

Residential Smart Inverter

ES Uniq 3.0-6.0kW

- LX A5.0-10
- LX A5.0-30
- LX U5.0-30
- GW14.3-BAT-LV-G10

Solutions Manual

GOODWE

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NOTICE

Due to product version upgrades or other reasons, the content of the document may be updated periodically. Unless otherwise agreed, the content of the document cannot replace the Safety Precautions in the product label. All descriptions in the document are provided for guidance only.

About This Manual

Overview

This document primarily introduces the product information, Installation wiring, configuration of Commissioning, fault troubleshooting, and maintenance content in the energy storage system composed of Inverter, Battery system, and Smart Meter. Before Installation or using the product, please read this manual carefully to understand the product safety information and familiarize yourself with the product's functions and features. The document may be updated periodically; please obtain the latest version and more product information from the official website.

Applicable Model

energy storage system includes the following products:

Product Type	Product Information	Description
Inverter	GW3000-ES-C10	Nominal output power: 3.0kW
	GW3600-ES-C10	Nominal output power: 3.6kW
	GW5000-ES-C10	Nominal output power: 5.0kW
	GW6000-ES-C10	Nominal output power: 6.0kW
Battery system	LX A5.0-10	Rated capacity 5.0kWh, supports up to 15 clusters in parallel
	LX A5.0-30	Rated capacity 5.12kWh, supports up to 30 clusters in parallel
	LX U5.0-30	Rated capacity 5.12kWh, supports up to 30 clusters in parallel
	GW14.3-BAT-LV-G10	Rated capacity 14.3kWh, supports up to 30 parallel clusters
Smart Meter	GMK110	The monitoring module in energy storage system can detect information such as voltage and current in the system.
	GM330	

Product Type	Product Information	Description
Smart dongle	WiFi/LAN Kit-20	In a standalone scenario, the system operation information can be uploaded to the monitoring platform via WiFi or LAN signals.
	4G Kit-CN-G20 4G Kit-CN-G21	In a standalone scenario, the system operation information can be uploaded to the monitoring platform via 4G signal.
	Ezlink3000	When parallel system, it is connected to Master inverter and uploads system operation information to the monitoring platform via WiFi or LAN signals.

Symbol Definition

 DANGER
Indicates a highly potential DANGER, which, if not avoided, will result in death or serious injury.
 WARNING
Indicates a moderate potential for DANGER, which, if not avoided, could result in death or serious injury.
 CAUTION
Indicates a low potential for DANGER, which, if not avoided, could result in moderate or minor injury to personnel.
NOTICE
Emphasis and supplementation of content may also provide tips or tricks for optimizing product use, helping you solve a problem or save time.

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1 Safety Precautions

The Safety Precautions information contained in this document must always be followed when operating the equipment.

WARNING

The equipment has been strictly designed in accordance with safety regulations and has passed all required tests. However, as electrical apparatus, all operations must comply with relevant safety instructions prior to any intervention. Improper operation may result in severe personal injury or property damage.

1.1 General Safety

NOTICE

- Due to product version upgrades or other reasons, the content of the document may be updated periodically. Unless otherwise agreed, the content of the document cannot replace the Safety Precautions in the product label. All descriptions in the document are provided for guidance only.
- Please read this document carefully before Installation the equipment to understand the product and NOTICE precautions.
- All operations of the equipment must be performed by professional and qualified electrical technicians who are thoroughly familiar with the relevant standards and safety regulations of the project location.
- When operating equipment, use insulated tools and wear personal protective equipment to ensure personal safety. When handling electronic components, wear anti-static gloves, wrist straps, and clothing to prevent Protection from electrostatic damage.
- Unauthorized disassembly or modification may cause equipment damage, which is not covered under warranty.
- Damage to equipment or personal injury caused by failure to install, use, or configure the device in accordance with this document or the applicable user manual is not covered by the warranty. For more product warranty information, please visit the official website:<https://www.goodwe.com/warrantyrelated.html>.

1.2 personnel requirements

NOTICE

To ensure the safety, compliance, and efficiency of the entire process, including equipment transportation, installation, wiring, operation, and maintenance, the work must be performed by professionals or qualified personnel.

1. Qualified personnel or professionals include:

- Personnel who have mastered the equipment's working principles, system structure, knowledge of risks and hazards, and have received professional operational training or possess extensive practical experience.
- Personnel who have received relevant technical and safety training, possess certain operational experience, are aware of the potential DANGER that specific tasks may pose to themselves, and can take protective measures to minimize risks to themselves and others.
- Qualified electrical technician compliant with the regulations of the respective country/region.
- Hold a degree in Electrical Engineering/Advanced Diploma in Electrical Discipline or equivalent/Professional qualification in the electrical field, with at least 2/3/4 years of experience in testing and regulatory work using electrical equipment safety standards.

2. Personnel involved in special tasks such as electrical work, work at heights, and operation of special equipment must hold valid qualification certificates as required by the equipment location.

3. Operation of medium-voltage equipment must be performed by certified high-voltage electricians.

4. Equipment and component replacement shall only be performed by authorized personnel.

1.3 System Safety



- Before performing electrical connections, disconnect all upstream switch of the equipment and ensure the device is POWER OFF. Live operation is strictly prohibited to avoid potential hazards such as electric shock or other DANGER.
- To prevent personal DANGER or equipment damage caused by live operations, a breaker must be added to the input side of the equipment voltage.
- During transportation, storage, installation, operation, use, maintenance, and all other operations, applicable laws, regulations, standards, and specification requirements must be complied with.
- The specifications of cables and components used for electrical connections shall comply with local laws, regulations, standards, and code requirements.
- Please use the cable connectors provided in the package to connect the equipment cables. If other model connectors are used, any resulting equipment damage will not be covered by the manufacturer's warranty.
- Ensure all cables of the equipment are correctly connected, securely fastened, and free from looseness. Improper wiring may cause poor contact or damage the equipment.
- The PE cable of the equipment must be securely connected.
- To ensure that Protection equipment and its components are not damaged during transportation, please ensure that the transport personnel are professionally trained. Record the operational steps during transportation and maintain the balance of the equipment to prevent it from falling.
- The equipment is heavy. Please assign personnel according to the equipment's Weight to prevent it from exceeding the human Weight lifting capacity and causing injury.
- Ensure the equipment is placed securely and not tilted, as tipping may cause equipment damage and personal injury.

 **WARNING**

- During the Installation process of the equipment, avoid subjecting the wiring terminal to load-bearing, as this may result in terminal damage.
- If the cable is subjected to excessive tension, it may result in poor connections. When wiring, ensure to leave a certain length of slack in the cable before connecting it to the equipment terminal port.
- Cables of the same type should be bundled together, while different types of cables must be spaced at least 30mm apart during installation. Intertwining or cross-laying of cables is strictly prohibited.
- The use of cables in high-temperature environments may cause insulation aging and damage. The distance between the cables and heat-generating components or the periphery of heat source areas should be at least 30mm.

1.3.1 PV String Safety

WARNING

- Ensure the module frame and mounting system are properly grounded.
- After the connection is completed, ensure that the cables are securely fastened and free from looseness. Improper wiring may result in poor contact or high impedance, and damage the Inverter.
- Use a multimeter to measure the positive and negative poles of the DC cable, ensuring correct polarity without reverse connection; and confirm the voltage is within the allowable range.
- Use a multimeter to measure the DC cable, ensuring correct polarity and no reverse connection. The voltage should be lower than the maximum DC input voltage. Damage caused by reverse connection or over-voltage is not covered by the manufacturer's warranty.
- The PV string output does not support grounding. Before connecting the PV string to Inverter, ensure that the minimum insulation resistance of the PV string meets the minimum insulation resistance requirement ($R = \text{Max. Input Voltage (V)} / 30\text{mA}$).
- Do not connect the same PV string to multiple Inverter, as this may cause damage to the Inverter.
- The PV modules used in conjunction with Inverter must comply with IEC 61730 Class A standards.
- When the input PV String value is high or the input current value is high, it may cause Inverter output derating.

1.3.2 Inverter Safety

WARNING

- Ensure the voltage and Frequency at the on-grid access point comply with Inverter on-grid requirements.
- It is recommended to add breaker or fuses as Protection devices on the AC side. The specifications of the Protection device should be greater than 1.25 times the maximum current of the AC output of Inverter.
- If the arc alarm is triggered less than 5 times within 24 hours, it can be automatically cleared. After the 5th arc alarm, the Inverter will shut down Protection, and the Inverter can only resume normal operation after the fault is cleared.
- In photovoltaic systems, if a Battery is not configured, it is not recommended to use the BACK-UP function, as it may lead to system POWER OFF risks.
- When Utility grid, voltage, and Frequency change, it may lead to Inverter output derating.

1.3.3 Battery Safety

DANGER

- Before operating any equipment in the system, ensure that the device is POWER OFF to prevent electric shock DANGER. Strictly adhere to all Safety Precautions in this manual and the safety labels on the equipment during operation.
- Do not disassemble, modify, or repair the Battery or control unit without official authorization from the equipment manufacturer, as it may result in electric shock DANGER or equipment damage. beyond the manufacturer's liability shall be liable for any losses caused thereby.
- Do not impact, pull, drag, squeeze, or step on the device, and do not place the Battery in fire, otherwise there is a risk of explosion for the Battery.
- Do not place the Battery in a high-temperature environment. Ensure there are no heat sources near the Battery and that it is not exposed to direct sunlight. A fire may occur if the ambient temperature exceeds 60°C.
- Do not use if Battery or control unit has obvious defects, cracks, damage, or other conditions. Damage to Battery may cause electrolyte leakage.
- Do not move the Battery system while the Battery is in operation. If you need to replace the Battery or add Battery, please contact the after-sales service center.
- A short circuit may cause personal injury. The instantaneous high current caused by a short circuit can release a large amount of energy, potentially leading to a fire.

WARNING

- Battery current may be affected by factors such as temperature, Humidity, and weather conditions, which could lead to Battery current limiting and impact load-carrying capacity.
- If the Battery fails to start, please contact the after-sales service center as soon as possible. Otherwise, the Battery may be permanently damaged.
- Please perform regular inspection and maintenance on Battery according to the maintenance requirements of Battery.

Emergency response measures for critical situations

- Battery electrolyte leakage

If the Battery module leaks electrolyte, avoid contact with the leaked liquid or gas.

The electrolyte is corrosive and contact may cause skin irritation and chemical burn. If accidental contact with the leaked substance occurs, please follow these steps:

- inhalation: Evacuate the contaminated area and seek immediate medical assistance.
- Eye contact: Rinse with clean water for at least 15 minutes and seek immediate medical assistance.
- Skin contact: Wash the affected area thoroughly with soap and water, and seek medical attention immediately.
- If swallowed: Induce vomiting and seek immediate medical attention.
- fire
 - When the Battery temperature exceeds 150°C, there is a risk of Battery catching fire, and toxic or harmful gases may be released after Battery ignites.
 - To prevent fire hazards, ensure that carbon dioxide, Novec 1230, or FM-200 fire extinguishers are available near the equipment.
 - Do not use ABC dry powder fire extinguishers for firefighting. Firefighters must wear protective clothing and self-contained breathing apparatus.
- Battery triggers fire protection
 - For Battery equipped with fire protection function, the following actions shall be executed after the fire protection function is triggered:
 - Immediately disconnect the main power switch to ensure no current passes through the Battery system.
 - Conduct a preliminary visual inspection of the Battery for any signs of damage, deformation, leakage, or unusual odors. Inspect the housing, connectors, and cables of the Battery.
 - Use temperature sensors to detect Battery and its ambient temperature to ensure no overheating risk.
 - Isolate and label the damaged Battery, and dispose of it properly in accordance with local regulations.

1.3.4 Smart Meter Safety

WARNING

If the Utility gridvoltage voltage fluctuation exceeds 265V, prolonged overvoltage operation may damage the meter. It is recommended to install a fuse with a rated current of 0.5A on the voltage input side of the meter to Protection it.

1.4 Safety Symbols and Certification Marks

DANGER		
<ul style="list-style-type: none">After Installation of the equipment, the labels and warning signs on the enclosure must remain clearly visible. Obscuring, altering, or damaging them is prohibited.The following warning labels on the enclosure are for reference only. Please refer to the actual labels on the equipment.		

No.	Symbol	Meaning
1		Potential DANGER exists during equipment operation. Please take necessary protective measures when operating the device.
2		High voltage DANGER. High voltage is present during equipment operation. Ensure the equipment is POWER OFF before performing any operations.
3		Inverter surface is at high temperature. Do not touch during operation to avoid burns.
4		Please use the equipment properly. In extreme conditions, there is a risk of explosion.
5		Battery contains flammable materials. Beware of fire.
6		The equipment contains corrosive electrolyte. Avoid contact with leaked electrolyte or vapor.
7		delayed discharge. After the equipment is power off, please wait for 5 minutes until the device is completely Discharge.

No.	Symbol	Meaning
8		The equipment should be kept away from open flames or ignition sources.
9		The equipment shall be kept away from children accessible areas.
10		Do not extinguish with water.
11		Before operating the equipment, please read the product manual carefully.
12		Wear personal protective equipment during Installation, operation, and maintenance.
13		The equipment must not be disposed of as household waste. Please handle the equipment in accordance with local laws and regulations or return it to the manufacturer.
14		grounding point.
15		Recycling symbol.
16		CE Marking.
17		TUV Mark.
18		RCM mark.

1.5 EU Declaration of Conformity

1.5.1 Equipment with Wireless Communication Modules

The Equipment with Wireless Communication Modules that can be sold in the European market meets the following directive requirements:

- 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 No Equipment with Wireless Communication Modules (except Battery)

Can be sold in the European market without Equipment with Wireless Communication Modules meeting the following directive requirements:

- 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 Battery that can be sold in the European market meets the following directive requirements:

- 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)

More EU Declaration of Conformity, available from [Official website](#) Acquisition.

2 System Introduction

2.1 System Overview

Residential smart Inverter solution integrates Inverter, Battery, Smart Meter, and smart dongle equipment. In the photovoltaic system, it converts solar energy into electricity to meet household power demands. The energy IoT devices in the system manage electrical appliances by monitoring the overall power status, enabling intelligent control of electricity for loads, storage in Battery, or export to Utility grid.

 **WARNING**

- Battery and model are selected based on the matching list of Inverter and Battery. For requirements regarding the use of Battery in the same system, such as whether model can be mixed and matched, whether capacities must be consistent, etc., please refer to the corresponding Battery user manual of the model or contact the Battery manufacturer for relevant requirements.
Compatibility list between Inverter and Battery:https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_Battery%20Compatibility%20Overview-EN.pdf
- Due to product version upgrades or other reasons, the document content will be updated periodically. The matching relationship between Inverter and IoT products can be referenced as follows:https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_Compatibility-list-of-GoodWe-inverters-and-IoT-products-EN.pdf
- For detailed networking and wiring schemes of each scenario, please refer to:[5.2.Detailed System Wiring Diagram\(Page 95\)](#)
- In a fully off-grid Inverter system, if Battery experiences prolonged low-light or rainy weather conditions without timely Charge replenishment, it may lead to excessive Discharge, resulting in performance degradation or damage to Battery. To ensure long-term stable operation of the system, complete discharge of Battery should be avoided. The following measures are recommended:
 1. During off-grid operation, set the minimum SOC threshold. It is recommended to set the off-grid SOC lower limit to 30%.
 2. When the SOC approaches the Protection threshold, the system will automatically enter load-limiting or Protection mode.
 3. If there is insufficient sunlight for several consecutive days and the Battery SOC is too low, external energy sources (such as a generator or Utility grid auxiliary Charge) should be used promptly to replenish the Battery.
 4. Regularly check the Battery status to ensure it remains within safe operating limits.
 5. It is recommended to perform a full charge and discharge cycle every six months to calibrate the SOC accuracy.

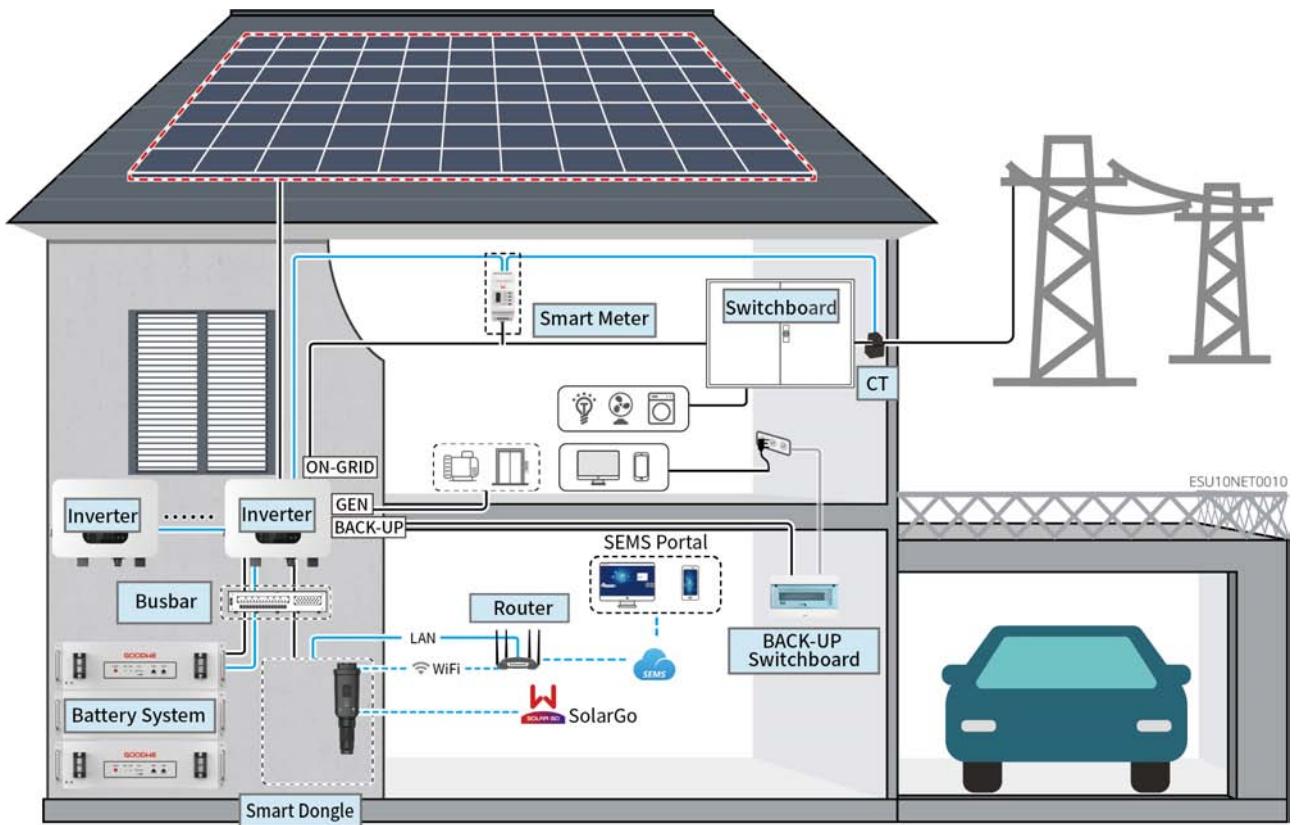
Off-grid load capacity description		
Inverter model	GW3000-ES-C10 GW3600-ES-C10	GW5000-ES-C10 GW6000-ES-C10

Off-grid load capacity description		
Single motor load Nominal power (kVA)	0.55	1.1
Total motor load Nominal power (kVA)	0.75*Pn	0.75*Pn
Capacitive Load (kVA)	0.33*Pn	0.33*Pn
Half-wave load (kW)	0.5*Pn	0.5*Pn

Note:

- Pn: InverterNominal output power.
- If the Nominal 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.
- For 2 or more units in parallel operation, the allowable total motor load Nominal power = single motor load Nominal power * number of parallel units * 80%.
- Half-wave load: Some older or non-EMC compliant appliances (such as hair dryers or small heaters using half-wave rectification).

General scenario



Equipment Type	model	Description
Inverter	GW3000-ES-C10 GW3000-ES-C11 GW3600-ES-C10 GW5000-ES-C10 GW6000-ES-C10	<ul style="list-style-type: none"> When only one Inverter is used in the system, it supports the connection of generators or large loads. When multiple Inverter units are used in the system, connecting generators or large loads is not supported. A maximum of 6 Inverter units can form a parallel system, and Ezlink3000 is required for parallel operation. The following version requirements must be met when connecting units in parallel to the grid: <ul style="list-style-type: none"> The software versions of all Inverter in the parallel system are consistent. All Inverter model in the parallel system are consistent. Inverter ARM software version is 15.493 or above The DSP software version is 02.10 or above.
Battery system	LX A5.0-10	Different model Battery system cannot be mixed and used together <ul style="list-style-type: none"> LX A5.0-10: Single Battery The nominal charging and discharging current with a current rating of 60A; supports a maximum of 15 units in parallel within the same system.
	LX A5.0-30	<ul style="list-style-type: none"> LX A5.0-30: The rated Battery Charge current of a single unit is 60A; the rated Discharge current is 100A; the maximum Charge current is 90A; the maximum Discharge current is 150A. A maximum of 30 units can be clustered in parallel within the same system.
	LX U5.0-30	The rated Battery current current is 60A; the rated Discharge current current is 100A; the maximum Charge current current is 90A; the maximum Discharge current current is 100A. A single system supports a maximum of 30 units in parallel.

Equipment Type	model	Description
	GW14.3-BAT-LV-G10	<ul style="list-style-type: none"> The single Battery The nominal charging and discharging current is 140A; the maximum Charge current is 224A, and the maximum Discharge current is 260A. Supports a maximum of 30 clusters in parallel within the same system. <ul style="list-style-type: none"> Products with SN codes 25C and later default to supporting 30 units in a cluster. For products before 25C that need to support 30 units in a cluster, please contact GoodWe After-Sales Service Center to upgrade the firmware version. View product SN code 12.4.SN code meaning(Page 424).
	Lead-acid battery	<ul style="list-style-type: none"> Supports connection to AGM, GEL, and Flooded types of lead-acid Battery Calculate the number of can be connected in seriesBattery based on the lead-acid Battery voltage. The total voltage of the series-connected Battery must not exceed 60V.
Busbar	BCB-11-WW-0 BCB-22-WW-0 BCB-32-WW-0 BCB-33-WW-0 (Purchased from GoodWe)	<p>Please select the busbar based on the system's Inverter charging Discharge capacity, load size, and Battery charging Discharge capacity.</p> <ul style="list-style-type: none"> BCB-11-WW-0: <ul style="list-style-type: none"> Compatible with LX A5.0-10, Battery system supports a maximum working current of 360A, working Power of 18kW, and can connect up to 3 Inverter units and 6 Battery units. BCB-22-WW-0: <ul style="list-style-type: none"> When paired with the LX A5.0-10, the Battery system supports a maximum working current of

Equipment Type	model	Description
		<p>720A, a working Power of 36kW, and can connect up to 6 Inverter units and 12 Battery units.</p> <ul style="list-style-type: none"> When paired with the LX A5.0-30, the Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter and 6 Battery. When paired with the LX U5.0-30, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 6 Battery units. BCB-32-WW-0: <ul style="list-style-type: none"> When paired with LX A5.0-10, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. When paired with the LX A5.0-30, the Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. When paired with the LX U5.0-30, the Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 8 Battery units. When paired with GW14.3-BAT-LV-G10, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. BCB-33-WW-0: <ul style="list-style-type: none"> Compatible with LX U5.0-30, Battery system supports a maximum working current of 720A, working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. When the number of Battery exceeds 8, two 600A fuses must be connected in parallel. Others: Please configure according to the system

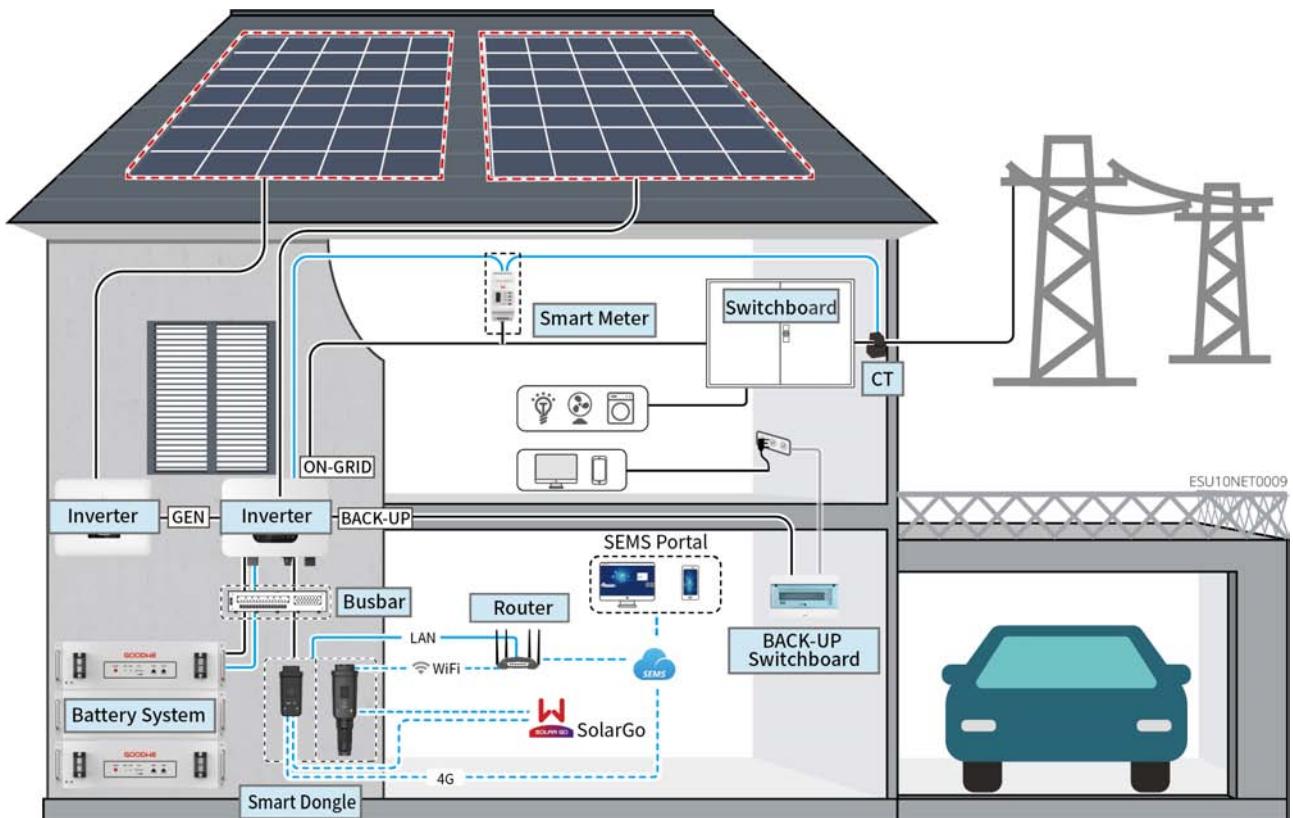
Equipment Type	model	Description
		Power and current on your own.
Smart Meter	<ul style="list-style-type: none"> • Built-in energy meter • GMK110 (purchased from GoodWe) • GM330 (purchased from GoodWe) 	<ul style="list-style-type: none"> • Built-in energy meter: Please use the CTs shipped with the box to connect Inverter, CT ratio with a ratio of 120A:40mA. • GMK110: When the built-in CT cable length of Inverter is insufficient to connect to Main panel, it can be extended using an external GMK110 meter. CT replacement is not supported. CT ratio: 120A/40mA. • GM330: CT can be sourced from GoodWe or purchased separately, with a CT ratio requirement of nA/5A. <ul style="list-style-type: none"> ◦ nA: CT primary side input current, range of n is 200-5000 ◦ 5A: CT secondary side output current
communication rod	<ul style="list-style-type: none"> • WiFi/LAN Kit-20 (standard-equipped) • 4G Kit-CN-G20 (China Only) • 4G Kit-CN-G21 (China Only) • Ezlink3000 (purchased from GoodWe) 	<ul style="list-style-type: none"> • For single unit operation, please use the WiFi/LAN Kit-20, 4G Kit-CN-G20, or 4G Kit-CN-G21 modules. • During parallel operation, only Master inverter needs to be connected to Ezlink3000, while Slave inverter does not require connection to smart dongle. The firmware version of Ezlink3000 should be 05 or higher.

Equipment Type	model	Description
heavy load	-	<p>Supports SG Ready, high load specification requirements:</p> <ol style="list-style-type: none"> 1. Total large load Power < GENport Maximum output Power 2. Large Load Power + BACK-UP Power < AC Max.Input Power (Utility grid)
Generator	-	Generator rated voltage meets Inverter GEN port rated voltage

Microgrid scenario

WARNING

- In microgrid scenarios, the PV Hybrid Inverter open-circuit voltage is not recommended to be $\geq 500V$ to avoid excessive system voltage under harsh operating conditions, which could trigger overvoltage Protection.
- In the microgrid system, Inverter does not support parallel operation, and only one Inverter is allowed in the system.
- When the system is in a high-temperature condition or current-limited by the BMS, it may result in restricted Battery charge Power, leading to excessive system voltage that triggers overvoltage Protection.
- In the microgrid scenario, ensure that the over-frequency load shedding point of grid-tied PV inverter matches that of Hybrid Inverter.
- Please ensure that the over-frequency load shedding curve for grid-tied PV inverter is configured as follows:
 - end power is set to 0% P_n
 - Tentional Delay T_a is set to 0
 - Set the Power response mode to off.



Equipment Type	model	Description
Hybrid Inverter	GW3000-ES-C10 GW3000-ES-C11 GW3600-ES-C10 GW5000-ES-C10 GW6000-ES-C10	<ul style="list-style-type: none"> In the microgrid system, Inverter does not support parallel operation, and only one Inverter is allowed in the system. Inverter version requirements: <ul style="list-style-type: none"> Inverter ARM software version is 15.493 or above The DSP software version is 02.10 or above.
	LX A5.0-10	

Equipment Type	model	Description
Battery system	LX A5.0-30	<p>Different model Battery system cannot be mixed and used together</p> <ul style="list-style-type: none"> • LX A5.0-10: Single Battery The nominal charging and discharging current with a current rating of 60A; supports a maximum of 15 units in parallel within the same system. • LX A5.0-30: The rated Battery Charge current of a single unit is 60A; the rated Discharge current is 100A; the maximum Charge current is 90A; the maximum Discharge current is 150A. A maximum of 30 units can be clustered in parallel within the same system.
	LX U5.0-30	<p>The rated Battery current current is 60A; the rated Discharge current current is 100A; the maximum Charge current current is 90A; the maximum Discharge current current is 100A. A single system supports a maximum of 30 units in parallel.</p>
	GW14.3-BAT-LV-G10	<ul style="list-style-type: none"> • The single Battery The nominal charging and discharging current is 140A; the maximum Charge current is 224A, and the maximum Discharge current is 260A. • Supports a maximum of 30 clusters in parallel within the same system. <ul style="list-style-type: none"> ◦ Products with SN codes 25C and later default to supporting 30 units in a cluster. ◦ For products before 25C that need to support 30 units in a cluster, please contact GoodWe After-Sales Service Center to upgrade the firmware version. ◦ View product SN code 12.4.SN code meaning(Page 424).

Equipment Type	model	Description
	Lead-acid battery	<ul style="list-style-type: none"> Supports connection to AGM, GEL, and Flooded types of lead-acid Battery Calculate the number of can be connected in seriesBattery based on the lead-acid Battery voltage. The total voltage of the series-connected Battery must not exceed 60V.
Busbar	BCB-11-WW-0 BCB-22-WW-0 BCB-32-WW-0 BCB-33-WW-0 (Purchased from GoodWe)	<p>Please select the busbar based on the system's Inverter charging Discharge capacity, load size, and Battery charging Discharge capacity.</p> <ul style="list-style-type: none"> BCB-11-WW-0: <ul style="list-style-type: none"> Compatible with LX A5.0-10, Battery system supports a maximum working current of 360A, working Power of 18kW, and can connect up to 3 Inverter units and 6 Battery units. BCB-22-WW-0: <ul style="list-style-type: none"> When paired with the LX A5.0-10, the Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 12 Battery units. When paired with the LX A5.0-30, the Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter and 6 Battery. When paired with the LX U5.0-30, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 6 Battery units. BCB-32-WW-0: <ul style="list-style-type: none"> When paired with LX A5.0-10, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. When paired with the LX A5.0-30, the Battery

Equipment Type	model	Description
		<p>system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units.</p> <ul style="list-style-type: none"> When paired with the LX U5.0-30, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 6 Battery units. When paired with GW14.3-BAT-LV-G10, Battery system supports a maximum working current of 720A, a working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. BCB-33-WW-0: <ul style="list-style-type: none"> Compatible with LX U5.0-30, Battery system supports a maximum working current of 720A, working Power of 36kW, and can connect up to 6 Inverter units and 15 Battery units. When the number of Battery exceeds 8, two 600A fuses must be connected in parallel. Others: Please configure according to the system Power and current on your own.

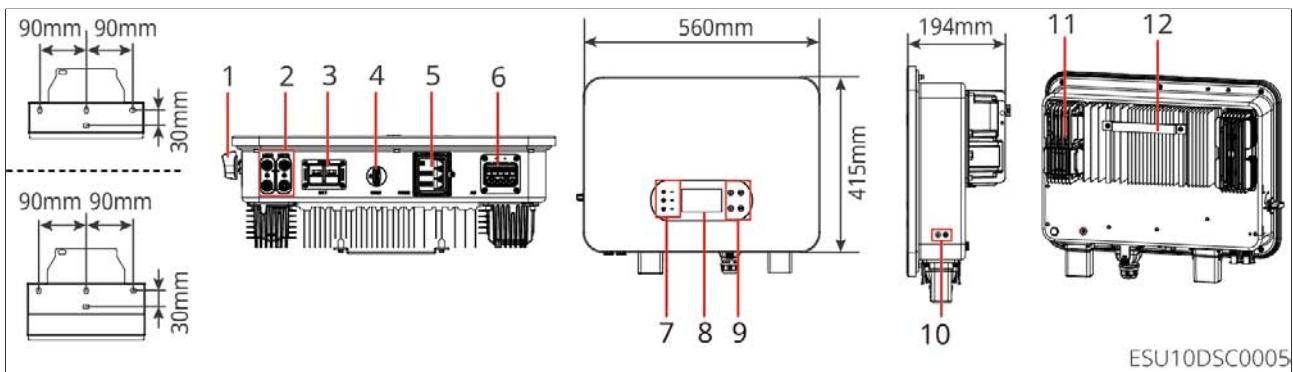
Equipment Type	model	Description
Smart Meter	<ul style="list-style-type: none"> • Built-in energy meter • GMK110 (purchased from GoodWe) • GM330 (purchased from GoodWe) 	<ul style="list-style-type: none"> • Built-in energy meter: Please use the CTs shipped with the box to connect Inverter, CT ratio with a ratio of 120A:40mA. • GMK110: When the built-in CT cable length of Inverter is insufficient to connect to Main panel, it can be extended using an external GMK110 meter. CT replacement is not supported. CT ratio: 120A/40mA. • GM330: CT can be sourced from GoodWe or purchased separately, with a CT ratio requirement of nA/5A. <ul style="list-style-type: none"> ◦ nA: CT primary side input current, range of n is 200-5000 ◦ 5A: CT secondary side output current
communication rod	<ul style="list-style-type: none"> • WiFi/LAN Kit-20 (standard-equipped) • 4G Kit-CN-G20 (China Only) • 4G Kit-CN-G21 (China Only) 	<p>For single unit operation, please use the WiFi/LAN Kit-20, 4G Kit-CN-G20, or 4G Kit-CN-G21 modules.</p>

Equipment Type	model	Description
grid-tied PV inverter	-	<ul style="list-style-type: none"> It is recommended to use GoodWe brand grid-tied PV inverter, which supports the use of third-party grid-tied PV inverter. In the microgrid system, ensure that grid-tied PV inverterNominal output power ≤ hybrid InverterNominal output power. When the microgrid system is in the on-grid state, if Power limitation is required, please ensure: <ul style="list-style-type: none"> Hybrid Inverter needs to pass through SolarGo APPExport power limitConfigure in the interface, grid-tied PV inverter please set according to the actual tool used. To ensure the grid-tied PV inverter can operate continuously for power generation, it is necessary to pass through the SolarGo APP.Microgrid modeThe interface adjusts the output Power of the hybrid Inverter. <p>Note: The output Power control accuracy varies with different grid-tied PV inverter. Please set the Export power limit parameter value according to the actual situation.</p>

2.2 Product Overview

2.2.1 Inverter

Inverter controls and optimizes power through an integrated energy management system in photovoltaic systems. The electricity generated by the photovoltaic system can be supplied to loads, stored in Battery, or exported to Utility grid.



No.	model	Nominal output power	Nominal output voltage
1	GW3000-ES-C10	3000W	220/230/240
3	GW3600-ES-C10	3600W	220/230/240
4	GW5000-ES-C10	5000W	220/230/240
5	GW6000-ES-C10	6000W	220/230/240

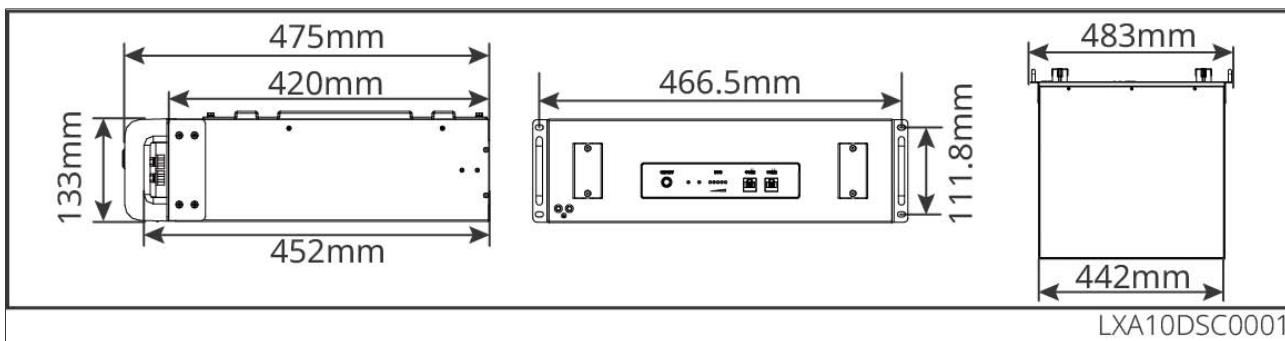
No.	Component/Silkscreen	Description
1	DC switch	Control the connection or disconnection of DC input.
2	PV Input terminal	Can connect to DC input lines of PV modules.
3	Battery input terminal	Can connect Battery DC input line.
4	smart dongle port	Can be connected to smart dongle, please select the module type according to actual requirements.
5	Communication Port	Can be connected to load control, CT, RS485 remote shutdown/Rapid Shutdown DRED(Australia)/RCR(Europe) and other Communication cable.
6	AC output	Connect the AC output cable, connecting Inverter to Utility grid.
7	indicator	Indicates the operating status of Inverter.
8	Display screen	View data related to Inverter.
9	button	Operate the Inverter in conjunction with the display screen.
10	Grounding terminal	Connecting the PE cable
11	heat sink	Provide heat dissipation for Inverter.

12	Mounting bracket	Can be mounted with Inverter.
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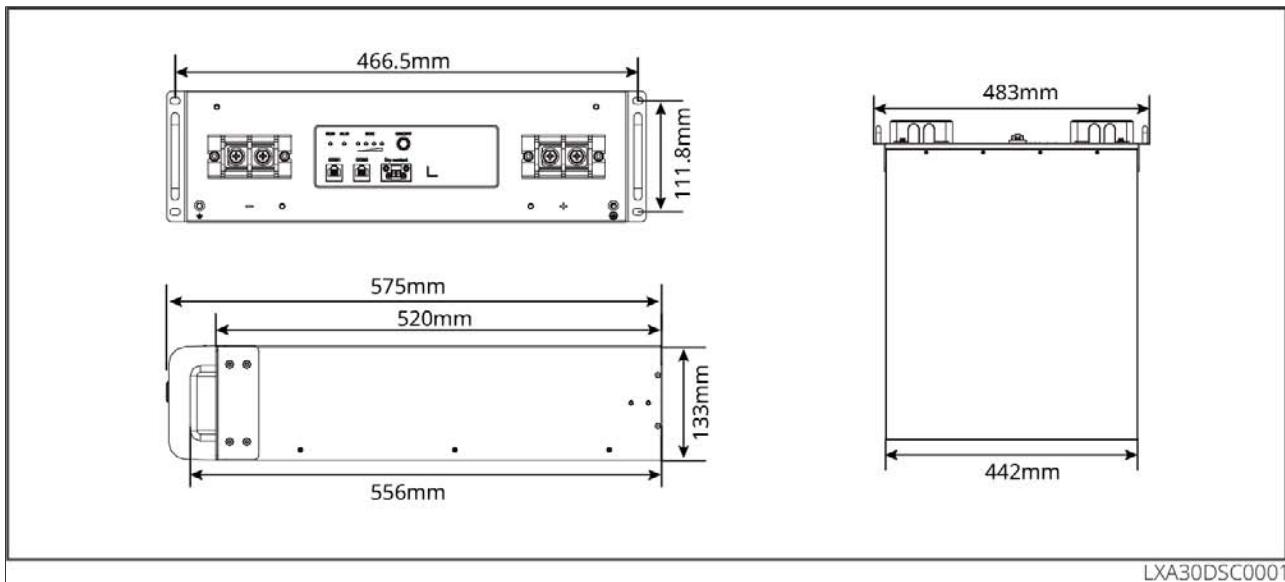
2.2.2 Battery

Battery system can store and release electrical energy according to the requirements of the photovoltaic energy storage system. The input and output port of this energy storage system are both high-voltage direct current. ES Uniq Inverter supports the use of lead-acid Battery. For related product information on lead-acid Battery, please obtain it from the lead-acid Battery manufacturer.

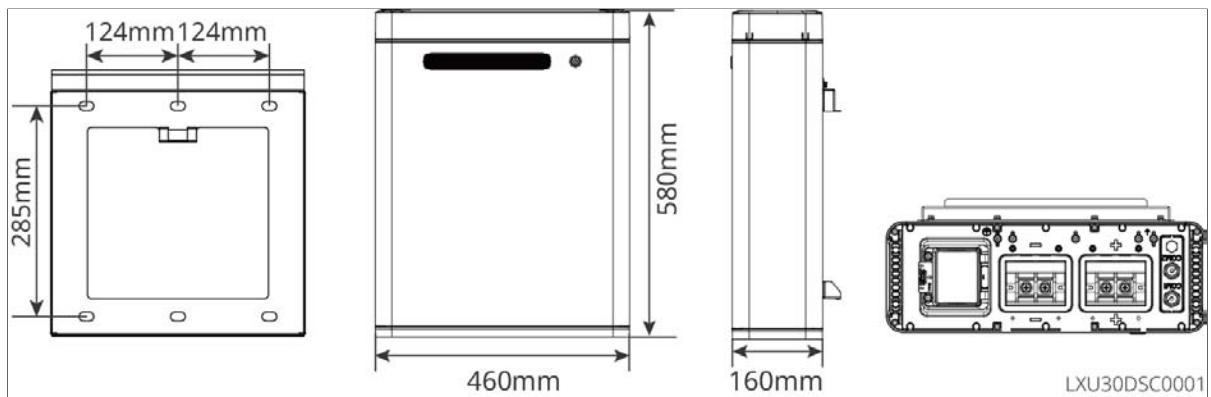
2.2.2.1 LX A5.0-10



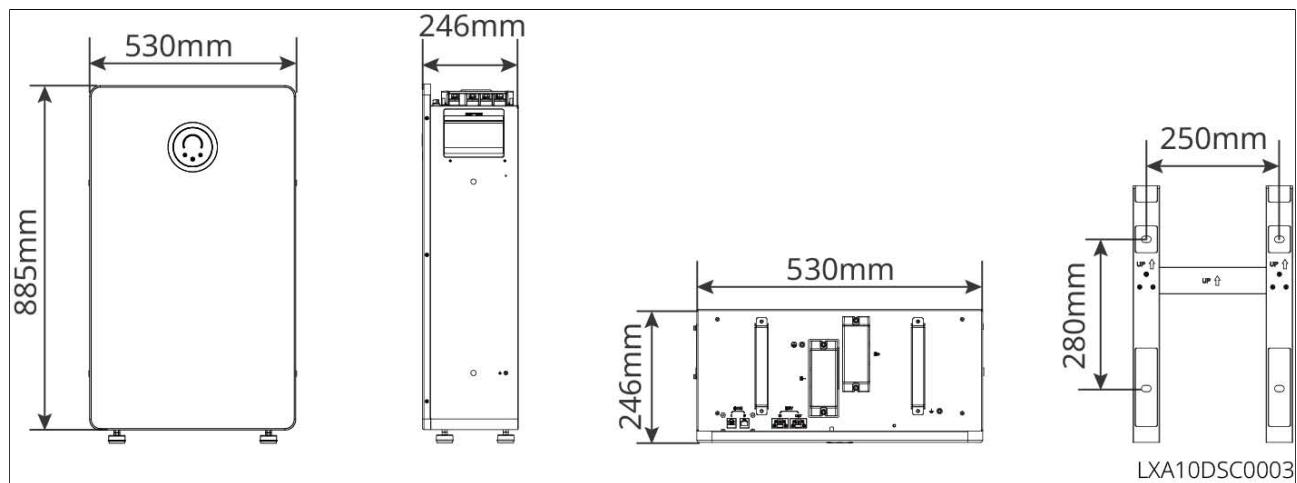
2.2.2.2 LX A5.0-30



2.2.2.3 LX U5.0-30

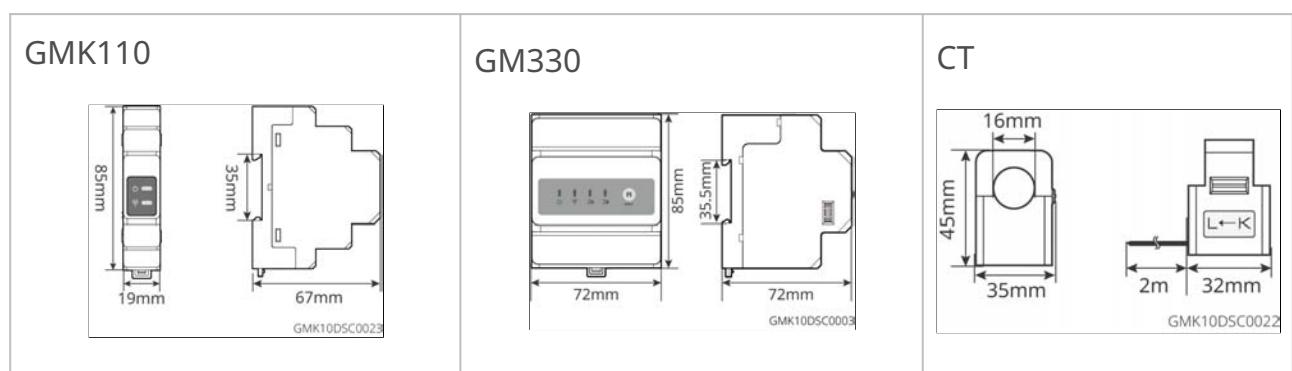


2.2.2.4 GW14.3-BAT-LV-G10



2.2.3 Smart Meter

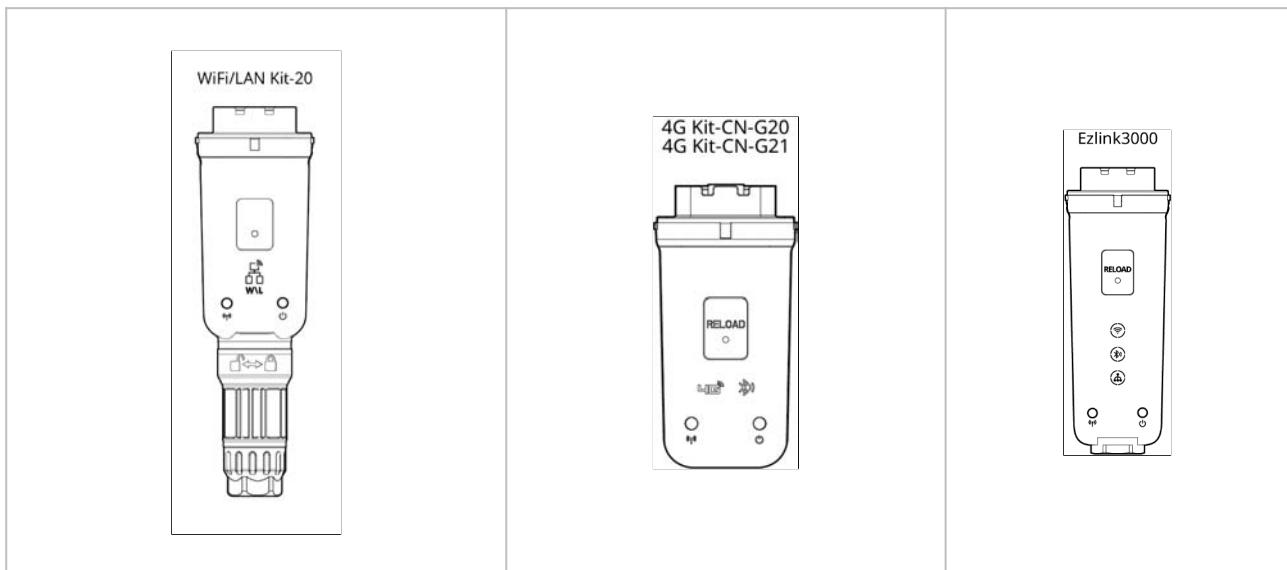
Smart Meter can measure and monitor electrical data in photovoltaic energy storage system, such as: voltage, current, Frequency, Output Power Factor, Power, etc.



No.	model	Applicable scenarios
1	GMK110	CT cannot be replaced, CT ratio: 120A: 40mA
2	GM330	<p>CT supports purchase from GoodWe or self-procurement, CT ratio requirement: nA: 5A</p> <ul style="list-style-type: none"> • nA: CT primary side input current, n range is 200-5000 • 5A: CT secondary side output current

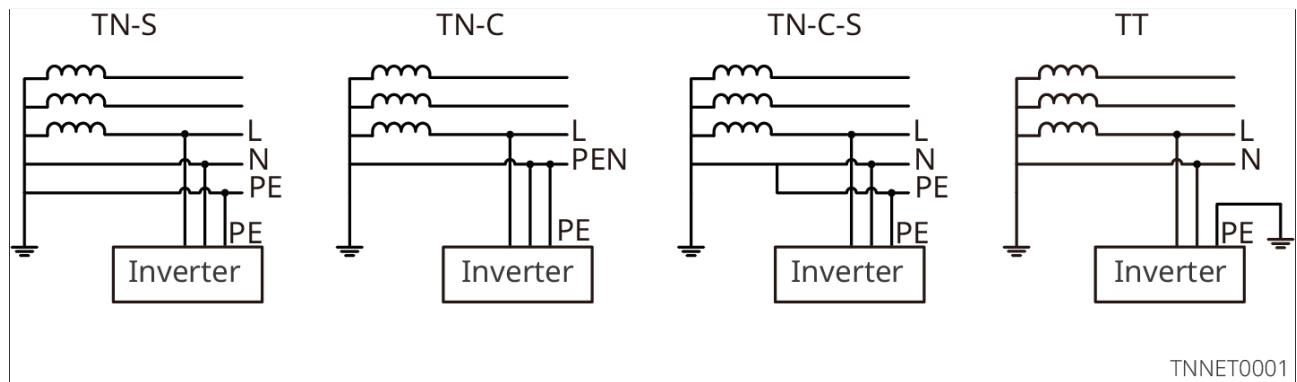
2.2.4 smart dongle

smart dongle is primarily used for real-time transmission of various power generation data from Inverter to the SEMS Portal remote monitoring platform, and for local device Commissioning via SolarGo APP connected to smart dongle.



No.	model	Signal type	Applicable scenarios
1	WiFi/LAN Kit-20	Bluetooth, WiFi, LAN	
2	4G Kit-CN-G20	Bluetooth, 4G	Inverter Standalone scenario application
3	4G Kit-CN-G21	4G, Bluetooth, GNSS	
4	Ezlink3000	Bluetooth, WiFi, LAN	host in a parallel system

2.3 Supported Grid Types



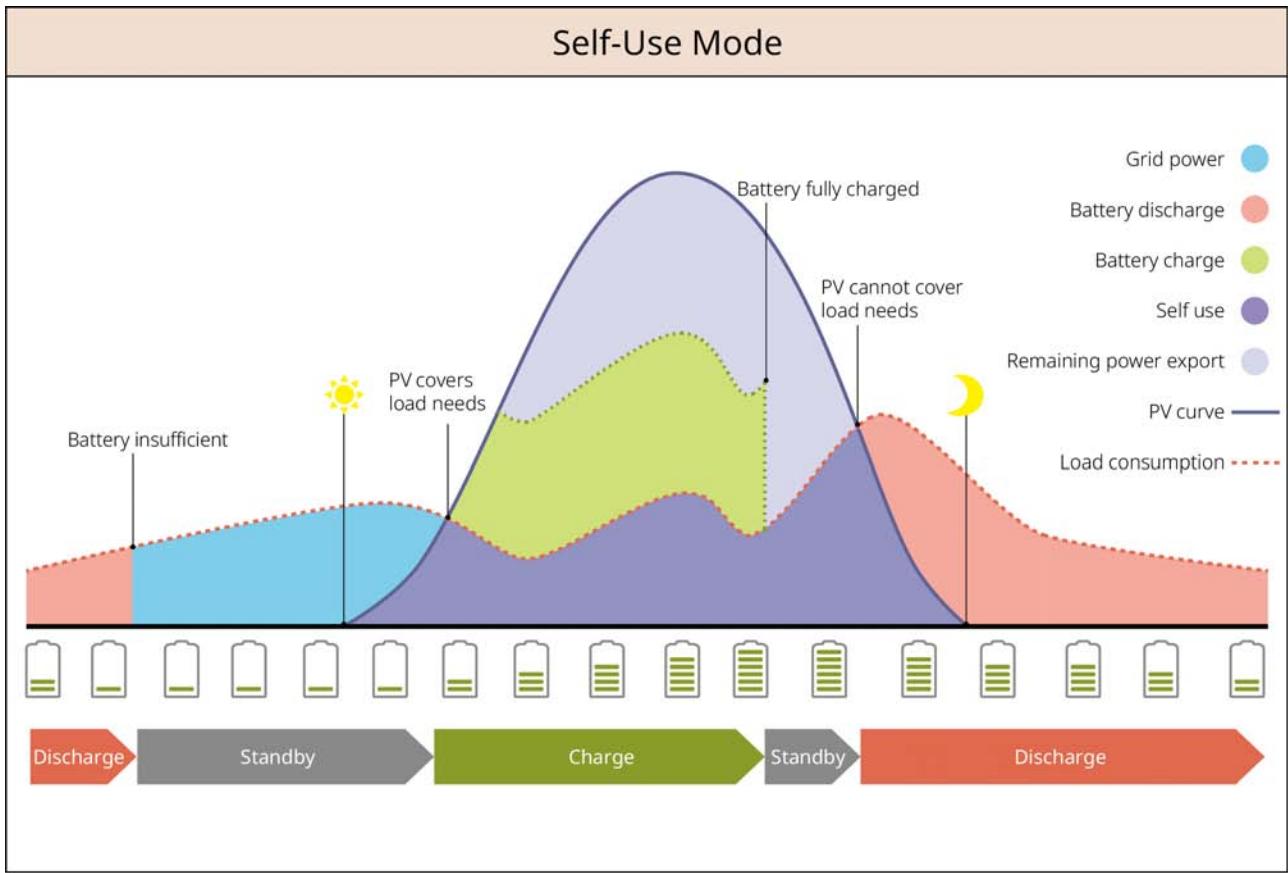
2.4 System Working Mode

NOTICE

GW14.3-BAT-LV-G10Battery system After the first Installation, a full Battery charge will be automatically executed. Upon completion, the system will switch to the configured operating mode.

Self-consumption mode

- Basic operating mode of the system.
- PV generation prioritizes supplying power to the load, with excess electricity directed to Battery charge. Any remaining power is then sold to Utility grid. When PV generation cannot meet the Load consumption demand, Battery supplies power to the load. If the Battery power is also insufficient to meet the Load consumption demand, Utility grid provides power to the load.

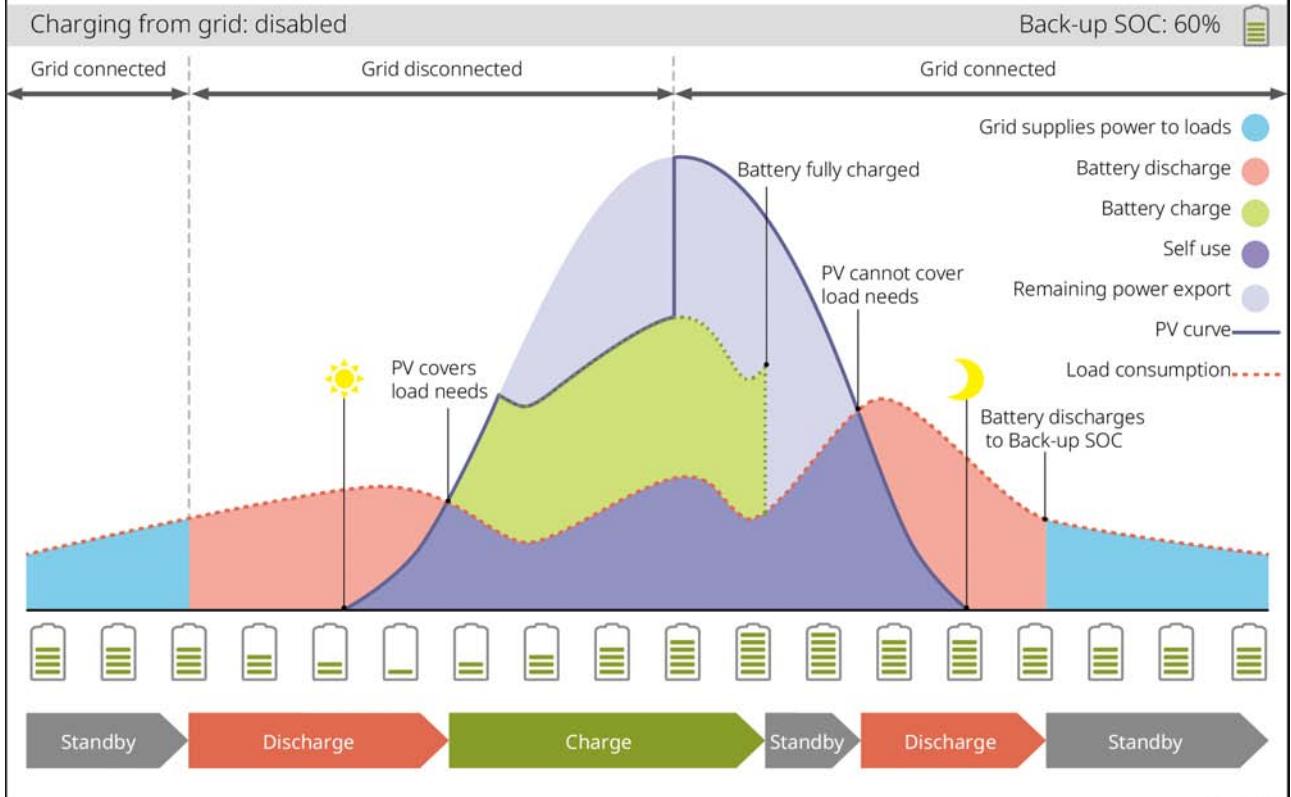


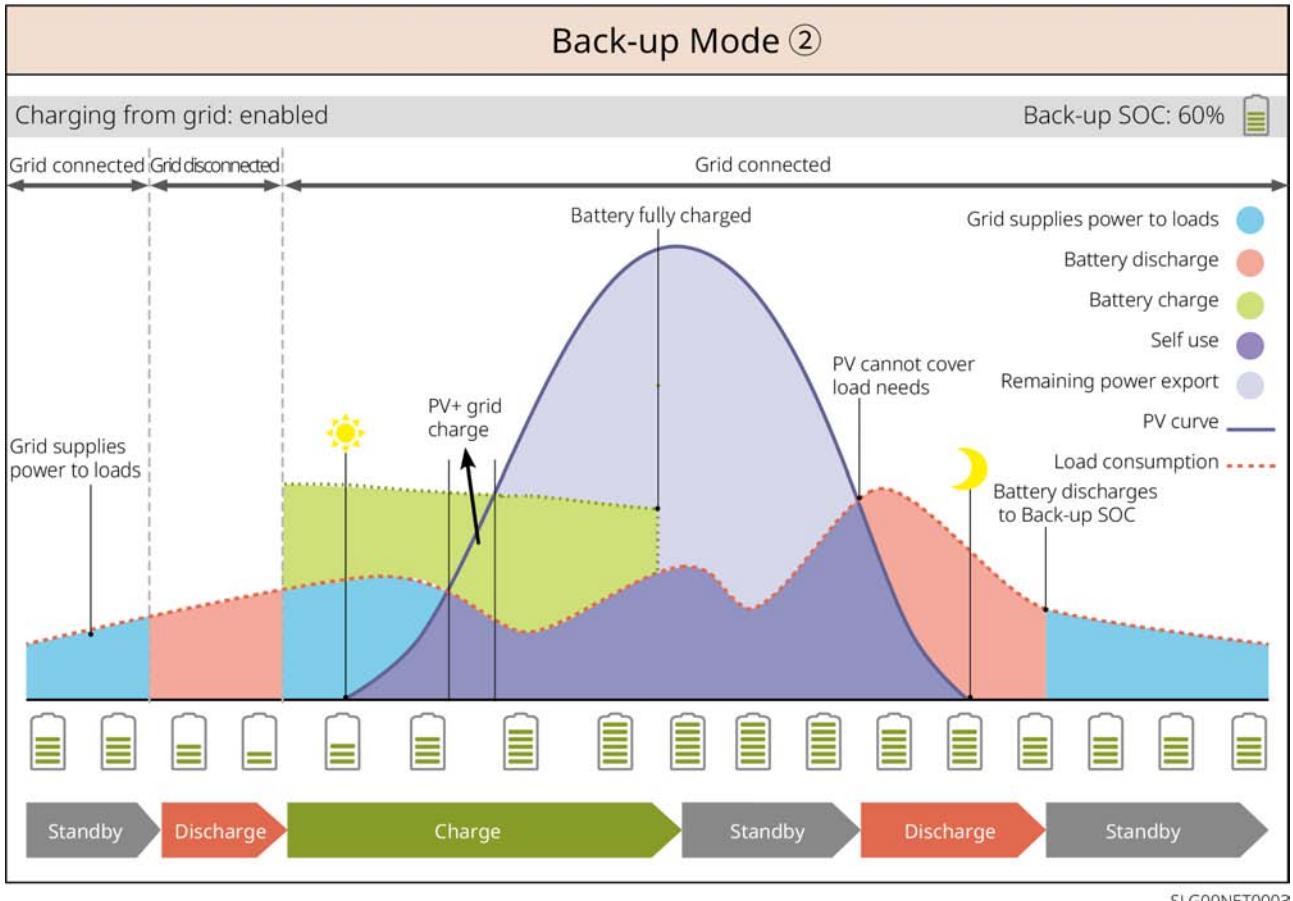
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Back-up Mode

- Recommended for use in areas with unstable Utility grid.
- When Grid disconnected occurs, Inverter switches to off-grid operation mode, and Battery discharge supplies power to the load to ensure BACK-UP Loads does not POWER OFF; when Utility grid is restored, the operation mode of Inverter switches back to on-grid operation.
- To ensure the Battery SOC is sufficient to maintain normal system operation during off-grid periods, when the system operates in on-grid mode, the Battery will utilize PV or Utility grid to purchase electricity Charge to Back-up SOC. If purchasing electricity for Battery charge via Utility grid is required, please confirm compliance with local Utility grid laws and regulations.

Back-up Mode ①



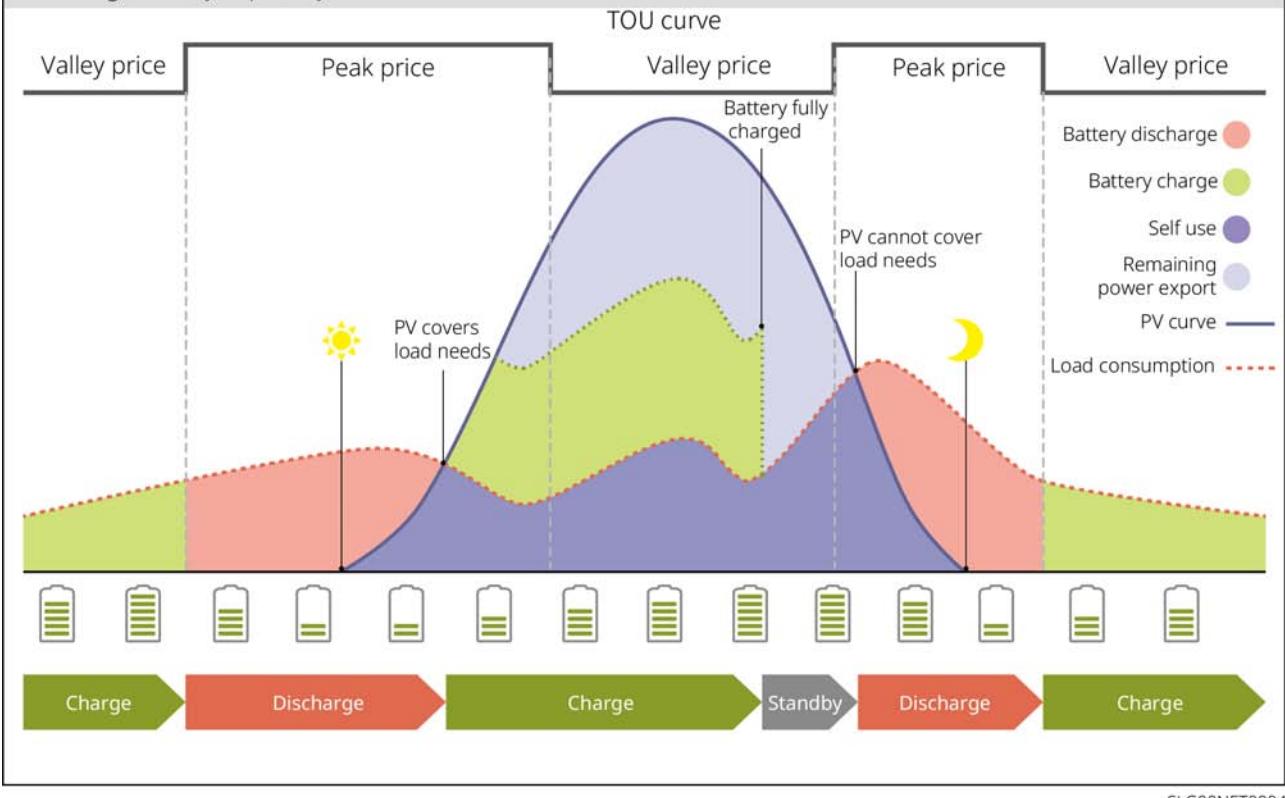


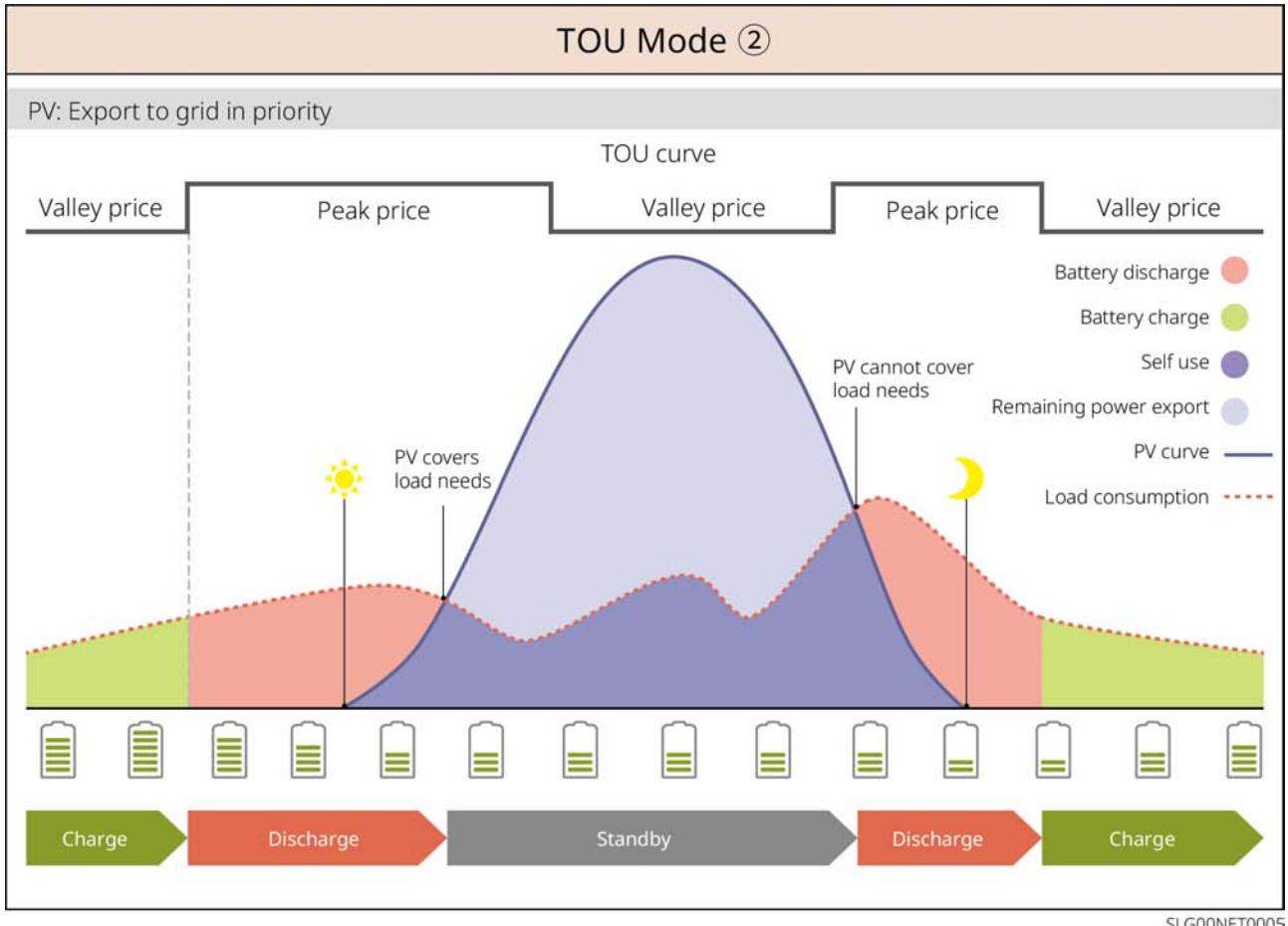
TOU mode

Under the premise of complying with local laws and regulations, set different time periods for electricity trading based on the peak-valley price difference of Utility grid. For example: during the off-peak electricity price period, set the Battery to Charge mode, and buy power from the grid Charge; during the peak electricity price period, set the Battery to Discharge mode, and supply power to the load through Battery.

TOU Mode ①

PV: Charge battery in priority





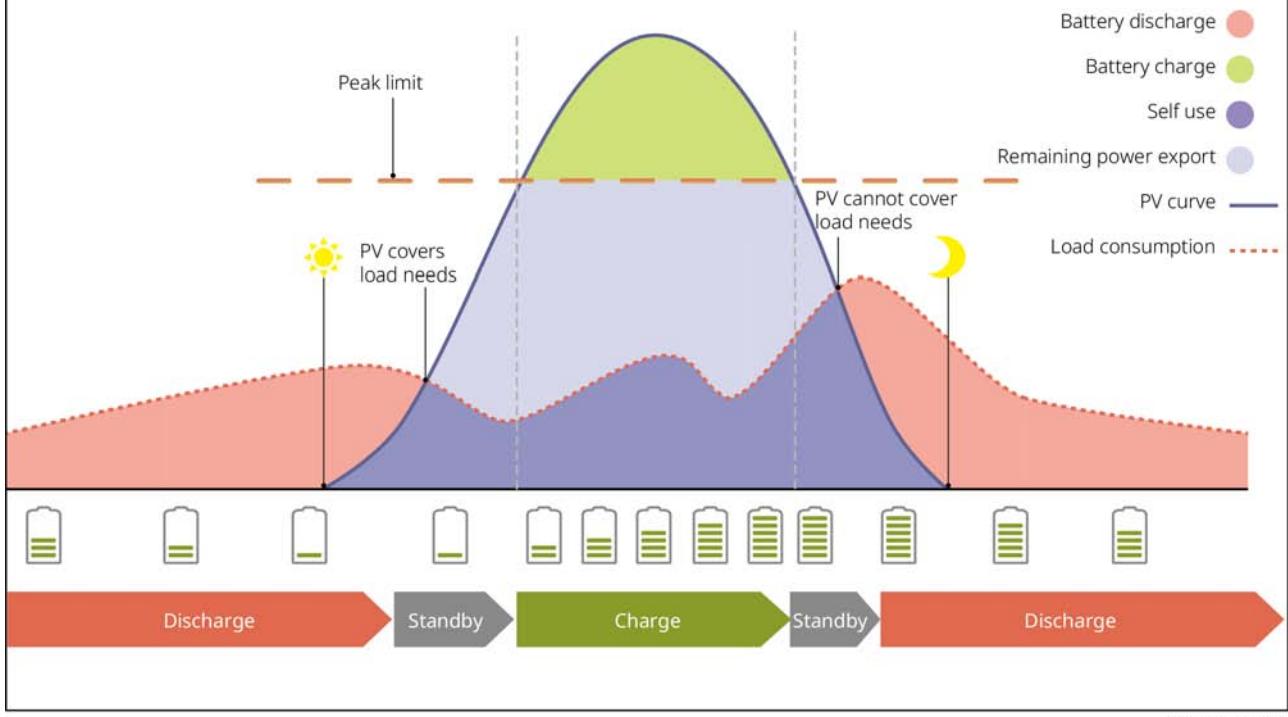
Delay Charge Mode

- Suitable for areas with on-grid Power output restrictions.
- Setting the peak Power limit allows excess photovoltaic power beyond the on-grid limit to be used for charging Battery charge; or configuring PV Charge periods enables the utilization of photovoltaic power to charge Battery charge during Charge intervals.

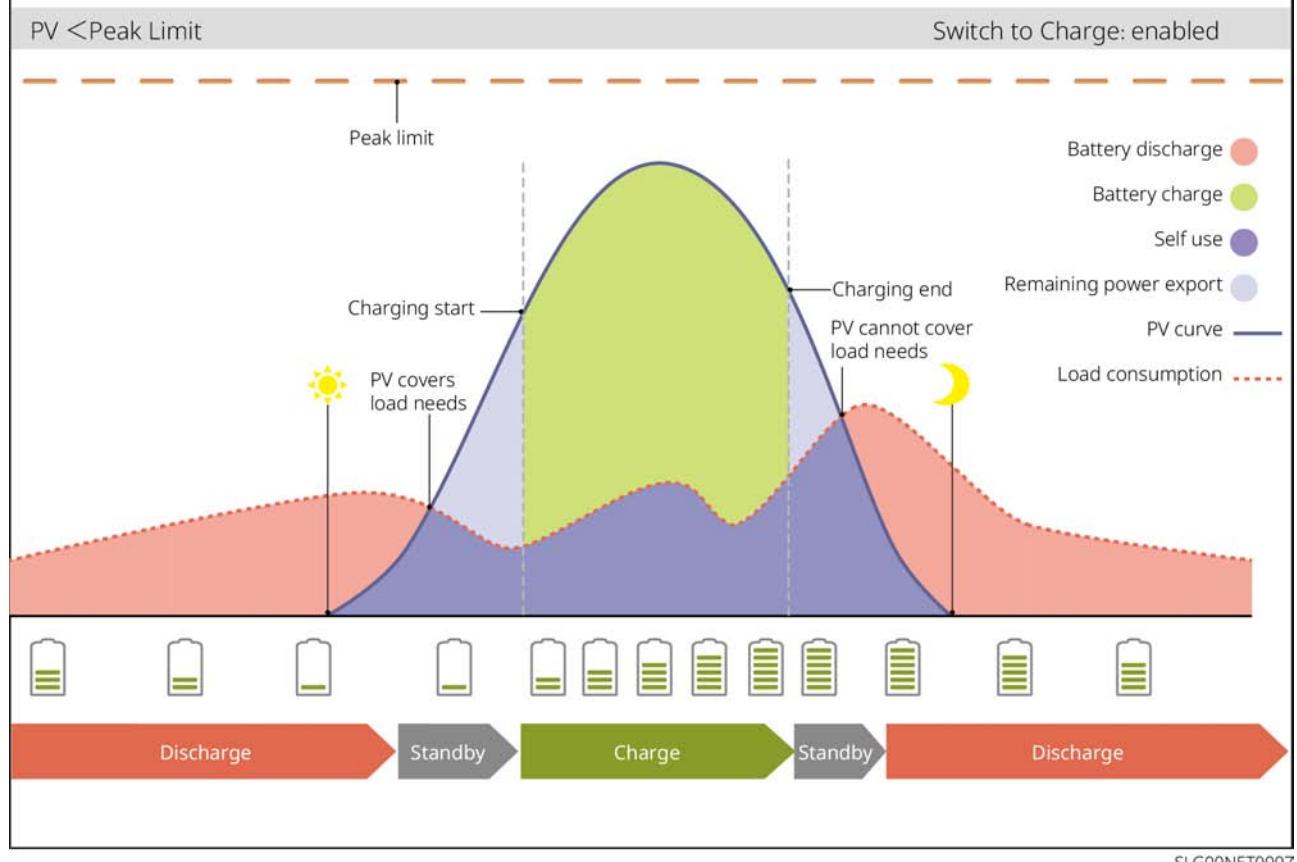
Smart Charging ①

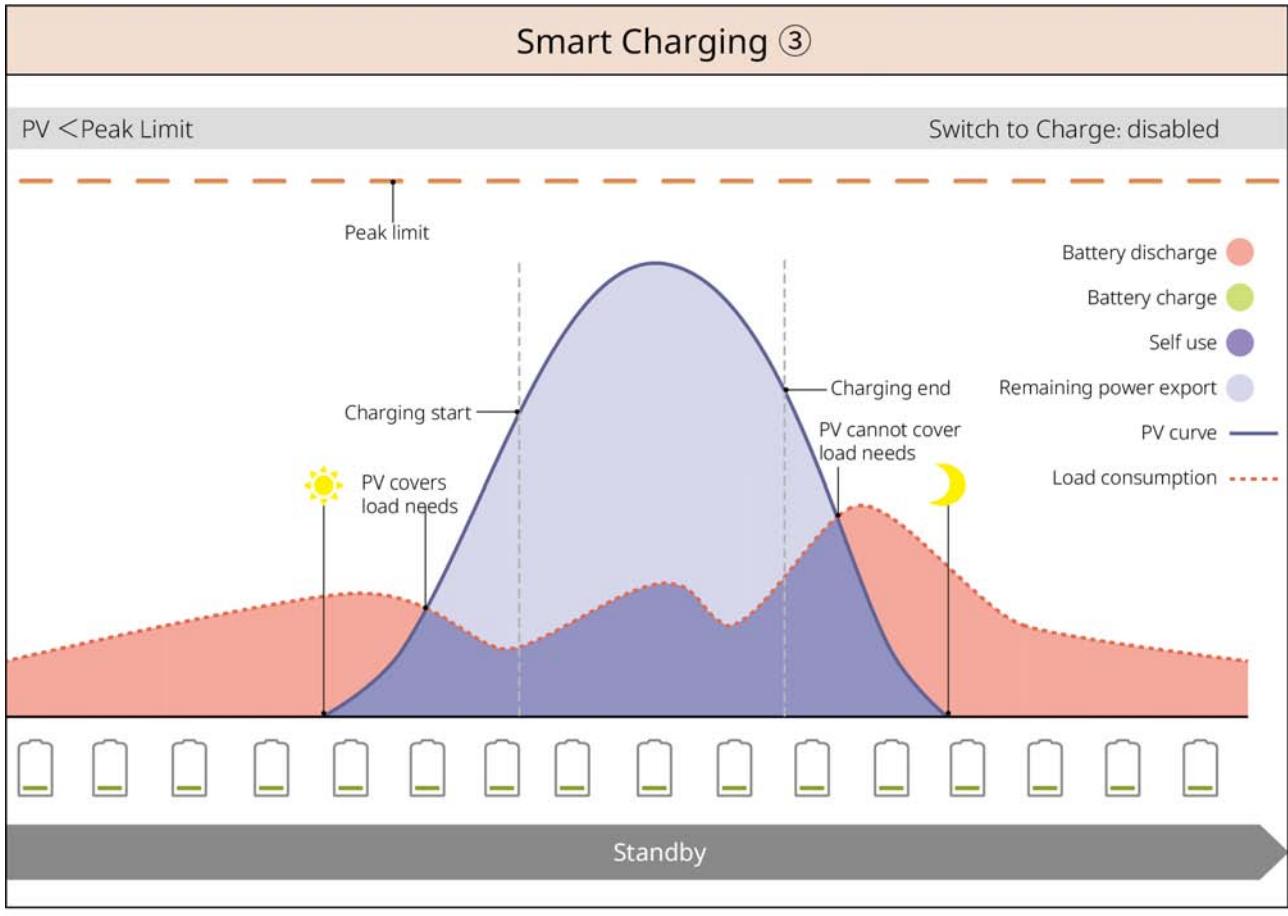
PV > Peak Limit

Switch to Charge: enabled/disabled



Smart Charging ②

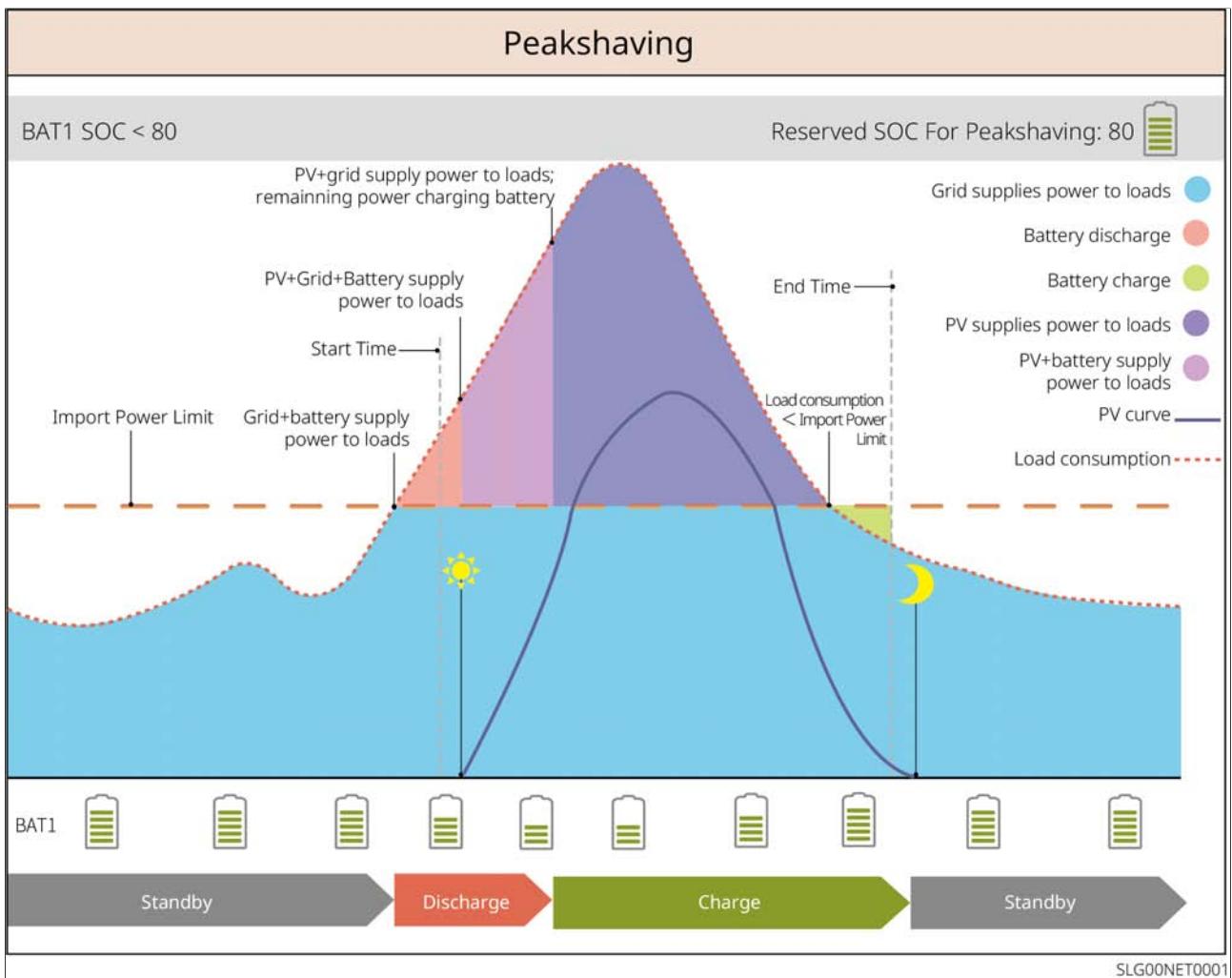




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Peakshaving mode

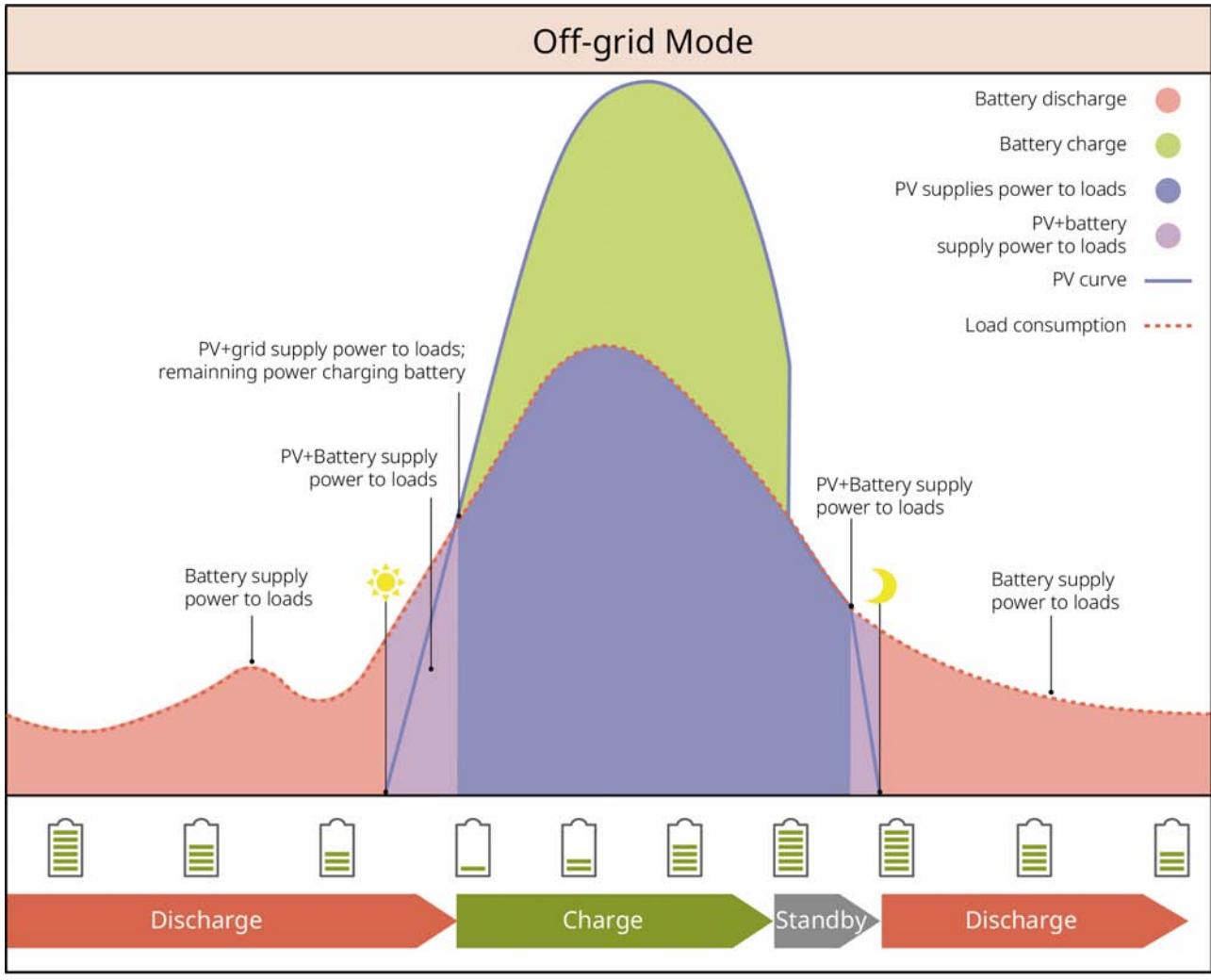
- Primarily suitable for industrial and commercial scenarios.
- When the total Load consumption exceeds the electricity quota in a short period of time, Battery discharge can be utilized to reduce the portion of electricity consumption that exceeds the quota.
- When Inverter two BatterySOCAll are below the reserved value.SOCFor Peakshaving, the system determines buy power from the grid based on the time period, Load consumption quantity, and peak power purchase limit; when Inverter has only one Battery.SOCAll are below the reserved value.SOCFor Peakshaving, the system determines the Load consumption quantity and the peak limit for electricity purchase buy power from the grid.



Off-grid mode

When Grid disconnected, Inverter switches to off-grid operation mode.

- During the day, PV generation preferentially supplies power to the load, with excess electricity directed to the Battery charge.
- At night, the Battery discharge supplies power to the load to ensure that BACK-UP Loads does not POWER OFF.
- Off-grid SOC recovery: After the system operates off-grid, Battery gradually restores to the minimum SOC level through photovoltaic power generation or other power generation methods.



2.5 Features

AFCI

Integrated AFCI circuit device, used to detect arc faults and quickly disconnect the circuit when detected, thereby preventing electrical fires.

Causes of arc generation:

- Connectors in the PV system are damaged.
- Incorrect or damaged cable connection.
- Connector and cable aging.

Troubleshooting method:

1. When an arc is detected, the fault type can be viewed on the Inverter display or the

App.

2. If the fault is triggered fewer than 5 times within 24 hours, the machine will automatically restore on-grid operation after a 5-minute wait. After the 5th arc fault, the fault must be cleared before the Inverter can resume normal operation. For detailed instructions, please refer to the <SolarGo APP User Manual>.

load control

Inverter Dry contact control port, supports connection of additional contactors for controlling load switching on/off. Compatible with household loads, heat pumps, etc. The load control method is as follows:

- Time Control: Set the time for turning the load on or off. The load will automatically switch on or off during the preset time period.
- Switch control: When the control mode is set to ON, the load will be turned on; when the control mode is set to OFF, the load will be turned off.
- BACK-UP Loads Control: Inverter Built-in relay dry contact control port. The relay can be used to control whether the load is turned off. In off-grid mode, if an overload is detected at the BACK-UP terminal Battery and the SOC value is below the Battery off-grid Protection setpoint, the load connected to the relay port can be turned off.

Rapid Shutdown(RSD)快速关断

In a Rapid Shutdown system, the Rapid Shutdown transmitter works in conjunction with the receiver to achieve system Rapid Shutdown. The receiver maintains module output by receiving signals from the transmitter. The transmitter can be externally mounted or integrated into the Inverter. In emergency situations, the transmitter can be deactivated by enabling an external trigger device, thereby shutting down the module.

- External emitter
 - Transmitter model: GTP-F2L-20, GTP-F2M-20
<https://www.goodwe.com/Ftp/Installation-instructions/RSD2.0-transmitter.pdf>
 - Receiver model: GR-B1F-20, GR-B2F-20
https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_RSD-20_Quick-Installation-Guide-POLY.pdf
- Built-in transmitter
 - External triggering device: AC side breaker
 - Receiver model: GR-B1F-20, GR-B2F-20

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 other signs that may indicate potential harm to the equipment inside the package. If damage is found, do not open the packaging and contact your distributor.
2. When removing the GW14.3-BAT-LV-G10Battery, ensure the packaging carton remains intact. If accidental damage occurs to the packaging and product quality issues necessitate return or exchange, please contact GoodWe after-sales service or authorized dealers to obtain a dedicated replacement packaging box.
3. Check if the equipment model is correct. If it does not match, do not open the package and contact your distributor.

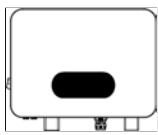
3.2 deliverables

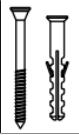
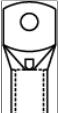
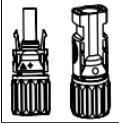
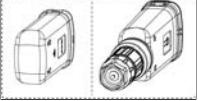
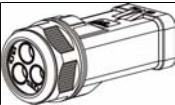
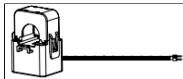
WARNING

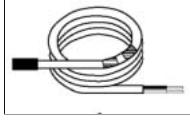
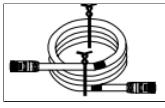
Check whether the deliverables type and quantity are correct and whether there is any damage to the appearance. If damaged, please contact your distributor.

After removing deliverables from the packaging, do not place it on rough, uneven, or sharp surfaces to avoid paint chipping.

3.2.1 Inverter Deliverables

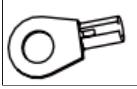
Component	Description	Component	Description
	Inverter x1		mounting plate x1

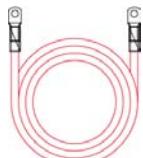
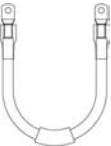
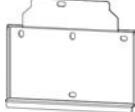
Component	Description	Component	Description
	Expansion screw x4		Grounding screw x1
	Grounding terminal x 1		Battery Power connection terminal x 2
	PV DC wiring terminal <ul style="list-style-type: none"> • GW3000-ES-C10, GW3000-ES-C11 x 1 • Others x 2 		smart dongle x1
	2PIN communication terminal x 1		6PIN communication terminal x 2
 	AC combiner box x1 provided on an actual basis.		Battery connectorx1
	Communication PIN terminal x 20		ACPIN terminal x 10
	CT x 1		Product Documentation x 1

Component	Description	Component	Description
	Lead-acid Battery temperature sensor cable fixing adhesive tape <ul style="list-style-type: none"> • China x 0 • Other regions x 2 		Single screwdriver x 1
	Lead-acid Battery temperature sensor wire <ul style="list-style-type: none"> • China x 0 • Other regions x 1 		BMS Communication cable x 1
	AC unlocking tool x 1		PV terminal Unlocking Tool <ul style="list-style-type: none"> • China x 0 • Other regions x 1

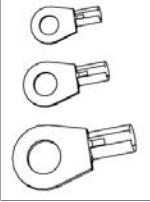
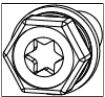
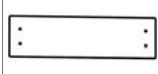
3.2.2 Batteries Deliverables

3.2.2.1 LX A5.0-10

Component	Description	Component	Description
	Battery module x 1		(25-8) OT terminal x 4 (5.5-5) OT terminal x 2
	M5PE screw x 2		Warning Label x 1

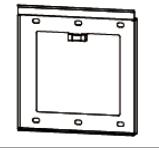
Component	Description	Component	Description
	Terminal resistor x 1		Electrical label x 1
	M4*8 screw x 8 (optional) Select the bracket Mounting method for distribution		Bracket x 2 (optional) Select the bracket Mounting method for distribution
	Product Documentation x 1		Negative power cable (optional) x 1
	Positive terminal (optional) x 1		Grounding wire (optional) x 1
	Communication cable (optional) x 1		Decorative Cover (Optional) x 1
	Rear Bracket Expansion screw (Optional) x 4		Rear mounting (optional) x 1
	Bracket (optional) x 1		Bracket screw (optional) x 4

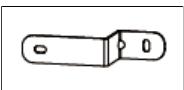
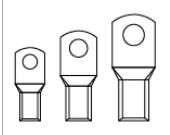
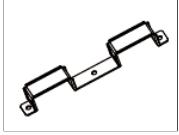
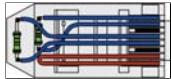
3.2.2.2 LX A5.0-30

Component	Description	Component	Description
	Battery module x 1		Terminal resistor x 1 When connecting to a third-party busbar, Battery must Installation this Terminal resistor.
	<ul style="list-style-type: none"> • M5 OT terminal x 2: Recommended connection 10mm²cable • M8 OT terminal x 4: Recommended connection 50mm²cable • M10 OT terminal x 2: Recommended connection 70mm²cable 		M5*12PE screw x 2
	Bracket x 2 Wall-mounted Mounting method with accessories		M6*70Expansion bolt x 4 Wall-mounted when selected Mounting method is issued
	M5*12PE screw x 2 Wall-mounted when selected Mounting method is issued		Marking Template x 1 Wall-mounted Mounting method with accessories
	Bracket x 2 (optional) Select stack Mounting method for distribution		M4*8 screw x 8 Select stack Mounting method for distribution

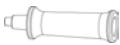
Component	Description	Component	Description
	Product Documentation x 1		Negative power cable (optional) x 1
	Positive terminal (optional) x 1		Grounding wire (optional) x 1
	Communication cable (optional) x 1		Decorative Cover (Optional) x 1

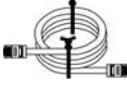
3.2.2.3 Batteries Deliverables(LX U5.0-30)

Component	Description	Component	Description
	Battery x 1		Plastic top cover x 1
	Wall-mounted x 1		Expansion screwx 2

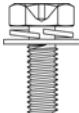
Component	Description	Component	Description
	locking bracket x 2		<ul style="list-style-type: none"> 35-8 OT terminal x 4: It is recommended to connect 25mm² or 35mm² cables. 50-8 OT terminal x 4: Recommended to connect 50mm² cable 70-10 OT terminal x 2: Recommended to connect 70mm² cable
	14-5Grounding terminal x 2		M5 x 7
	M10 x 6		Harness fixing plate x 1
	Terminal resistor x 1		Product Documentation x 1

3.2.2.4 Batteries Deliverables(GW14.3-BAT-LV-G10)

Component	Description	Component	Description
	Battery x 1		Wire cover x 1
	Lifting rod x 1 (Shipped with the box after October 2025)		Expansion screw x 2

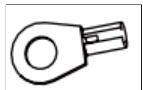
	M5*16 Internal Cross External Hexagon screw x 7		Lock wall locking bracket x 2
	Terminal resistor x 1		Grounding OT terminal x 1 (To be shipped with the package before October 2025)
	DCOT terminal x 6 (To be shipped with the package before October 2025)		Grounding wire x 1 (Shipped with the box after October 2025)
	Positive terminal power cable x 1 (Shipped with the box after October 2025)		Negative electrode power cable x 1 (Shipped with the box after October 2025)
	Communication cable x 1		Product Documentation x 1

Optional accessories

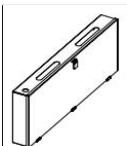
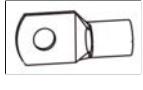
Component	Description	Component	Description
	Wall bracket x 1		Hook x 4
	M5*16 Internal Hexagon Socket Head Cap Screw x 12		M10 x 4

3.2.3 Busbar Deliverables

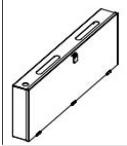
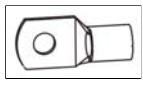
3.2.3.1 [TERM_1643] (Optional)

Component	Description	Component	Description
	360A combiner box x 1		M6 x 4
	(25-8) OT terminal x 18 (70-10) OT terminal x 2	-	-

3.2.3.2 BCB-22-WW-0

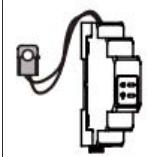
Component	Description	Component	Description
	720A Combiner Box x 1		M6 x 4
	(25-8) x 36 (70-10) OT terminal x 6	-	-

3.2.3.3 BCB-32-WW-0, BCB-33-WW-0 (optional)

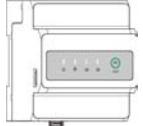
Component	Description	Component	Description
	720A Combiner Box x 1		M6 Expansion bolt x 4
	(50-8) OT terminal x 30 (70-10) OT terminal x 6	-	-

3.2.4 Smart Meter Deliverables

3.2.4.1 GMK110

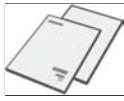
Component	Description	component	Description
	Smart Meter and CT x 1		RS485 communication terminal x 1
	voltage Input side wiring terminal x 1		PIN terminal x 4
	screwdriver x1		Product Documentation x 1

3.2.4.2 GM330

Component	Description	Component	Description
	Smart Meterx1		2PIN connector x1
	PIN terminal x 6		7PIN communication terminal x1
	screwdriver x1		Product Documentation x 1

3.2.5 Smart dongle

3.2.5.1 Ezlink3000

component	Description	component	Description
	smart dongle x1		LAN cable connection port x1
	Product Documentation x1		Unlocking tool x1 Some modules require tools for disassembly. If tools are not provided, they can be unlocked using the buttons on the module body.

3.3 Storage

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

1. If the storage time of Inverter exceeds two years or the non-operational period after Installation exceeds six months, it is recommended to undergo inspection and testing by professionals before being put back into service.
2. To ensure the good electrical performance of internal electronic components in Inverter, it is recommended to power it on every 6 months during storage. If it has not been powered on for more than 6 months, professional inspection and testing are advised before putting it into operation.
3. To ensure the performance and service life of the Battery, it is recommended to avoid prolonged idle storage. Long-term storage may lead to deep Discharge of the Battery, causing irreversible chemical degradation, resulting in capacity decay or even complete failure. Timely usage is advised. If the Battery requires long-term storage, please follow the maintenance requirements below:

Battery model	Initial SOC range for storage	Recommended Storage Temperature	Charging Discharge Maintenance Cycle ^[1]	Battery maintenance method ^[2]
LX A5.0-10	30%~40%	0~35°C		

n*LX A5.0-10			-20~0°C, ≤1 month 0~35°C, ≤6 months	For maintenance methods, please consult the dealer or after-sales service center.
LX A5.0-30	30%~40%	0~35°C	-20~45°C, ≤6 months	
LX U5.0-30	30%~40%	0~35°C	-20~0°C, ≤1 month 0~35°C, ≤6 months 35~40°C, ≤1 month	
GW14.3-BAT-LV-G10	30%~40%	0~35°C	-20~35°C, ≤12 months 35~45°C, ≤6 months	

NOTICE

[1] The storage time is calculated from the SN date on the Battery outer packaging. After exceeding the storage period, Discharge maintenance charging is required. (Battery Maintenance time = SN date + Discharge maintenance charging cycle). For the method to check the SN date, refer to:[SN code meaning](#).

[2] After the charging maintenance is qualified, if there is a Maintaining Label on the outer box, please update the maintenance information on the Maintaining Label. If there is no Maintaining Label, please record the maintenance time and battery SOC by yourself and keep the data properly for easy maintenance record storage.

Packaging requirements:

Ensure the outer packaging box is not dismantle, and the desiccant inside the box is not missing.

Environmental requirements:

1. Ensure the Storage is placed in a shaded area to avoid direct sunlight.
2. Ensure the storage environment is clean, with an appropriate temperature range and no condensation. If condensation is observed on the equipment, do not operate the device.
3. Ensure that Storage is kept away from flammable, explosive, and corrosive materials.

stack requirements

1. Ensure the Inverter stack height and orientation are positioned as indicated on the packaging label.
2. Ensure there is no risk of tipping after Inverter stack.

4 Installation

DANGER

Please use the deliverables included in the shipment for equipment Installation and electrical connections. Damage caused by not using the provided components 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							4G Kit-CN-G20 4G Kit-CN-G21 WiFi/LAN Kit-20 Ezlink3000
Tools	① D: 80mm φ: 8mm ② M5 1.5-2N·m 	① M8 5N·m 	Recommend: A-2546B ② 52mm 6-7N·m 	① M5 1.5-2N·m 	② 65mm 10N·m 	② M4 1.5N·m ③ 40mm 5-6N·m 	
Steps	① Installation						
Battery							
Tools	 M4 1.4N·m M6 6N·m ③ M5	 M4 1.4N·m M6 6N·m ③ M5	 M4 1.4N·m M6 6N·m ③ M5	 M4 1.4N·m M6 6N·m ③ M5	 M4 1.4N·m M6 6N·m ③ M5	 M4 1.4N·m M6 6N·m ③ M5	 M4 1.4N·m M6 6N·m ③ M5
Steps	① Installation		② PE		③ Battery		④ COM
Smart meter							SolarGo APP
							SEMS Portal APP or SEMS Portal WEB

4.2 Installation Requirements

4.2.1 Installation Environment Requirements

1. The equipment must not be operated in flammable, explosive, or corrosive

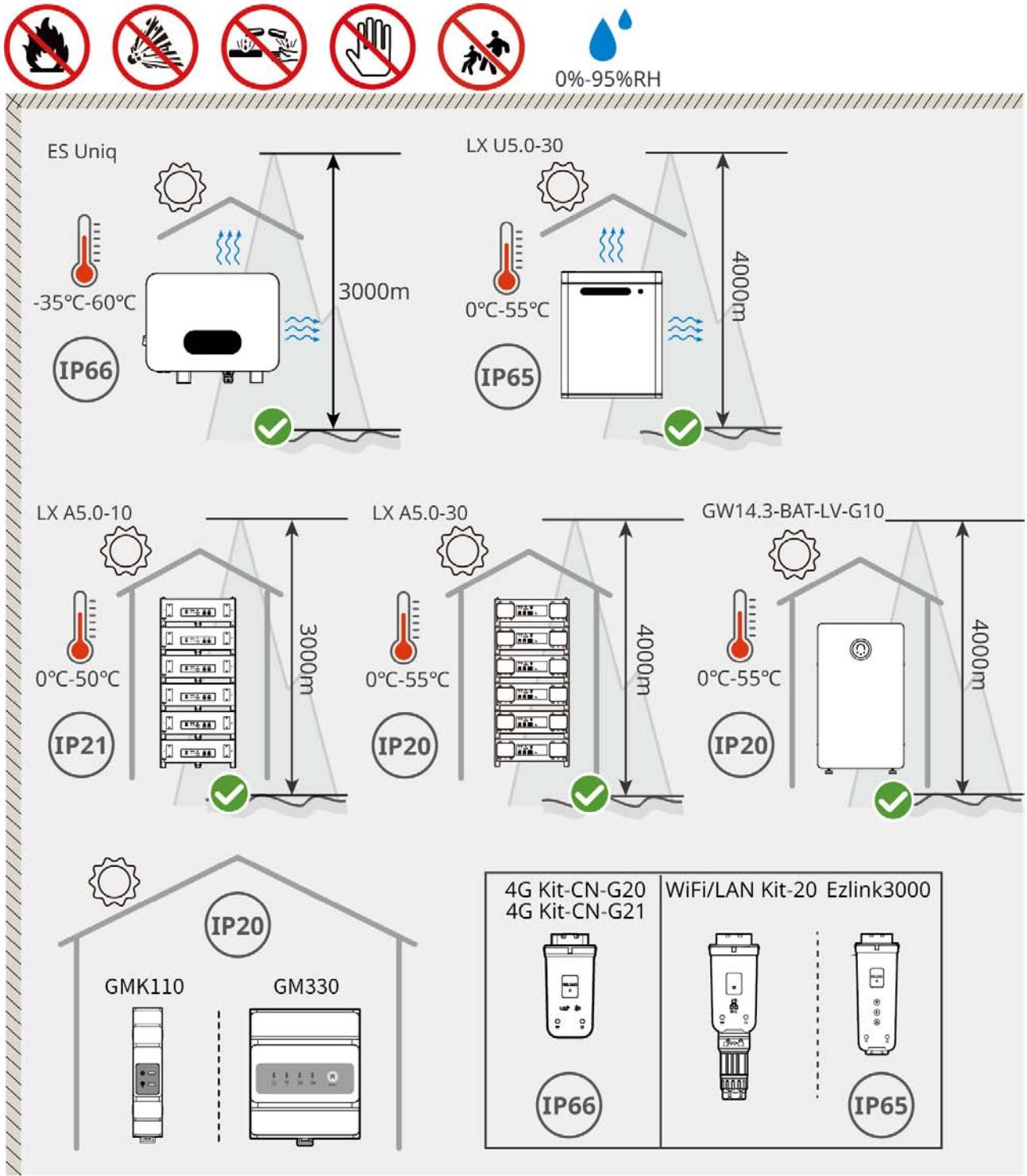
environments.

2. The ambient temperature of the equipment Installation must be within the appropriate range.
3. Installation Location should be kept out of reach of children and avoid being placed in easily accessible locations.
4. Inverter The enclosure temperature may exceed 60°C during operation. Do not touch the enclosure before it cools down to prevent burns.
5. The equipment should be protected from exposure to sunlight, rain, snow accumulation, and other Installation conditions. It is recommended to Installation in a shaded Installation Location. If necessary, a sunshade canopy can be constructed.
6. The Installation space must meet the ventilation and heat dissipation requirements of the equipment as well as the operational space requirements.
7. The environment must meet the equipment's Ingress Protection Rating, Inverter, Battery, and smart dongle requirements for both indoor and outdoor Installation; the electric meter must comply with indoor Installation.
8. The height of the equipment Installation should facilitate operation and maintenance, ensuring that the equipment indicator and all labels are easily visible, and the wiring terminal is easy to operate.
9. Equipment Installation Altitude is below Max. Operating Altitude.
10. Before installing salt affected area outdoor Installation equipment, consult the manufacturer. salt affected area mainly refers to areas within 500m of the coast. The affected zone depends on factors such as sea breeze, precipitation, and terrain.
11. Keep away from strong magnetic fields to avoid electromagnetic interference. If there is a radio station or wireless communication equipment below 30MHz near the Installation Location, please Installation the device according to the following requirements:
 - Inverter: Add ferrite cores with multiple turns on the Inverter DC input line or AC output line, or install low-pass EMI Filter; or maintain a distance of over 30m between the Inverter and radio electromagnetic interference equipment.
 - Other equipment: The distance between the equipment and the radio frequency interference device exceeds 30m.
12. The DC line between Battery and Inverter, as well as the Communication cable line length, must be less than 3m. Please ensure that the Installation distance between Inverter and Battery meets the cable length requirement.

NOTICE

If the Installation is in an environment below 0°C, the Battery will be unable to continue Charge energy recovery after venting, resulting in Battery undervoltage Protection.

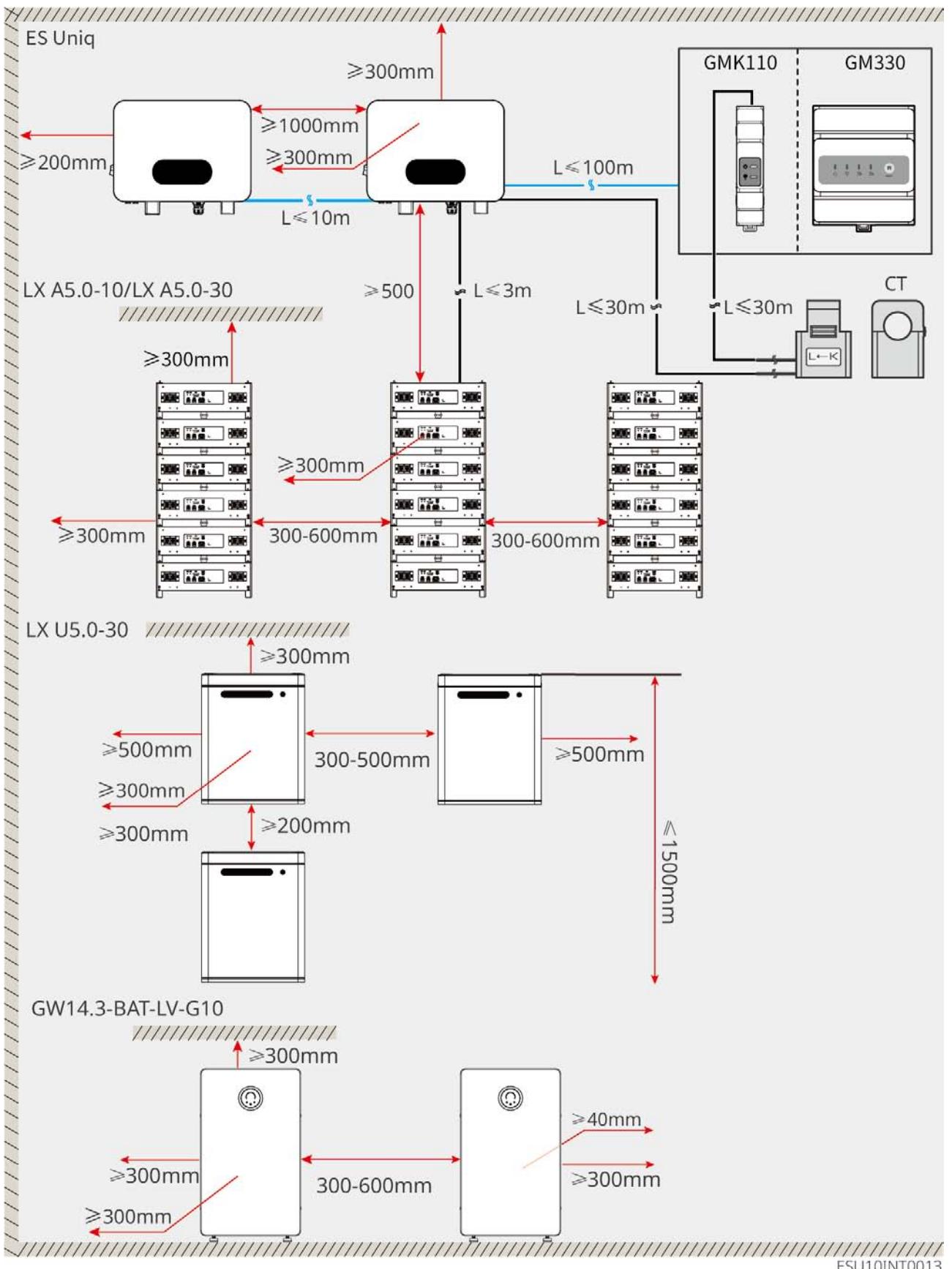
- LX A5.0-30, LX U5.0-30, GW14.3-BAT-LV-G10: Charge Temperature range: $0 < T \leq 55^{\circ}\text{C}$; Discharge Temperature range: $-20 < T \leq 55^{\circ}\text{C}$
- LX A5.0-10: Charge Temperature range: $0 < T \leq 50^{\circ}\text{C}$; Discharge Temperature range: $-10 < T \leq 50^{\circ}\text{C}$



4.2.2 Installation Space Requirements

When working on equipment in the Installation system, sufficient space should be reserved around the equipment to ensure adequate Installation and heat dissipation space.

- When using CAT7E Communication cable between Inverter, the cable distance should not exceed 10 meters; when using CAT5E or CAT6E Communication cable, the cable distance should not exceed 5 meters. Communication cable should not exceed 10m, otherwise it may cause communication abnormalities.
- Installation CT shall use CAT5E or higher shielded network cable, with a cable distance not exceeding 30 meters.
- The RS485 twisted-pair shielded cable for communication between Inverter and the electricity meter, with a cable distance not exceeding 100 meters.



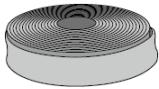
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4.2.3 Tool Requirements

NOTICE

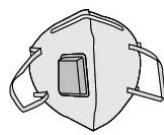
When Installation, it is recommended to use the following Installation tools. If necessary, other auxiliary tools can be used on-site.

Installation tool

Tool type	Description	Tool Type	Description
	diagonal plier		RJ45
	wire stripper		Level bar
	open-end wrench		PVterminalcrimp Tool A-2546B
	hammer drill(Drill bit Φ8mm)		torque wrench M4、 M5、 M8
	rubber hammer		socket wrench
	Marker pen		multimeter Range ≤600V
	Heat shrink tubing		Hot air gun

Tool type	Description	Tool Type	Description
	cable tie		Vacuum cleaner

personal protective equipment

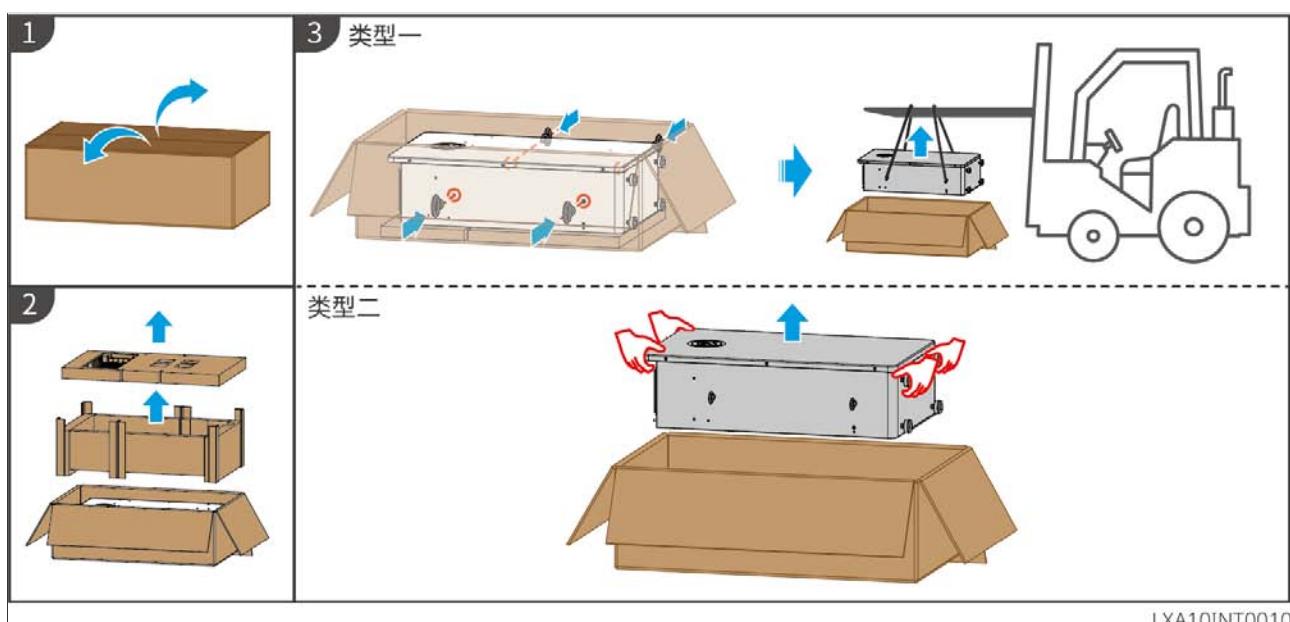
Tool type	Description	Tool type	Description
	Insulated gloves, protective gloves		Dust mask
	goggle		Safety shoes

4.3 Equipment Handling

 CAUTION

1. During transportation, handling, Installation, and other operations, it is necessary to comply with the laws, regulations, and relevant standards of the country or region where the operations are conducted.
2. Before Installation, it is necessary to move the Equipment Handling to the Installation location. During the transportation process, to prevent personal injury or equipment damage, please NOTICE the following matters:
3. Please equip the corresponding personnel for the device Weight to prevent it from exceeding the Weight range that can be manually handled, thereby avoiding injury to personnel.
4. Please wear safety gloves to avoid injury.
5. Please ensure the equipment is kept balanced during transportation to avoid falling.
6. The Battery system can be removed from the packaging using a crane or hoisting method and transported to the Installation location.
 - Crane requirements (GW14.3-BAT-LV-G10): Load capacity $\geq 180\text{kg}$
7. When lifting and moving equipment using a hoisting method, please use flexible slings or straps. The requirements for the lifting rings and ropes of GW14.3-BAT-LV-G10 are:
 - Lifting rings: 4 M10 lifting rings, each with a load-bearing capacity $\geq 260\text{ kg}$
 - Lifting rope: 1 piece, rope length $\geq 2.5\text{m}$, load-bearing capacity $\geq 600\text{kg}$

GW14.3-BAT-LV-G10:



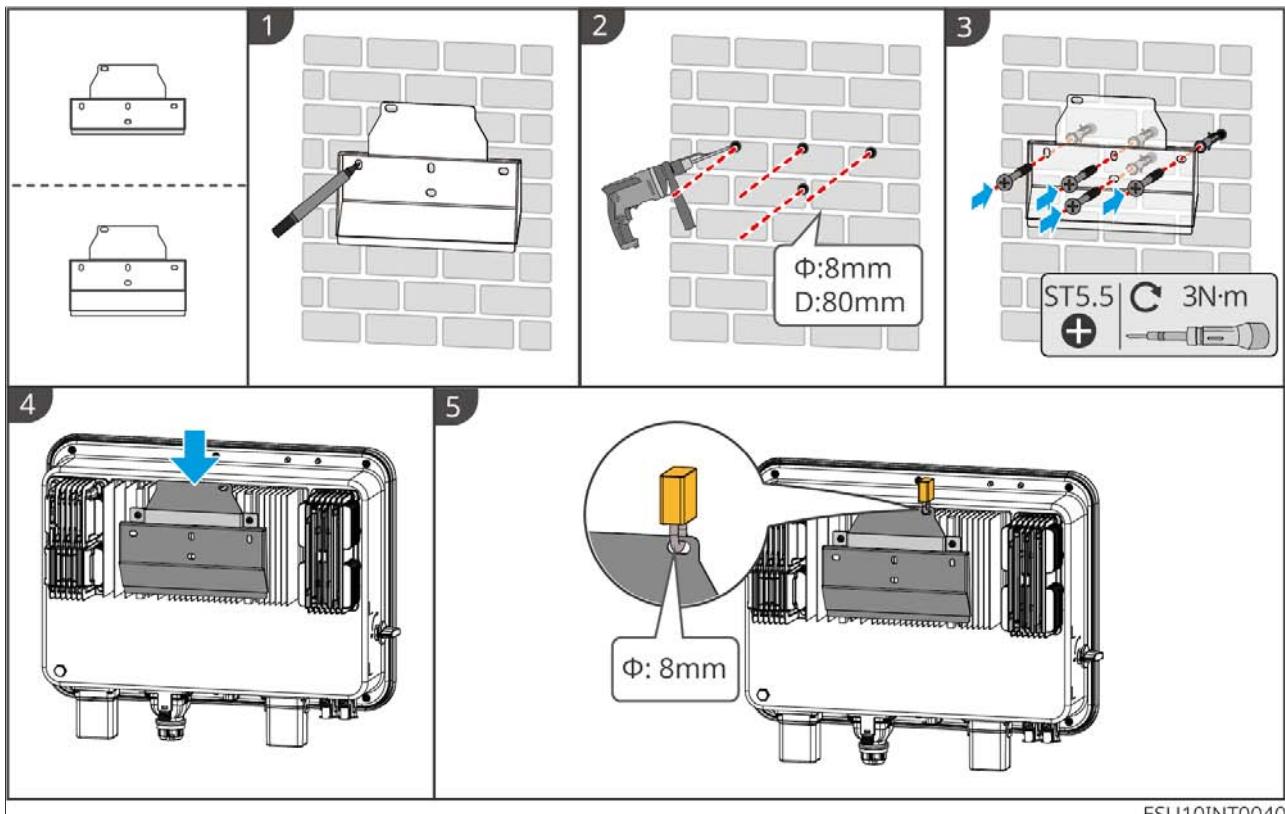
LXA10INT0010

4.4 Installing the Inverter

CAUTION

- When drilling, ensure the hole position avoids water pipes, cables, etc. inside the wall to prevent DANGER.
- When drilling, wear goggle and a dust mask to prevent dust from inhalation entering the respiratory tract or falling into the eyes.
- Ensure the Inverter Installation is securely fastened to prevent falling and injuring personnel.

- Place the mounting plate horizontally on the wall and mark the drilling positions with a marker pen.
- Use hammer drill for punching holes.
- Use expansion bolt to secure the Inverter mounting plate bracket to the wall.
- Mount the Inverter onto the backplate. After mounting, secure the backplate and Inverter using screw to ensure the Inverter Installation is stable.



ESU10INT0040

4.5 Installing the Battery System

WARNING

- When Battery system Installation, ensure that the Installation is level and secure. When using the locking bracket, the locking bracket should be vertically flush against the wall and the surface of the Battery system.
- When using hammer drill for punching, use cardboard or other barriers to cover Battery system to prevent foreign objects from entering the equipment and causing damage.
- After marking the drilling position with a marker pen, the Battery system must be moved away to prevent damage to the equipment caused by the hammer drill being too close to the Battery system position when drilling with the hammer drill.

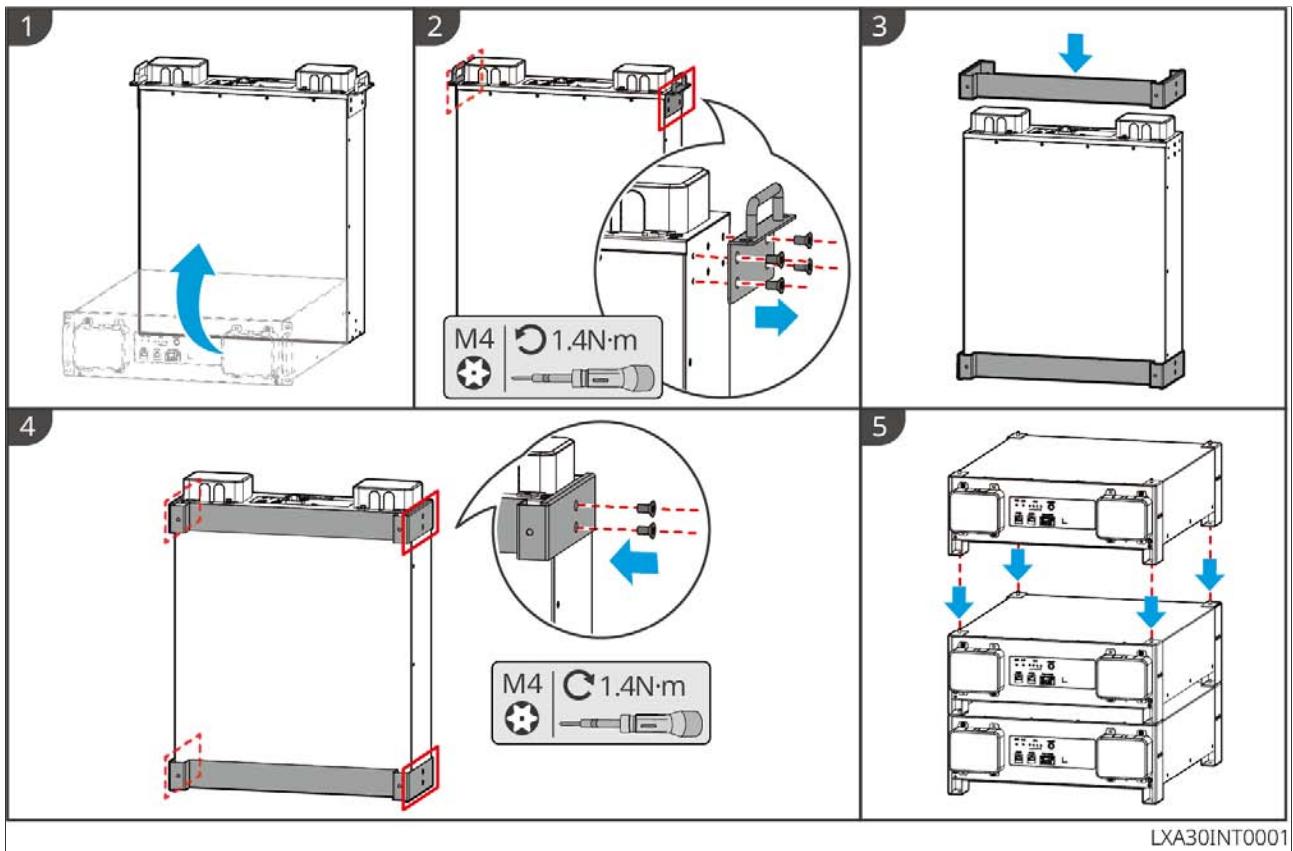
4.5.1 LX A5.0-30

LX A5.0-30: Ground Stacking

NOTICE

The maximum stacking height for floor stacking is 6 Battery units.

1. Place the Battery vertically and remove the Battery Handle.
2. Mount the bracket Installation onto the Battery and secure it with screw.
3. Lay flat Battery, stack multiple Battery Installation. Ensure to insert locating pin into the positioning hole.



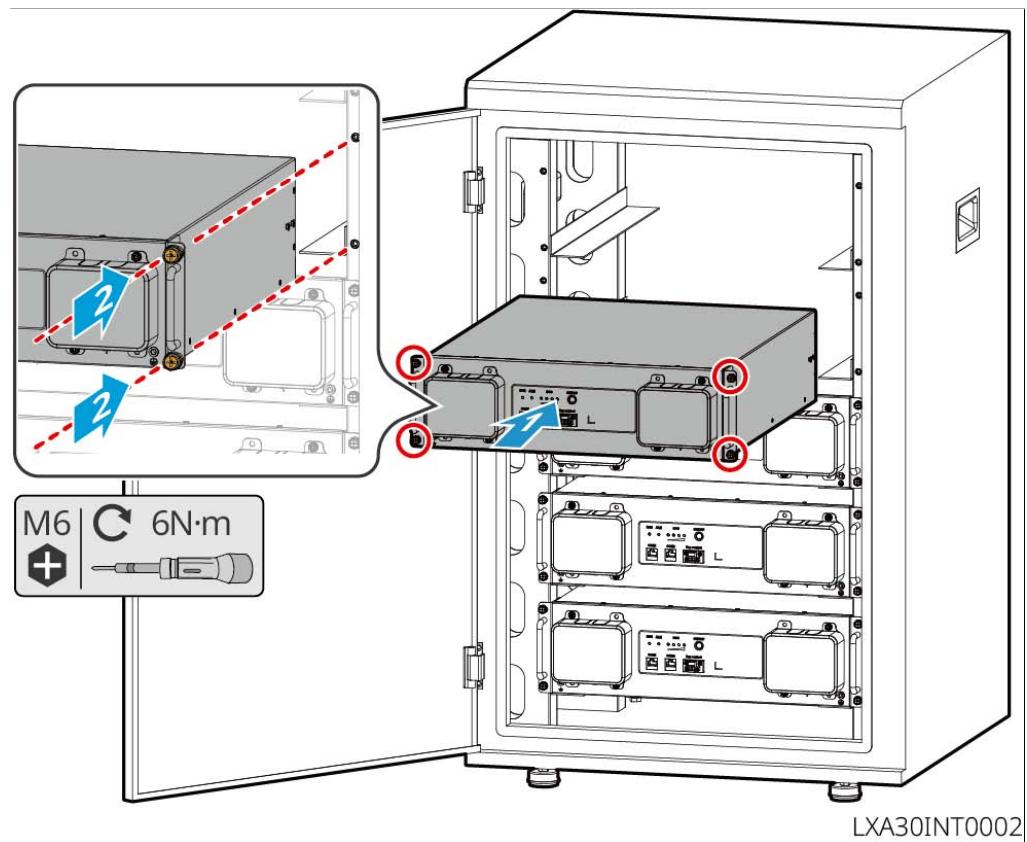
LXA30INT0001

LX A5.0-30: Cabinet Installation

NOTICE

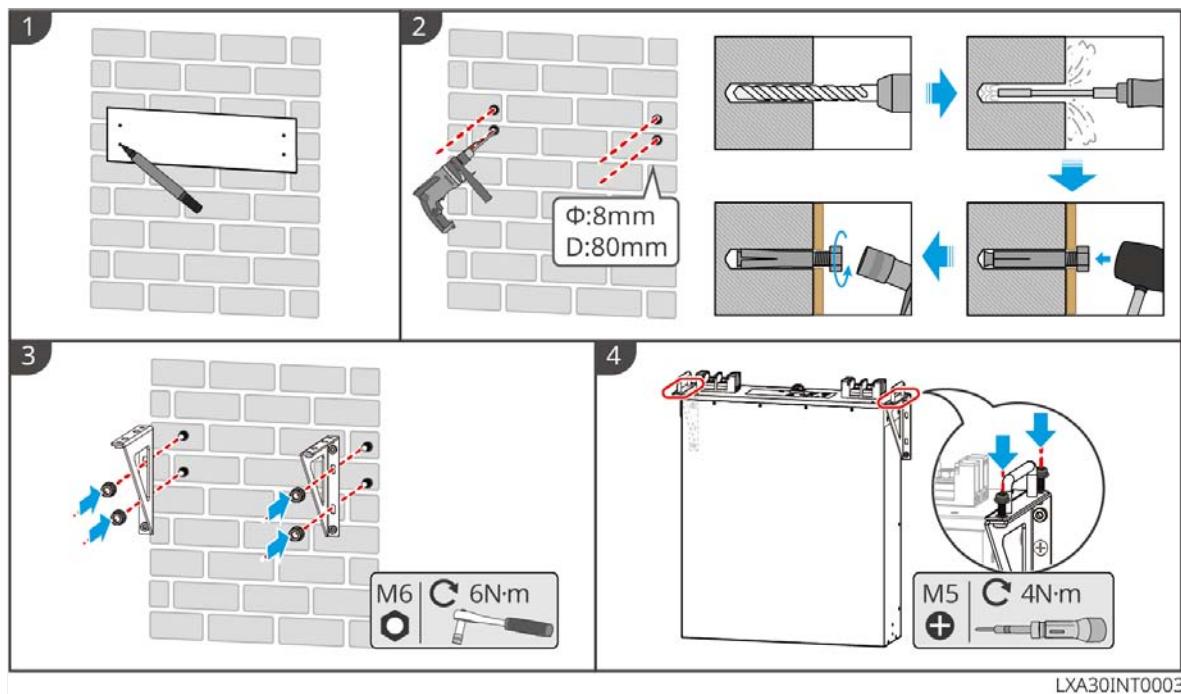
- It is recommended to install Installation in a standard 19-inch cabinet with dimensions of length*width: 600*800mm or larger, and height: selected based on the thickness of Battery (133mm) or greater.
- For cabinet installation, it is necessary to affix electrical labels and warning labels (this label is additionally shipped as an accessory) on the front panel of any Battery.

1. Place the Battery onto the guide rails of the cabinet, and secure the Battery to the cabinet using the screw from the Handle.



LX A5.0-30: Wall-mounted Installation

1. Determine the punching position according to the marked template, and mark the punching position with a marker pen.
2. Use hammer drill for punching.
3. Bracket.
4. Mount the Battery Installation on the bracket, and secure the Battery to the bracket using screw.



LXA30INT0003

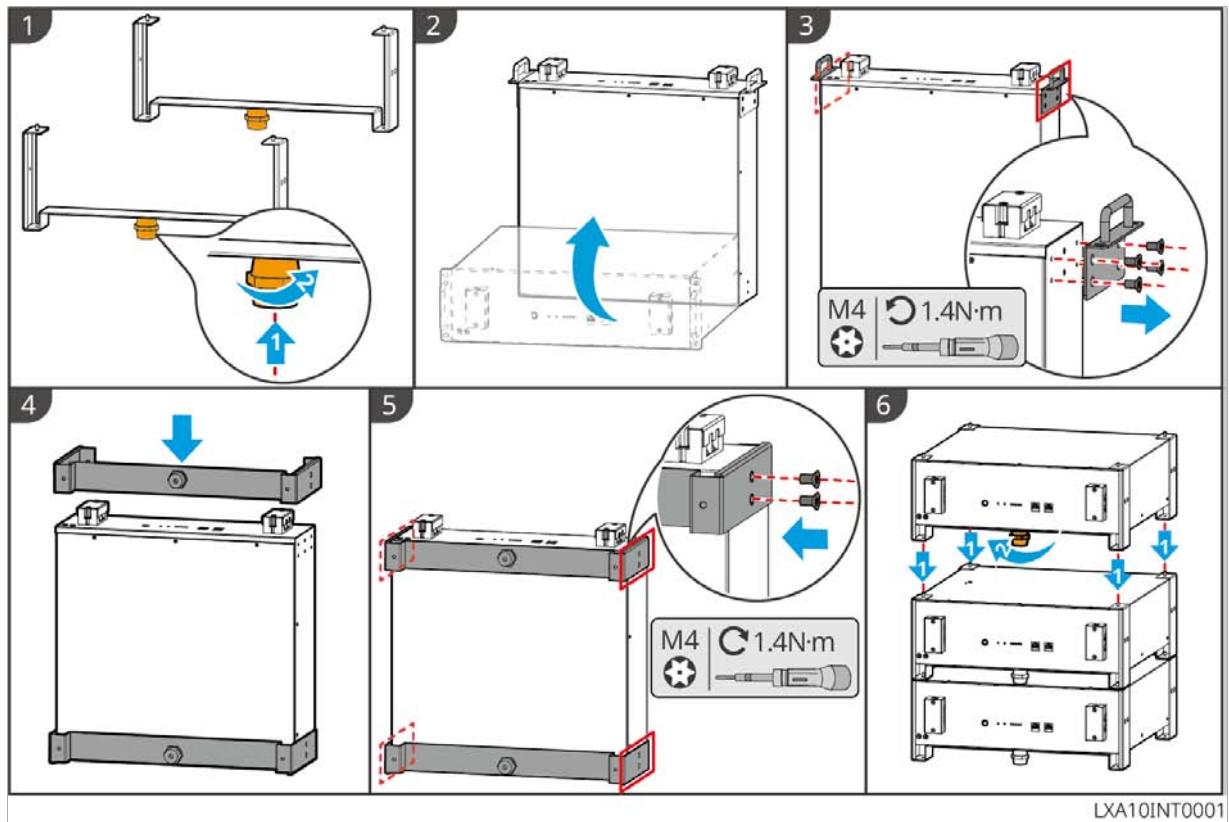
4.5.2 LX A5.0-10

LX A5.0-10: Ground Stacking

NOTICE

A maximum of 6 Battery can be stacked vertically.

1. Place the Battery vertically.
2. Place the bracket onto the Battery and remove the Handle from the Battery.
3. Place another bracket onto the Battery.
4. Fix the bracket to the Battery using screw, and lay the Battery flat.
5. Stack multiple Battery Installation.
 - Align the locating pin on the lower Battery bracket with the positioning holes on the upper Battery bracket, and insert the locating pin into the positioning holes.

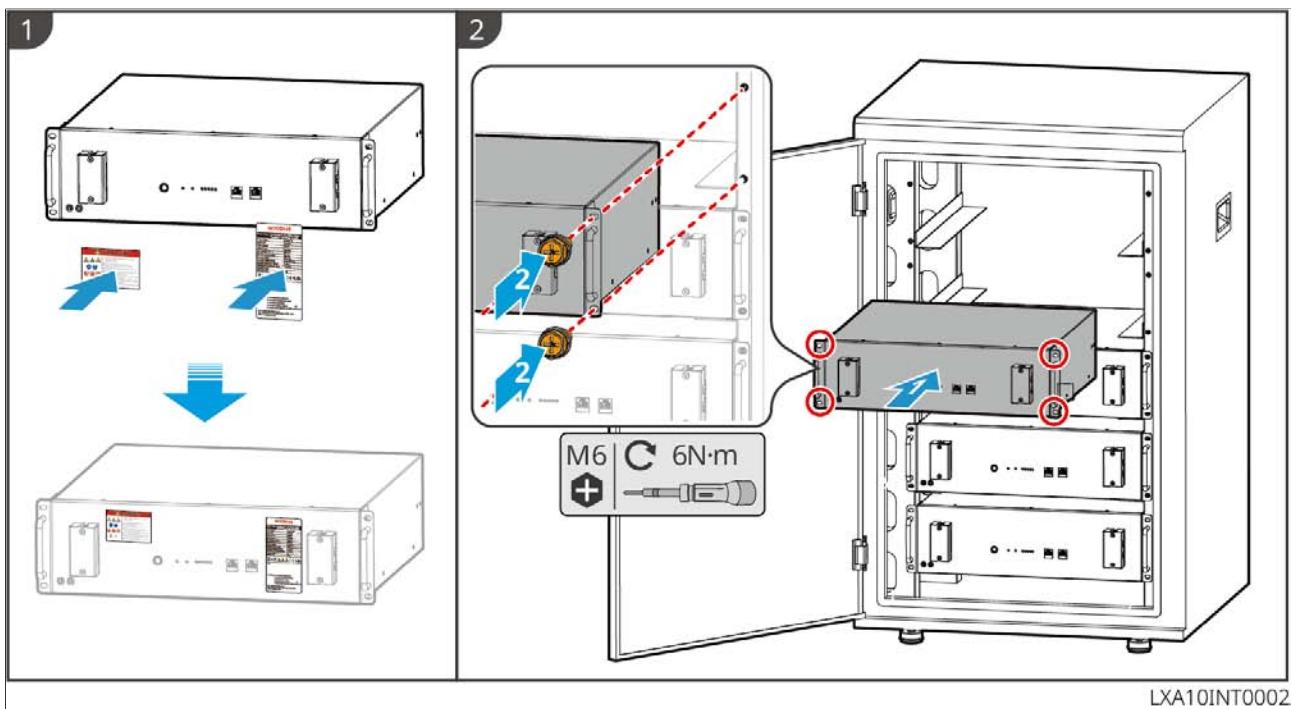


LX A5.0-10: Cabinet Installation

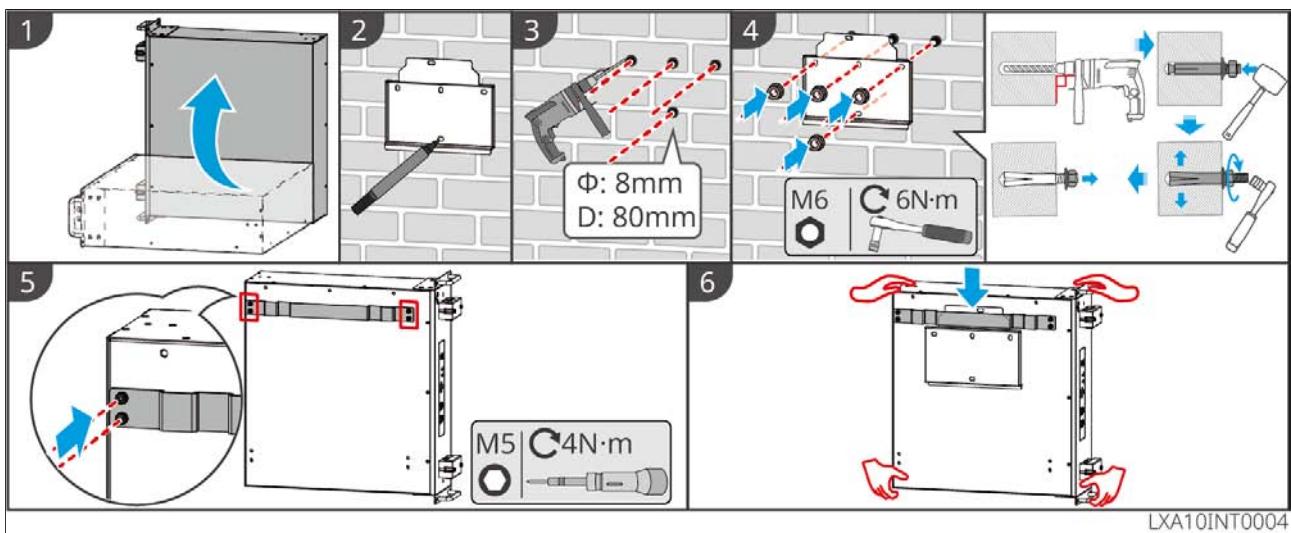
NOTICE

- A 19-inch standard cabinet is recommended, with physical dimensions of 600*800mm or larger in length and width. The height can be selected based on the number of Battery connected in parallel.
- For cabinet installation, it is necessary to affix electrical labels and warning labels (this label is additionally shipped as an accessory) on the front panel of any Battery.

1. Attach the electrical label and warning label to any front panel position of the Battery.
2. Place the Battery onto the guide rails of the cabinet, and use the screw to fasten the Battery to the cabinet from the Handle.

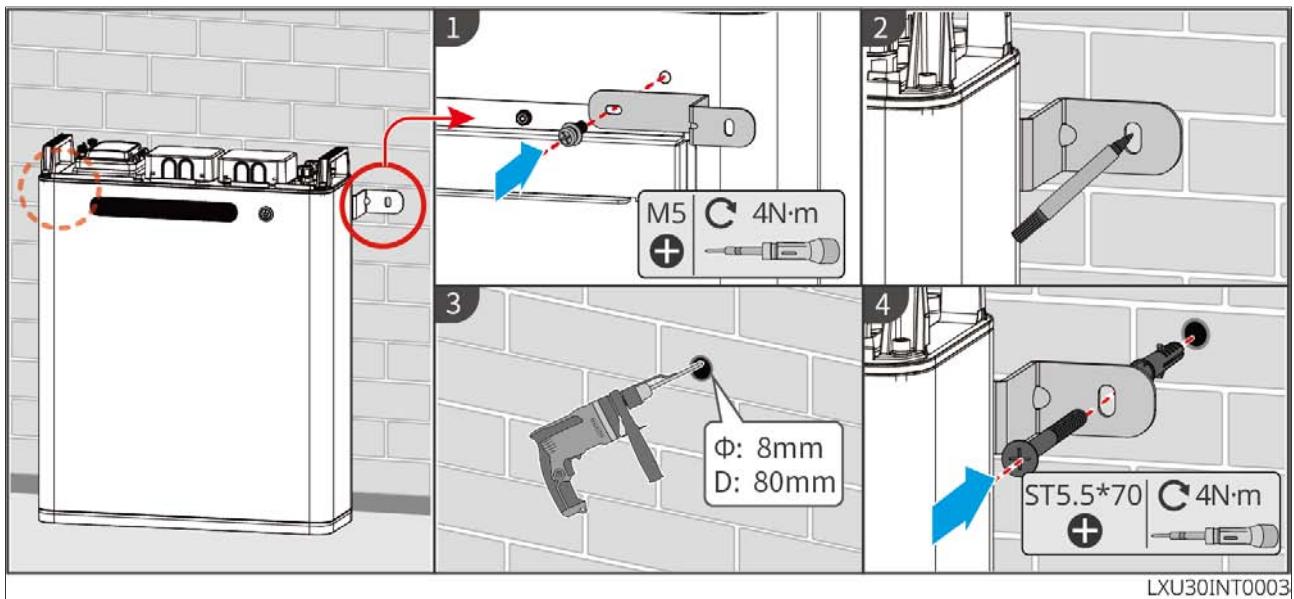


LX A5.0-10: Wall-mounted Installation

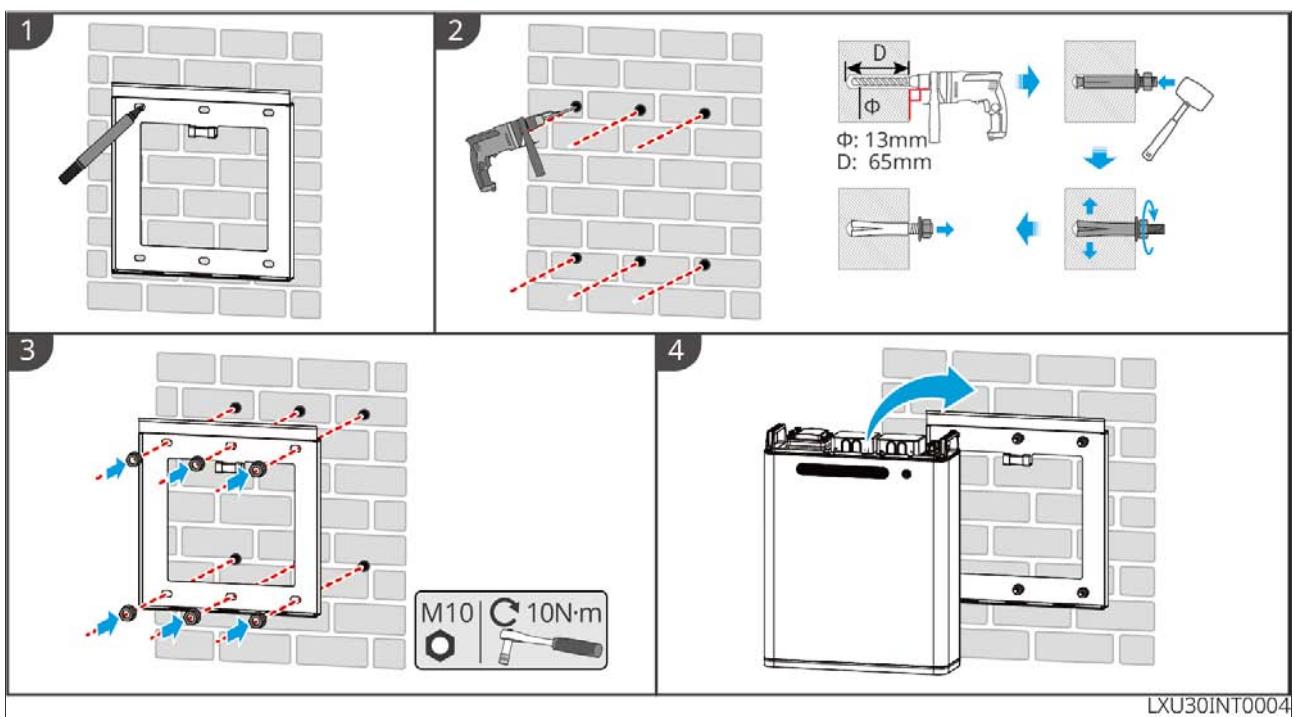


4.5.3 LX U5.0-30

LX U5.0-30: Floor-mounted Installation



LX U5.0-30: Wall-mounted Installation

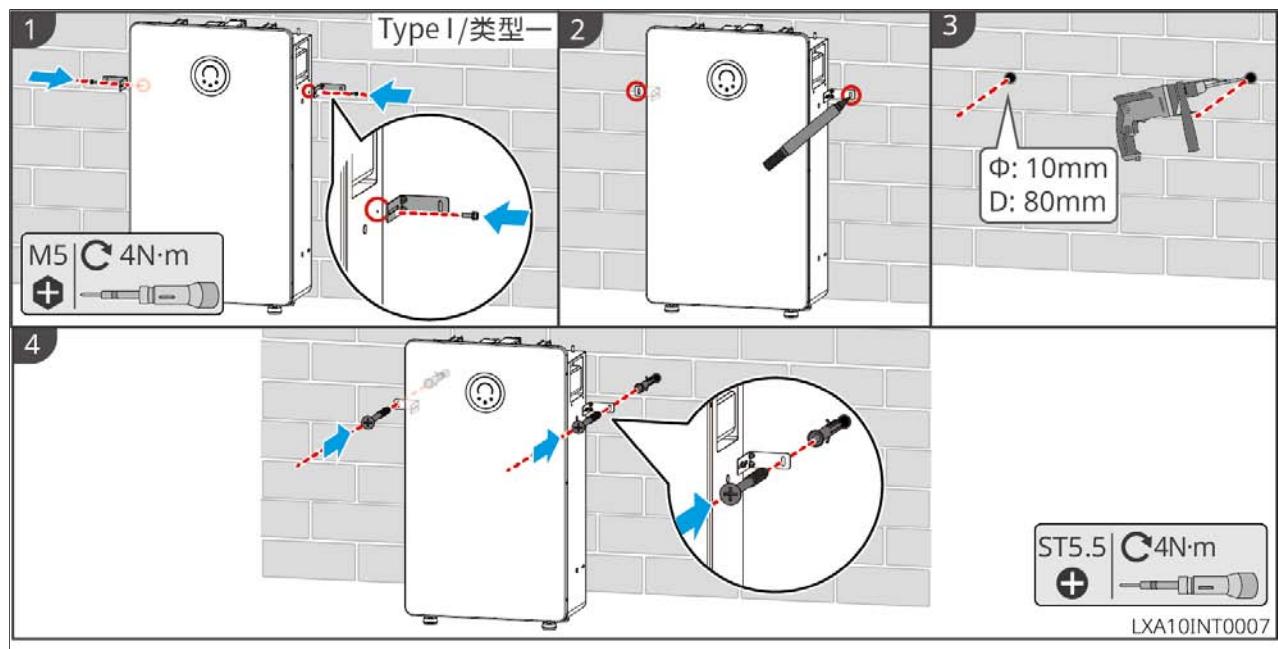


4.5.4 GW14.3-BAT-LV-G10

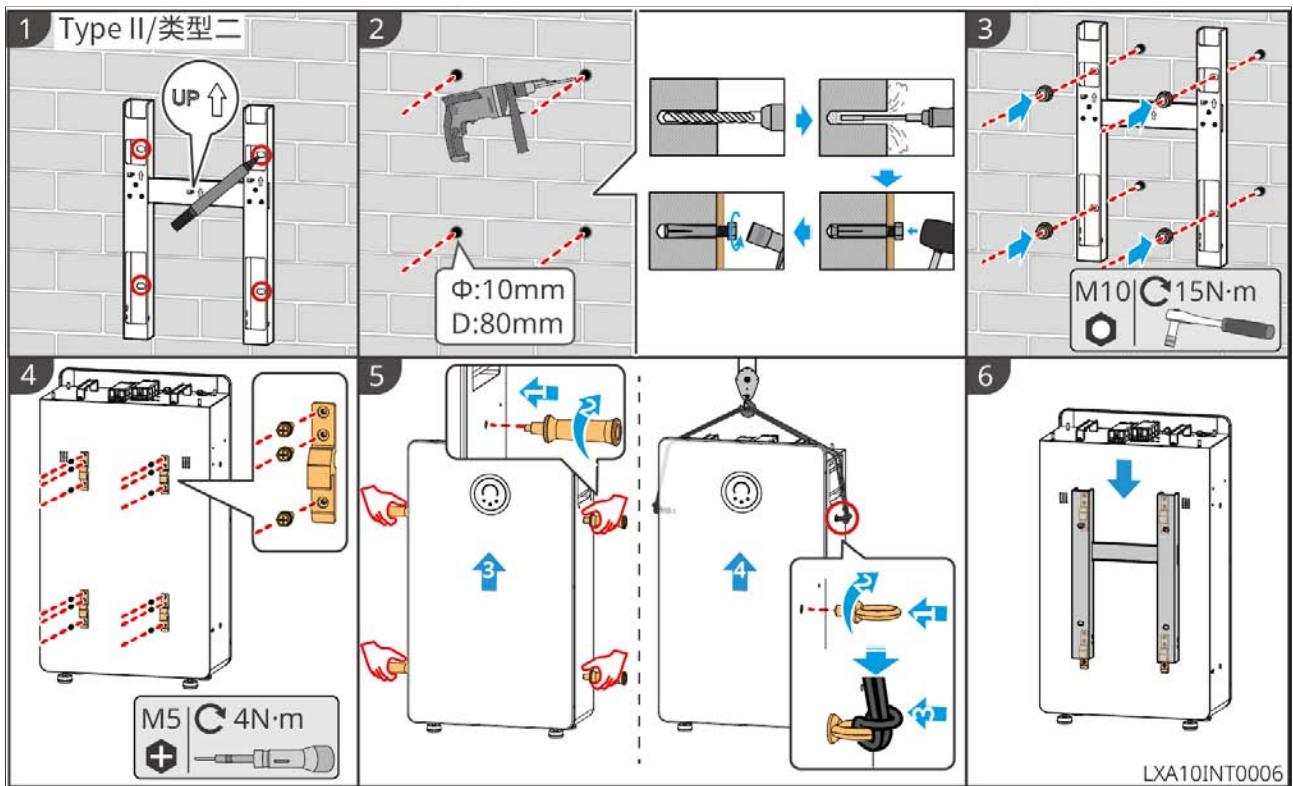
NOTICE

- Wall mounting requires two people Installation.

GW14.3-BAT-LV-G10: Floor-mounted Installation



GW14.3-BAT-LV-G10: Wall-mounted Installation

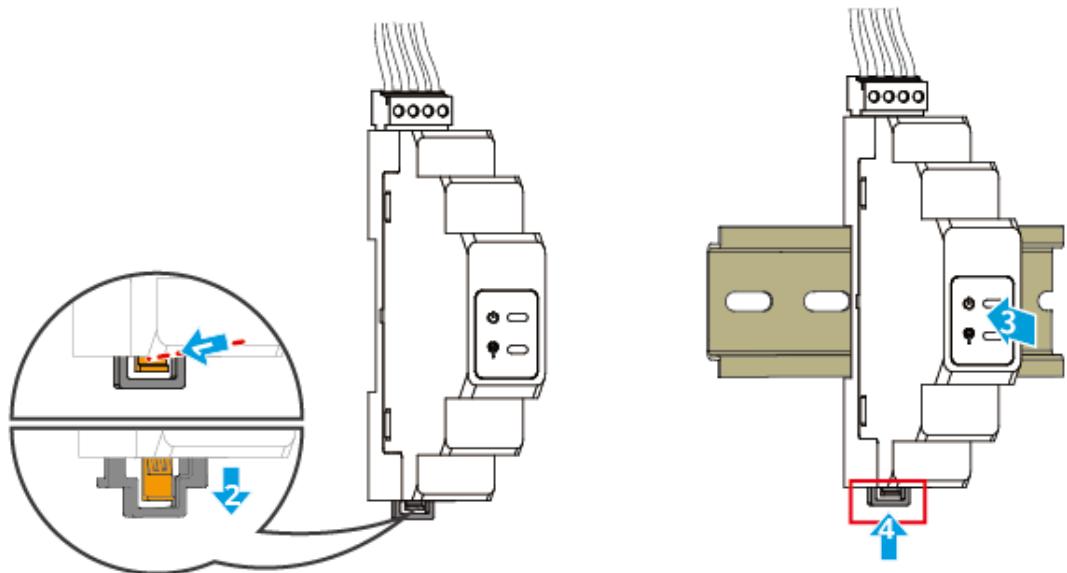


4.6 Installing the Smart Meter

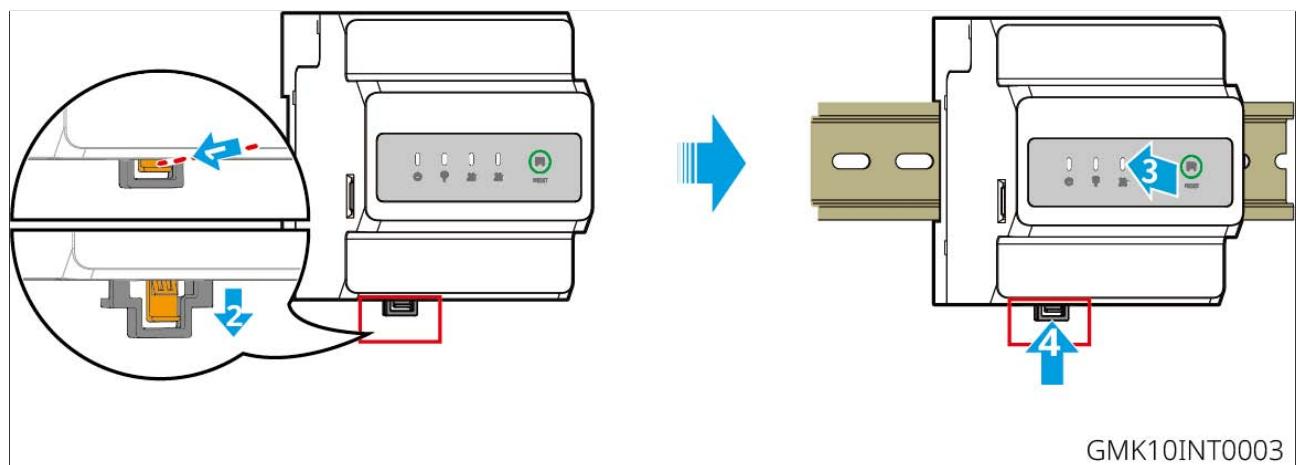
⚠️ WARNING

In areas with lightning DANGER, if the meter cable length exceeds 10m and the cable is not installed with grounded Steel conduit wiring, it is recommended to install external lightning protection devices.

GMK110



GM330



GMK10INT0003

5 System Wirings

DANGER

- The installation, routing, and connection of cables must comply with local laws, regulations, and standard requirements.
- All operations during the electrical connection process, as well as the specifications of cables and components used, must comply with local laws and regulations.
- Before performing electrical connections, disconnect the DC switch and AC output switch of the equipment to ensure it is POWER OFF. Live operation is strictly prohibited, as it may lead to electric shock or other DANGER.
- Cables of the same type should be bundled together and routed separately from different types of cables. Intertwining or cross-routing is strictly prohibited.
- If the cable is subjected to excessive tension, it may result in poor connections. When wiring, ensure to leave a certain length of slack in the cable before connecting it to the Inverter terminal port.
- When crimp wiring terminal, ensure that the conductor part of the cable makes full contact with the wiring terminal. Do not crimp the cable insulation together with the wiring terminal, as this may cause the equipment to fail to operate or result in unreliable connections leading to overheating, which could damage the Inverter terminal busbar.

NOTICE

- When performing electrical connections, wear safety shoes, protective gloves, insulating gloves, etc. as required.
- Only qualified personnel are permitted to perform electrical connection operations.
- The cable colors in the diagrams of this document are for reference only. The actual cable specifications must comply with local regulatory requirements.
- For parallel systems, please NOTICE comply with the user manuals Safety Precautions corresponding to the relevant products in the system.

5.1 System Wiring Electrical Block Diagram

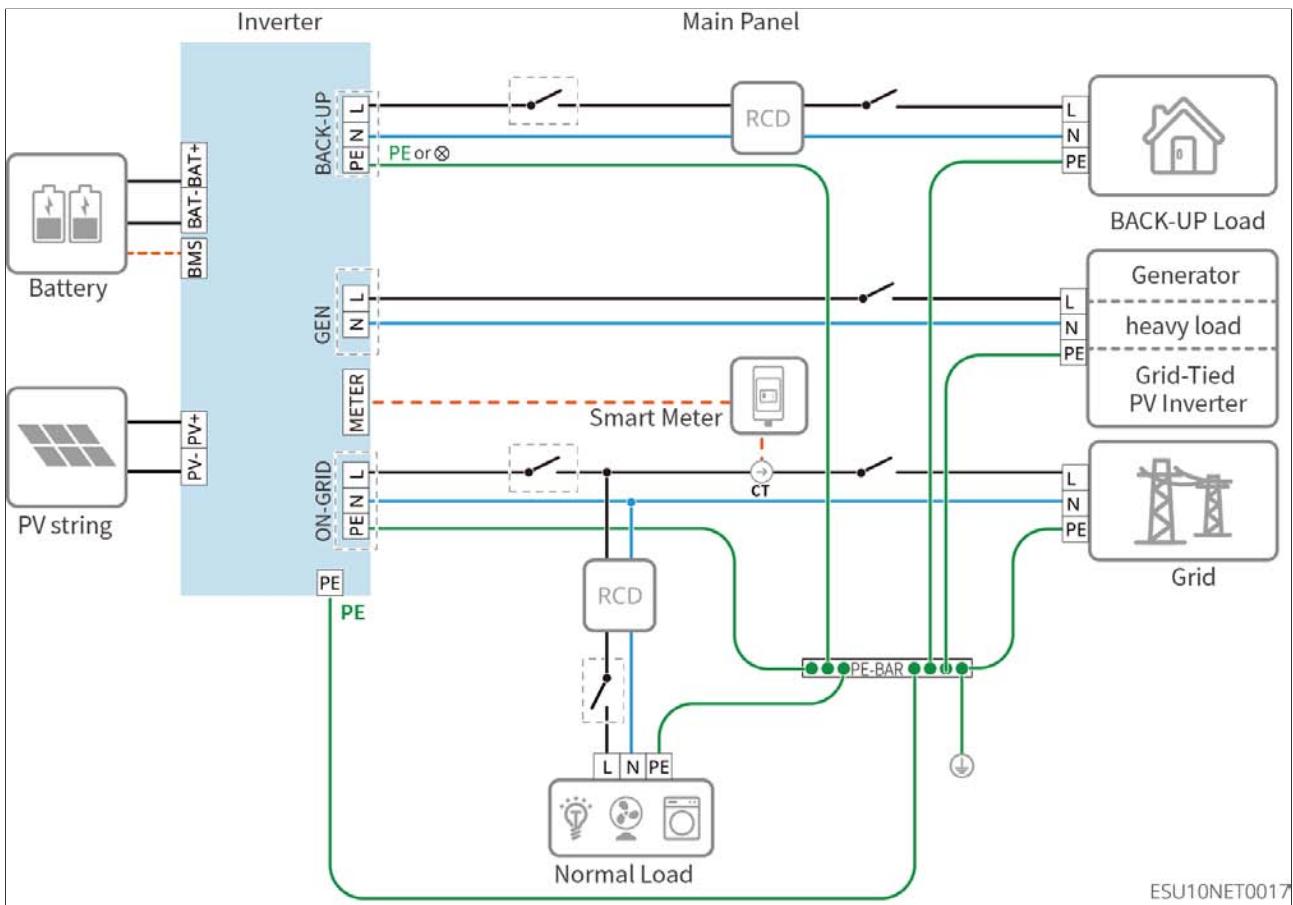
NOTICE

- According to the regulatory requirements of different regions, the wiring methods for the N and PE lines in Inverter ON-GRID and BACK-UP port systems vary. Specific configurations should comply with local regulations.
- ON-GRID AC built-in relay. When the Inverter is in off-grid mode, the built-in ON-GRID relay remains in the open state; when the Inverter operates in on-grid mode, the built-in ON-GRID relay is in the closed state.
- When the Inverter power on, the BACK-UP AC port is live. If maintenance is required on the BACK-UP Loads, please Inverter the power off, otherwise electric shock may occur.

N and PE wires are separately connected in distribution box.

NOTICE

- Please ensure that the PE cable connection of the BACK-UP is correct and secure, otherwise the BACK-UP function may malfunction when Utility grid fault occurs.
- The following wiring methods apply to regions other than Australia, New Zealand, etc.:

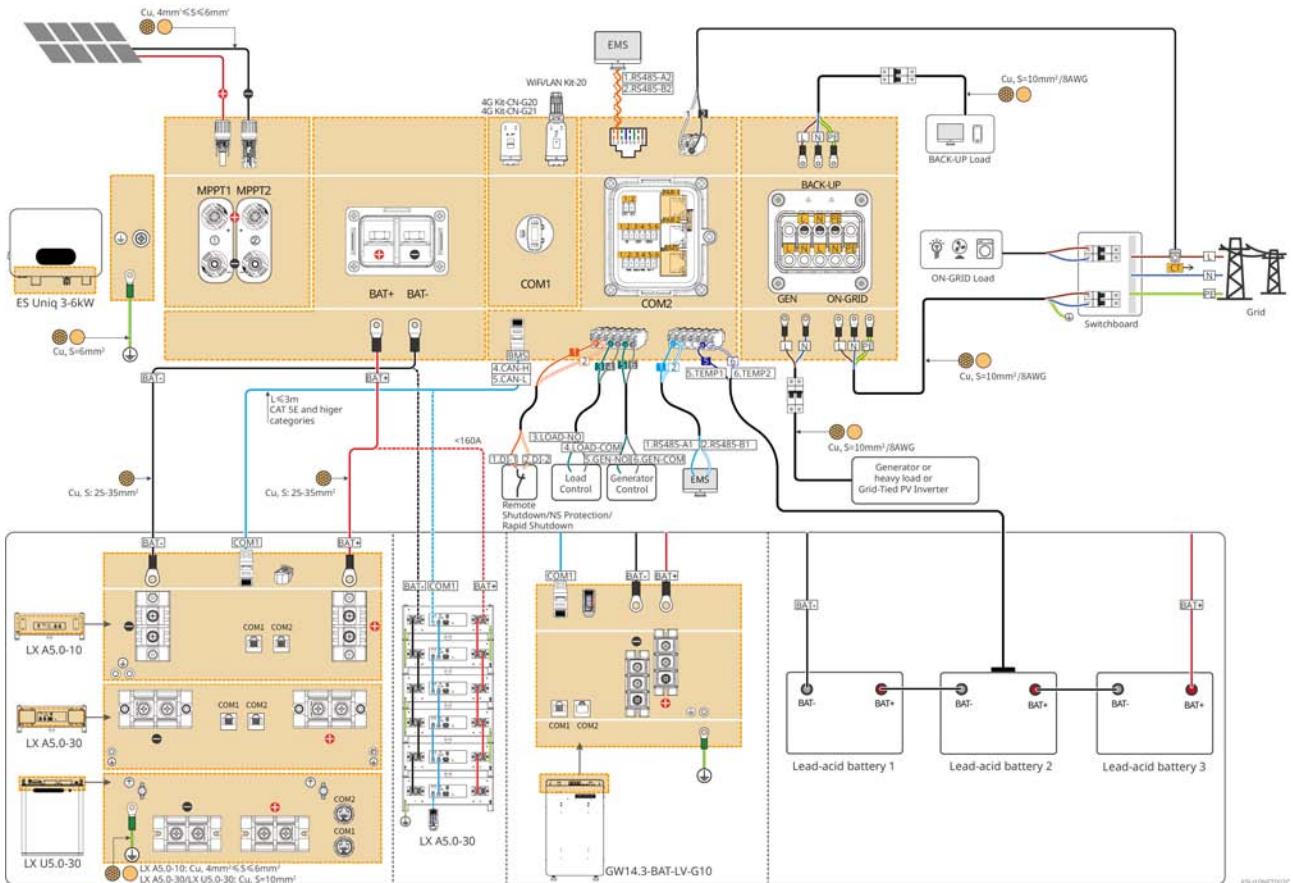


5.2 Detailed System Wiring Diagram

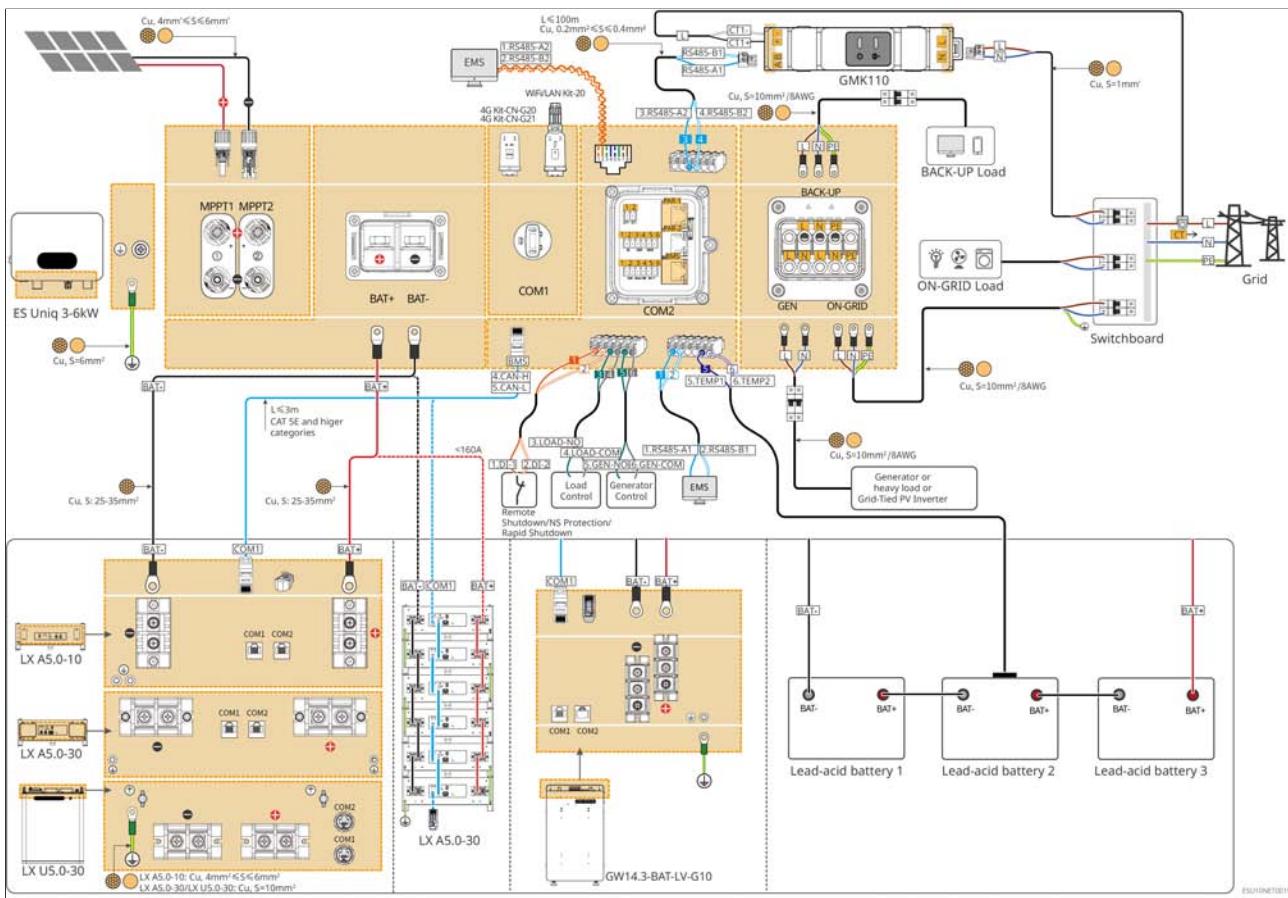
5.2.1 Detailed System Wiring Diagram for Single Inverter

In single-unit scenarios, other specifications such as the GM330 can also be used to meet the requirements. Only the recommended types are displayed here.

Built-in meter scenario



Matching GMK110 scenario

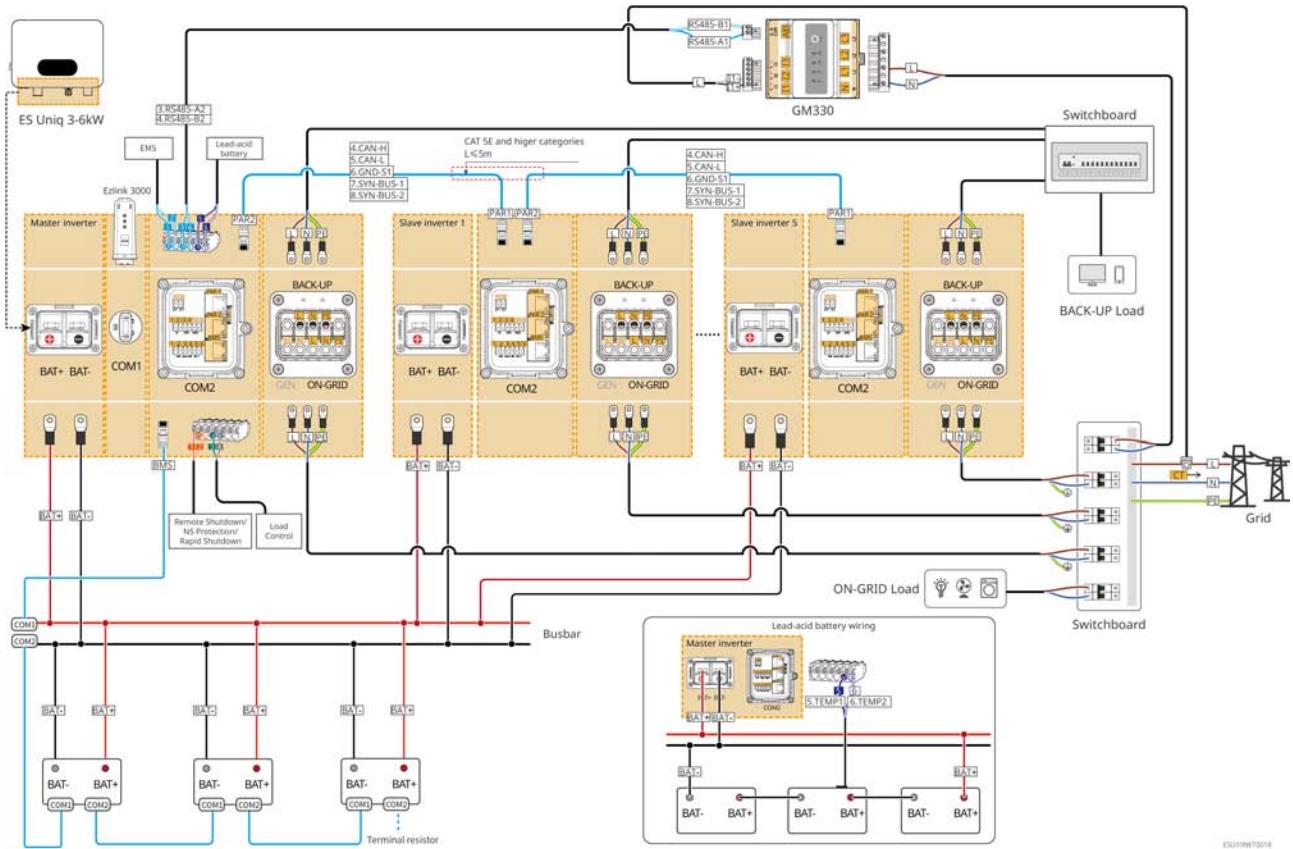


5.2.2 Detailed System Wiring Diagram for Parallel System

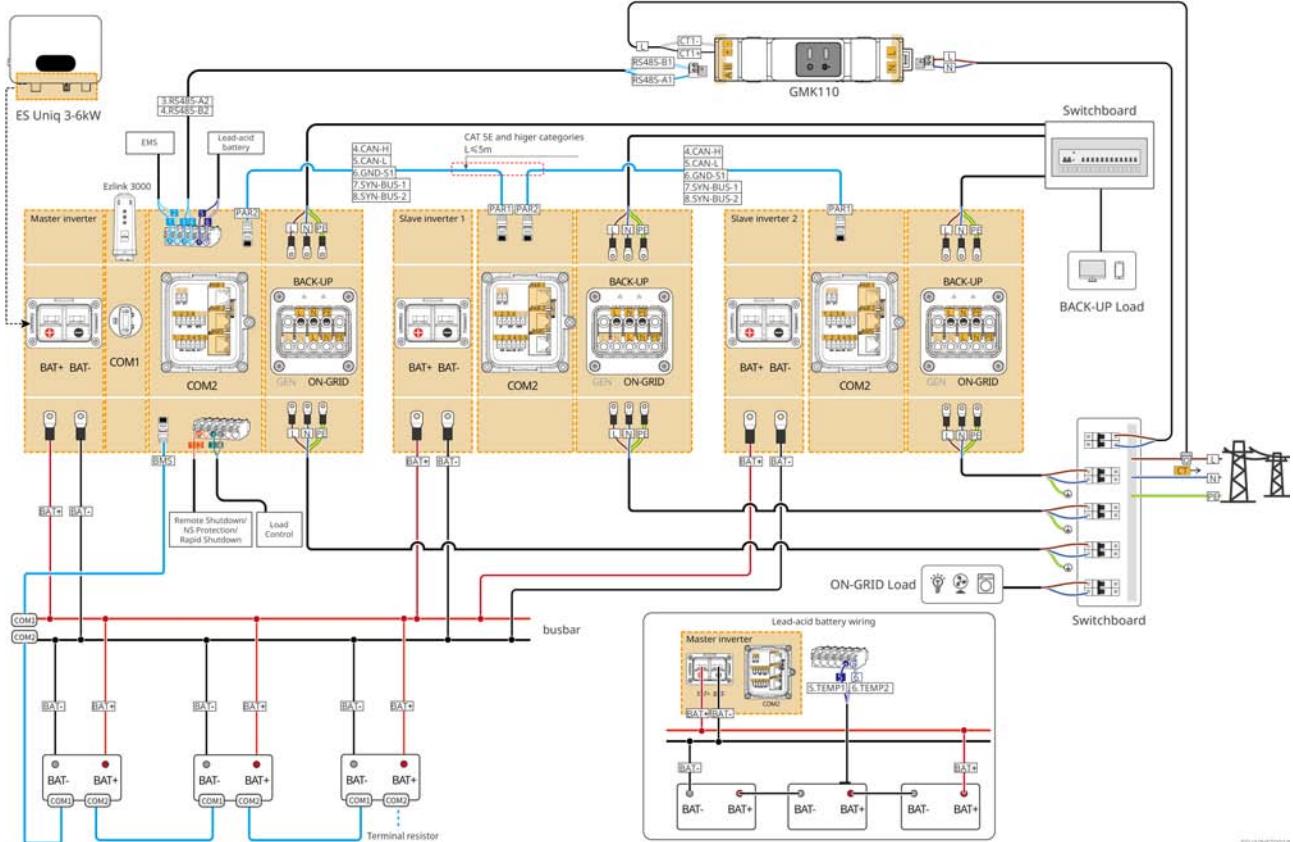
NOTICE

- In the parallel system, the Inverter connecting the Ezlink3000 smart dongle and the meter is Master inverter, while the others are Slave inverter. Do not connect smart dongle to the Slave inverter in the system.
- The parallel system does not support the connection of generators, large loads, or grid-tied PV inverter.
- The following diagram highlights the wiring related to parallel operation. For other port wiring requirements, please refer to the single-unit system.
- In parallel system, under the non-convergence mode of Inverter, each Inverter can be connected to Battery of different model. For specific wiring methods, please refer to [5.6.Connecting the Battery Cable\(Page 113\)](#).

During parallel operation, the Battery busbar connection mode is adopted.
Matching GM330 scenario

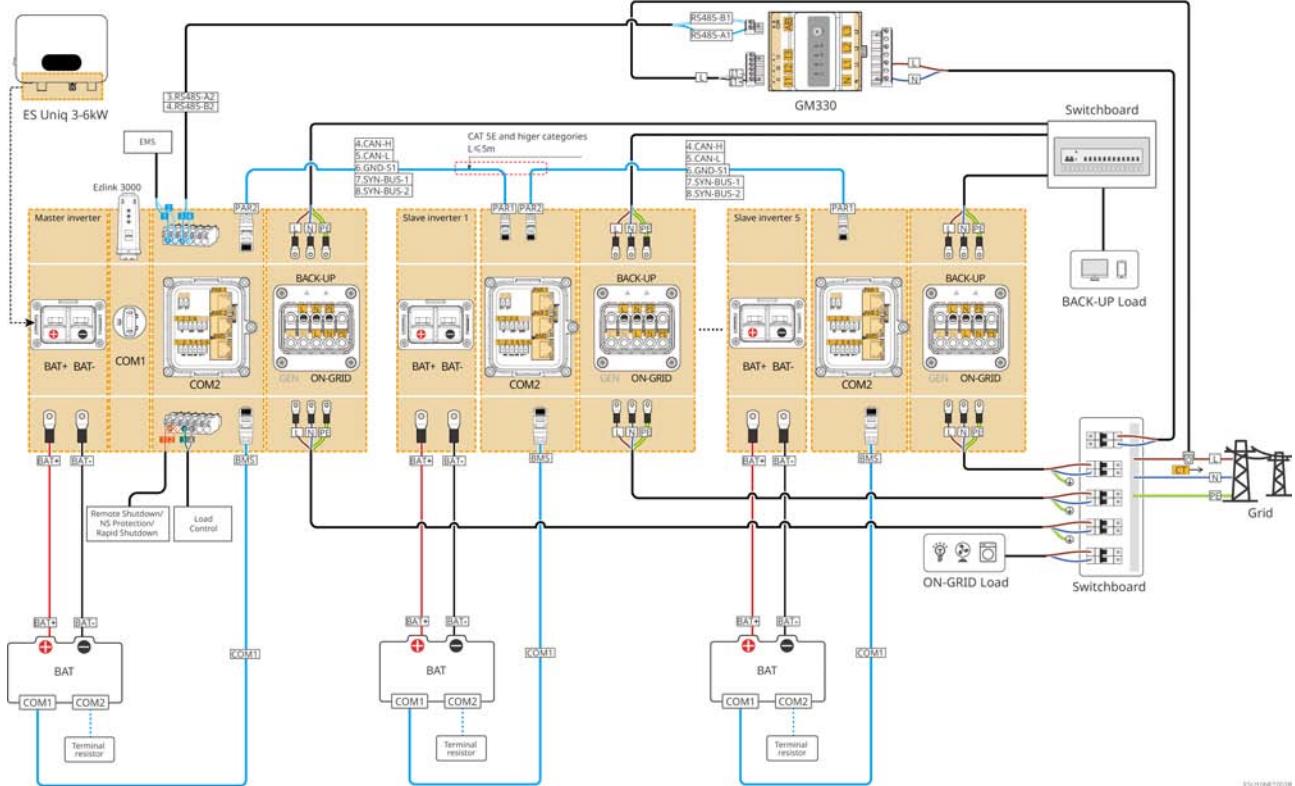


Matching GMK110 scenario



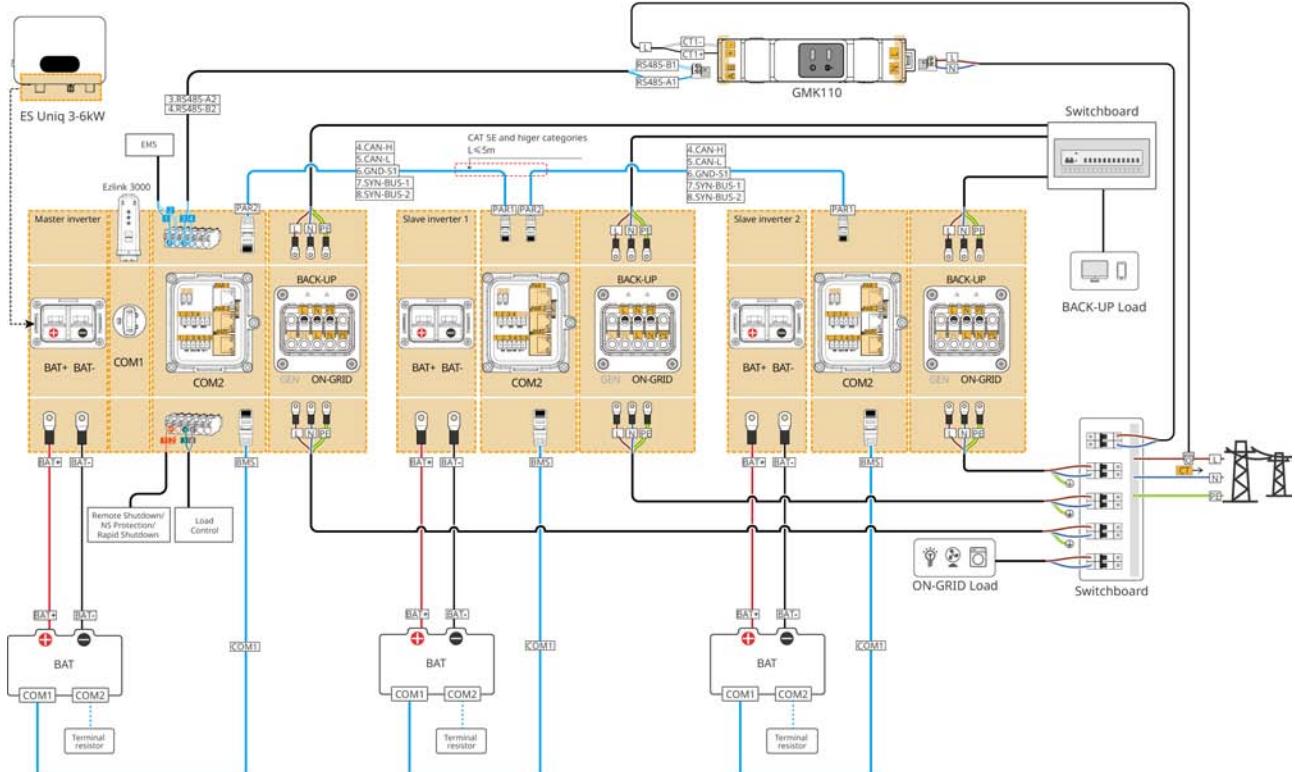
During parallel operation, Battery is in non-busbar connection mode.

Matching GM330 scenario



ESUNET028

Matching GMK110 scenario

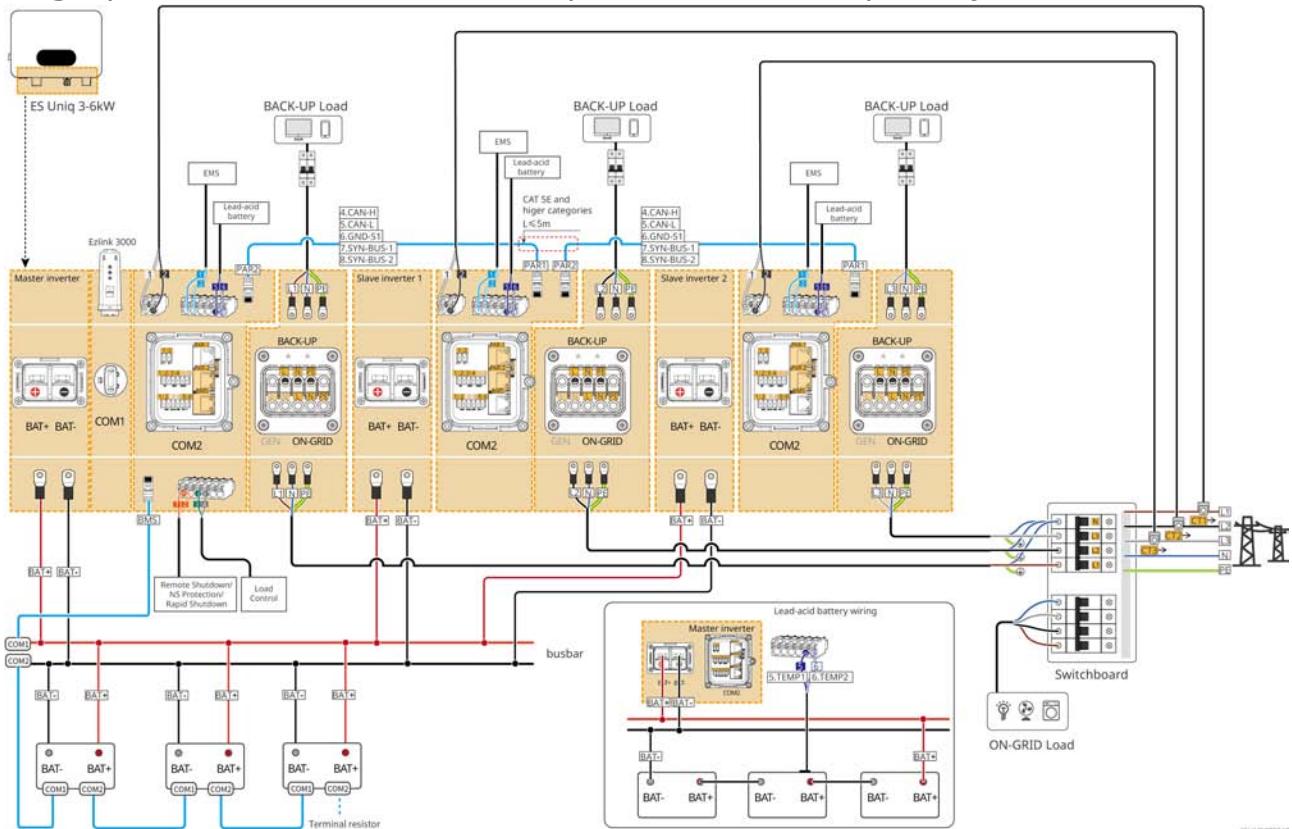


ESUNET028

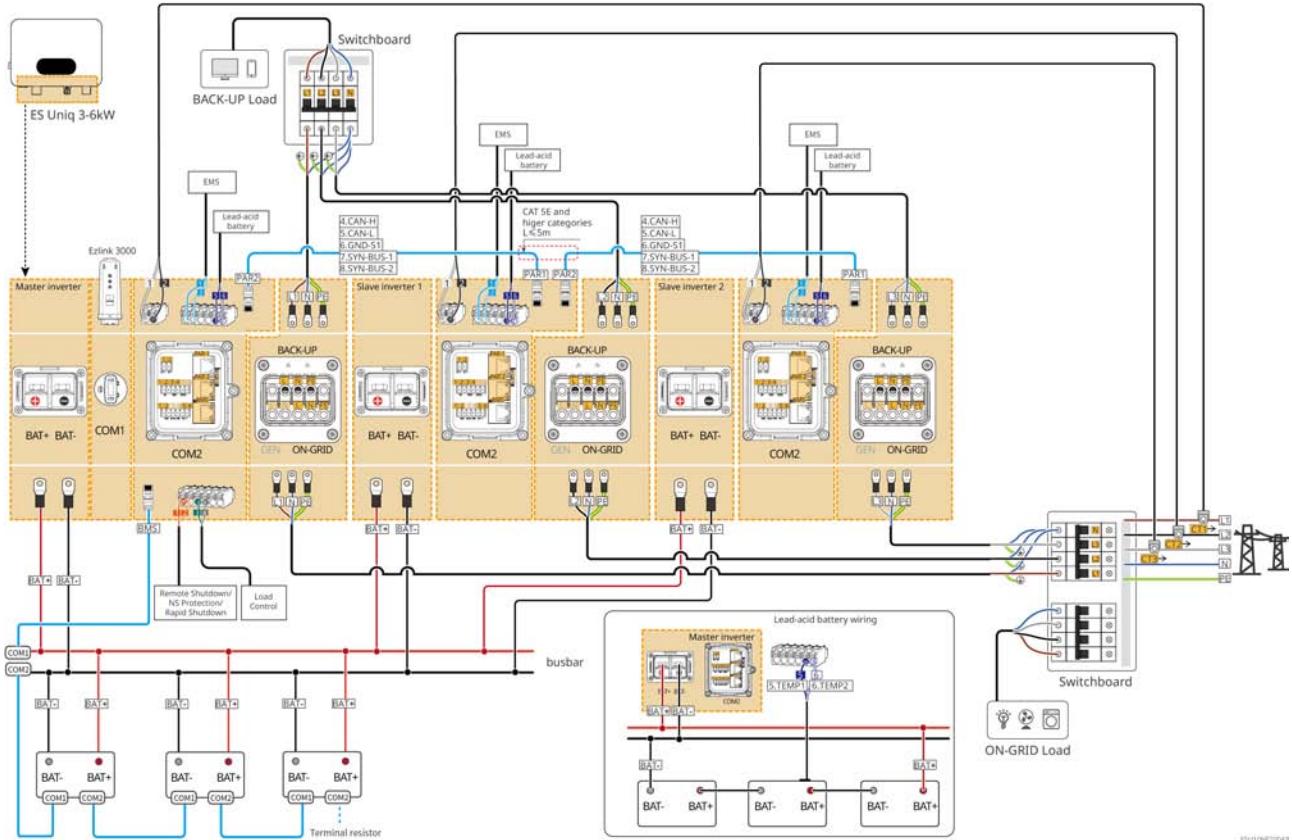
5.2.3 Single-phase to three-phase Detailed System Wiring Diagram

Built-in meter scenario

Single-phase load scenario with each phase connected separately

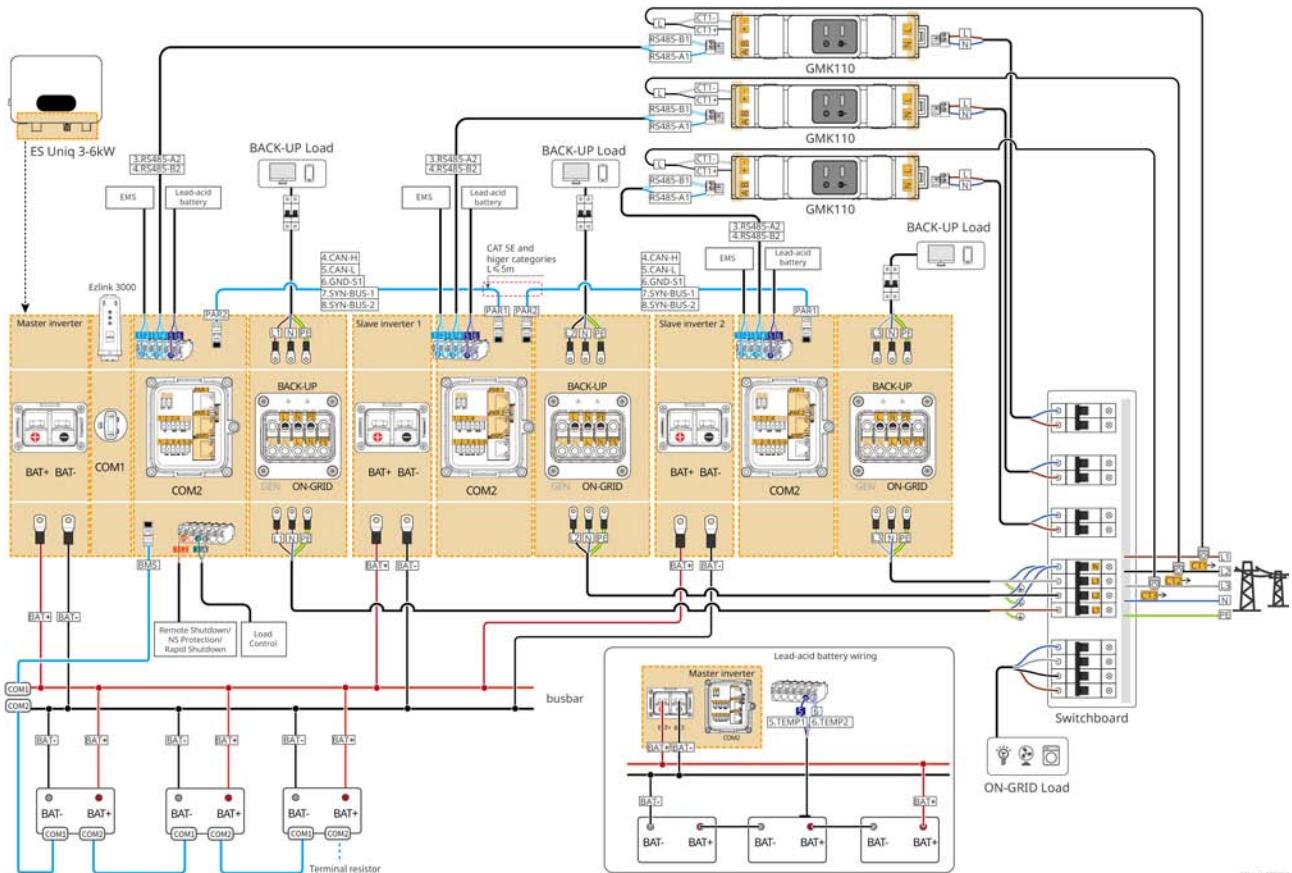


Three-phase load connection scenario

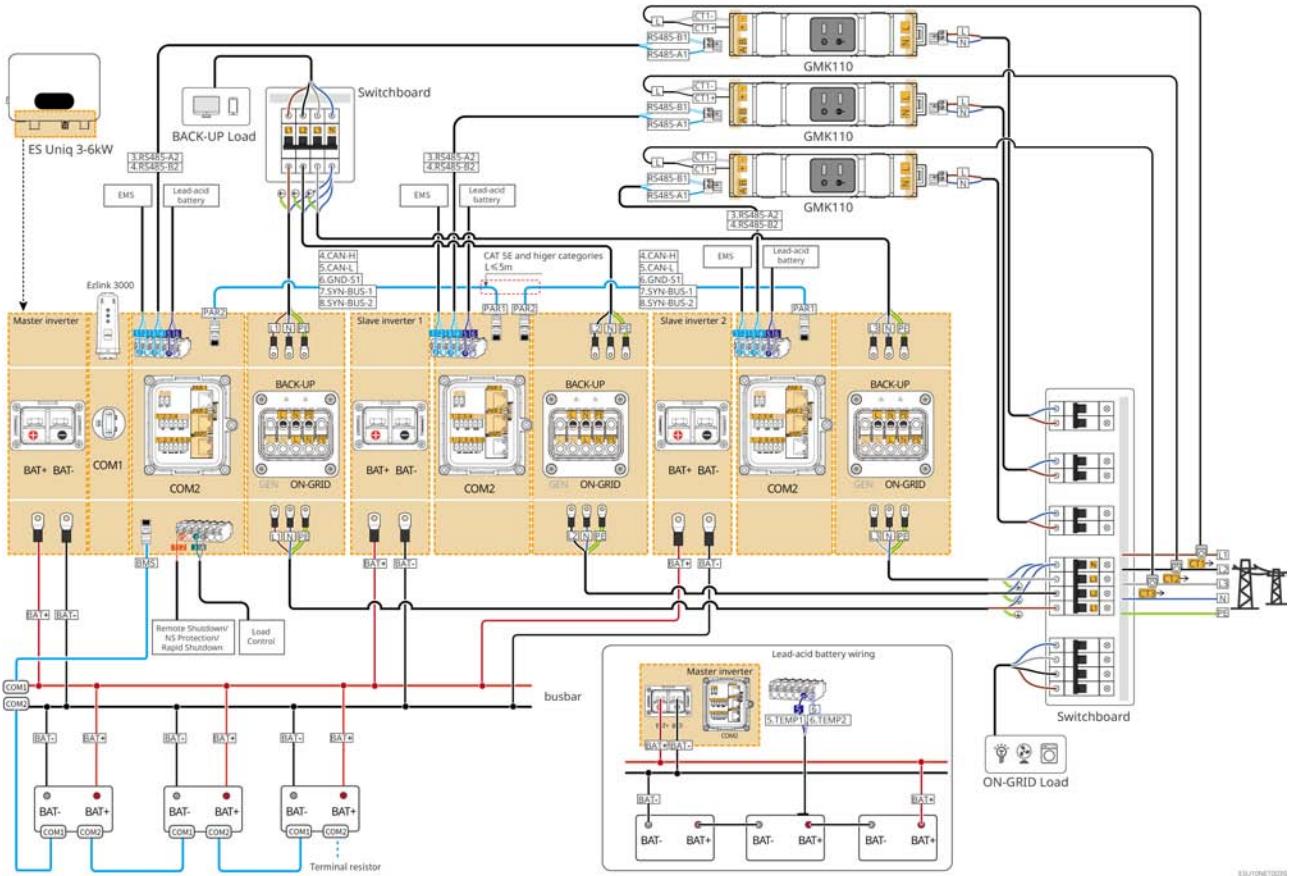


Matching GMK110 scenario

Single-phase load scenario with each phase connected separately



Three-phase load connection scenario



5.3 Preparing Materials

WARNING

- It is prohibited to connect any load between the Inverter and the AC Switch directly connected to the Inverter.
- Each Inverter must be equipped with an AC output breaker. Multiple Inverter units cannot be connected to a single AC breaker simultaneously.
- To ensure that the Inverter can be safely disconnected from the Utility grid in case of an abnormal situation, please connect a AC breaker on the AC side of the Inverter. Select an appropriate AC breaker according to local regulations.
- When the Inverter power on is completed, the BACK-UP AC port becomes live. If maintenance is required on the BACK-UP Loads, please Inverter the power off to avoid the risk of electric shock.
- For cables used in the same system, it is recommended that the conductor material, cross-sectional area, length, etc., be consistent.
 - The BACK-UP AC line of each Inverter
 - The AC line of each Inverter connected to the grid
 - Inverter-Battery power cable cable
 - power cable cable between Battery and Battery
 - Inverter to busbar power cable cable
 - power cable cable between Battery and the busbar

5.3.1 Preparing Breakers

No.	breaker	Recommended specifications	Remarks
1	<ul style="list-style-type: none"> • Grid-Tied • BACK-UP Loadsbreaker • Generator 	<ul style="list-style-type: none"> • GW3000-ES-C10, GW3000-ES-C11, GW3600-ES-C10: Rated current \geq 40A, Rated voltage \geq 230V • GW5000-ES-C10, GW6000-ES-C10: Rated current \geq50A, Rated voltage \geq230V 	Self-supply

No.	breaker	Recommended specifications	Remarks
2	Battery switch	<p>Select according to local laws and regulations</p> <ul style="list-style-type: none"> • GW3000-ES-C10: Rated current $\geq 90A$, Rated voltage $\geq 60V$ • GW3000-ES-C11: Rated current $\geq 175A$, Rated voltage $\geq 60V$ • GW3600-ES-C10: Rated current $\geq 115A$, Rated voltage $\geq 60V$ • GW5000-ES-C10: Rated current $\geq 150A$, Rated voltage $\geq 60V$ • GW6000-ES-C10: Rated current $\geq 175A$, Rated voltage $\geq 60V$ 	Self-supply
3	RCD	<p>Select according to local laws and regulations.</p> <ul style="list-style-type: none"> • Type A • ON-GRID side: 300mA • BACK-UP side: 30mA 	Self-supply

5.3.2 Preparing Cables

No.	cable	Recommended Specifications	Acquisition method
1	InverterPE cable	<ul style="list-style-type: none"> • single core Outdoor copper cable • conductor cross-sectional area: $S=6mm^2$ 	Self-supply

No.	cable	Recommended Specifications	Acquisition method
2	BatteryPE cable	<ul style="list-style-type: none"> single core outdoor copper cable conductor cross-sectional area: LX A5.0-10: 4-6mm² LX A5.0-30: 10mm² LX U5.0-30: 10mm² GW14.3-BAT-LV-G10: 10mm² 	<ul style="list-style-type: none"> Self-supply LX A5.0-30, LX A5.0-10: Accessory Acquisition (Optional) GW14.3-BAT-LV-G10: For some machines, the grounding cable is shipped with the Battery accessory.
3	PV DC line	<ul style="list-style-type: none"> Industry-standard outdoor photovoltaic cables conductor cross-sectional area: 4-6mm² Cable outer diameter: 4.8mm-6.3mm 	Self-supply

No.	cable	Recommended Specifications	Acquisition method
4	DC line	<ul style="list-style-type: none"> single core outdoor copper cable InverterBatteryport Wiring Requirements: <ul style="list-style-type: none"> conductor cross-sectional area: 25-35mm² Cable outer diameter: 8-13mm Cable requirements between Battery and busbar: <ul style="list-style-type: none"> LX A5.0-30, conductor cross-sectional area: 50mm² LX A5.0-10, LX U5.0-30, conductor cross-sectional area: 25mm² GW14.3-BAT-LV-G10, conductor cross-sectional area: 70mm² Cable requirements between Battery and Battery: <ul style="list-style-type: none"> LX A5.0-30, conductor cross-sectional area: 50mm² LX A5.0-10, LX U5.0-30, conductor cross-sectional area: 25mm² GW14.3-BAT-LV-G10, conductor cross-sectional area: 70mm² 	<ul style="list-style-type: none"> Self-supply LX U5.0-30: Supports purchase from GoodWe LX A5.0-30, LX A5.0-10: Accessory Acquisition (Optional) GW14.3-BAT-LV-G10: Some machines, Battery DC cable are shipped with Battery accessories.

No.	cable	Recommended Specifications	Acquisition method
5	AC line	<ul style="list-style-type: none"> • AC input/output cable (BACKUP/GRID) <ul style="list-style-type: none"> ◦ conductor cross-sectional area: 10mm²/8AWG ◦ multi-core Outdoor copper cable outer diameter: 15-18mm ◦ single core Outdoor copper cable outer diameter: 5.5mm-7mm • Generator power cable (GEN): <ul style="list-style-type: none"> ◦ conductor cross-sectional area: 10mm²/8AWG ◦ multi-core Outdoor copper cable outer diameter: 14mm-17mm ◦ single core Outdoor copper cable outer diameter: 5.5mm-7mm 	Self-supply
6	Power cord	<ul style="list-style-type: none"> • Outdoor copper cable • conductor cross-sectional area: 1mm² 	Self-supply

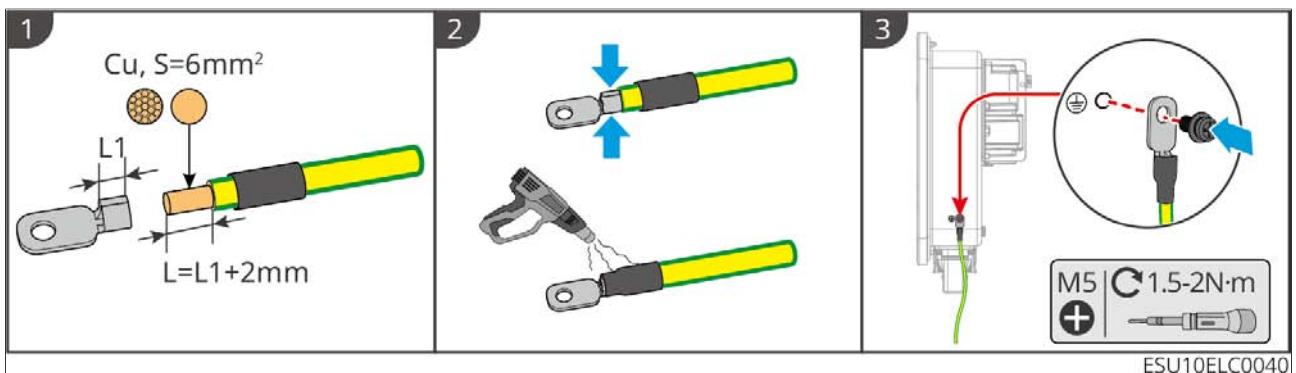
No.	cable	Recommended Specifications	Acquisition method
7	Battery Communication cable	Communication between the combiner box and Battery, as well as between Battery, requires the use of CAT 5E or higher standard shielded network cable and shielded RJ45 RJ45 connector.	<ul style="list-style-type: none"> • Self-supply • LX A5.0-10, LX A5.0-30: Accessory Acquisition (Optional) • GW14.3-BAT-LV-G10: <ul style="list-style-type: none"> ◦ Inverter and Battery Communication cable: Partial standard-equipped ◦ Battery Communication cable: Self-provided, cable length ≤2m
8	Electric Meter RS485	<ul style="list-style-type: none"> • Shielded Twisted Pair (STP) • conductorcross-sectional area: 0.2mm²-0.4mm² 	Self-supply
9	Parallel operation of generators WiFi/LAN Kit-20	CAT 5E and above standard shielded network cables and RJ45 shielded RJ45 connector	Self-supply
10	remote shutdown/ Rapid Shutdown Pass/NS Protection Communication cable	<ul style="list-style-type: none"> • Copper core twisted pair • conductorcross-sectional area: 0.2mm²-0.4mm² 	Self-supply

5.4 Connecting the PE cable

WARNING

- The Protection grounding of the cabinet enclosure cannot replace the PE cable of the AC output port. When wiring, ensure that the PE cable connections at both locations are securely connected.
- When multiple devices are present, ensure that all equipment chassis enclosures are ProtectionGrounding point equipotentially bonded.
- To improve the corrosion resistance of terminal, it is recommended to apply silica gel or paint on the exterior of Grounding terminal after completing the connection of Installation to PE cable for protection.
- When Installation equipment, the PE cable must be Installation first; when dismantle equipment, the PE cable must be dismantle last.

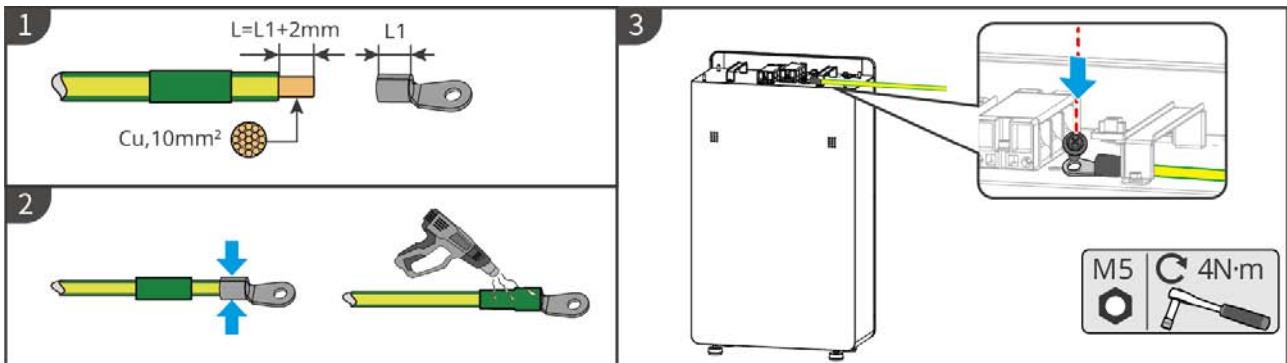
Inverter



Battery

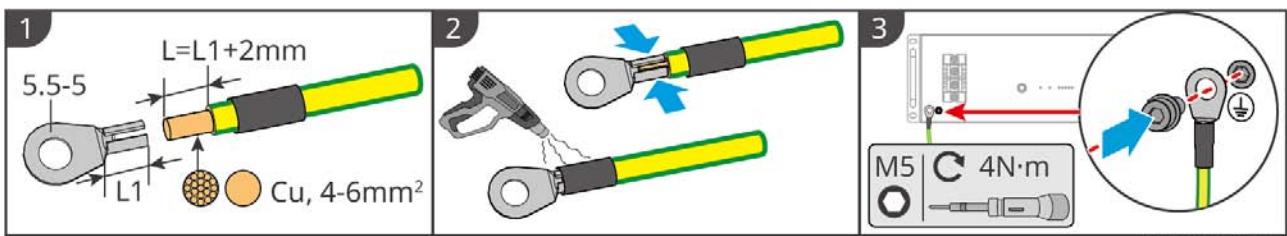
GW14.3-BAT-LV-G10

- GW14.3-BAT-LV-G10: If the grounding cable is shipped with the Battery accessory, please use the shipped cable without performing crimp.



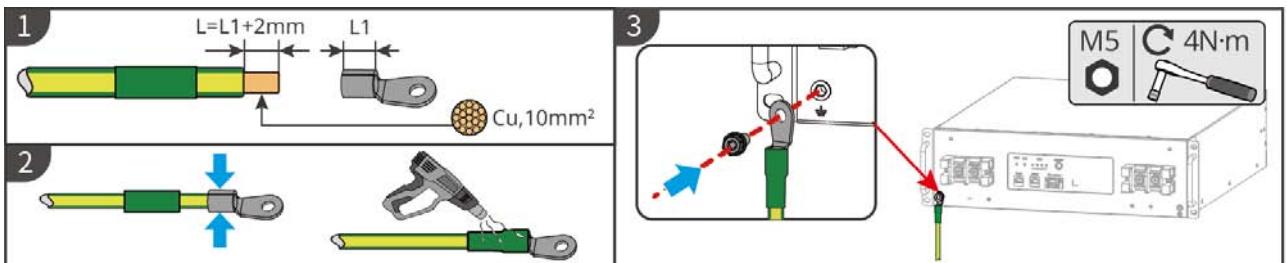
LXA10ELC0014

LX A5.0-10



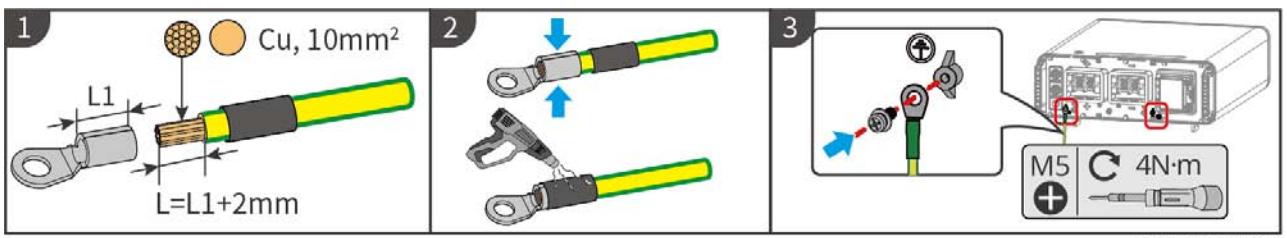
LXA10ELC0003

LX A5.0-30



LXA30ELC0001

LX U5.0-30



LXU30ELC0001

5.5 Connecting the PV Cable

DANGER

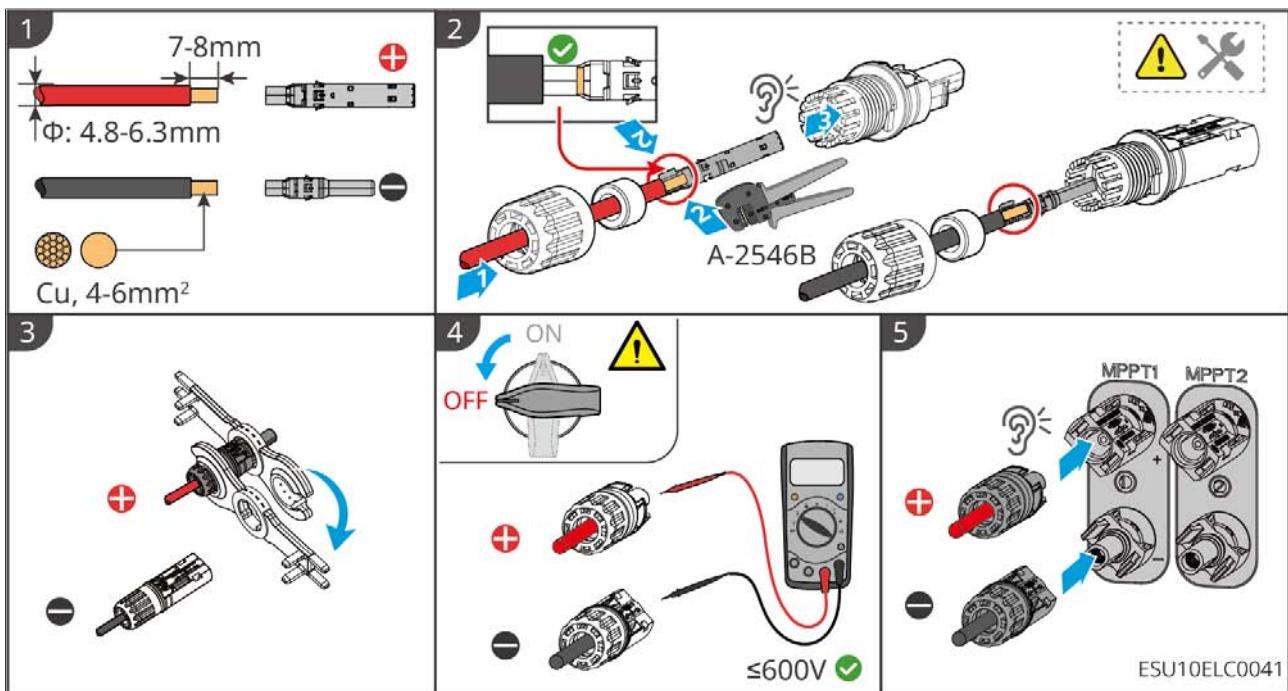
- Do not connect the same PV string to multiple Inverter, as this may cause damage to the Inverter.
- Before connecting the PV string to the Inverter, please verify the following information. Failure to do so may result in permanent damage to the Inverter and, in severe cases, could lead to fire, causing personal injury or property damage.
 1. Please ensure that both Max. Short Circuit Current per MPPT and Max.Input Voltage are within the allowable range of Inverter.
 2. Please ensure that the positive terminal of the PV string is connected to the PV+ of Inverter, and the negative terminal of the PV string is connected to the PV- of Inverter.

 **WARNING**

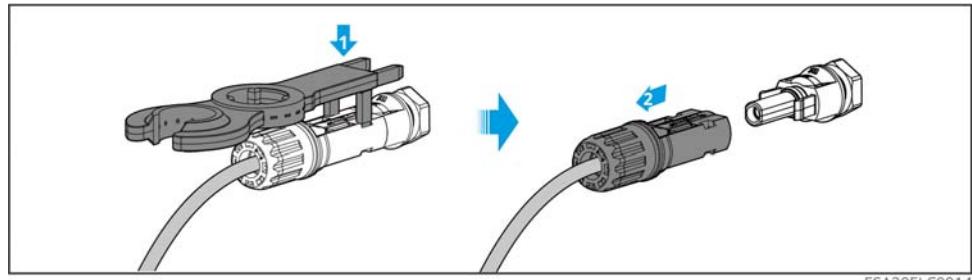
- The PV string output does not support grounding. Before connecting the PV string to Inverter, ensure that the the minimum insulation resistance of the PV string meets the minimum insulation resistance requirement ($R=Max.Input\ Voltage/30mA$).
- After the connection is completed, ensure that the cables are securely fastened and free from looseness.
- Use a multimeter to measure the positive and negative poles of the DC cable, ensuring correct polarity without reverse connection; and confirm the voltage is within the allowable range.

NOTICE

The two sets of PV String in each MPPT channel must have the same model, the same number of Battery panels, the same tilt angle and azimuth angle to ensure the maximization of Efficiency.



To disassemble the PV module, please refer to the following steps:



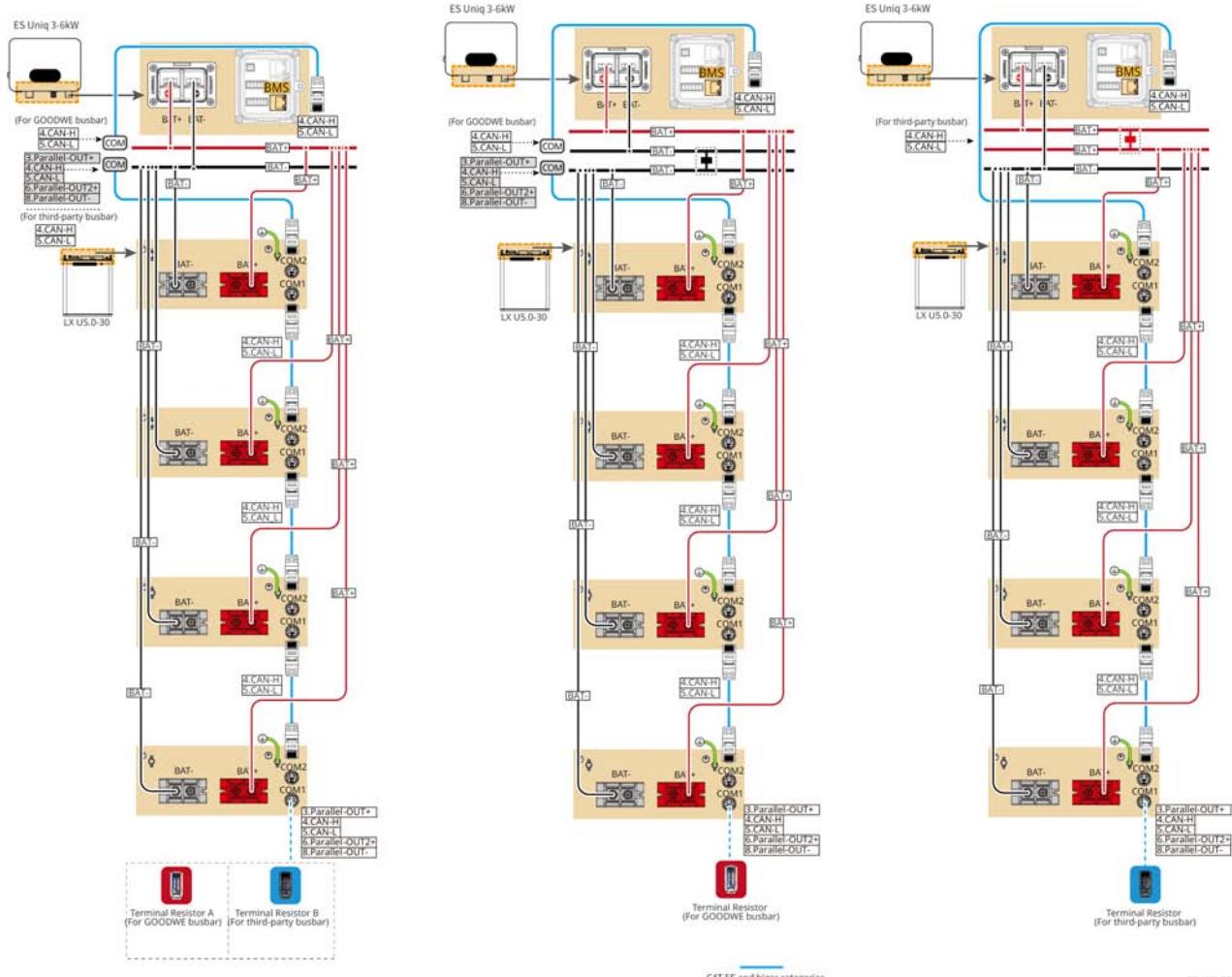
ESA20ELC0014

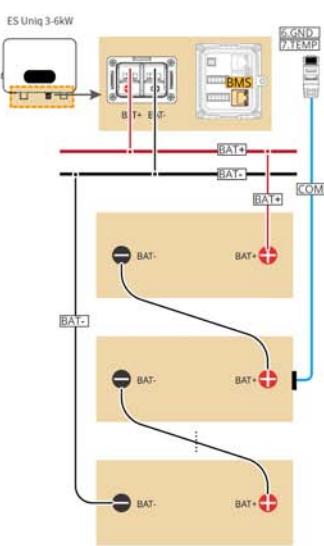
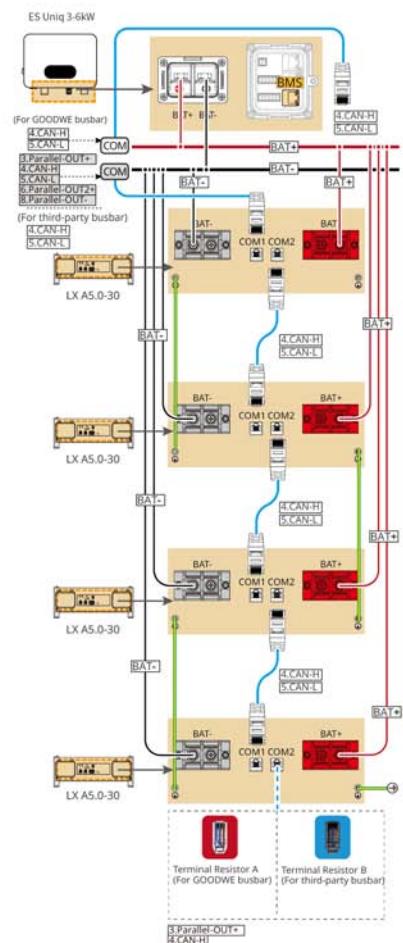
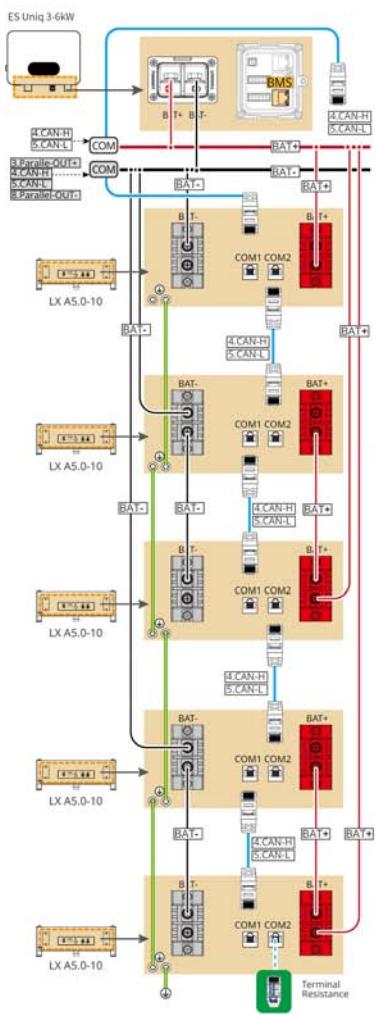
5.6 Connecting the Battery Cable

DANGER

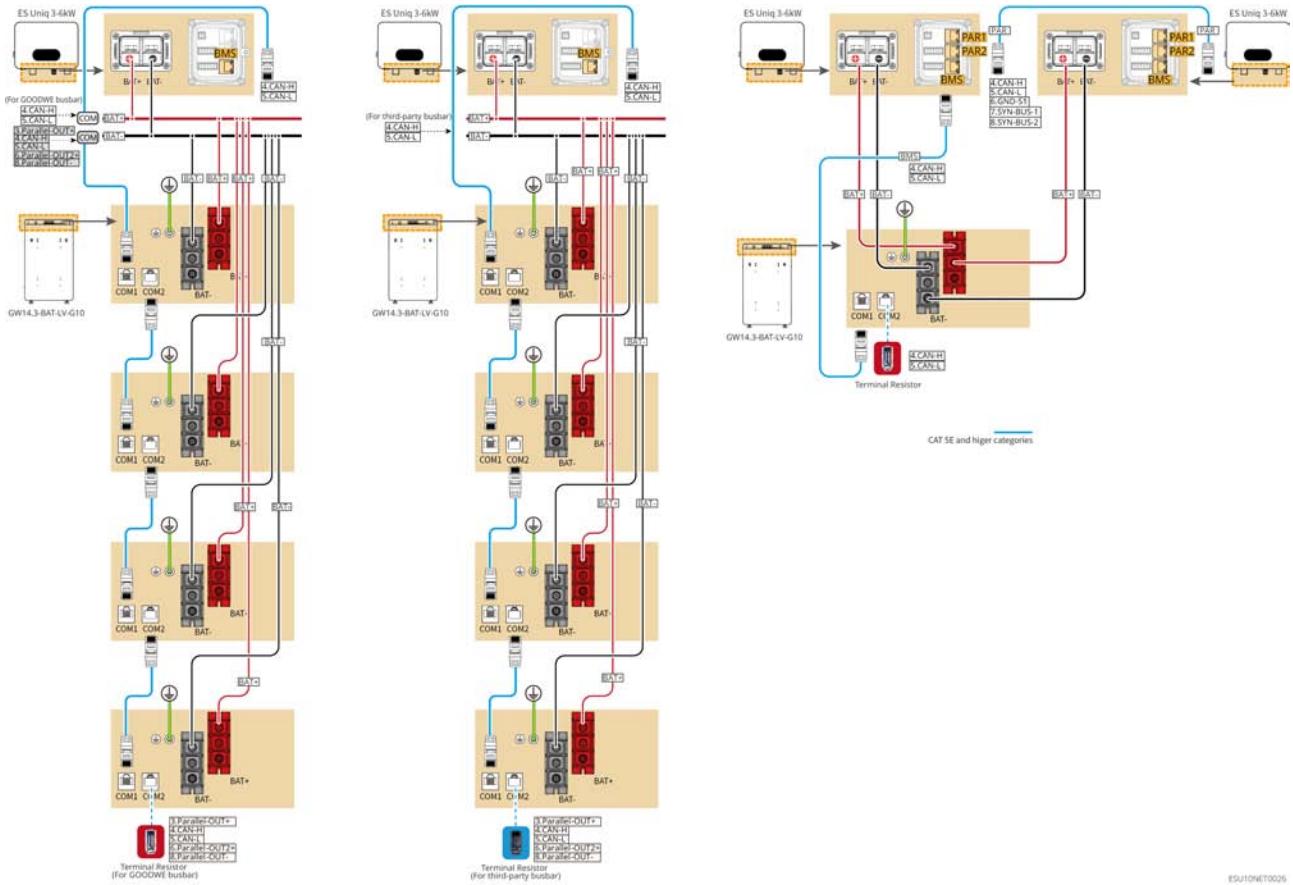
- In a single-unit system, do not connect the same Battery group to multiple Inverters, as this may cause damage to the Inverter.
- Do not connect any load between the Inverter and Battery.
- When Connecting the Battery Cable, use insulated tools to prevent accidental electric shock or Battery short circuit.
- Please ensure that Battery open-circuit voltage is within the allowable range of Inverter.
- Between Inverter and Battery, please configure DC switch according to local laws and regulations.

Battery system Wiring Diagram



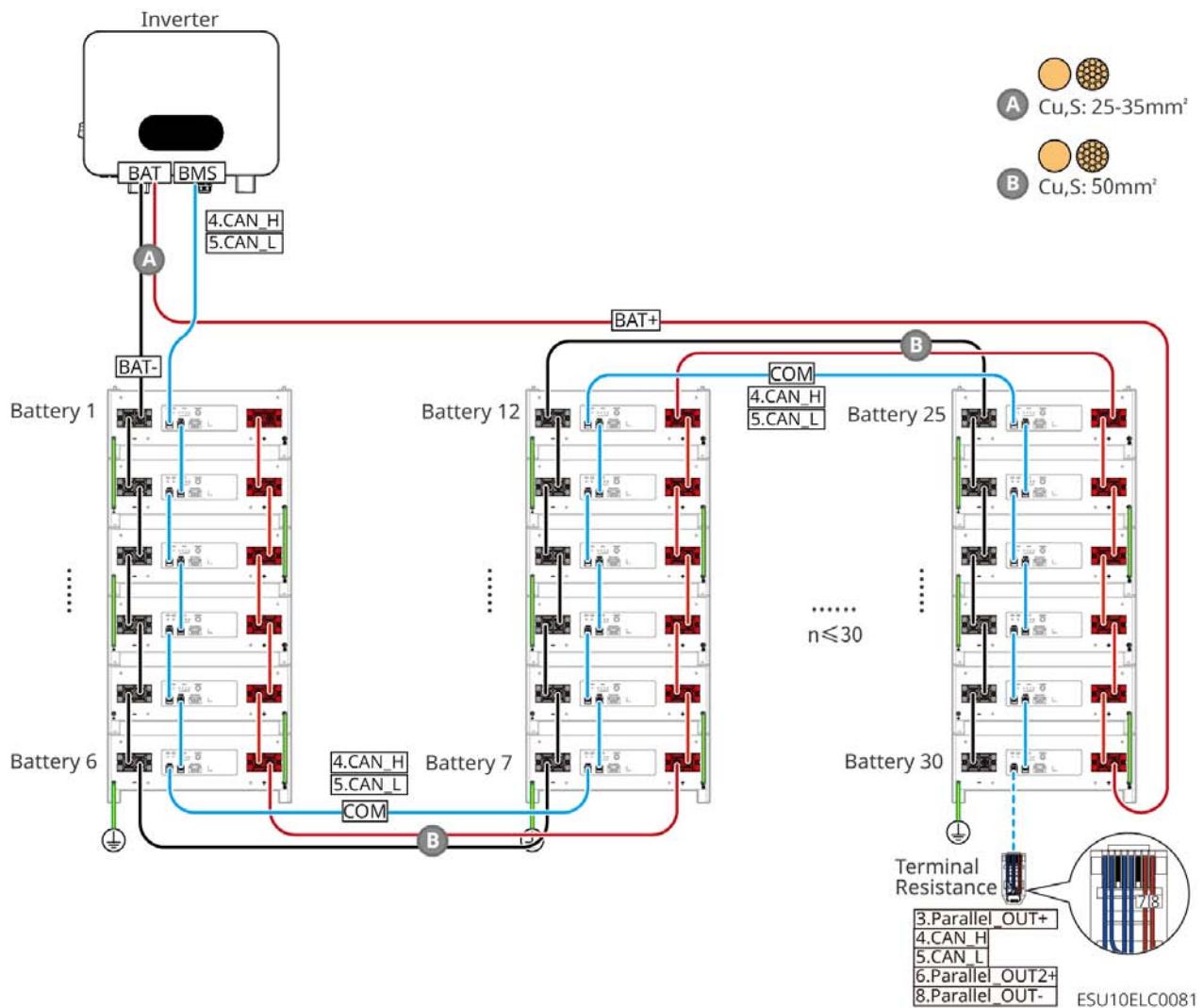


The quantity of batteries depends on the required voltage.



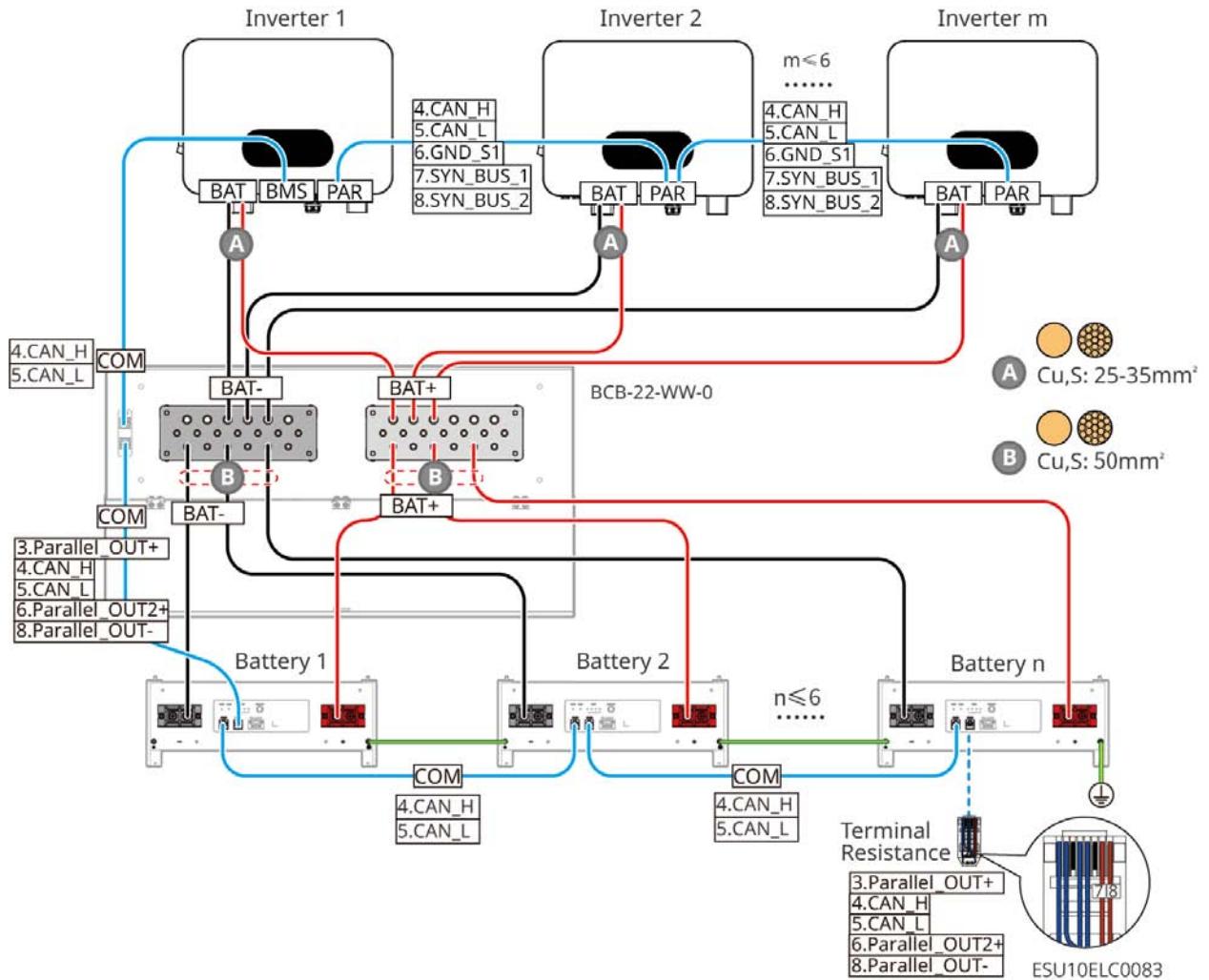
LXA5.0-30: Daisy-chain connection method

- Battery system supports a maximum working current of 160A, working power of 8kW, with a maximum connection capacity of 1 Inverter and 30 Battery.



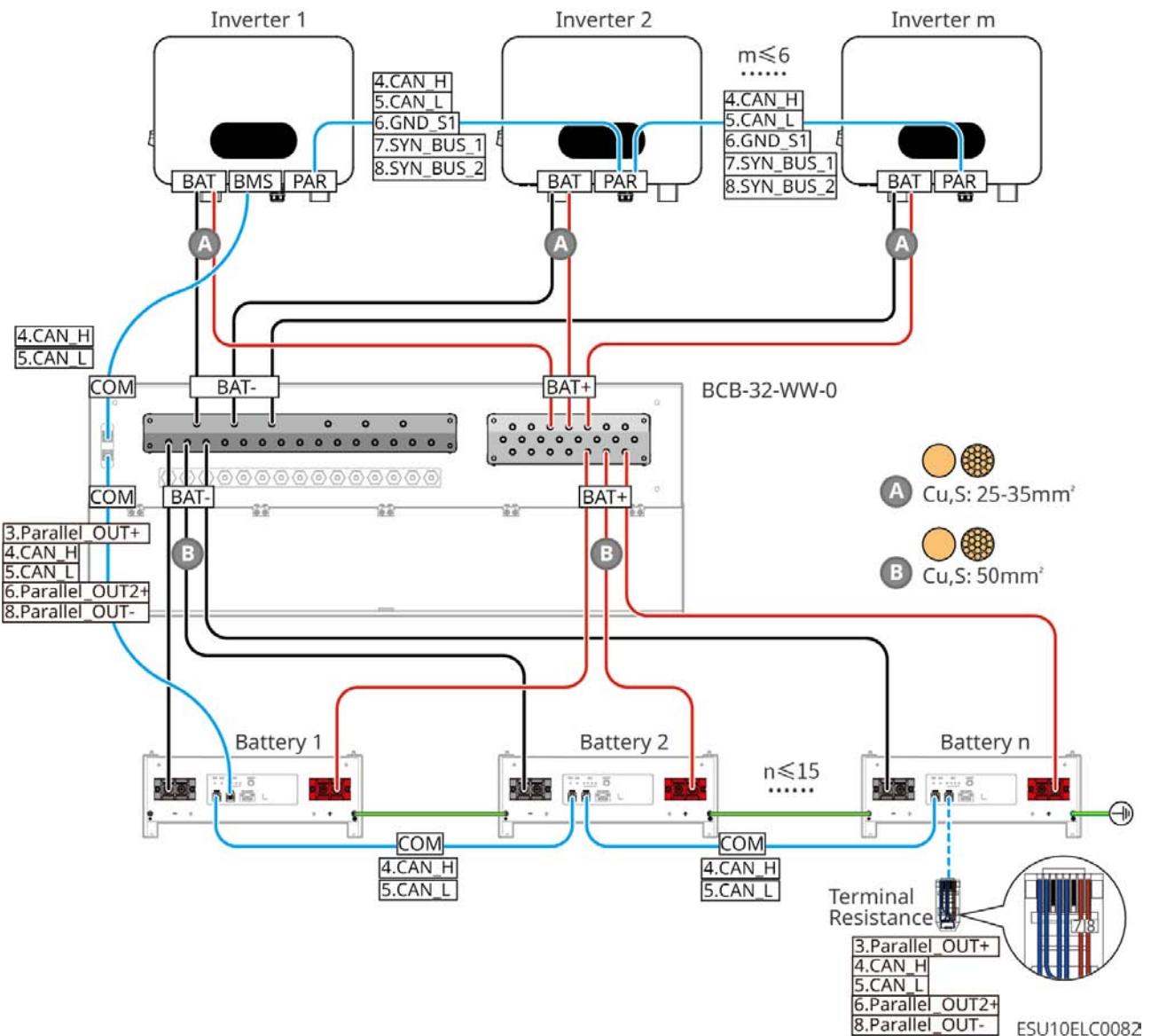
LXA5.0-30: Compatible with busbar BCB-22-WW-0 connection method

- Battery system supports a maximum working current of 720A current, working power of 36kW Power, and can connect up to 6 Inverter and 6 Battery.



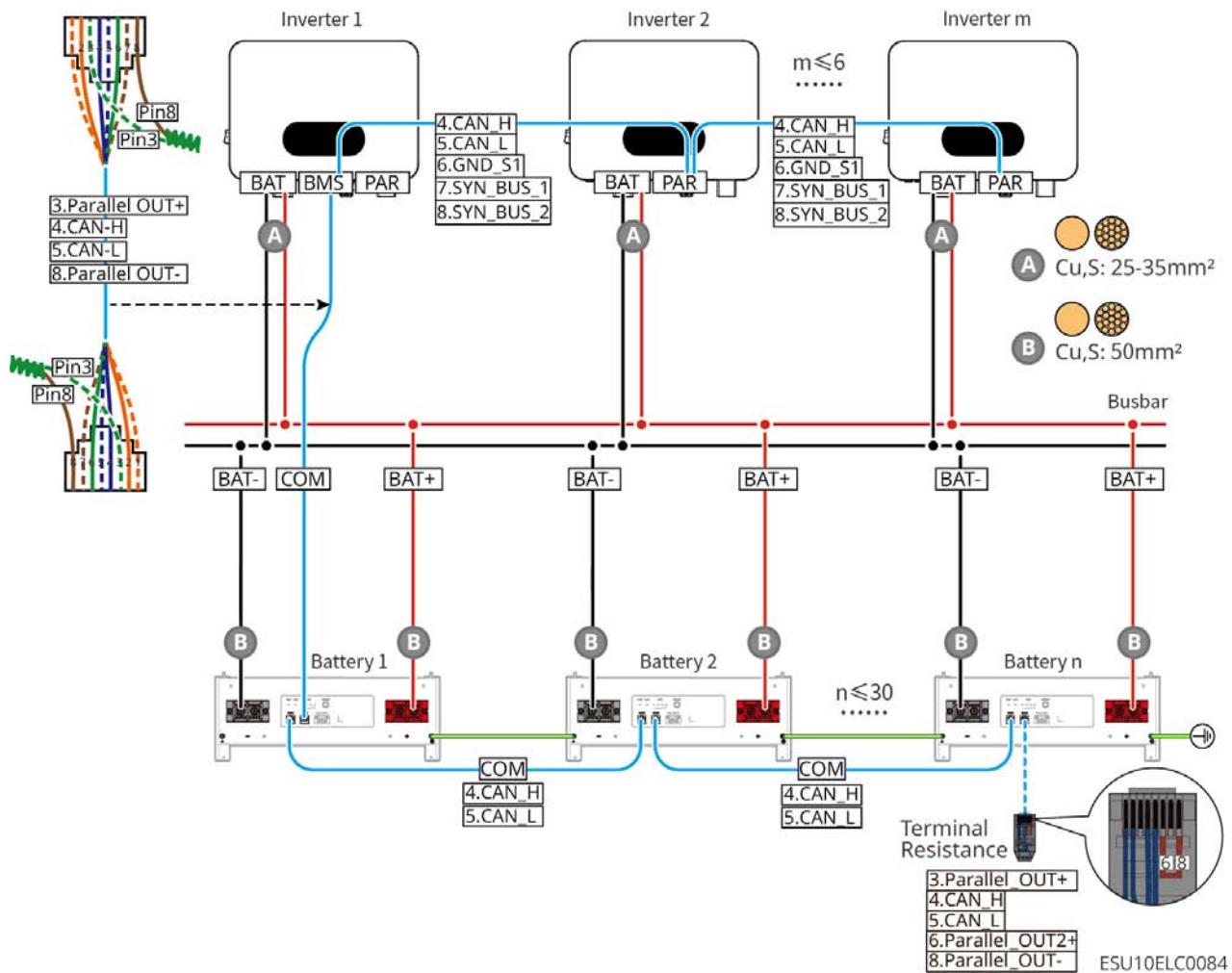
LXA5.0-30: Compatible with busbar BCB-32-WW-0 connection method

- Battery system supports a maximum working current of 720A, working power of 36kW, and can connect up to 6 Inverter and 15 Battery.



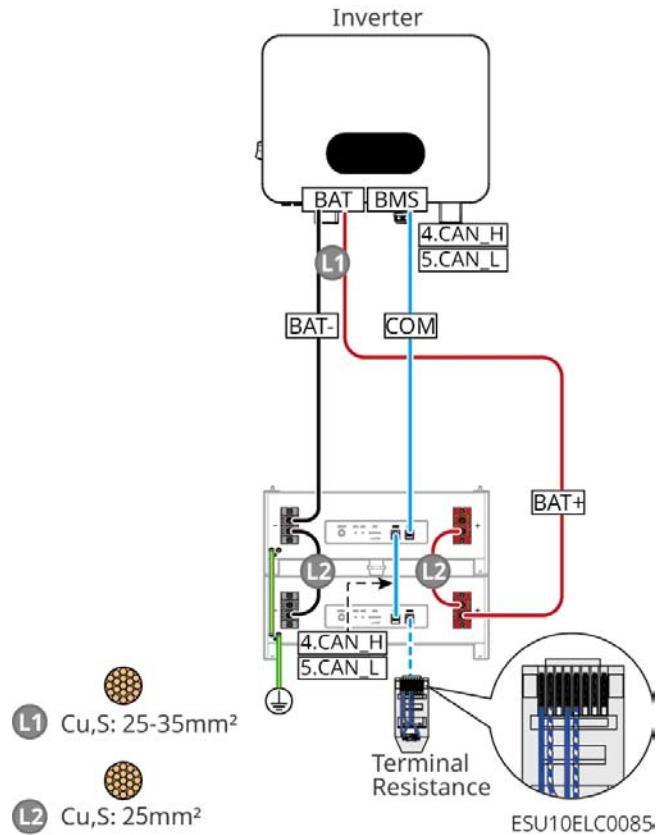
LXA5.0-30: Compatible with third-party busbar connection method

- The rated Battery current of a single unit is 60A; the rated Discharge current is 100A; the maximum Charge current is 90A; the maximum Discharge current is 150A. A single system supports a maximum of 30 units in parallel.



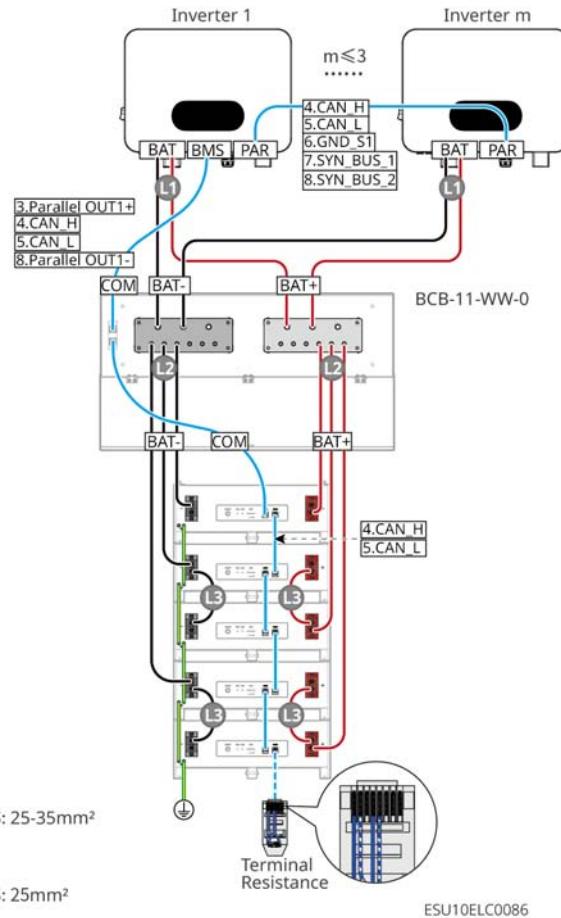
LX A5.0-10: Daisy-chain connection method

- The rated current of a single Battery The nominal charging and discharging current is 60A.
- Battery system supports a maximum working current of 120A, current operates at 6kW, with a maximum connection capacity of 1 Inverter and 2 Battery.



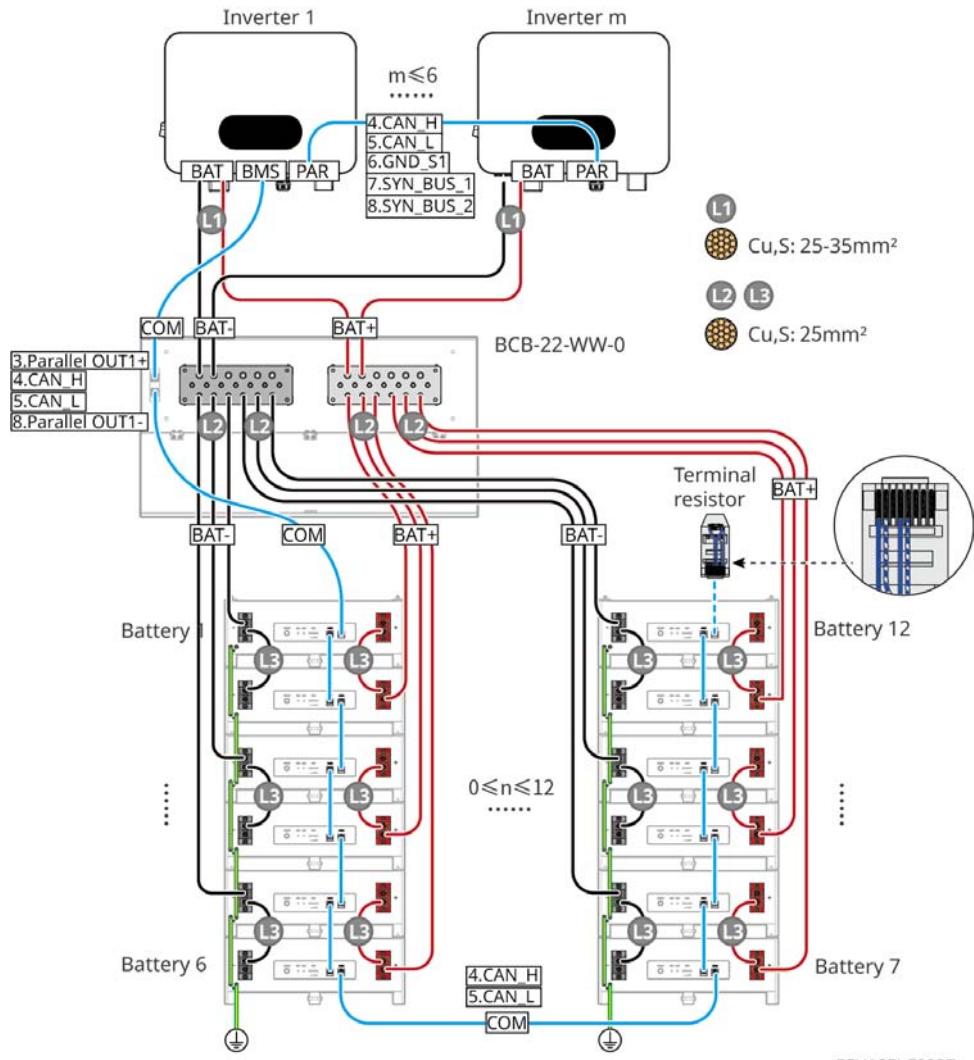
LX A5.0-10: Battery in conjunction with busbar BCB-11-WW-0 connection method

- The rated current of a single Battery The nominal charging and discharging current is 60A.
- Battery system supports a maximum of Battery system up to 360A operating current, 18kW operating Power, with a maximum connection of 3 Inverter units and 6 Battery units.



LX A5.0-10: Battery in conjunction with busbar BCB-22-WW-0 connection method

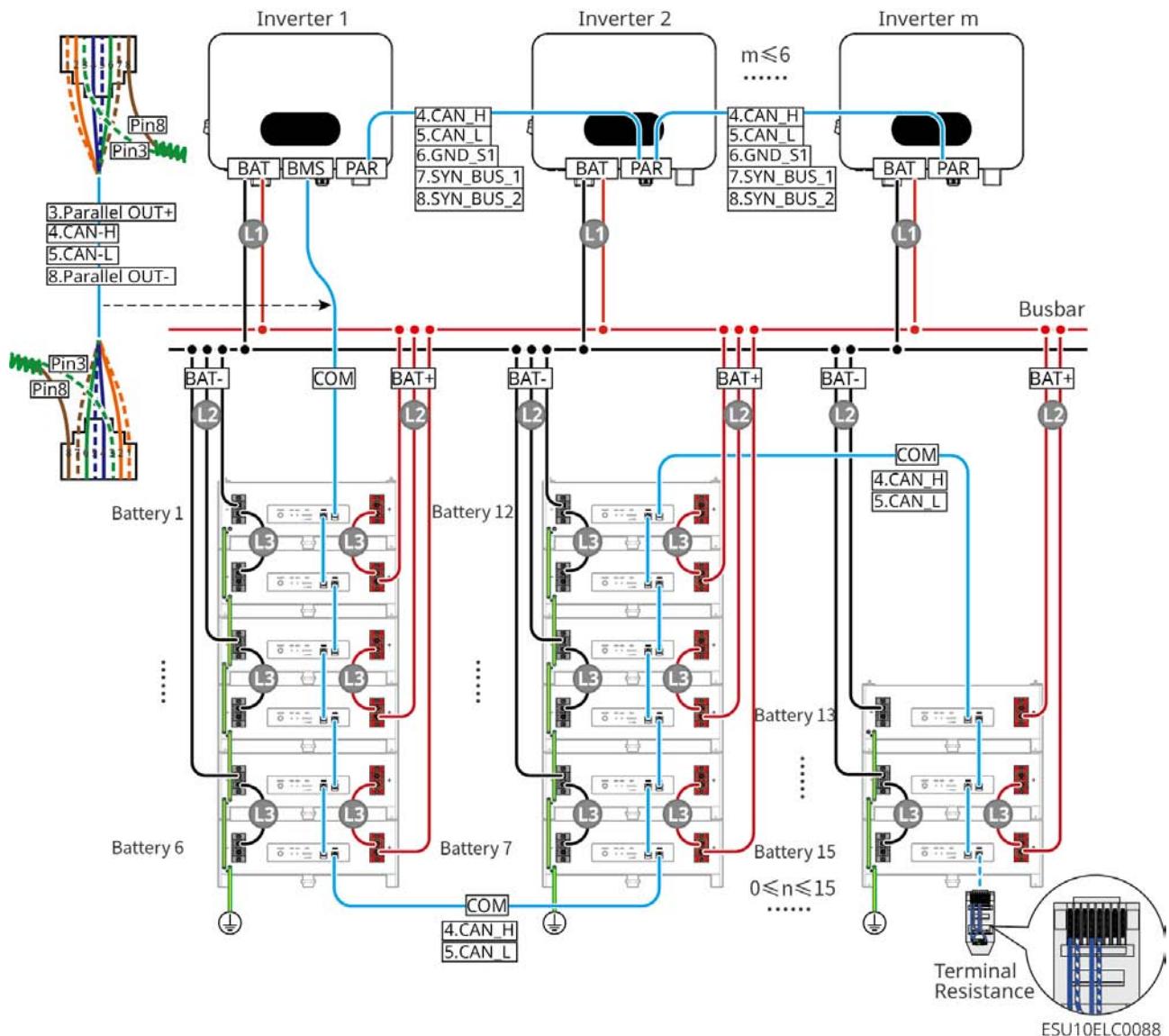
- The rated current of a single Battery The nominal charging and discharging current is 60A.
- Battery system supports a maximum working current of 720A, a working power of 36kW, and can connect up to 6 Inverter units and 12 Battery units.



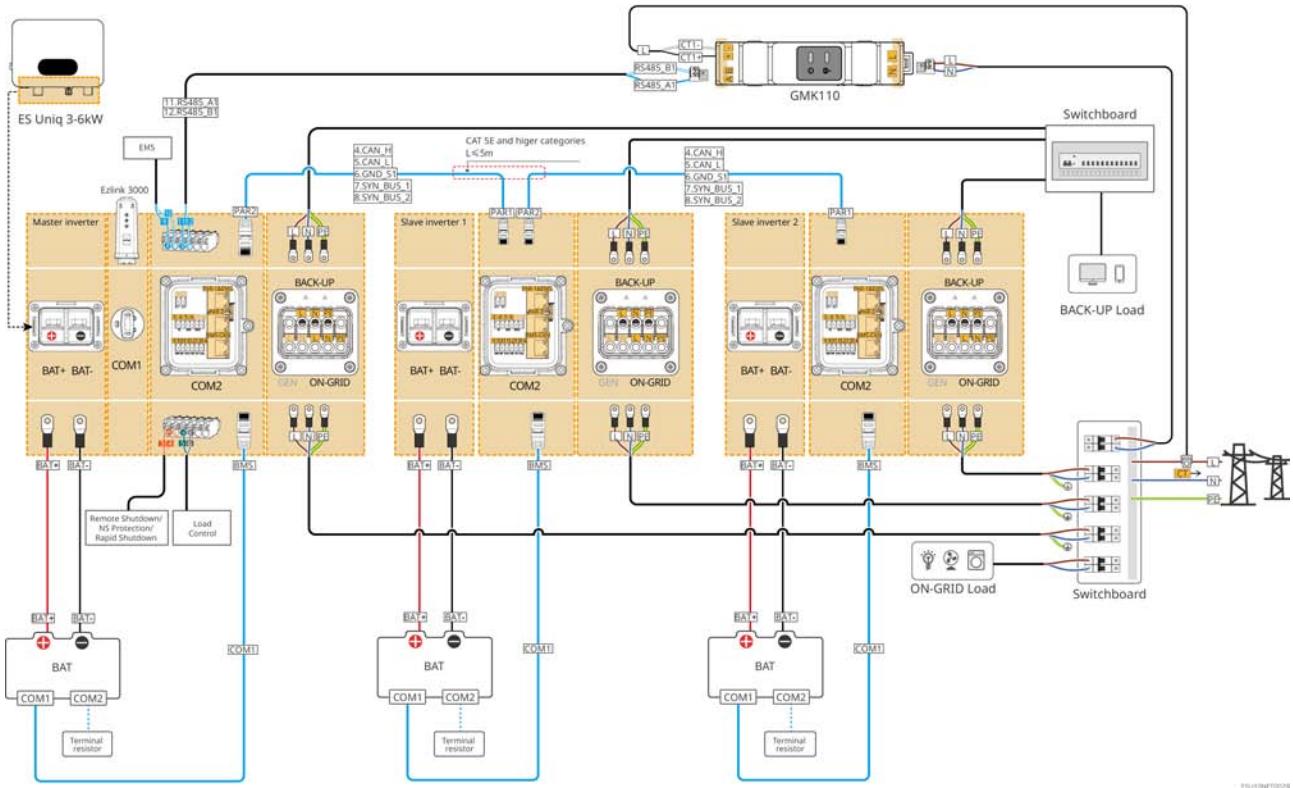
ESU10ELC0087

LX A5.0-10: Battery compatible with third-party busbar connection method

- The rated current of a single Battery The nominal charging and discharging current is 60A.
- Maximum support for 900A working Battery system, 45kW working current, and 15 units of Battery



LX U5.0-30: Daisy-chain connection method

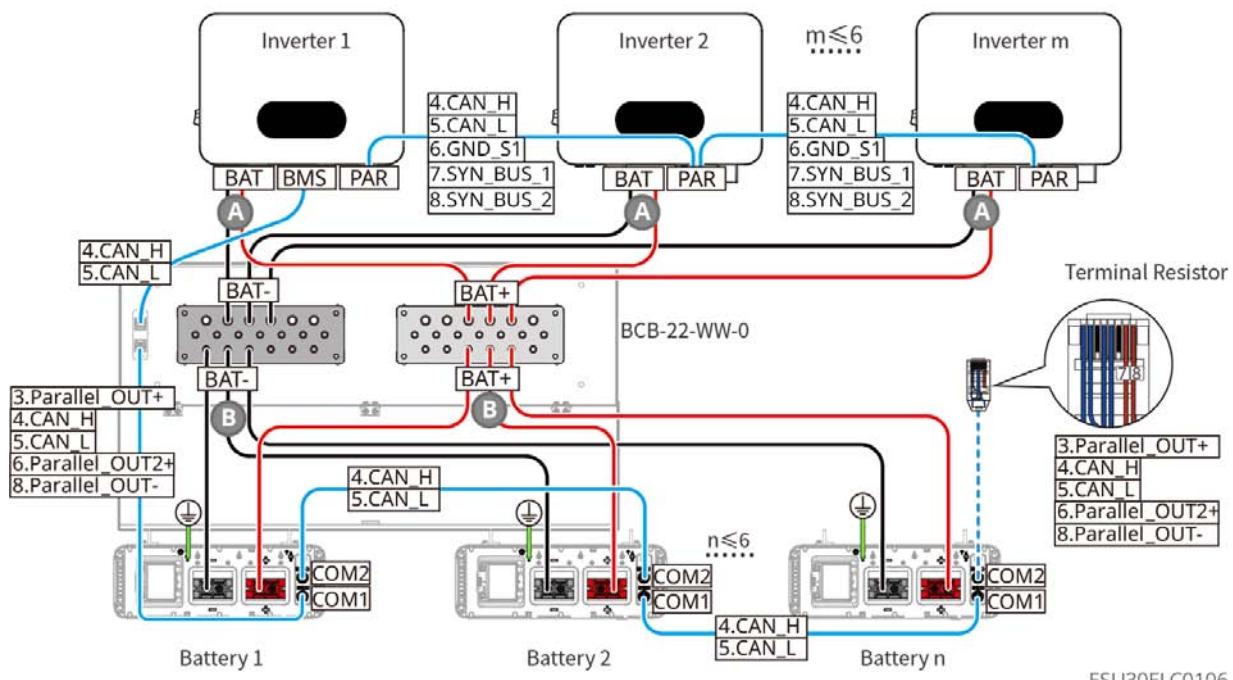


ESU10NET028

LX U5.0-30: When the number of Battery is ≤ 6 , Battery is paired with BCB-22-WW-0 connection method.

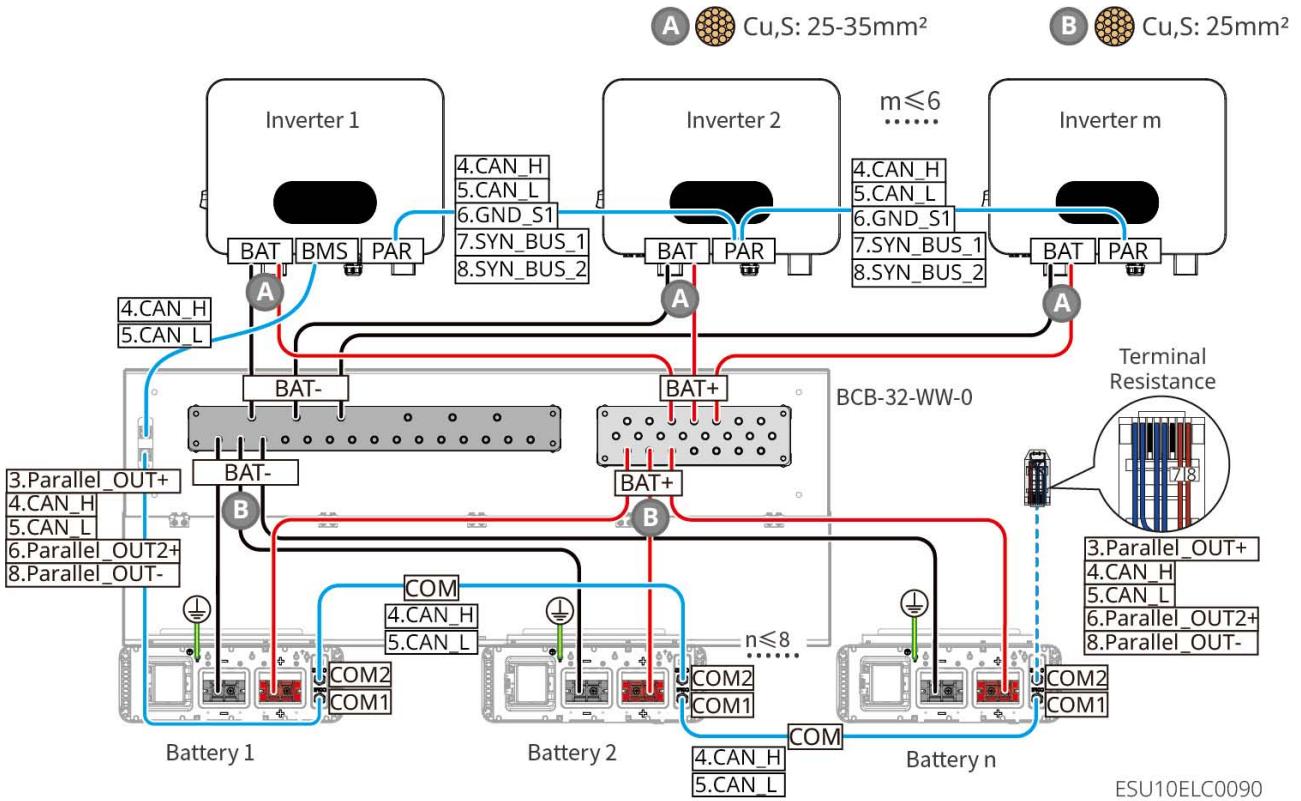
A Cu,S: 25-35mm²

B Cu,S=25mm²

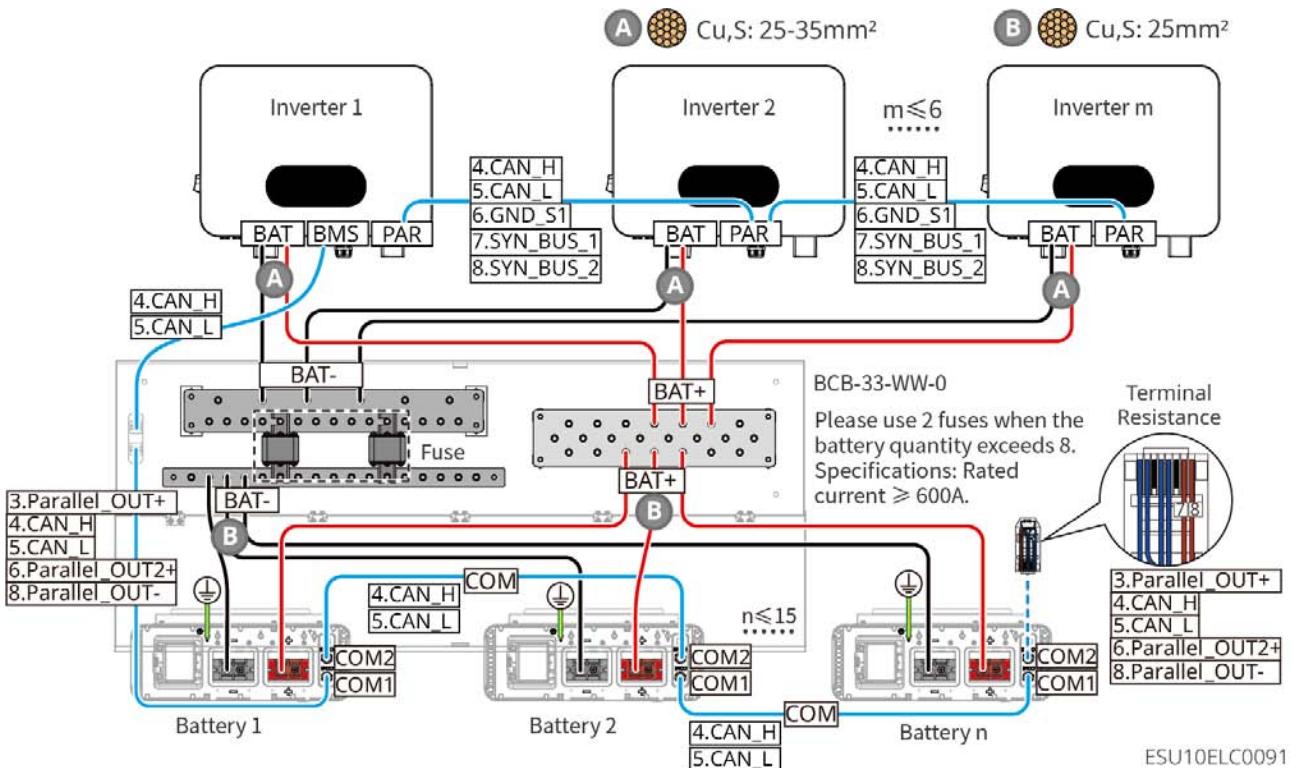


ESU30ELC0106

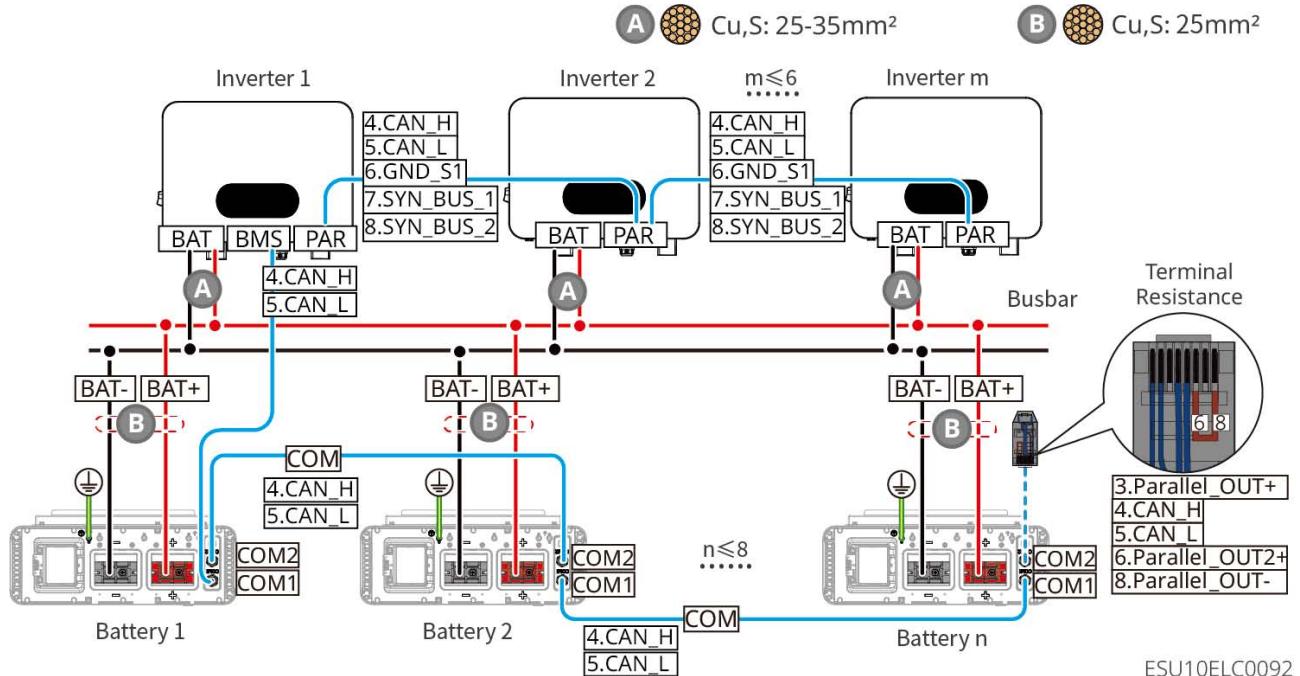
LX U5.0-30: When the number of Battery is ≤ 8 , Battery is paired with the BCB-32-WW-0 connection method.



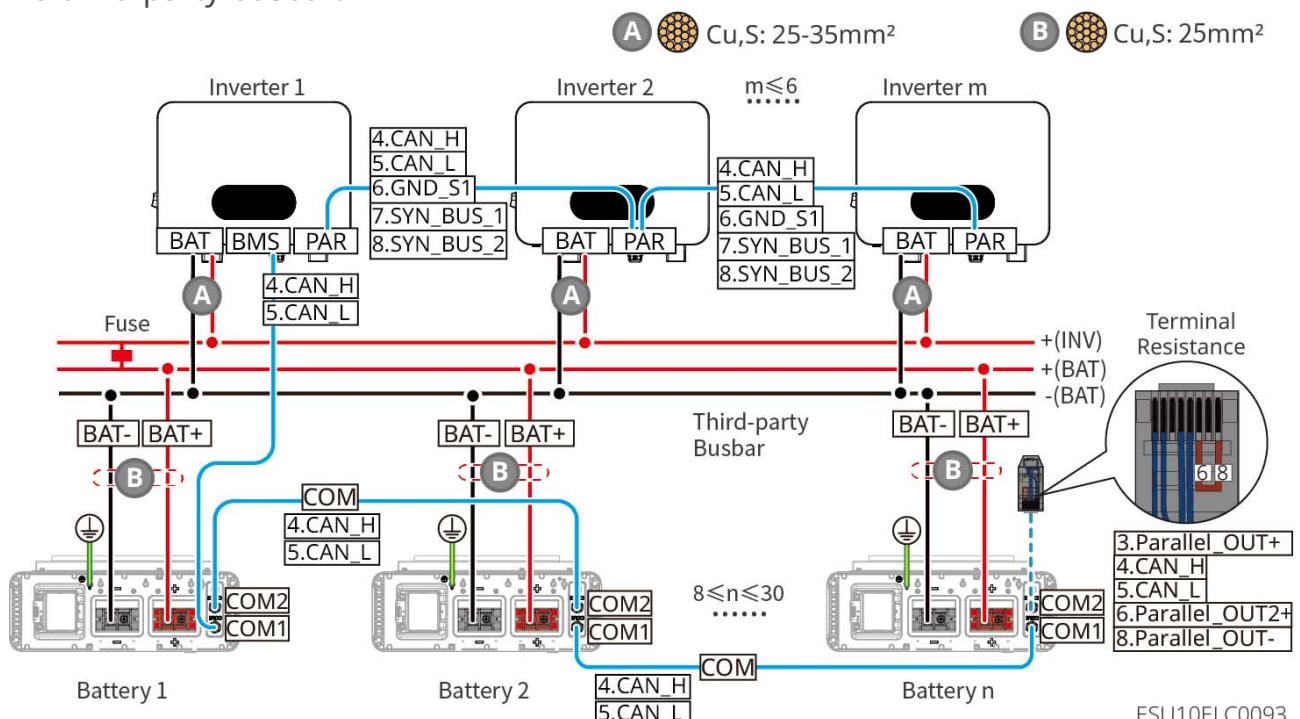
LX U5.0-30: When the number of Battery is ≤ 15 , the Battery is connected using the combiner box BCB-33-WW-0.



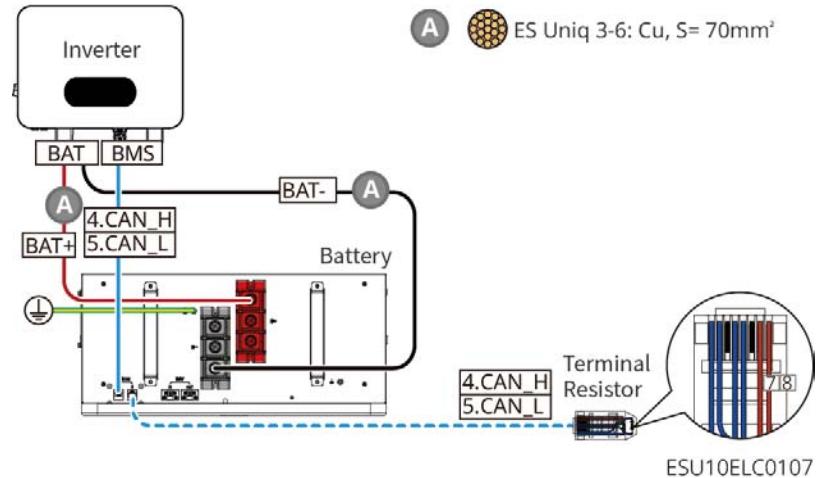
LX U5.0-30: When the number of Battery ≤ 8 , Battery is paired with a third-party combiner box connection method.



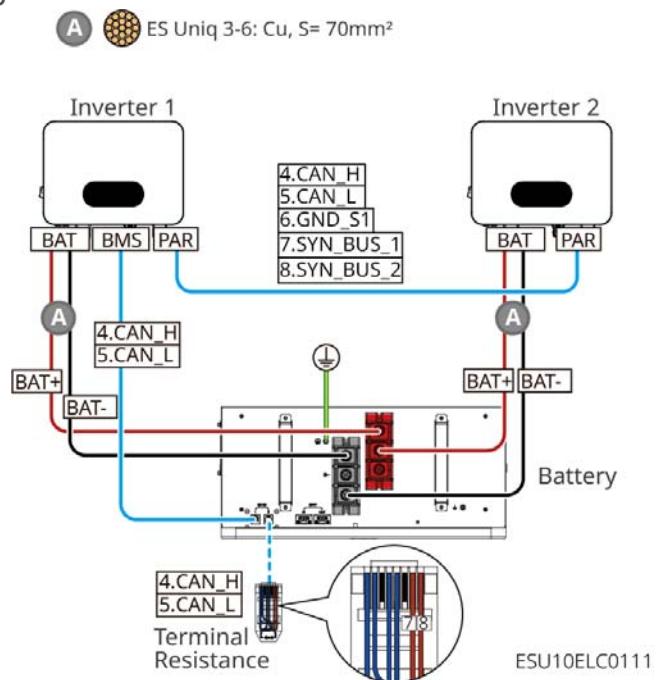
LX U5.0-30: When the number of Battery exceeds 8 units, Battery shall be connected via third-party busbar.



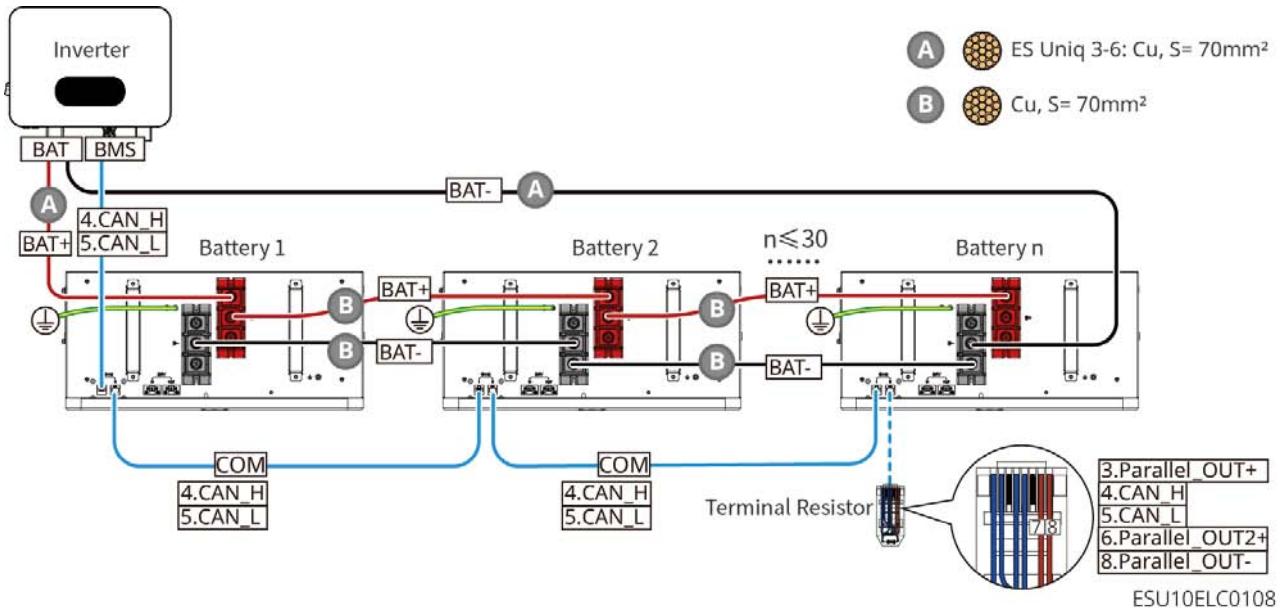
GW14.3-BAT-LV-G10: When Battery is directly connected to a single 1-channel output Inverter, the wiring diagram is as follows:



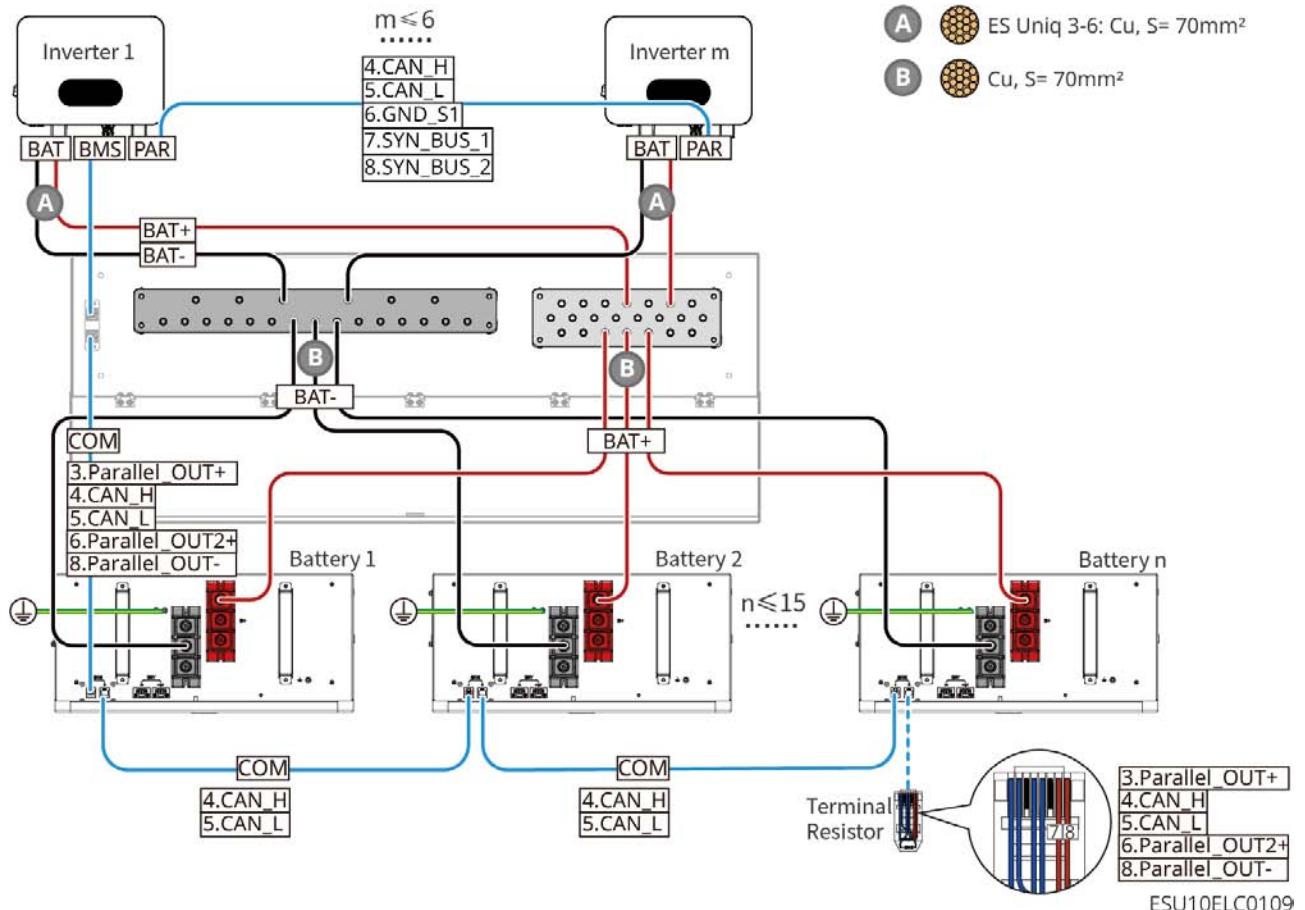
GW14.3-BAT-LV-G10: When Battery is directly connected to two single-output Inverter units, the wiring diagram is as follows:



GW14.3-BAT-LV-G10: When Battery is connected in a daisy-chain configuration with a single 1-channel output Inverter, the wiring diagram is as follows:

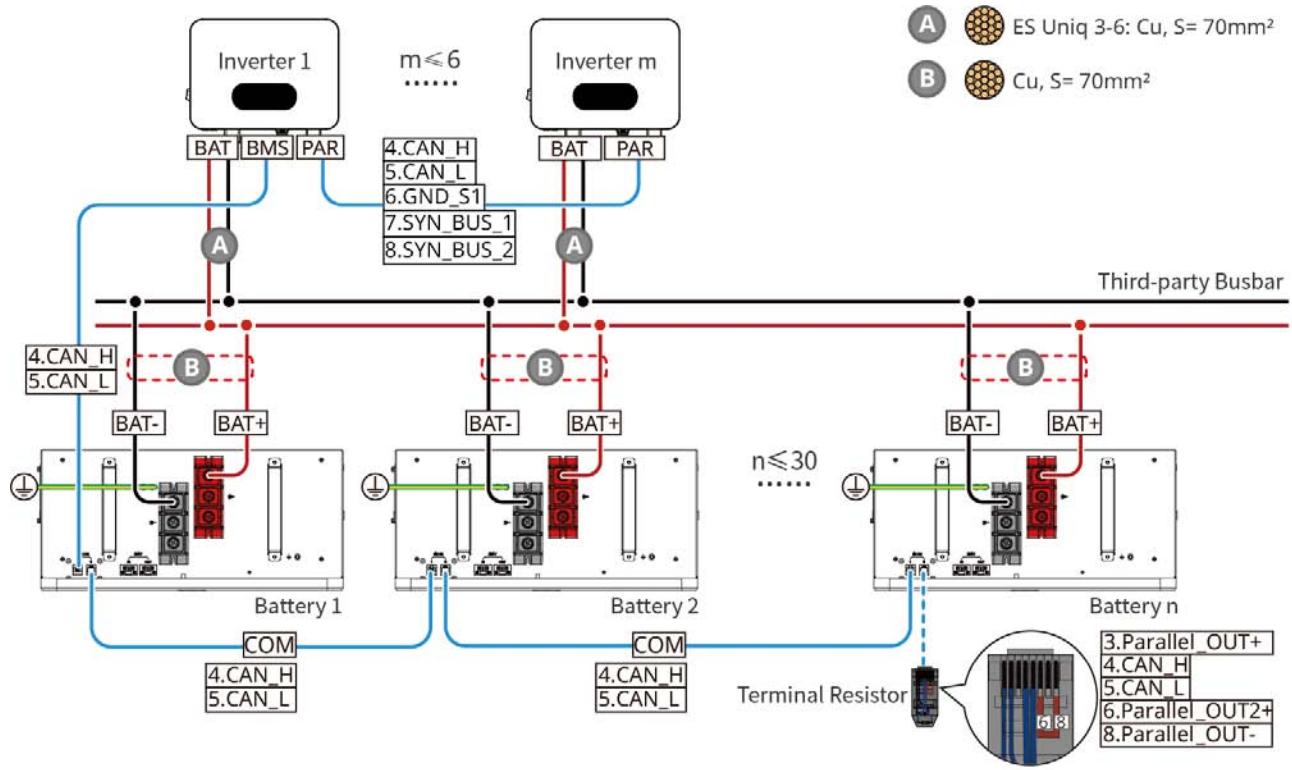


GW14.3-BAT-LV-G10: When the number of Battery is less than or equal to 15, and a busbar (BCB-32-WW-0, current ≤ 720A) is used to connect one output Inverter, the wiring diagram is as follows:



GW14.3-BAT-LV-G10: When the quantity of Battery is less than or equal to 30, and a third-party busbar is used to connect one output Inverter, the wiring diagram is as

follows:



LX A5.0-30Communication Port Definition

PIN	COM1	COM2	Description
1	-	-	Reserved
2	-	-	
3	Parallel OUT+	Parallel OUT+	Parallel operation Communication Port
4	CAN_1H	CAN_1H	Connect Inverter communication or
5	CAN_1L	CAN_1L	Battery and cluster Communication Port
6	Parallel OUT2+	Parallel OUT2+	Parallel Interlock
7	-	-	Reserved
8	Parallel OUT-	Parallel OUT-	Parallel operation Communication Port

LX A5.0-10Communication Port Definition

PIN	COM1	COM2	Description
1	-	-	Reserved
2	-	-	
3	Parallel OUT+	Parallel OUT+	Parallel operation Communication Port

PIN	COM1	COM2	Description
4	CAN_1H	CAN_1H	Connect Inverter communication or Battery cluster Communication Port
5	CAN_1L	CAN_1L	
6	-	-	Reserved
7	-	-	
8	Parallel OUT-	Parallel OUT-	Parallel operation Communication Port

LX U5.0-30Communication Port Definition

PIN	COM1	COM2	Description
1	RS485A	RS485A	
2	RS485B-	RS485B-	Reserved
3	Parallel OUT+	Parallel OUT+	Parallel operation Communication Port
4	CAN_H	CAN_H	Connect Inverter communication or
5	CAN_L	CAN_L	Battery and cluster Communication Port
6	Parallel OUT2+	Parallel OUT2+	Parallel operation Communication Port
7	-	-	Reserved
8	Parallel OUT-	Parallel OUT-	Parallel operation Communication Port

GW14.3-BAT-LV-G10 Communication port Definition

PIN	COM1	COM2	Description
1	RS485A	RS485A	
2	RS485B-	RS485B-	Reserved
3	Parallel OUT+	Parallel OUT+	Parallel operation Communication Port
4	CAN_H	CAN_H	Connect Inverter communication or
5	CAN_L	CAN_L	Battery cluster Communication Port
6	Parallel OUT2+	Parallel OUT2+	Parallel operation Communication Port
7	-	-	Reserved
8	Parallel OUT-	Parallel OUT-	Parallel operation Communication Port

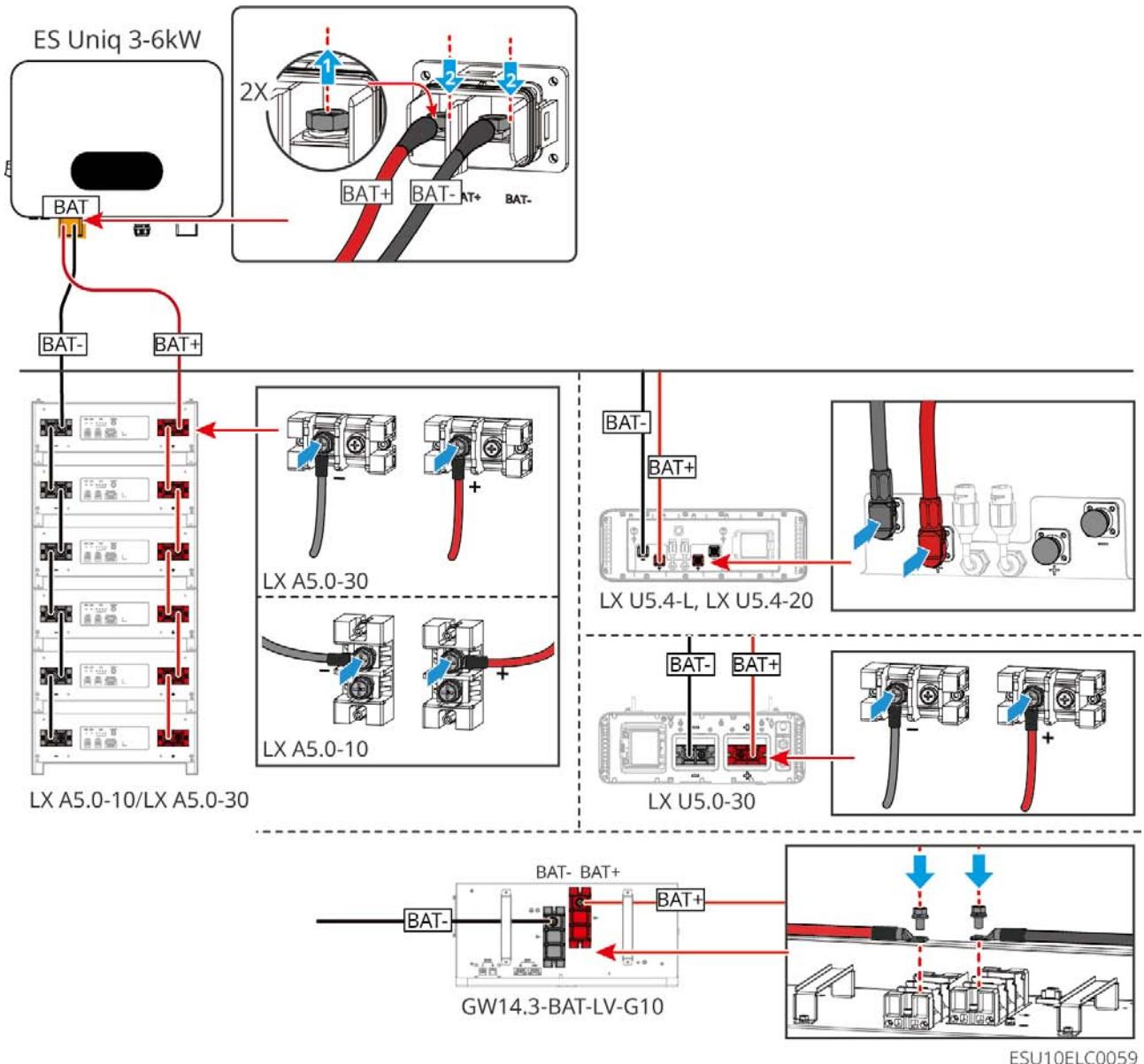
5.6.1 Connecting the Power Cable between the Inverter and Battery



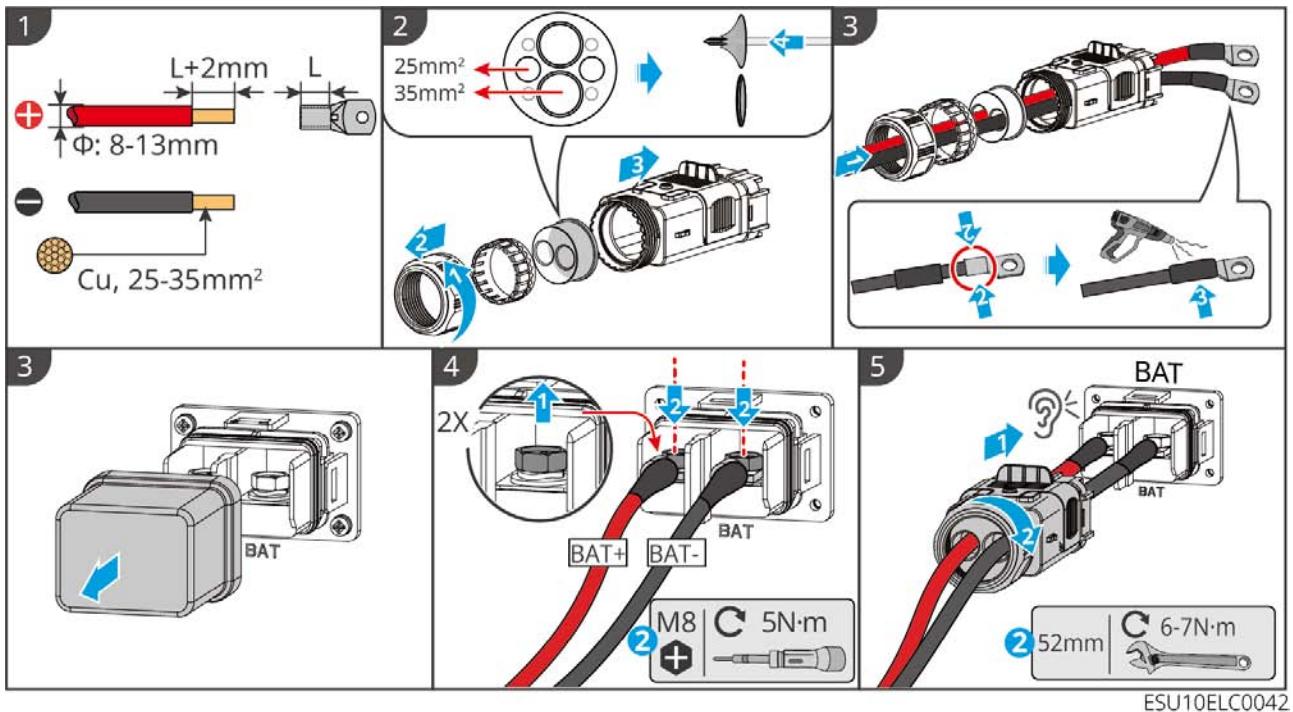
WARNING

- Use a multimeter to measure the positive and negative poles of the DC cable, ensuring correct polarity without reverse connection; and confirm the voltage is within the allowable range.
- During wiring, ensure that the Battery wire fully matches the "BAT+", "BAT-", and grounding port of the Battery terminal. Incorrect cable connections may result in equipment damage.
- Please ensure the conductor is fully inserted into the terminal terminal hole without any exposure.
- Please ensure the cable connections are securely fastened, otherwise overheating of the terminal terminals may occur during equipment operation, leading to device damage.
- Do not connect the same Battery group to multiple Inverters, as this may cause damage to the Inverter.

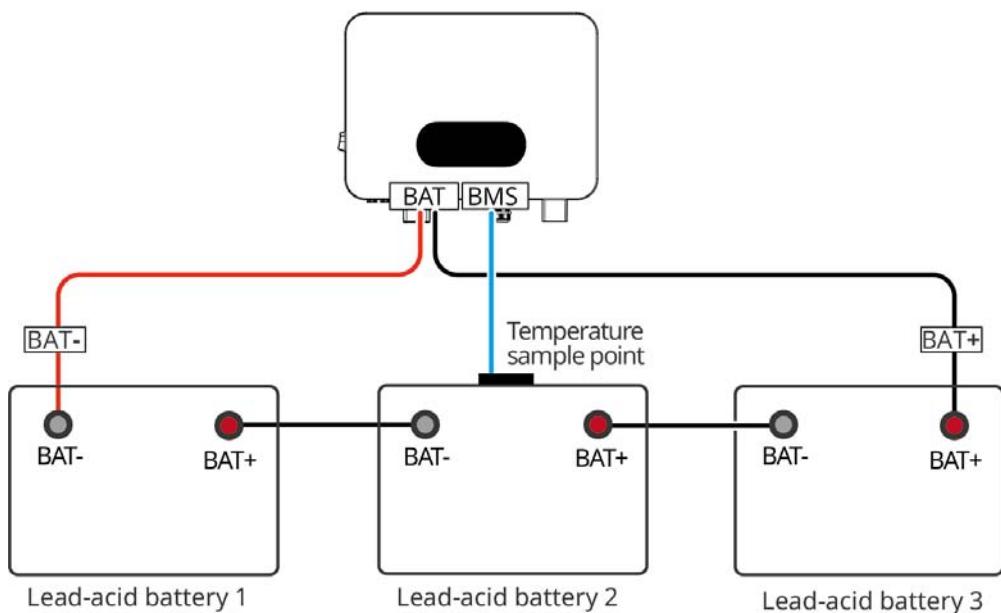
Overview of Inverter and Battery power cable



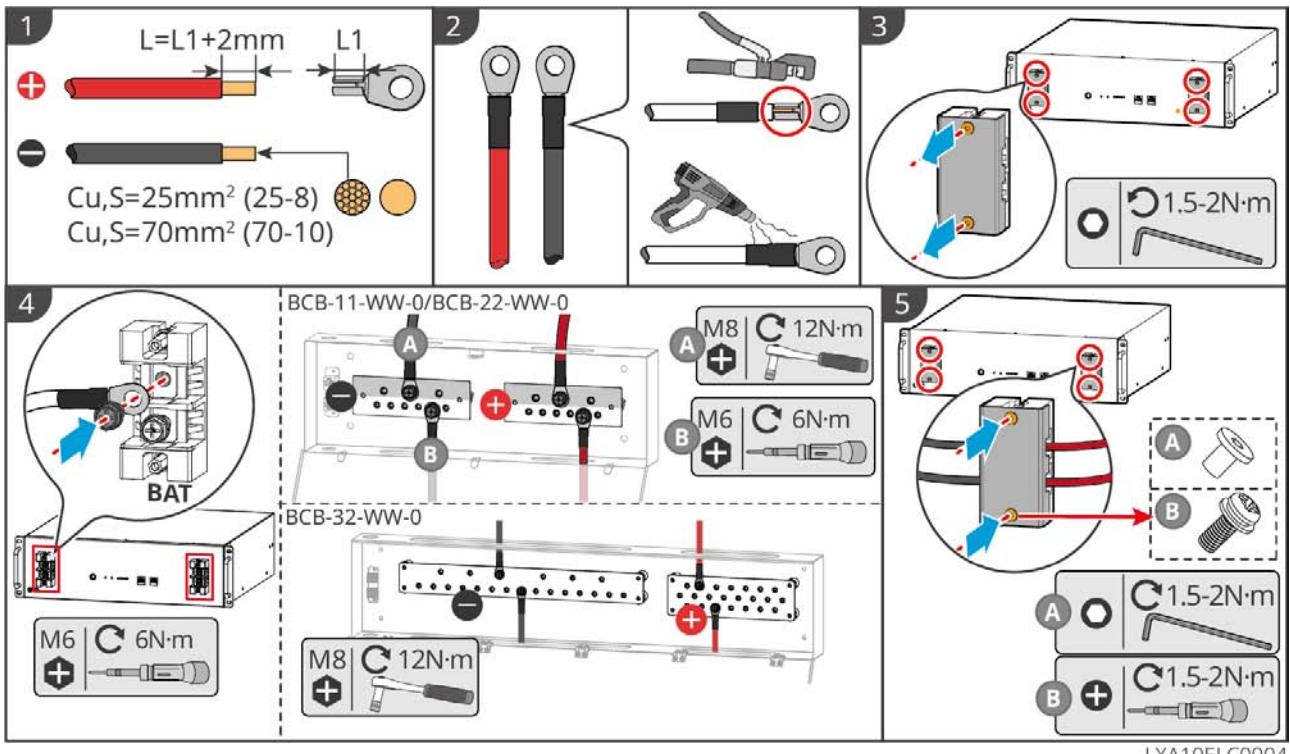
Inverter terminal cable fabrication



InverterBattery Cover Removal Method (Optional)
Inverter

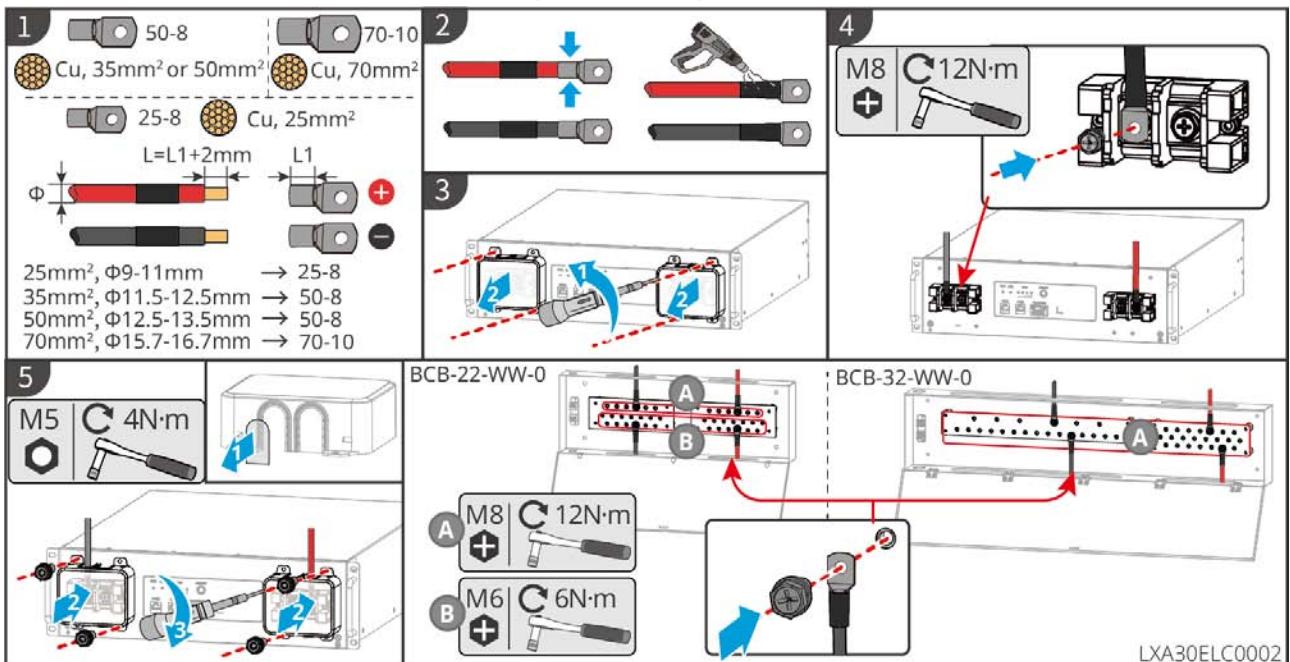


Cable termination method for Battery end (LX A5.0-10)



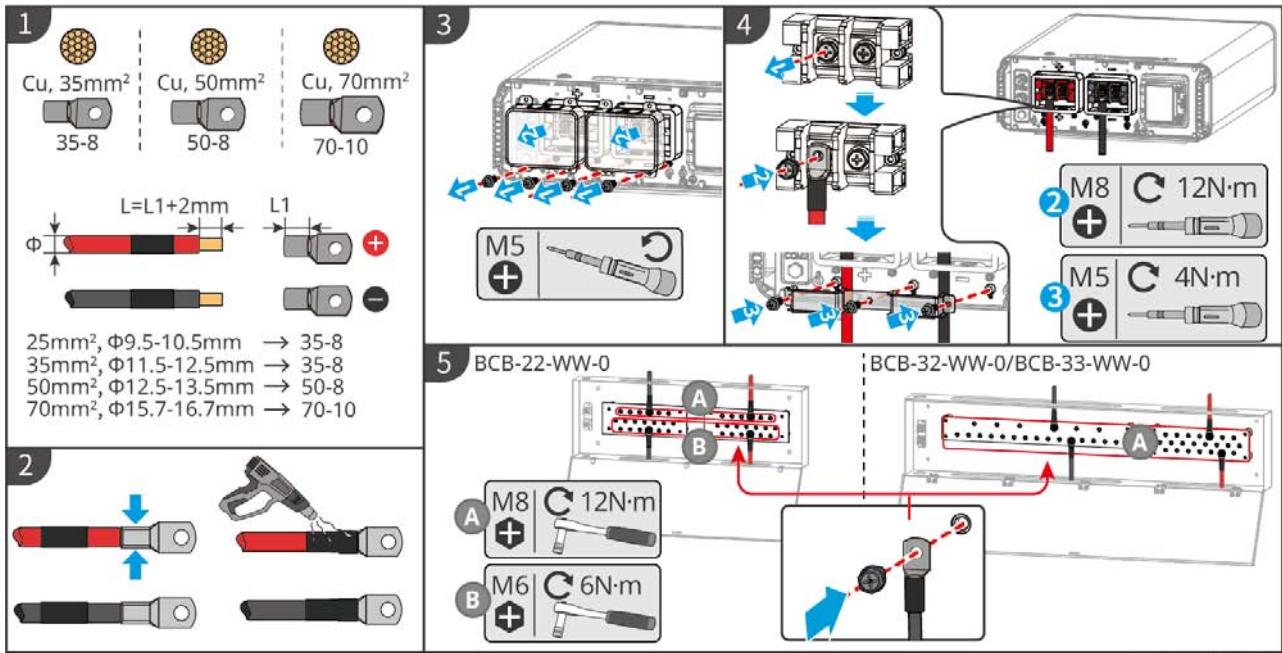
LXA10ELC0004

Terminal cable fabrication method (LX A5.0-30)



LXA30ELC0002

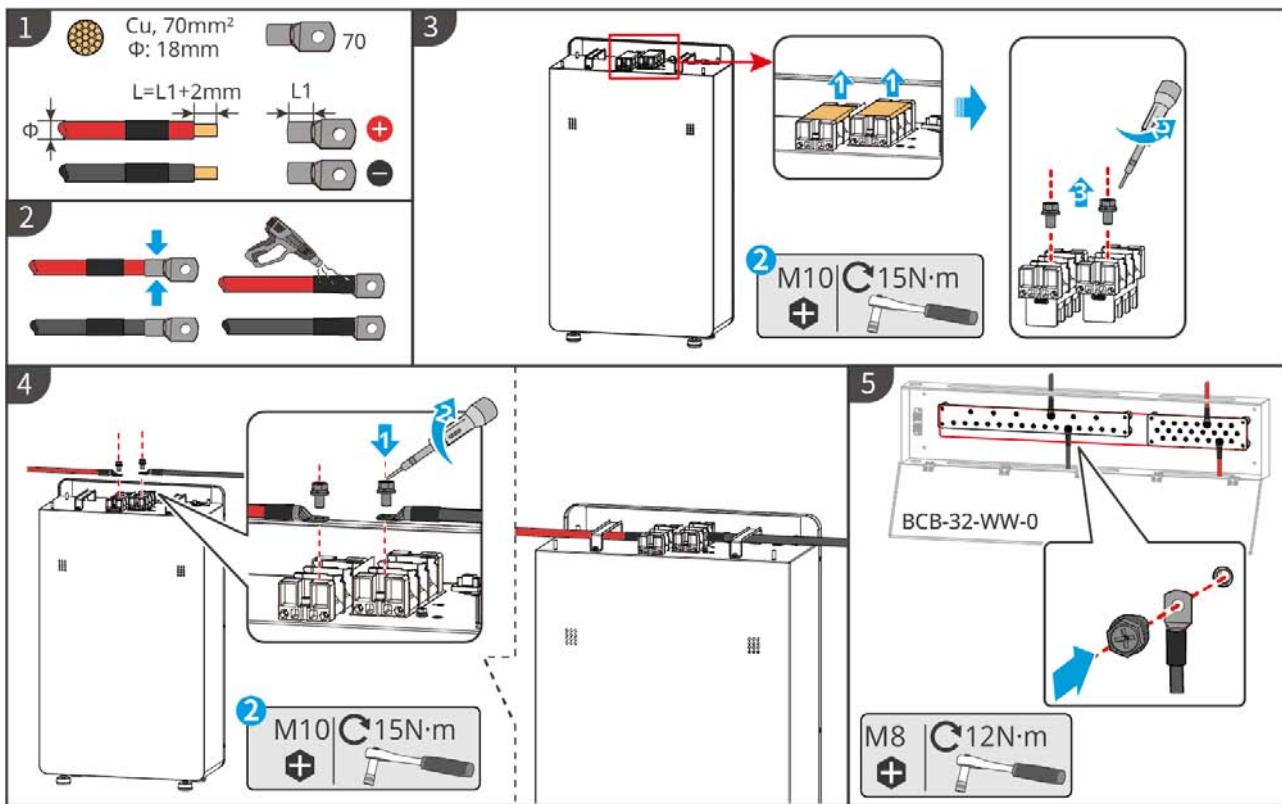
Cable termination method for Battery end (LX U5.0-30)



LXU30ELC0004

Cable termination method for Battery (GW14.3-BAT-LV-G10)

- GW14.3-BAT-LV-G10: If the power cable cable is shipped with the Battery accessory, please use the shipped cable and no crimp is required.



LXA10ELC0015

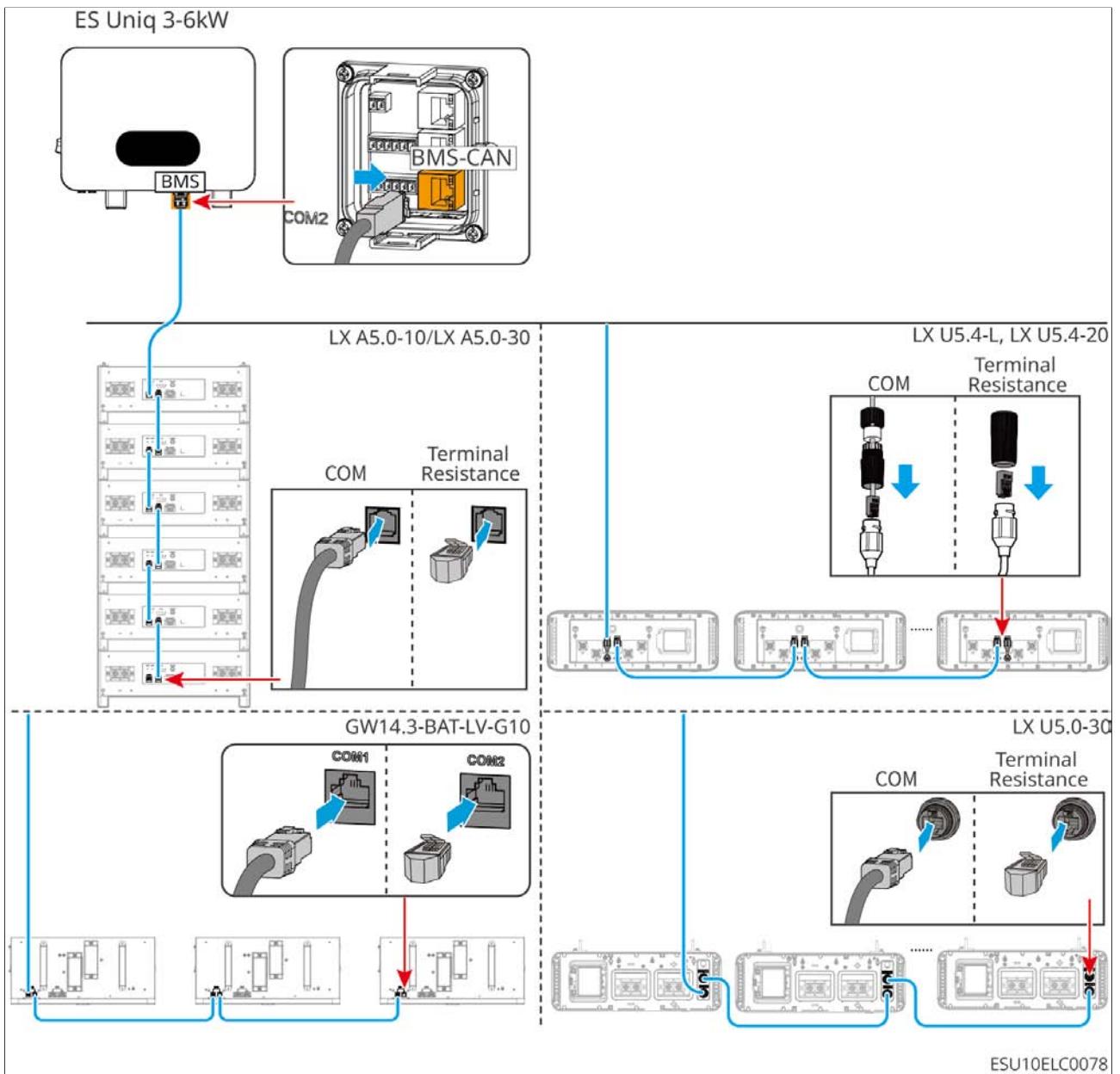
5.6.2 Connecting the Communication Cable between the Inverter and Battery

NOTICE

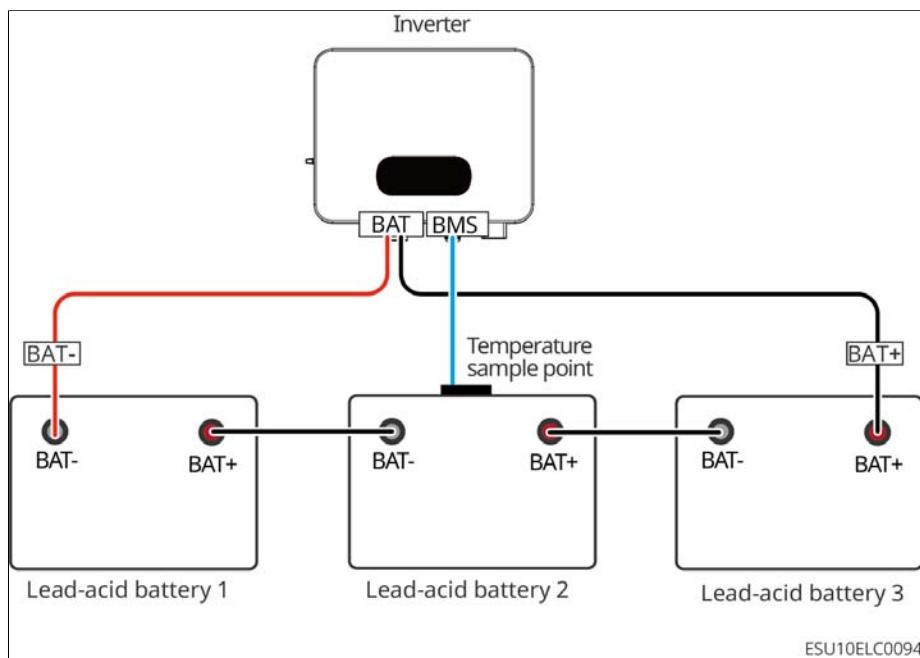
The BMS is included in the package with the box. It is recommended to use the BMS provided with the box. If the included BMS does not meet the requirements, please prepare your own BMS and shielded RJ45 cables. When crimping the wires, only connect PIN4 and PIN5 of the BMS; otherwise, communication may fail.

Connection Instructions for BMS Communication Between Inverter and Battery:

Inverter port	Connected to Battery port	port definition	Description
BMS(CAN)	COM1	4: CAN_H 5: CAN_L	<ul style="list-style-type: none">• Inverter and Battery communicate via CAN bus.• InverterBMSport is connected to BatteryCOM1port



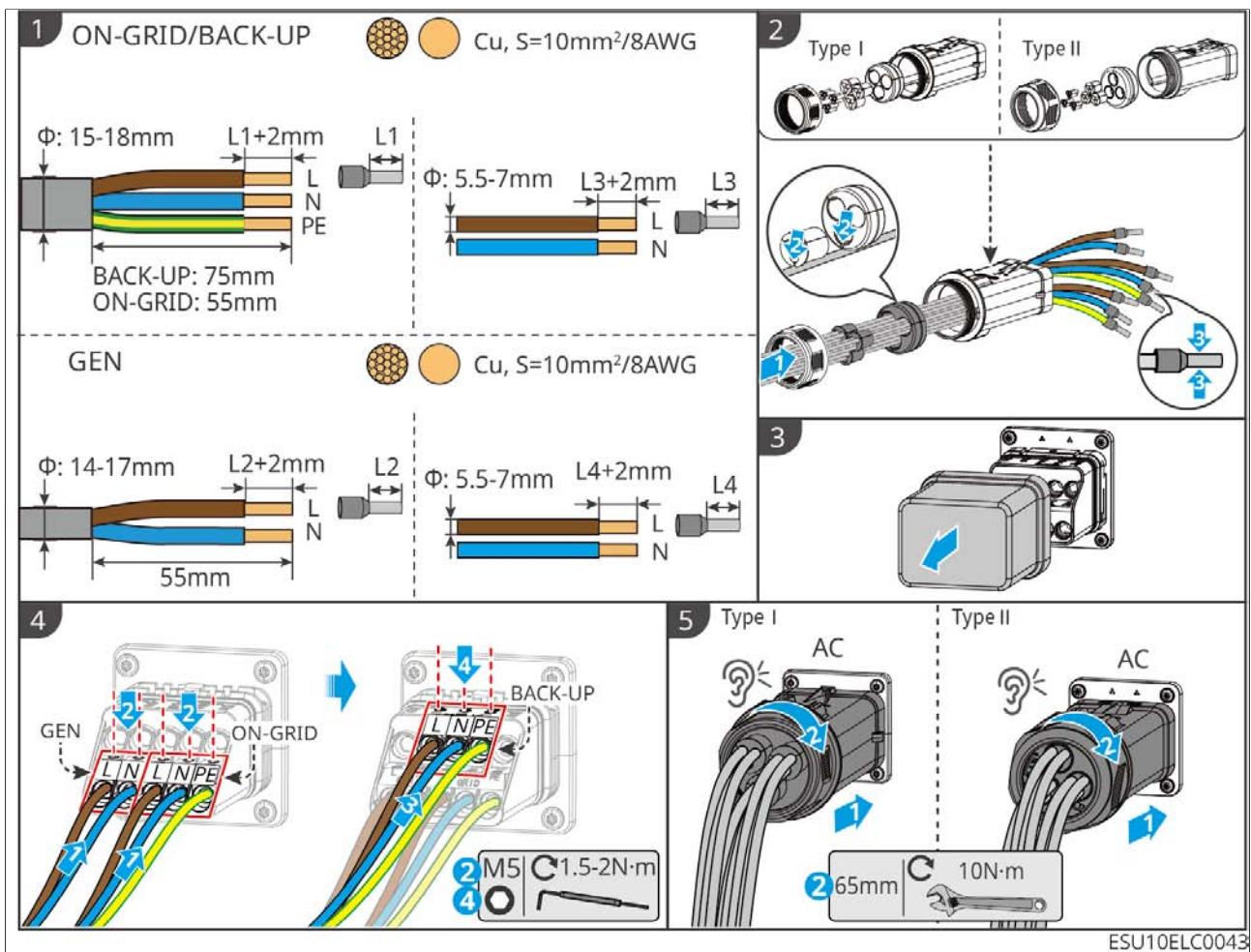
- When connecting the lead-acid Battery temperature sensor cable, it is recommended to attach the sensor cable to a location with poor heat dissipation. For example: when lead-acid Battery are placed side by side, fix the sensor on the middle lead-acid Battery.
- To better Protection the battery cell, it is necessary to Installation the temperature sampling line, and it is recommended to place the Battery in an environment with good heat dissipation.



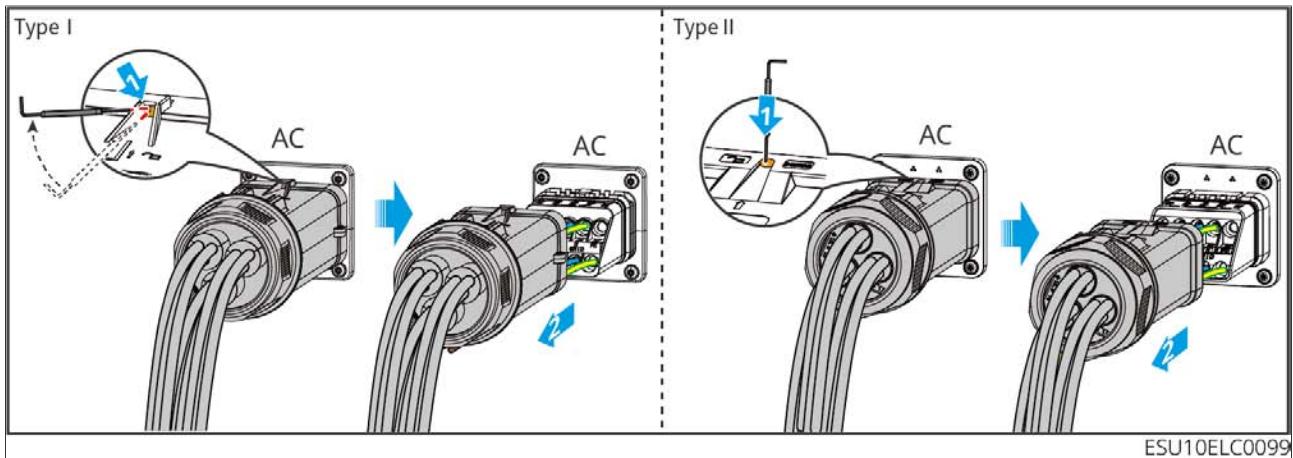
5.7 Connecting the AC Cable

 **WARNING**

- The Inverter integrates an internal residual current monitoring unit (RCMU) to prevent residual current from exceeding the specified limit. When a leakage current greater than the permissible value is detected, the Inverter will promptly disconnect from the Utility grid.
- During wiring, ensure the AC cables are correctly matched with the "BACKUP", "ON-GRID", "GEN", and grounding terminals of the AC terminal. Incorrect cable connections may result in equipment damage.
- Ensure the conductor is fully inserted into the terminal terminal hole with no exposed part.
- Please ensure that the insulating plate at the AC terminal is securely fastened and free from looseness.
- Ensure the cable connections are securely fastened; otherwise, overheating at the terminal terminals may occur during equipment operation, leading to device damage.



Inverter AC Cover Removal Method (Optional)



5.8 Connecting the Meter Cable

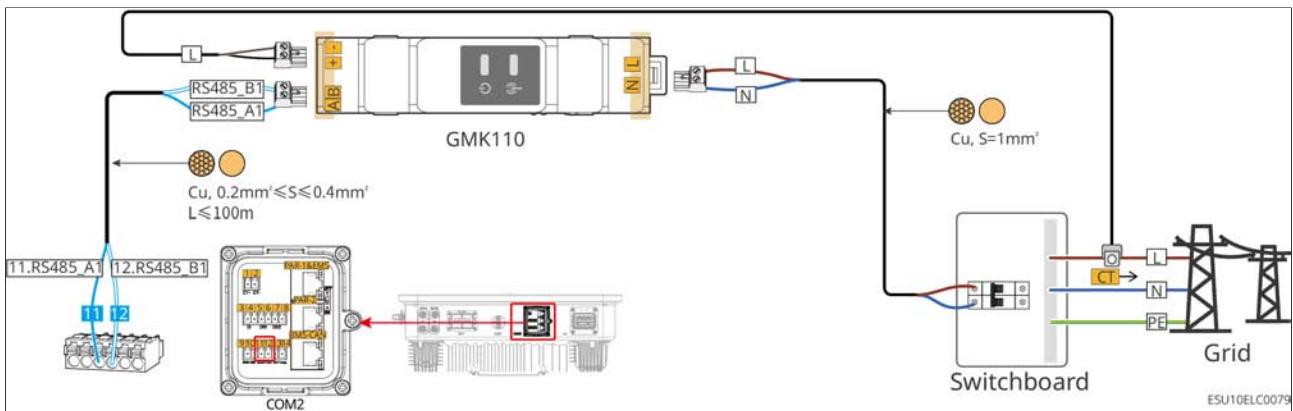
NOTICE

- If multiple Inverter units are required, please consult the manufacturer to purchase additional meters separately.
- Please ensure the correct connection direction of the CT and the correct phase, otherwise it may lead to inaccurate monitoring data.
- Ensure all cable connections are correct, secure, and free from looseness. Improper wiring may cause poor contact or damage to the meter.
- In areas with lightning DANGER, if the meter cable length exceeds 10m and the cable is not installed with grounded Steel conduit wiring, it is recommended to install external lightning protection devices.

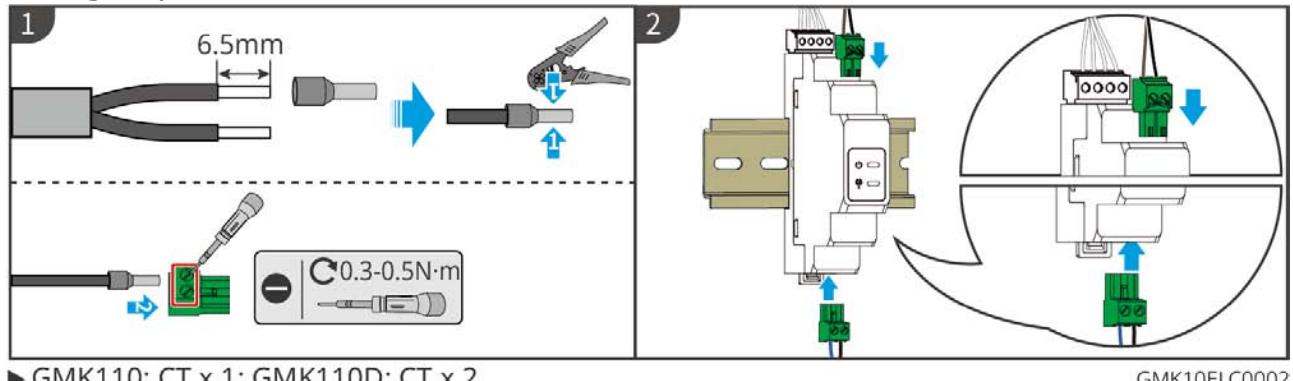
GMK110 meter wiring

NOTICE

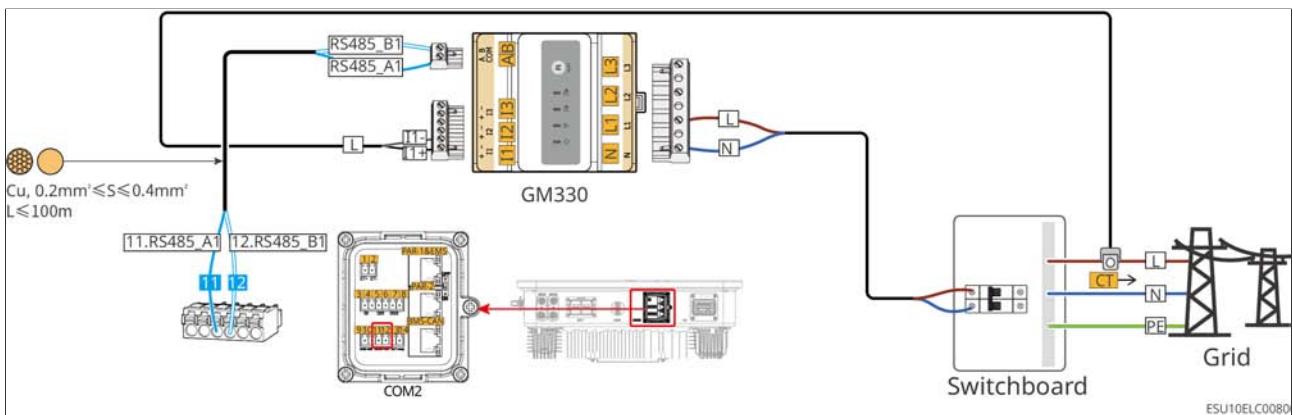
- The outer diameter of the AC power line must be smaller than the CT aperture to ensure the AC power line can pass through the CT.
- To ensure the current monitoring accuracy of the CT, the recommended length of the CT cable should not exceed 30m.
- Do not use network cables as CT cables, otherwise the meter may be damaged due to excessive current.
- The CTs provided by equipment manufacturers may vary slightly in size and appearance depending on the model, but the Installation wiring method remains consistent.



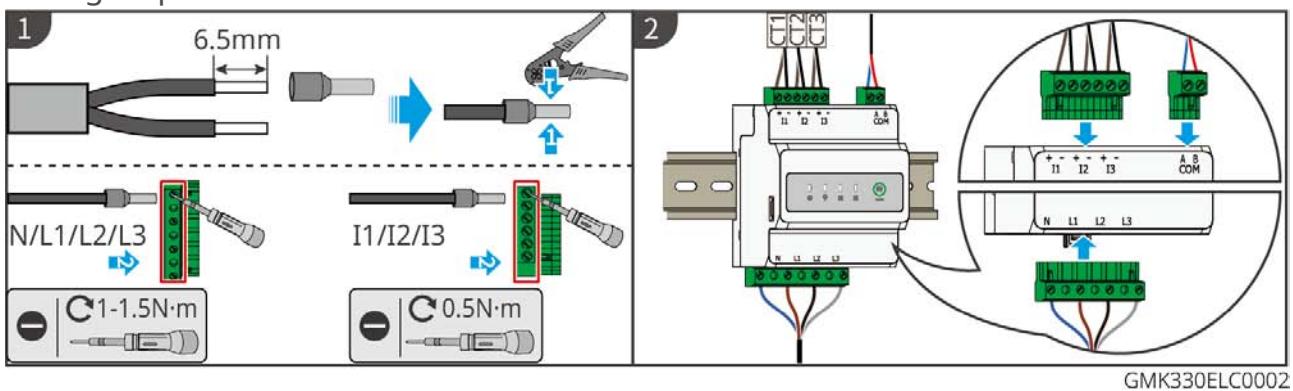
Wiring steps



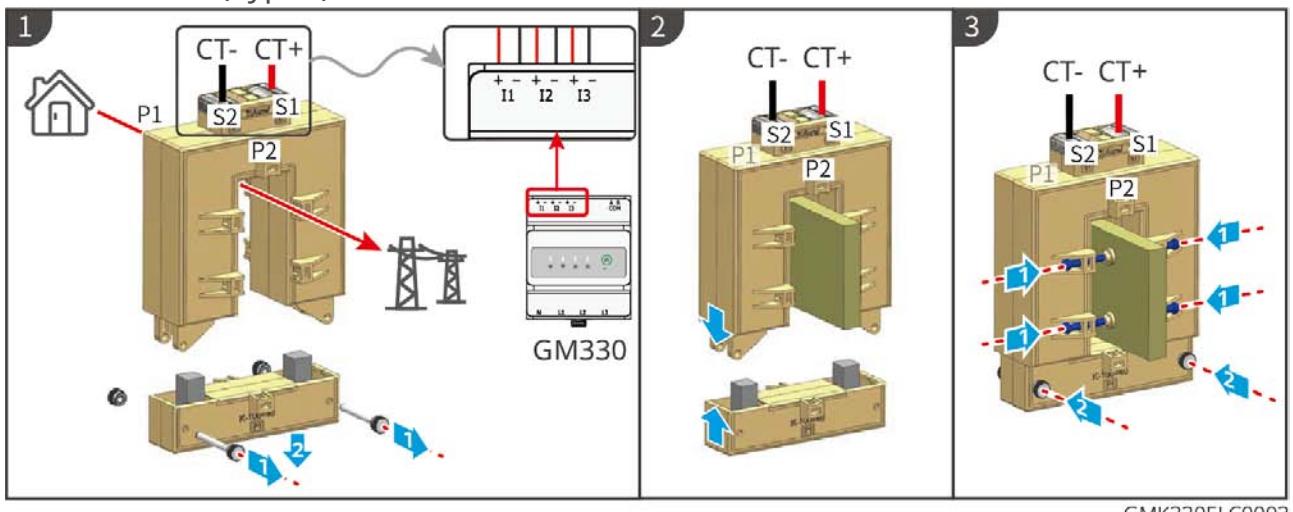
GM330 meter wiring



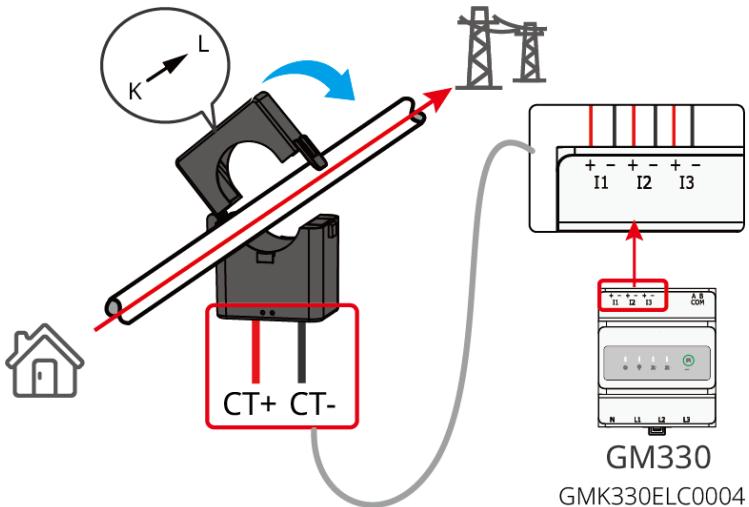
Wiring steps



Installation CT (Type I)



Installation CT (Type II)

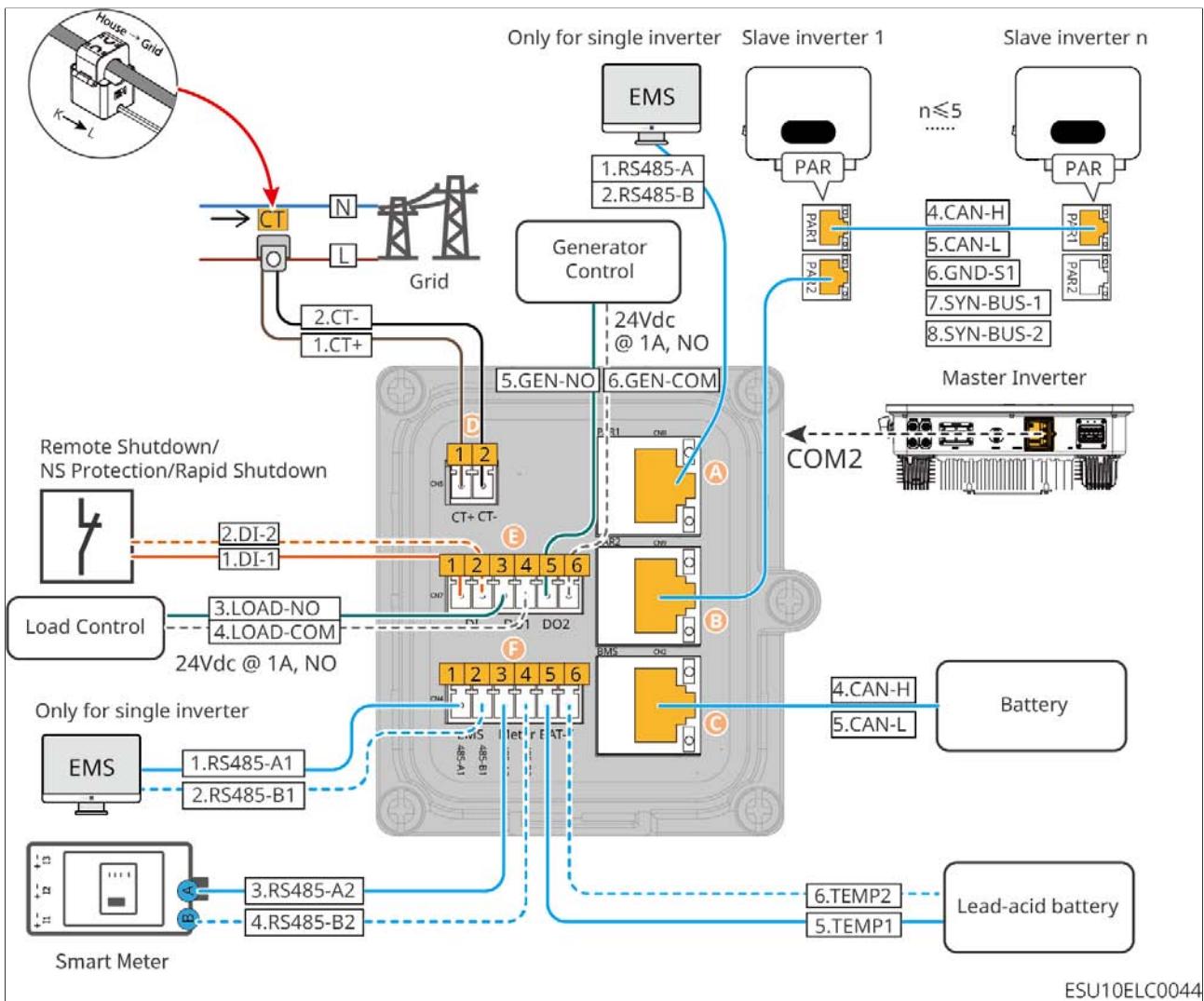


5.9 Connecting the Inverter Communication Cable

NOTICE

- Inverter Communication function is optional, please select according to actual usage scenarios.
- Inverter supports connecting to mobile phones or WEB interfaces via Bluetooth, WiFi, LAN, and 4G communication methods to set device-related parameters, view device operation information and error messages, and promptly understand system status.
- In a single-unit system, InstallationWiFi/LAN Kit-20, 4G Kit-CN-G20, 4G Kit-CN-G21smart dongle are included. When the system consists of multiple Inverter units operating in parallel for networking, the Master inverter requires the InstallationEzlink3000 module for networking.
- To use the remote shutdown function, please enable it in the SolarGo App after completing the wiring.
- Do not enable this function in the SolarGo App if the remote shutdown device is not connected, otherwise the Inverter will fail to on-grid operate.
- In a parallel system, to enable the remote shutdown function, connect Communication cable to Master inverter; otherwise, the function will not take effect.

Communication Function Description
Type I



port(Silkscreen)	function	Description
A	PAR1	<p>Parallel Connection Communication Port1 Energy Management System (EMS) (PAR-1&EMS)</p> <ul style="list-style-type: none"> • CAN and BUS: Parallel operation Communication Port, CAN communication is used to connect other Inverter in parallel operation networking; BUS is used to control the grid-connected and off-grid status of each Inverter in parallel operation. • RS485: When used to connect third-party EMS devices that support RS485 communication. parallel system does not support connecting third-party EMS devices.

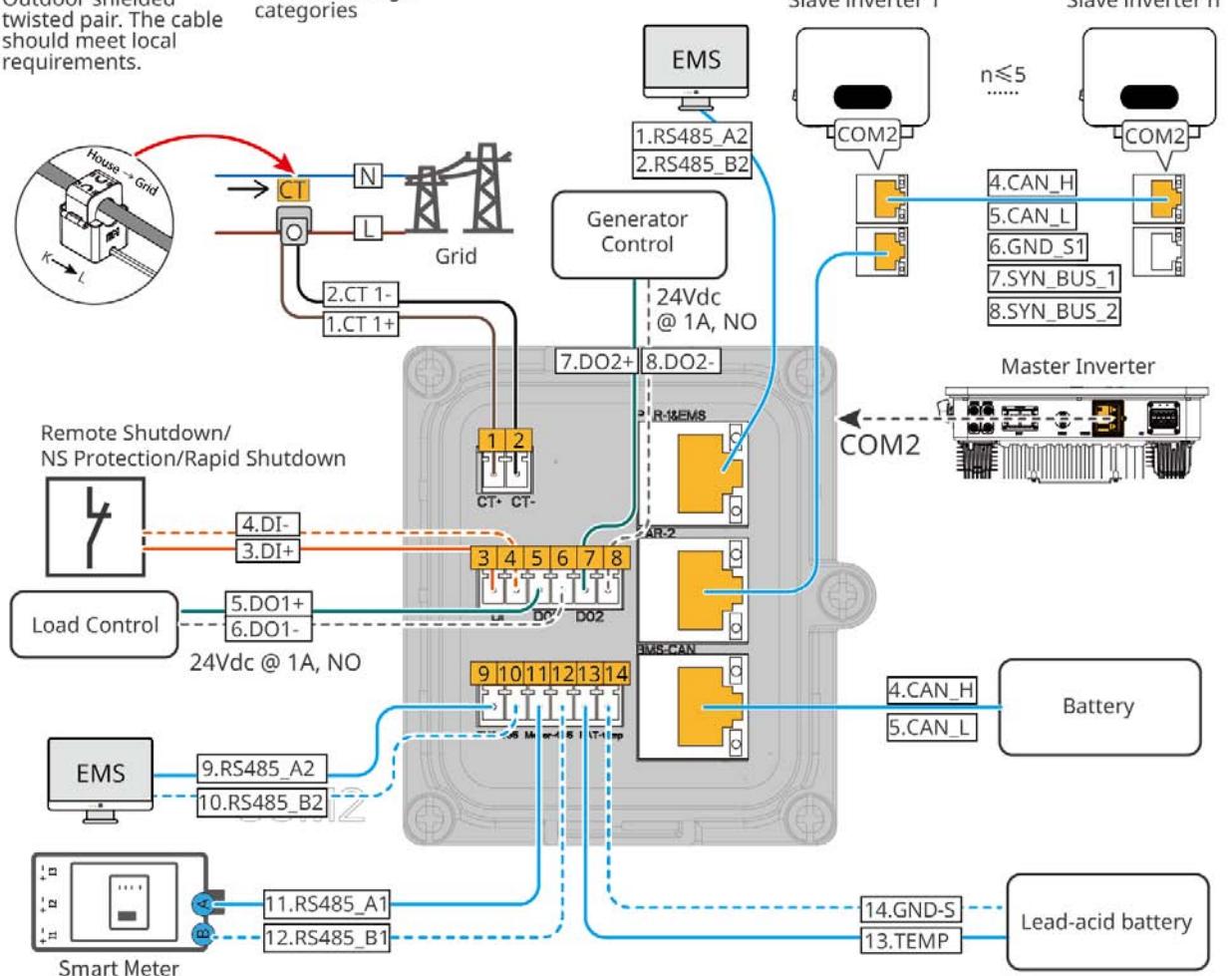
port(Silkscreen)		function	Description
B	PAR2	Parallel Connection Communication Port 2 (PAR-2)	When used for parallel communication, it supports the use of CAN communication to connect other Inverter; it uses BUS bus control to manage the grid-tied and off-grid status of each Inverter in parallel operation.
C	BMS	BMS Communication	When connecting a lithium-ion Battery, it is used to connect the Battery system BMS Communication cable, supporting communication via CAN signals.
D	CT	CT connection	Connect the CT cable.
E	DI	remote shutdown/Rapid Shutdown/NS Protection	<ul style="list-style-type: none"> Provide signal control port, control equipment remote shutdown, or achieve NS Protection Rapid Shutdown: <ul style="list-style-type: none"> In a Rapid Shutdown system, the Rapid Shutdown transmitter works in conjunction with the receiver to achieve system Rapid Shutdown. The receiver maintains module output by receiving signals from the transmitter. The transmitter can be externally mounted or integrated into the Inverter. In emergency situations, the transmitter can be deactivated by enabling an external trigger device, thereby shutting down the module. remote shutdown function: <ul style="list-style-type: none"> In case of an accident, the equipment can be controlled to stop working. The remote shutdown equipment must be a normally closed switch.

port(Silkscreen)	function	Description
	LOAD	load control
	GEN	Generator start-stop control Manufacturing port
F	EMS485	Energy Management System (EMS)
	Meter	Electric meter communication
	BAT-T	Lead-acid temperature measurement port

Type II

Outdoor shielded twisted pair. The cable should meet local requirements.

CAT 5E and higher categories



ESU10ELC0113

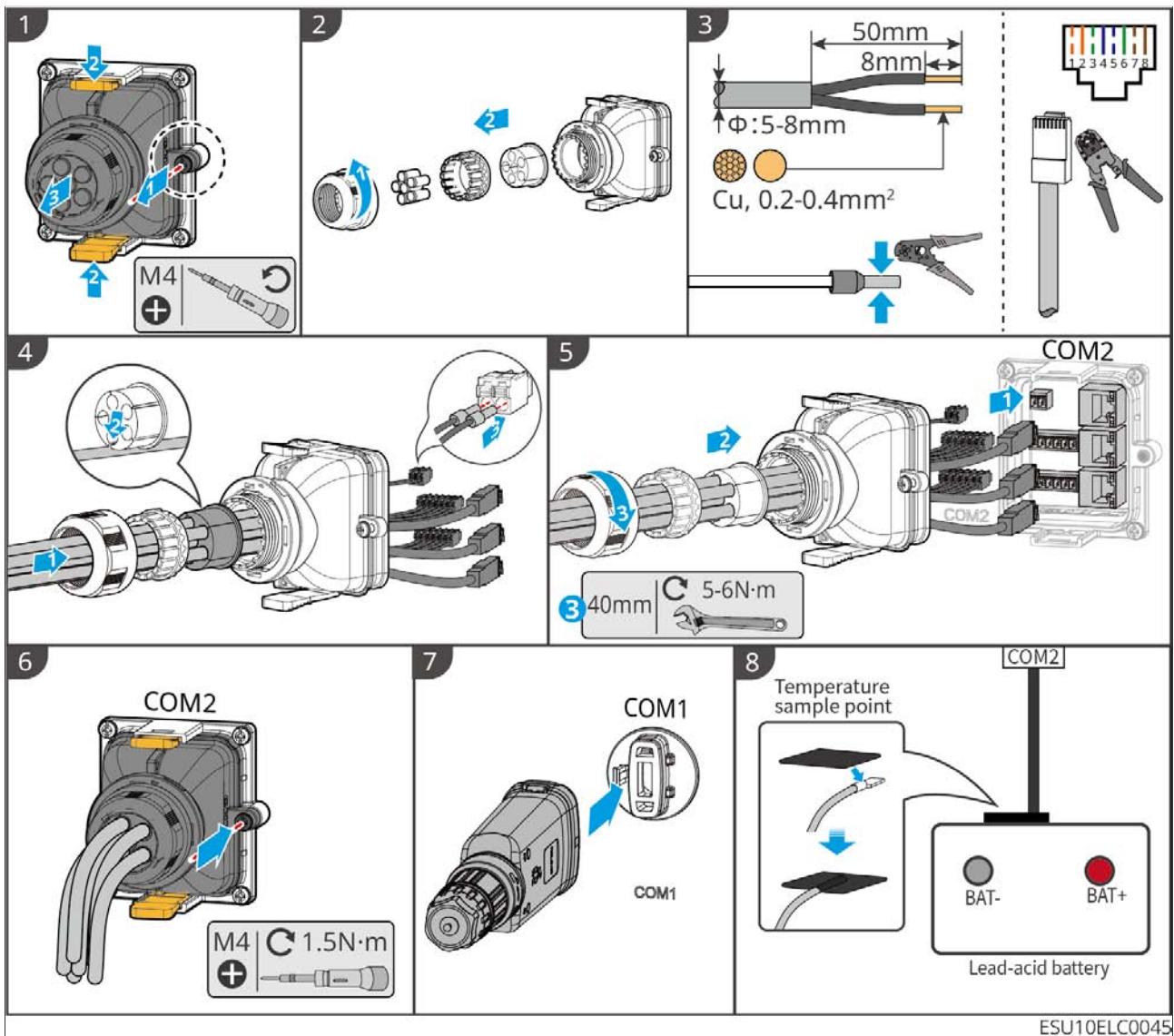
port	function	Description
1-2	CT connection	Connect the CT cable.

port	function	Description
3-4	remote shutdown/Rapid Shutdown/NS Protection	<ul style="list-style-type: none"> Provide signal control port, control equipment remote shutdown, or achieve NS Protection Rapid Shutdown: <ul style="list-style-type: none"> In a Rapid Shutdown system, the Rapid Shutdown transmitter works in conjunction with the receiver to achieve system Rapid Shutdown. The receiver maintains module output by receiving signals from the transmitter. The transmitter can be externally mounted or integrated into the Inverter. In emergency situations, the transmitter can be deactivated by enabling an external trigger device, thereby shutting down the module. remote shutdown function: <ul style="list-style-type: none"> In case of an accident, the equipment can be controlled to stop working. The remote shutdown equipment must be a normally closed switch.
5-6	load control	<ul style="list-style-type: none"> Supports dry contact signal connection to enable functions such as load control. The DO contact rating is 24Vdc @1A, with NO/COM normally open contacts. Supports SG Ready heat pump connection, controls the heat pump via dry contact signals for heat pump operation Supported operating modes: <ul style="list-style-type: none"> Operating Mode 2 (Signal: 0:0): Energy-saving mode. In this mode, the heat pump operates in energy-saving mode. Operating Mode 3 (Signal: 0:1): Activation Recommendation. In this mode, the heat pump maintains its current operation while increasing hot water storage to accumulate additional thermal energy.

port	function	Description
7-8	Generator start-stop control Manufacturing port	Supports the connection of generator control signals DO contact capacity: 24Vdc @1A, NO/COM normally open contact
9-10	Energy Management System (EMS)	When used to connect third-party EMS devices, RS485 communication is supported, but parallel system does not support connecting to third-party EMS devices. Note: The EMS in PAR-1 & EMS port is on the same line.
11-12	Electricity meter communication	Supports RS485 communication for external Smart Meter connection
13-14	Lead-acid temperature measurement port	Temperature sensing wire for connecting lead-acid temperature measurement
PAR-1 & EMS	Parallel Connection Communication Port1 Energy Management System (EMS) (PAR-1&EMS)	<ul style="list-style-type: none"> • CAN and BUS: Parallel operation Communication Port, CAN communication is used to connect other Inverter in parallel operation networking; BUS is used to control the grid-connected and off-grid status of each Inverter in parallel operation. • RS485: When used to connect third-party EMS devices that support RS485 communication. parallel system does not support connecting third-party EMS devices.
PAR-2	Parallel Connection Communication Port 2 (PAR-2)	When used for parallel communication, it supports the use of CAN communication to connect other Inverter; it uses BUS bus control to manage the grid-tied and off-grid status of each Inverter in parallel operation.

port	function	Description
BMS-CAN	BMS Communication	When connecting a lithium-ion Battery, it is used to connect the Battery system BMS Communication cable, supporting communication via CAN signals.

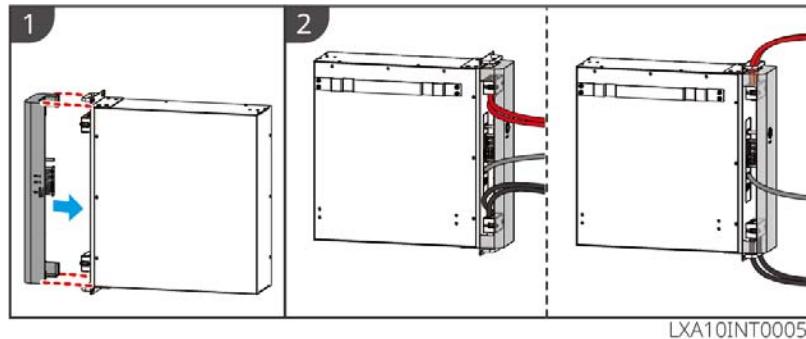
Connection Communication cable method



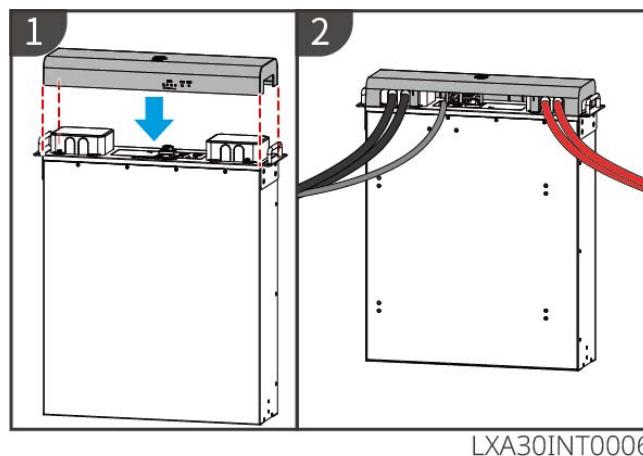
ESU10ELC0045

5.10 Installing the Battery System Protection Cover

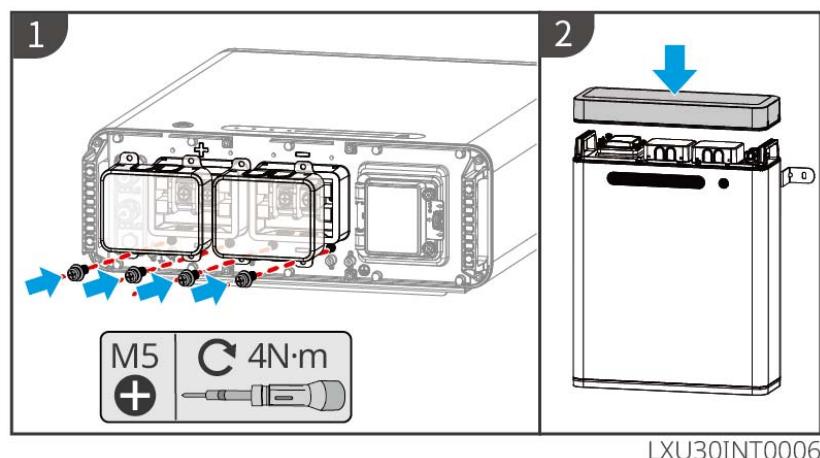
5.10.1 LX A5.0-10



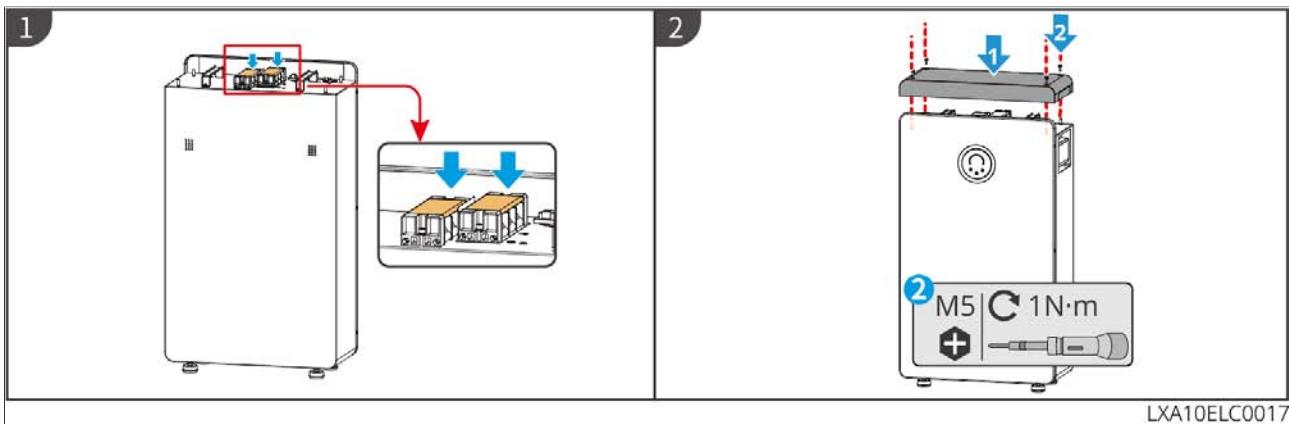
5.10.2 LX A5.0-30



5.10.3 LX U5.0-30



5.10.4 GW14.3-BAT-LV-G10



LXA10ELC0017

6 System Commissioning

6.1 Check Before Power ON

No.	Inspection items
1	The equipment is securely installed, easy to operate and maintain, with sufficient space for ventilation and heat dissipation, and the environment is clean and tidy.
2	PE cable, DC line, AC line, Communication cable, and Terminal resistor are correctly and securely connected.
3	The cable ties meet the wiring requirements, are reasonably distributed, and show no signs of damage.
4	Unused wire holes and port shall be reliably connected using the provided terminal accessories and properly sealed.
5	Ensure that all used wire feed-through holes are properly sealed.
6	The Inverter and Frequency of the on-grid access point comply with the on-grid requirements.

6.2 Power ON

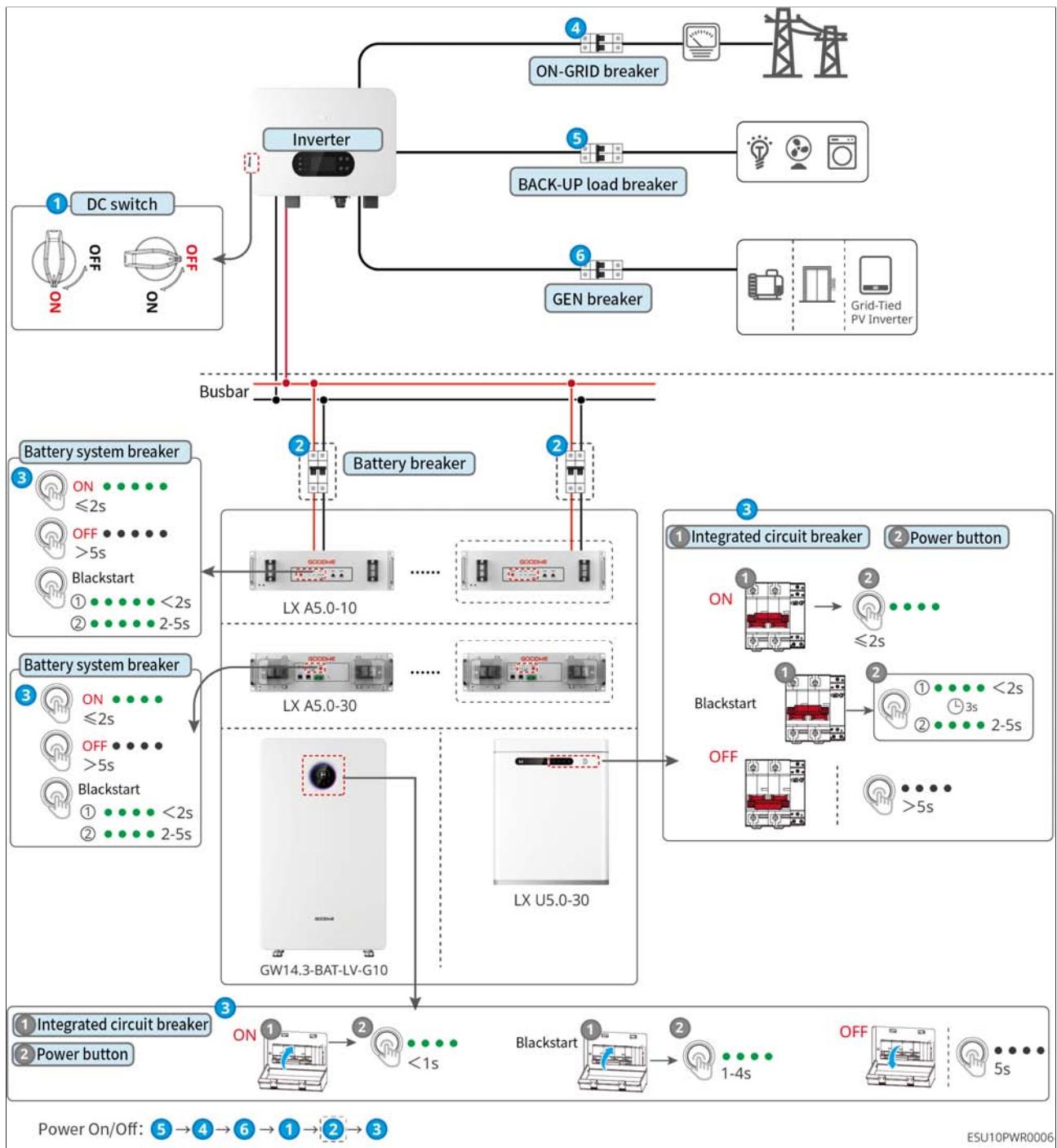


- When there are multiple Inverter in the system, ensure that all Slave inverter AC-side power on are completed within one minute after the Master inverter AC-side power on.
- Black start application scenario:
 - Inverter needs to be activated via Battery.
 - In the absence of Inverter, it is necessary to perform Battery charging and Discharge management.
- After Battery system is started, ensure that Inverter communicates normally with Battery system within 15 minutes. If Inverter fails to communicate with Battery system, the Battery system switch will automatically disconnect, and Battery system will undergo POWER OFF.
- When multiple Battery are connected in parallel in the system, starting any one Battery will activate all Battery.
 - GW14.3-BAT-LV-G10: After Battery and power off, if power on occurs again, it is necessary to restart each Battery one by one or wait for 15 minutes before starting any Battery, then all Battery can be activated.

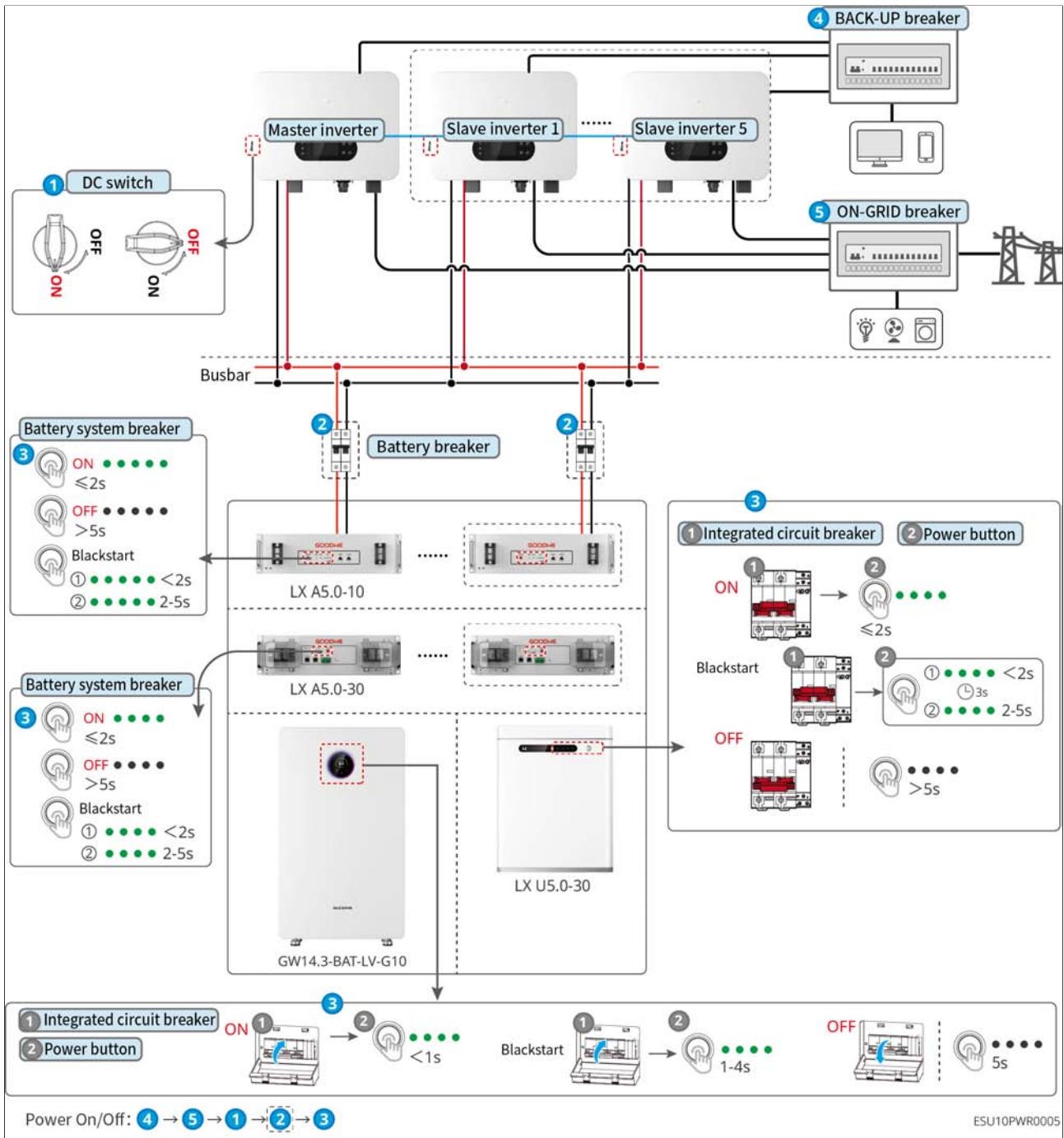
Upper current process

1. Close the BACK-UP breaker.
2. Close the ON-GRID circuit breaker.
3. (Optional) Close GENbreaker.
4. (Select according to local regulations) Close the breaker between the PV modules and the Inverter.
5. Close the DC switch of Inverter.
6. (According to local regulations) Close the switch between Inverter and Battery.
7. Close the Battery switch.
8. Close the Battery system switch (LX A5.0-10, LX A5.0-30). Close the Battery system integrated breaker (LX U5.0-30, GW14.3-BAT-LV-G1).
9. (Only for LX U5.0-30, GW14.3-BAT-LV-G1) Press the Battery system button.

Stand-alone system

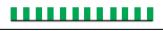


Parallel system



6.3 Indicators

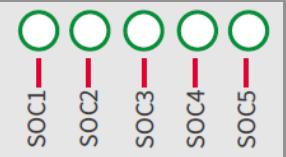
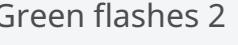
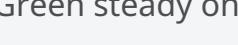
6.3.1 Inverter Indicators

Indicator	Status	Description
		Inverter starting up, in self-test mode
		Inverter Normal on-grid power generation or off-grid operation mode
		BACK-UP output overload
		System fault
		LCD ON: Inverter is already power on, in Standby mode. LCD OFF: Inverter is POWER OFF
		Utility grid abnormal, Inverter BACK-UP port power supply normal
		Utility grid Normal, Inverter BACK-UP port Power Supply Normal
		BACK-UPportNo Power Supply
		Inverter Monitoring Module Resetting
		Inverter is not connected to the communication terminal
		Communication terminal and cloud Server communication fault
		Inverter monitoring normal
		Inverter monitoring module not started

6.3.2 Battery Indicators

6.3.2.1 LX A5.0-10

Normal state

State of Charge (SOC)	RUN indicator	Battery system status
 <p>SOC represents the state of charge.</p> <p>  SOC<5%  5%≤SOC<25%  25%≤SOC<50%  50%≤SOC<75%  75%≤SOC<95%  95%≤SOC≤100% </p>		Battery system is in Standby status
		Battery system is in idle state
		Battery system is in the Charge state
<p>Maximum SOC indicator flashes once per second</p> <ul style="list-style-type: none"> When 5% ≤ SOC < 25%, SOC1 flashes. When 25% ≤ SOC < 50%, SOC2 flashes. When 50% ≤ SOC < 75%, SOC3 flashes. When 75% ≤ SOC < 95%, SOC4 flashes. When 95% ≤ SOC ≤ 100%, SOC5 flashes. 		Battery system is in the Discharge state

abnormal state

ALM light	Battery system status	Description
	<p>Red flashes once per second</p> <p>Battery system alarm occurred</p>	<p>After the Battery system alarm occurs, the Battery system will perform a self-check. Wait for the Battery system self-check to complete, and the Battery system will enter normal operation or the fault state.</p>

ALM light	Battery system status	Description
	Battery system occurs fault	Determine the type of fault that occurred based on the SOCindicator display format, and handle it according to the methods recommended in the Troubleshooting section.

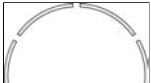
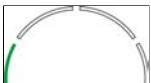
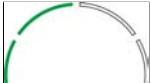
6.3.2.2 LX A5.0-30、LX U5.0-30

indicator		System Status
	SOCindicator no green display	SOC=0%
	The first SOCindicator is displayed in green.	0% < SOC ≤ 25%
	The second SOCindicator is displayed in green.	25% < SOC ≤ 50%
	The third SOC displays green.	50% < SOC ≤ 75%
	The fourth SOC indicator is displayed in green.	75% < SOC ≤ 100%
	Green steady on	Battery system is operating normally
	Green flashing once per second	Battery system is in the Standby state
	Green flashing 3 times/s	PCS communication loss
	slow blinking	When Battery system triggers an alarm, it will perform a self-check. After the self-check is completed, it will transition to either normal operation mode or fault status.
	Red steady on	Determine the type of fault that occurred based on the SOCindicator display format, and handle it according to the methods recommended in the Troubleshooting section.

6.3.2.3 GW14.3-BAT-LV-G10

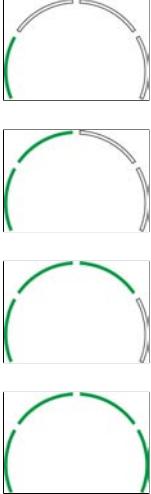
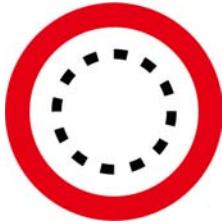


Normal state

indicat or name	indicator status	Corresponding to other light status	System Status
State of Charge (SOC)	 	SOCindicator Green Steady On	SOC=0% 0% < SOC ≤ 25% 25% < SOC ≤ 50% 50% < SOC ≤ 75% 75% < SOC ≤ 100%
	 	SOCindicator green flashing	/ Battery system is in the Discharge state

indicator name	indicator status	Corresponding to other light status	System Status
Operation indicator + Touch Button	 White steady on	 Blue-purple breathing light	System operating normally
		 Blue-purple running light	System preparing
Communication light	 White steady on	/	PCS communication normal

abnormal state

indicator or name	indicator status	Corresponding to other light status	System Status
State of Charge (SOC)	 SOC indicator Green Steady On Green Flickering Green Flashing Green Off	 Red flashing  extinguish  Red steady on	Determine the type of fault that occurred based on the SOC indicator display format, and handle it according to the methods recommended in the Troubleshooting section.
Communication light		extinguish	/
System Alarm Light		White steady on	/

6.3.3 Smart Meter Indicator

6.3.3.1 GMK110

Type	Status	Description
 Power LED	Always On	The electricity meter has been power on
	Extinguish	The electricity meter has been power off
 Communication light	flicker	Meter communication normal
	Extinguish	Meter communication abnormal or no communication

6.3.3.2 GM330

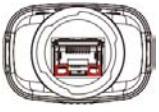
Type	Status	Description
Power LED 	Always On	The meter has been power on, with no RS485 communication.
	flicker	The electricity meter has been power on, and RS485 communication is normal.
	Extinguish	The electricity meter has been power off.
communication light 	Extinguish	Reserved
	flicker	Press the Reset button for ≥ 5 s, the power light and buy/sell light flash: the meter resets.
Buying and selling electric lights 	Always On	buy power from the grid
	flicker	Selling electricity to Utility grid
	Extinguish	No purchase, no sale of electricity
	Reserved	

6.3.4 Smart Dongle Indicator

6.3.4.1 WiFi/LAN Kit-20

Indicator	Status	Description
Power LED 		Constant Light: Smart dongle has been power on.
		Extinguish: Smart dongle Not power on
Communication light 		Always On: WiFi mode or LAN mode communication is normal.
		Single flash: Smart dongle Bluetooth signal is on, waiting to connect to the SolarGo app.
		Double flash: Smart dongle not connected to Router.
		Four flashes: Smart dongle communicates normally with Router, but fails to connect to Server
		Six flashes: Smart dongle is identifying connected devices.

indicator	Status	Description
	_____	Extinguished: Smart dongle Software reset in progress or not power on.

indicator	color	Status	Description
LAN communication indicator 	green	Always On	100Mbps wired network connection is normal.
		Extinguish	<ul style="list-style-type: none"> • Network cable not connected. • 100Mbps wired network connection anomaly. • 10Mbps wired network connection is normal.
	Yellow	Always On	10/100Mbps wired network connection is normal, with no communication data transmission or reception.
		flicker	Communication data transmitting/receiving.
		Extinguish	Network cable not connected.

Button	Description
Reload	<p>Press and hold for 0.5~3 seconds, Smart dongle will be reset.</p> <p>Hold for 6~20 seconds, Smart dongle will restore factory settings.</p>

6.3.4.2 4G Kit-CN-G20 & 4G Kit-CN-G21

indicator	Status	Description
Power LED 		Constant On: Smart dongle has been power on.
	_____	Extinguish: Smart dongle not power on.
communication light 		Normal: Smart dongle is connected to Server, communication is normal.
		Double flashing: Smart dongle not connected to the base station.
		Quadruple flashing: Smart dongle is connected to the base station but not to Server.
		Six flashes: Smart dongle communication with Inverter is disconnected.

indicator	Status	Description
	_____	Extinguished: Smart dongle Software reset in progress or not power on.

button	Description
Reload	Hold for 0.5~3 seconds, Smart dongle will restart.
	Press and hold for 6~20 seconds, Smart dongle will restore factory settings.

6.3.4.3 Ezlink3000

indicator /screen printing	color	Status	Description
Power LED 	blue		Flicker = Communication stick is operating normally.
			Extinguish = Communication stick has power off.
Communication light 	green		Always On = Communication Stick is connected to Server.
			Double flash = Communication stick is not connected to Router.
			Four flashes = Communication stick is connected to Router, but not connected to Server.
RELOAD	-	-	<ul style="list-style-type: none"> Press and hold for 1-3 seconds to restart the communication stick. Press and hold for 6-10 seconds to restore factory settings. <p>Quick double-click to activate Bluetooth signal (maintained for 5 minutes only).</p>

7 System rapid configuration

7.1 Downloading the App

7.1.1 Download SolarGo App

Mobile phone requirements:

- Mobile operating system requirements: Android 5.0 and above, iOS 13.0 and above.
- The phone supports a web browser for connecting to the Internet.
- The phone supports WLAN/Bluetooth functionality.

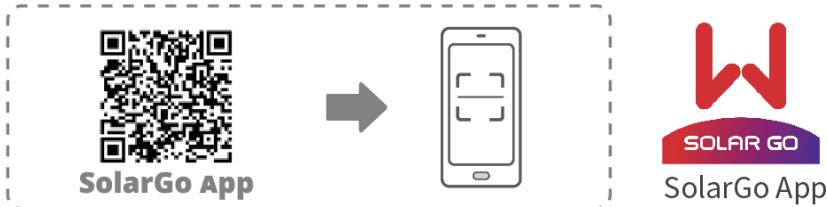
NOTICE

After the SolarGo App is Installation, subsequent version updates will automatically prompt for software upgrades.

Option 1: Search for SolarGo on Google Play (Android) or App Store (iOS) to download and install.



Option 2: Scan the QR code below to download and Installation.



7.1.2 Download SEMS+ APP

Mobile phone requirements:

- Mobile operating system requirements: Android 6.0 and above, iOS 13.0 and

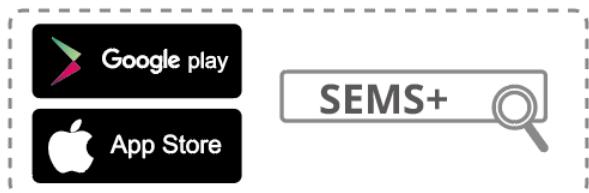
above.

- The phone supports a web browser for connecting to the Internet.
- The phone supports WLAN/Bluetooth functionality.

Download method:

Mode 1:

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



Mode 2:

Scan the QR code below to download and Installation.



7.2 Connect hybrid inverter (Bluetooth)

Step 1 Confirm that the Inverter is already power on, and both the smart dongle and Inverter are operating normally.

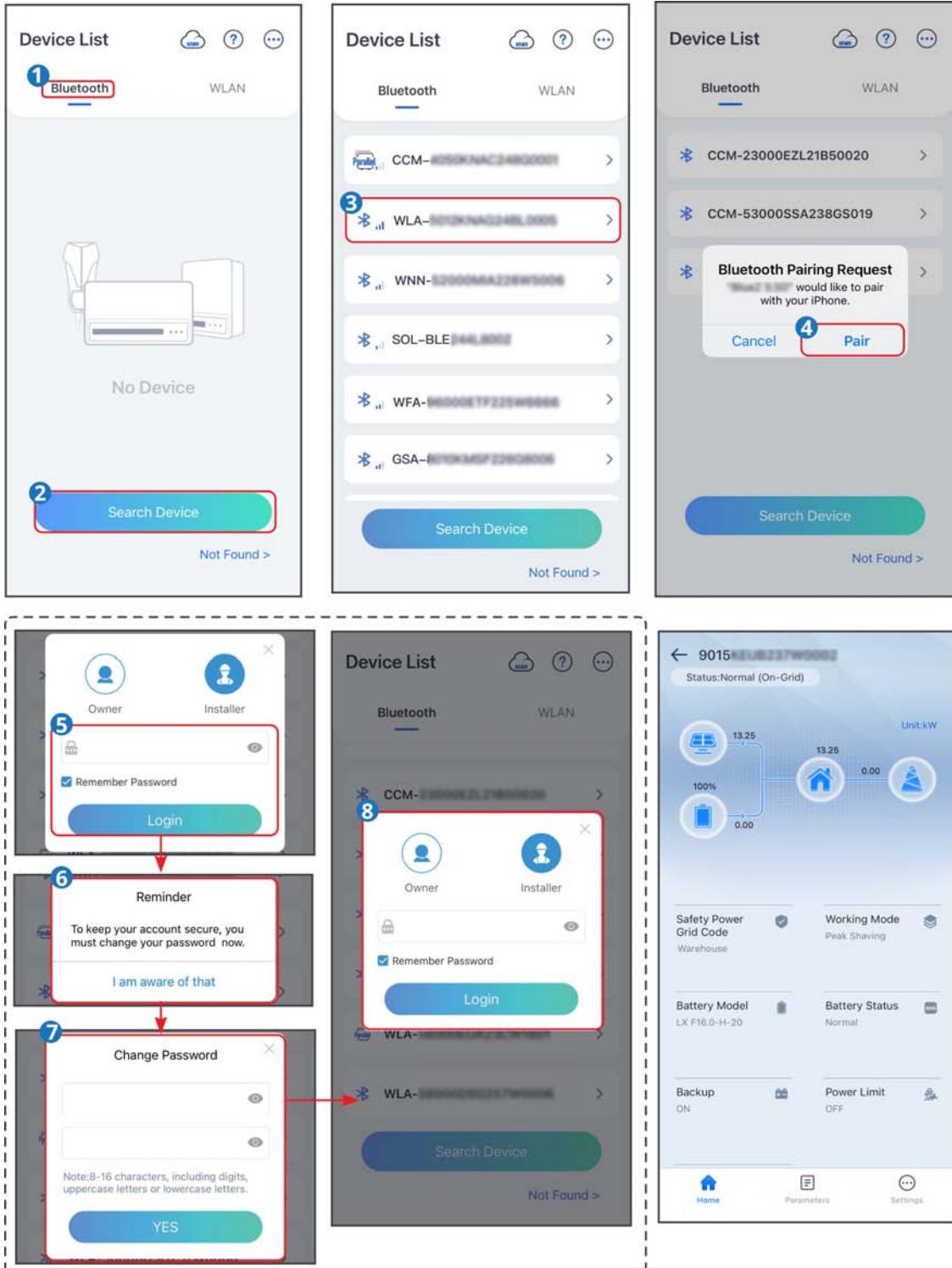
Step 2 Based on the smart dongle type, select the Bluetooth tab on the SolarGo App home screen.

Step 3 Pull down or click the search device to refresh the device list. Confirm the Inverter signal name based on Inverter serial number, then click the Inverter signal name to enter the login interface. When multiple Inverter units form a parallel system, select the corresponding device according to Master inverter serial number.

Step 4 When connecting to the device via Bluetooth for the first time, a Bluetooth pairing prompt will appear on the interface. Please click "Pair" to continue the connection and proceed to the login screen.

Step 5 Log in to the App according to your actual role, and follow the on-screen instructions to change your login password. The initial login password is 1234. After changing the password, log in again and enter the device details page.

Step 6(Optional): If connecting to Inverter via WLA-*** or WFA-***, after entering the device details page, please enable Bluetooth to remain on as prompted by the interface. Otherwise, the Bluetooth signal will be turned off after the current connection ends.



7.3 Set communication parameters

NOTICE

The communication configuration interface may vary depending on the communication method used or the smart dongle connected to Inverter. Please refer to the actual interface.

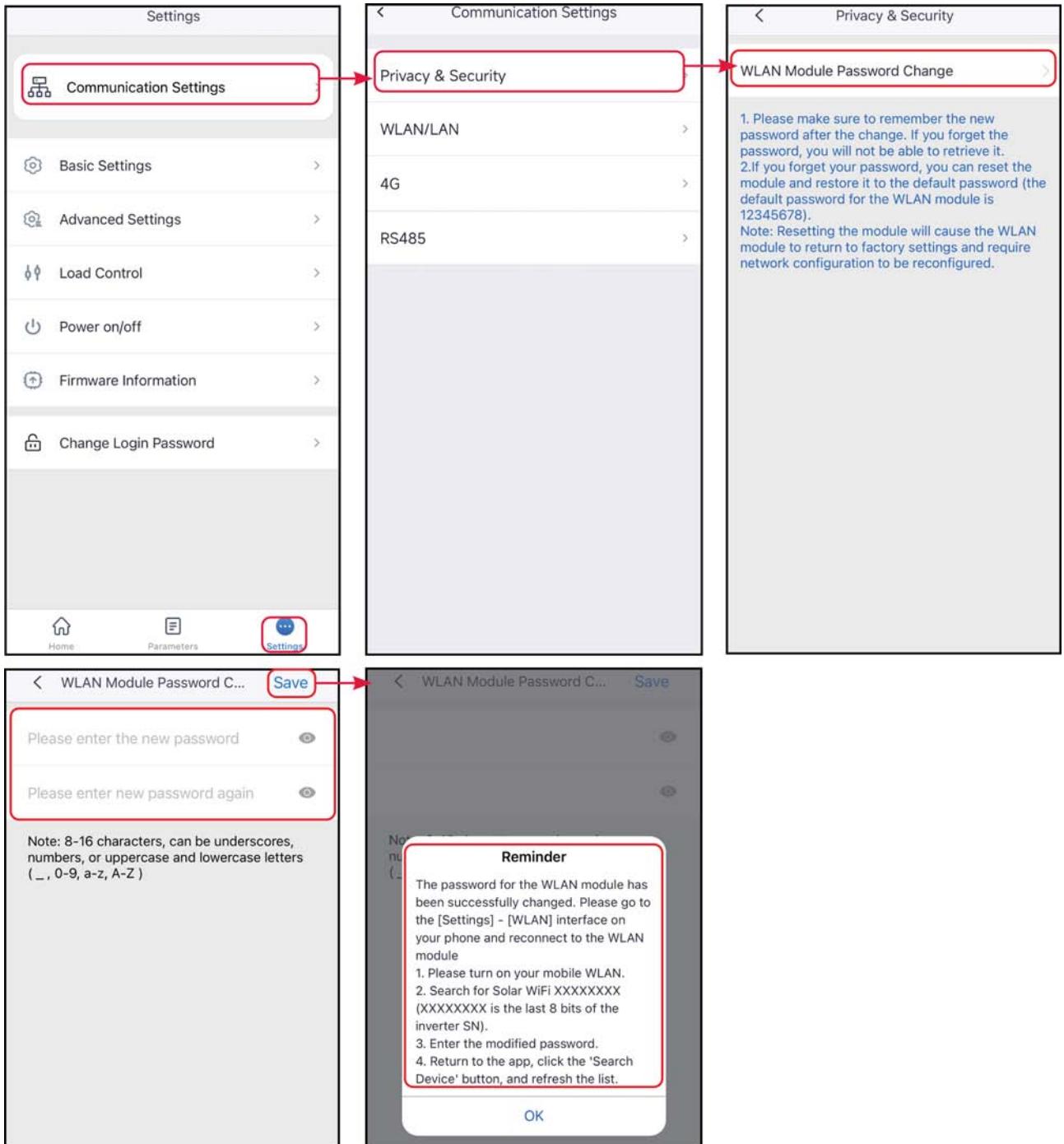
7.3.1 Configure privacy and security parameters

Type I

Step 1 Through **Home > Settings > Communication Configuration > Privacy & Security > WLAN Module Password Modification** Enter the settings page.

Step 2 Set a new smart dongle WiFi hotspot password according to actual needs, and click **Save** Setup completed.

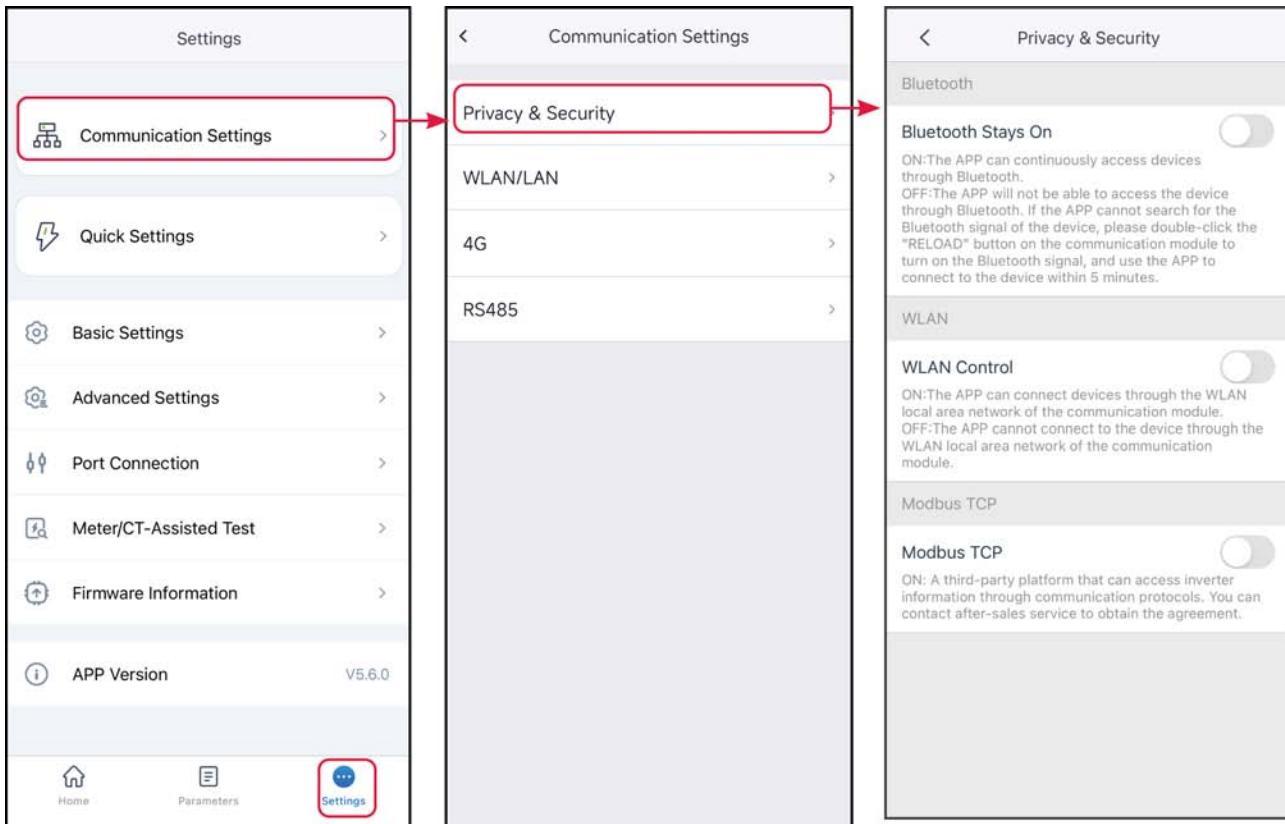
Step 3 Open the WiFi settings on your phone and connect to the Inverter WiFi signal using the new password.



Type II

Step 1 Through **Home > Settings > Communication Configuration > Privacy & Security** Enter the settings page.

Step 2 Enable the corresponding function based on actual requirements.

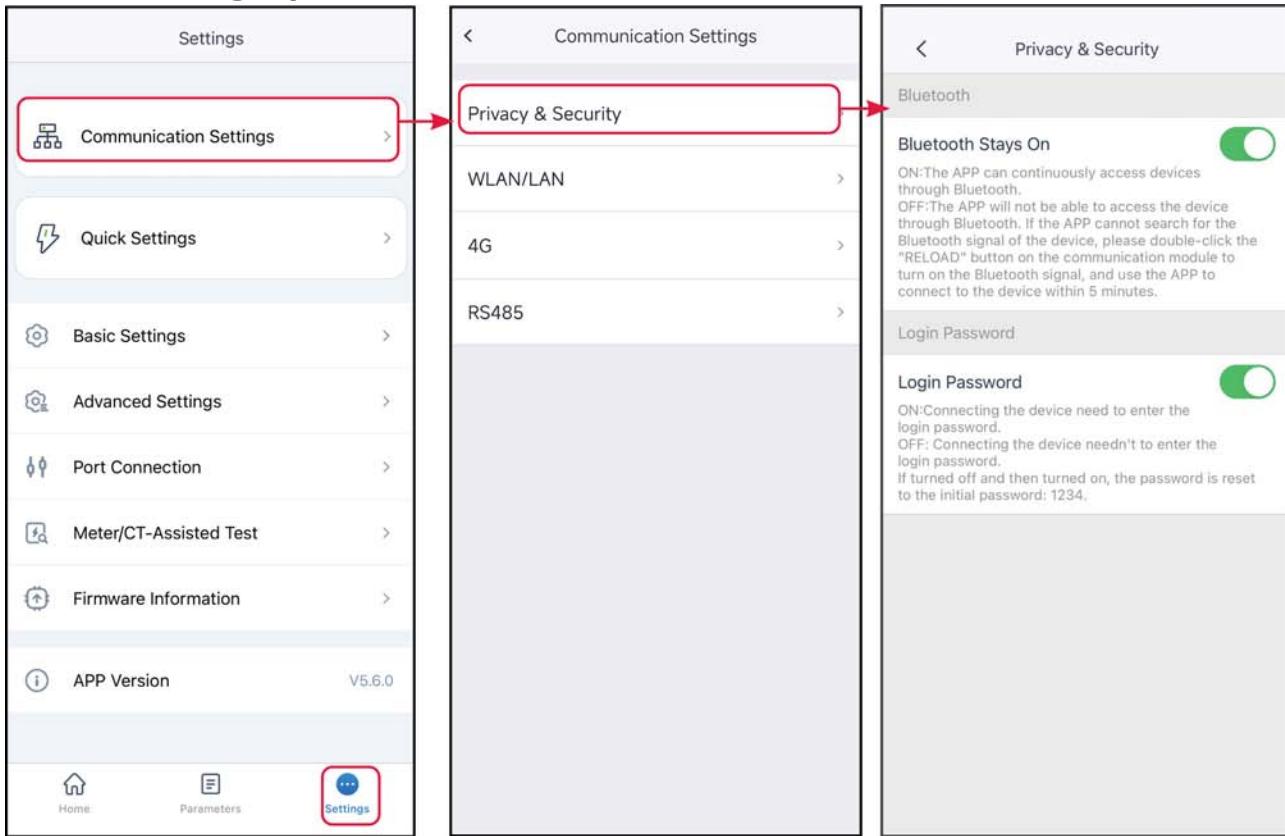


No.	Parameter Name	Description
1	Bluetooth continuously enabled	Default off. When enabled, the device's Bluetooth remains continuously active, maintaining the connection with SolarGo. Otherwise, the device's Bluetooth will turn off after 5 minutes, disconnecting from SolarGo.
2	WLANControl	Disabled by default. When enabled, SolarGo can connect to the device via WLAN if they are on the same local network; otherwise, connection will not be possible even within the same LAN.
3	Modbus-TCP	When this function is enabled, third-party platforms can access the Inverter via the Modbus TCP protocol to achieve monitoring capabilities.
4	SSH control Ezlink	When this function is enabled, third-party platforms can connect to and control the Linux system of EzLink.

Type III

Step 1 Through **Home > Settings > Communication Configuration > Privacy & Security** Enter the settings page.

Step 2 Enable according to actual requirements **Bluetooth continuously enabled** and **Login password** Function.



No.	Parameter Name	Description
1	Bluetooth continuously enabled	Default off. When enabled, the device's Bluetooth remains continuously active, maintaining the connection with SolarGo. Otherwise, the device's Bluetooth will turn off after 5 minutes, disconnecting from SolarGo.
2	Login password	Default off. When enabled, the device will prompt for a login password when connecting to SolarGo. For the first-time use of the login password, please use the initial password and follow the on-screen instructions to change it.

7.3.2 Configure WLAN/LAN parameters

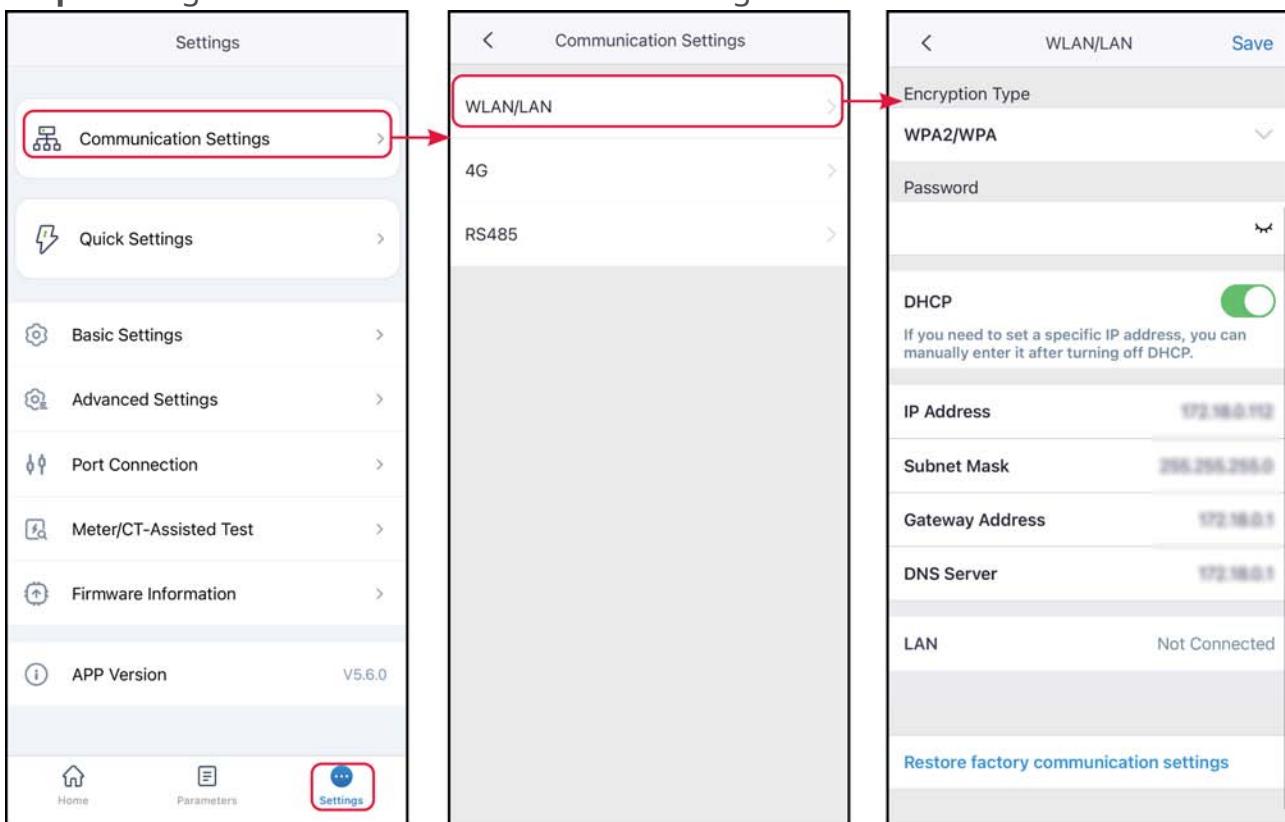
NOTICE

When the Inverter-connected smart dongle differs, the communication configuration interface may vary. Please refer to the actual interface.

Step 1 Through Home > Settings > Communication Configuration >

WLAN/LAN Enter the settings page.

Step 2 Configure WLAN or LAN network according to actual conditions.



No.	Parameter Name	Description
1	Network Name	Suitable for WLAN. Please select the corresponding network based on actual requirements to enable communication between the device and the Router or switch.
2	Password	Suitable for WLAN. Enter the password of the actually selected network.

No.	Parameter Name	Description
3	DHCP	When Router employs dynamicIPIn mode, turn onDHCPFunction. When using Router as staticIPMode or when using a switch, turn offDHCPFunction.
4	IPAddress	WhenDHCPThis parameter does not need to be configured when turned on.
5	Subnet Mask	whenDHCPWhen closing, configure this parameter according to Router or switch information.
6	Gateway Address	
7	DNSServer	

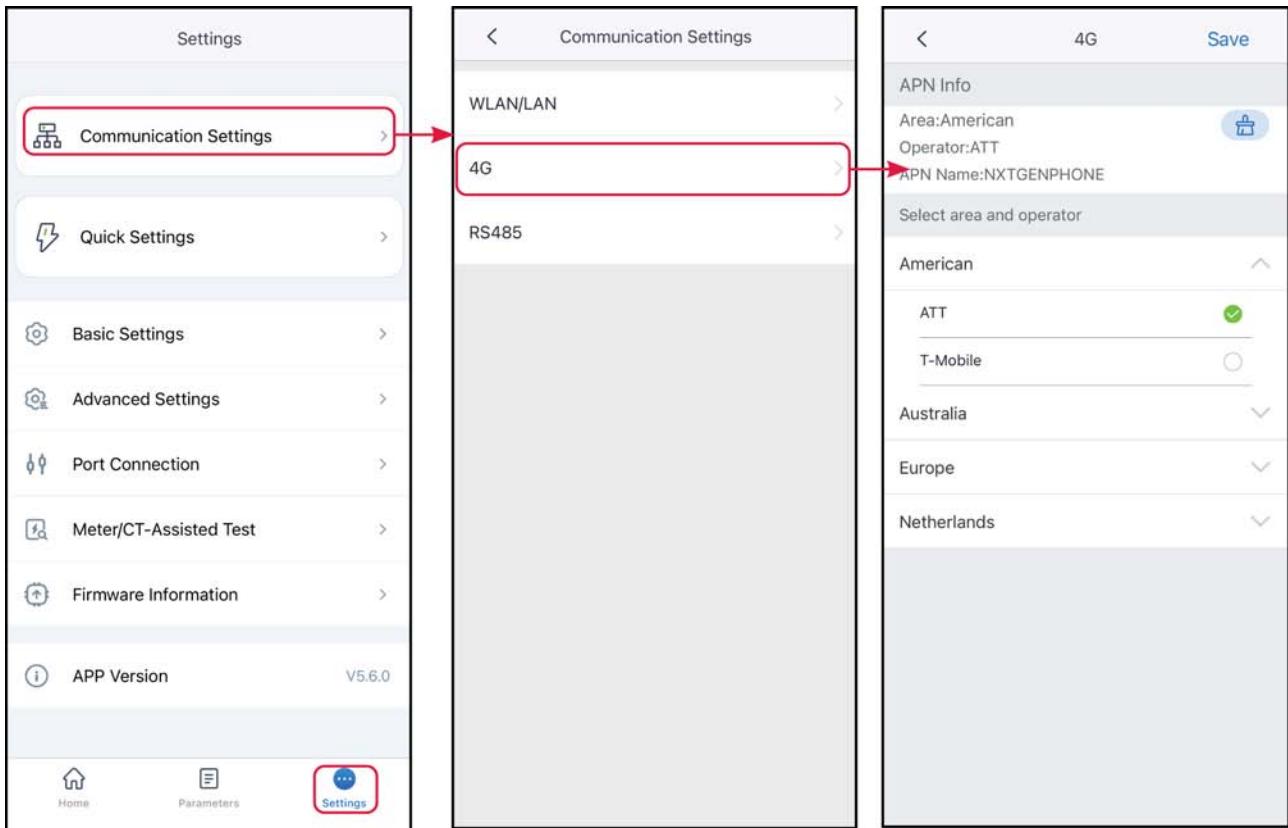
7.3.3 Configure APN parameters

NOTICE

- APN settings are only applicable for configuring SIM card information of 4G communication devices.
- If the 4G module does not provide Bluetooth signals, first configure the APN parameters via the Bluetooth module or WiFi module to enable 4G communication.

Step 1: Pass through **Home > Settings > Communication Configuration > 4G** Enter the settings page.

Step 2: Select the region and operator based on actual conditions, and configure the network.



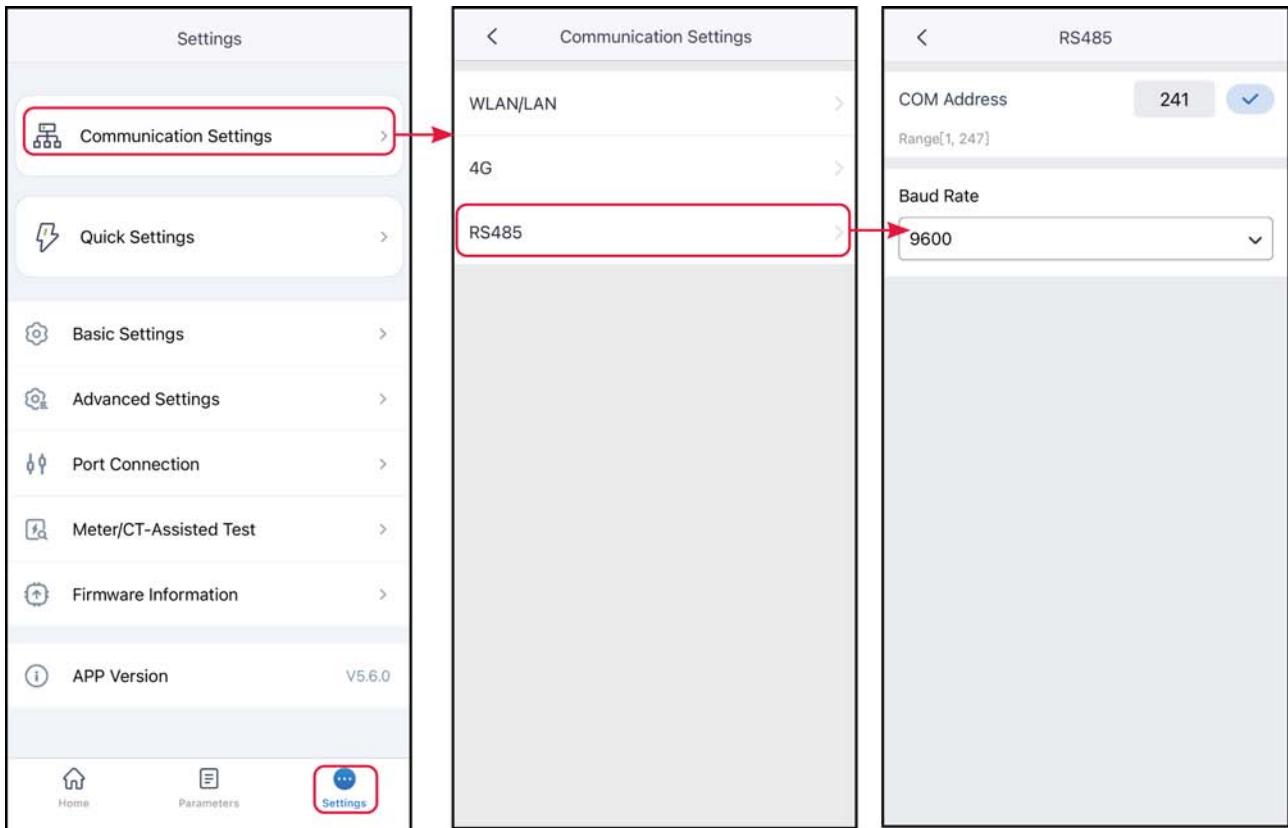
7.3.4 Set RS485 communication parameters

NOTICE

Set the host communication address for Inverter. For a single Inverter, set the communication address according to the actual situation. When multiple Inverter are connected, the address of each Inverter must be different, and none of the Inverter should have their communication address set to 247.

Step 1 Through **Home > Settings > Communication Configuration > RS485** Enter the settings page.

Step 2 Configure the communication address and baud rate according to the actual situation.



7.4 System Quick Settings

NOTICE

- When Inverter and model differ, the interface display and parameter settings may vary. Please refer to the actual situation.
- When selecting the safety regulation country/region, the system will automatically configure over/under voltage Protection, over/under frequency Protection, Inverteron-gridvoltage/Frequency, connection slope, Cos ϕ curve, Q(U) curve, P(U) curve, PF curve, high/low voltage ride-through, etc., according to the safety requirements of different regions. For specific parameter values, please navigate to Home > Settings > Advanced Settings > Safety Regulation Parameter Settings after configuring the safety regulation region.
- The power generation Efficiency of Inverter varies under different operating modes. Please configure it according to the actual local electricity usage.
 - Self-Use Mode: The basic operating mode of the system. PV generation prioritizes supplying power to the load, with excess electricity directed to the Battery charge. Any remaining electricity is then sold to the Utility grid. When

NOTICE

PV generation does not meet the Load consumption demand, the Battery supplies power to the load. If the Battery capacity also fails to meet the Load consumption demand, the Utility grid supplies power to the load.

- **Back-up Mode:** Recommended for use in unstable Utility grid areas. When Grid disconnected occurs, the Inverter switches to off-grid operation mode, and the Battery discharge supplies power to the load to ensure the BACKUP load does not POWER OFF. When Utility grid is restored, the Inverter operation mode switches back to on-grid operation.
- **TOU Mode:** In compliance with local laws and regulations, electricity trading is scheduled at different time periods based on the peak and valley price differences of Utility grid. According to actual demand, during the valley price period, Battery can be set to Charge mode, buy power from the gridCharge; during the peak price period, Battery can be set to Discharge mode, supplying power to the load via Battery.
- **Off-grid mode:** Suitable for areas without Utility grid. PV and Battery form a pure off-grid system, where PV generation supplies power to the load, and excess electricity charges the Battery charge. When PV generation cannot meet the Load consumption demand, the Battery supplies power to the load.
- **Delay Charge:** Applicable to areas with on-grid Power output restrictions. By setting peak Power limits and Charge time periods, excess photovoltaic generation beyond the on-grid limit can be used to charge the Battery charge, reducing photovoltaic waste.
- **Peakshaving:** Mainly applicable to scenarios with peak Power purchase restrictions. When the total Power of Load consumption exceeds the electricity quota within a short period, Battery discharge can be utilized to reduce the portion of electricity consumption that exceeds the quota.

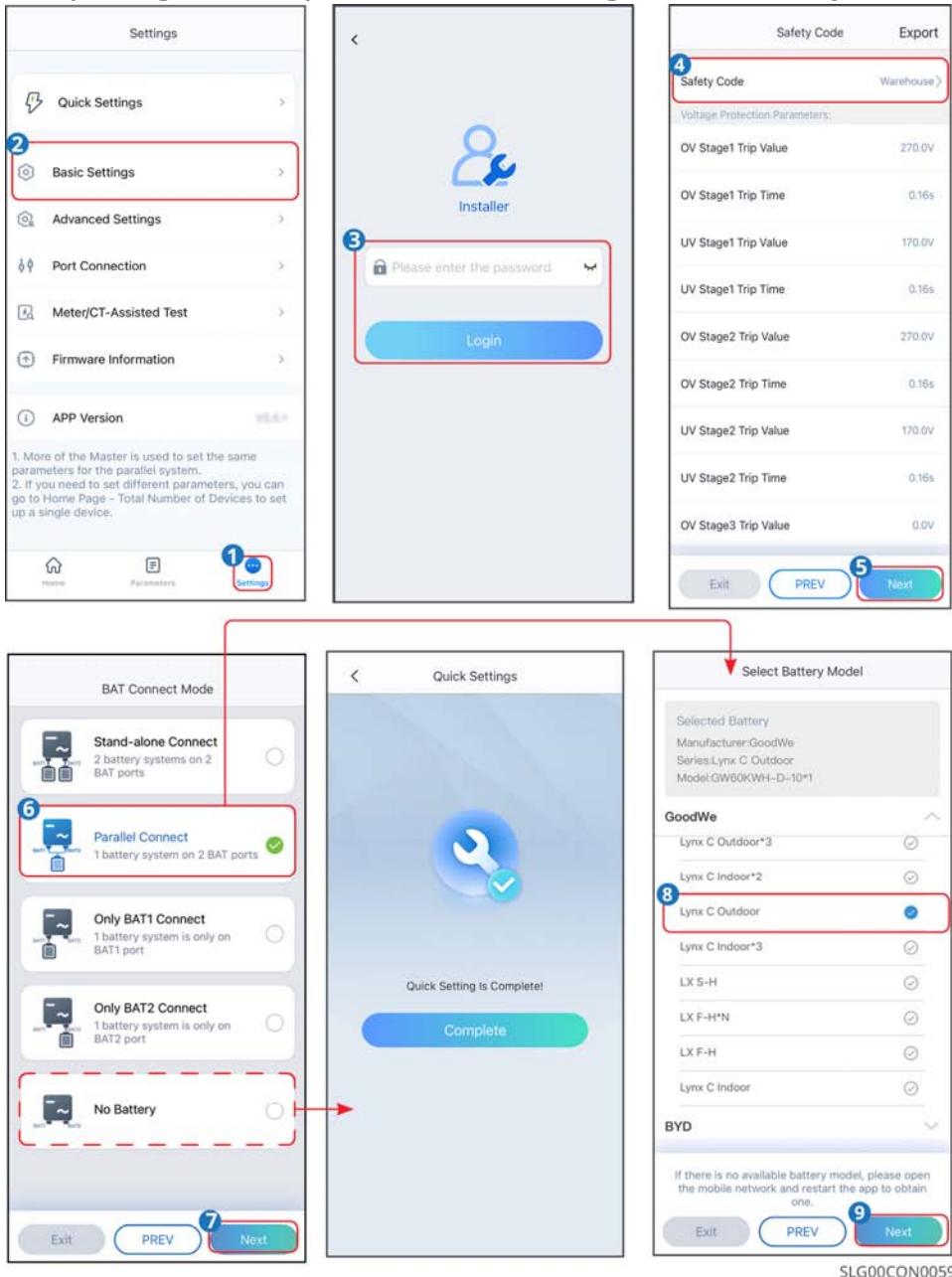
7.4.1 System Quick Settings (Type III)

Step 1 Through **Home > Settings > Quick Configuration** Enter the parameter settings page.

Step 2 Enter the login password to access the safety regulation settings interface. Only authorized vendors are allowed to configure.

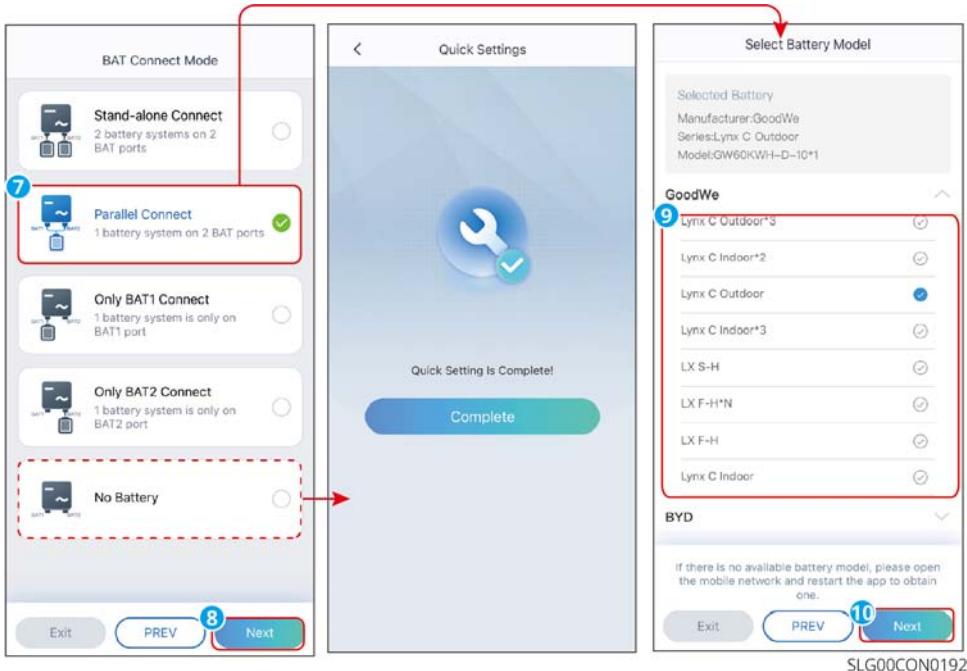
Step 3 Select the safety standard country based on the country or region where Inverter is located. After completing the setup, please click **Next step** Set the Battery access mode or configure the number of Inverter parallel units.

Step 4 Only parallel system. Set the number of Inverter parallel units. After completing the setup, click Next to configure the Battery access mode.

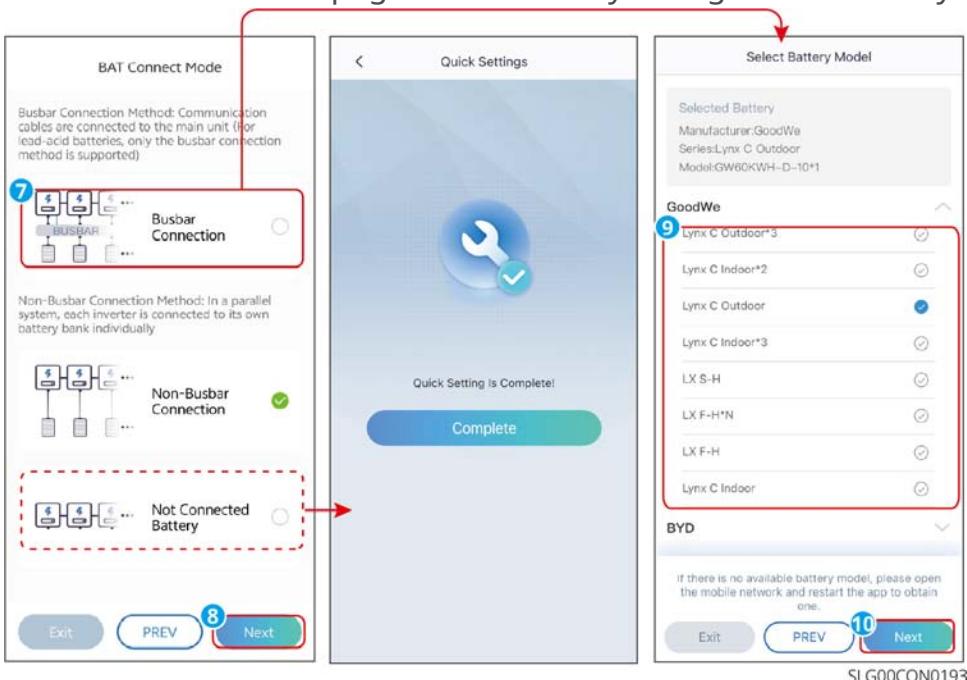


Step 5 Based on the actual situation of Battery connection, select the Battery connection mode. If there is no Battery connection, the basic parameter settings end here. If there is Battery connection, please click after completing the settings. **Next step** Set Battery model.

Step 6 Based on the actual connection of Battery, select Battery model. After completing the settings, please click **Next step** Set working mode.

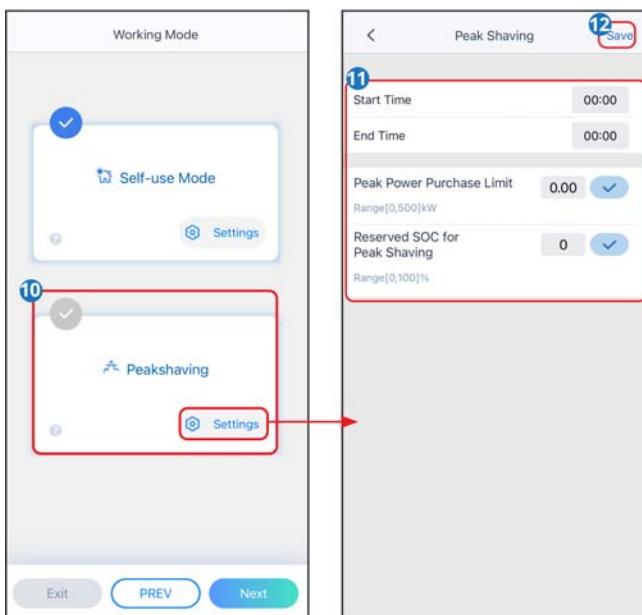


For certain models, when paralleling with Ezlink3000, please configure the Battery connection mode as either busbar mode or non-busbar mode based on actual conditions and select the Battery model. After the master unit is configured, the slave units will automatically synchronize the Battery settings. If the Battery connected to the slave unit differs from the master unit, access the Quick Settings interface via the slave SN on the homepage to individually configure the Battery model.



Step 7 Set the working mode according to actual requirements. After setting, please click **Next step** Entering device self-check.

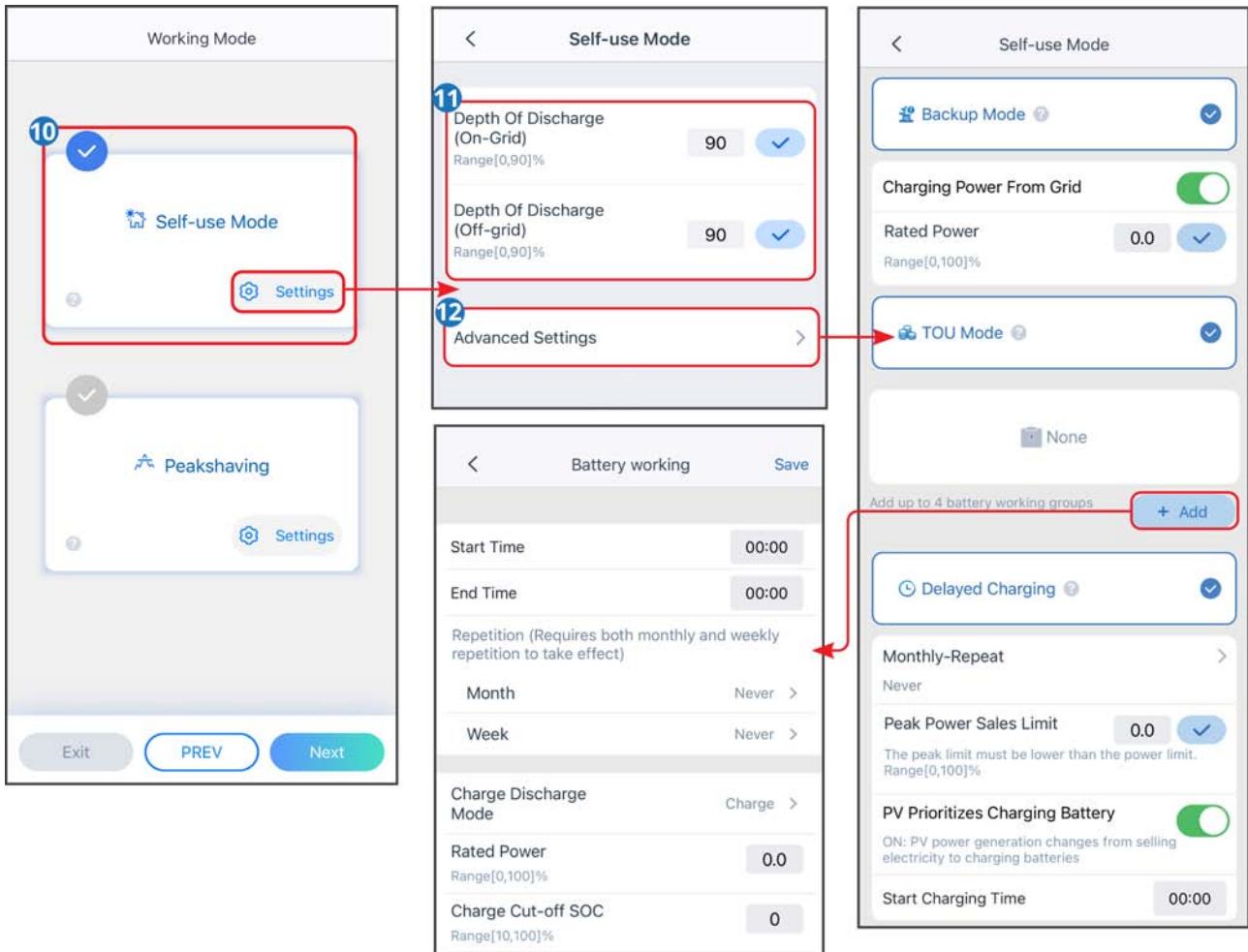
- When selecting the peak shaving mode, click Settings to enter the parameter configuration interface and set the Peakshaving related parameters.



No.	Parameter Name	Description
peak shaving		
1	Start Time	Within the start time and End Time, when Load consumption does not exceed the electricity purchase quota, Battery charge can be supplied via Utility grid. Outside the time range, only photovoltaic-generated Power can be used to supply Battery charge.
2	End Time	
3	Peak power purchase limit	Set the maximum Power limit allowed for buy power from the grid. When the load consumption Power exceeds the sum of the electricity generated by the PV system and this limit, the excess Power will be supplemented by Battery discharge.
4	Reserved SOC for Peakshaving	In Peakshaving mode, the Battery SOC is lower than the reserved SOC for Peakshaving. When the Battery SOC is higher than the reserved SOC for Peakshaving, the Peakshaving function is disabled.

- When selecting the self-use mode, click Settings to enter the self-use mode settings

interface, and configure the on-grid depth of discharge and off-grid depth of discharge under the self-use mode. Then click Advanced Settings to configure Back-up Mode, TOU mode, or delayed Charge according to actual needs. If TOU mode is selected, click Add to set the working hours and mode of the Battery task group.



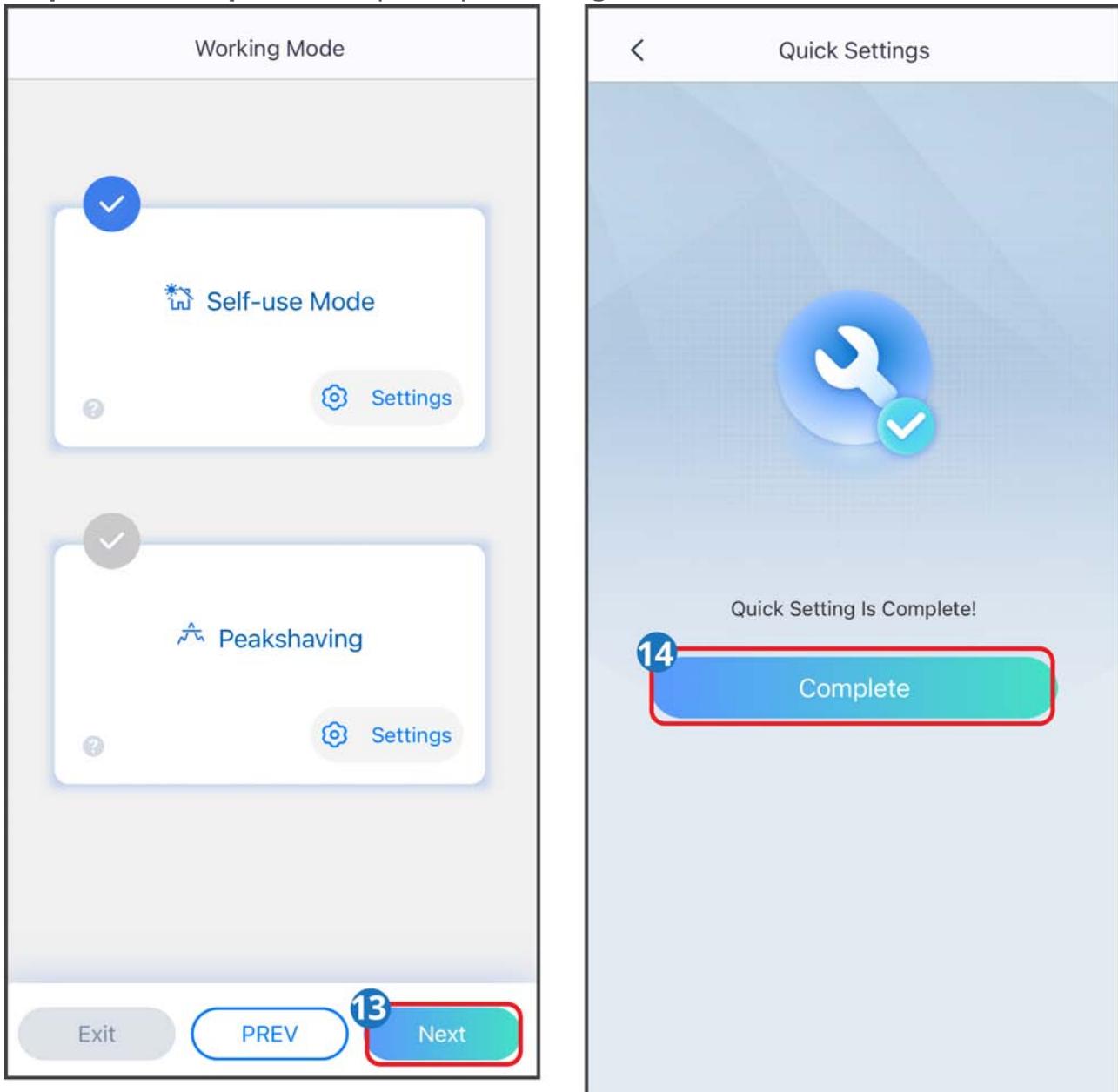
No.	Parameter Name	Description
Self-consumption mode		
1	on-grid depth of discharge	During the operation of on-grid, the maximum depth of discharge Protection point of Battery.
2	Off-grid depth of discharge	During off-grid operation, the maximum depth of discharge Protection point of Battery.

No.	Parameter Name	Description
Back-up Mode		
3	Utility grid Purchase of electricity Charge	Enable this function to allow the system to buy power from the grid.
4	Nominal power	The percentage of Power to Inverter Nominal power when purchasing electricity.
TOU mode		
5	Start Time	Within the Start Time and End Time, the Battery performs Charge or Discharge based on the set charging Discharge mode and Nominal power.
6	End Time	
7	Charging Discharge mode	Set to Charge or Discharge based on actual requirements.
8	Inverter Nominal power	The percentage of Power to Inverter Nominal power during Charge or Discharge.
9	Cut-off SOC	When the Battery reaches the set SOC, the Charge is stopped.
Delay Charge Mode		
10	Monthly repetition	Set the delay Charge months according to actual needs, and multiple months can be selected.
11	Peak power selling limit	Set the peak Power limit according to the Utility grid standard requirements of certain countries or regions. The peak Power limit value must be lower than the local specified output Power limit value.
12	PV prioritizes supplying power to Battery charge	Within the Charge timeframe, photovoltaic power generation is prioritized for supplying Battery charge.
13	Charge time	

Step 8 Perform device self-check or skip it based on actual requirements.

Step 9 Click according to actual needs **Retest** or **Next step**. Testing completed. To export the test results, please click **Export**.

Step 10 Click **Completed** to complete quick configuration.



7.5 Power Plant Creation

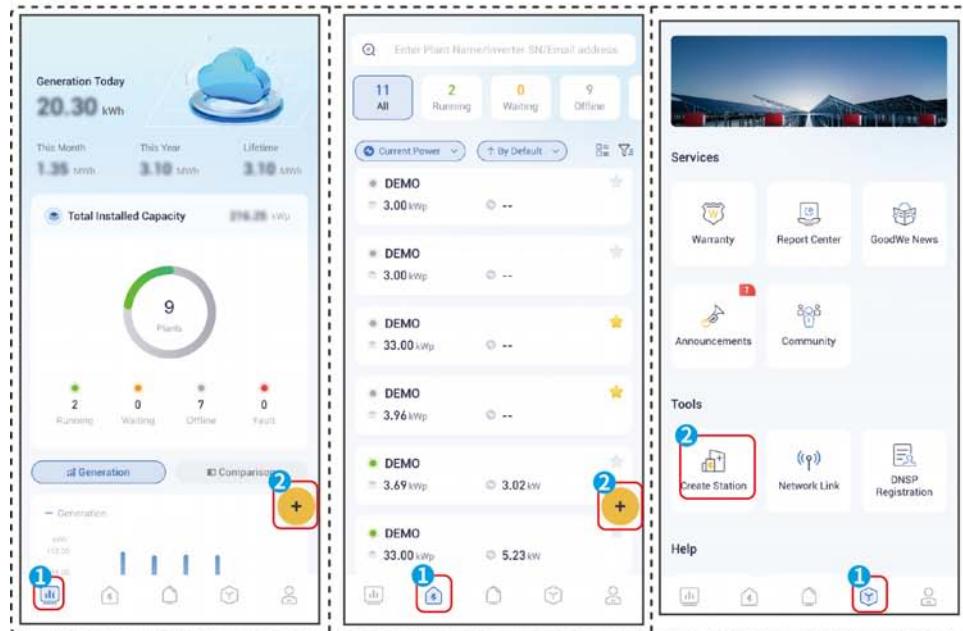
Step 1 Click on the homepage or power station list page .

Step 2 Based on the actual situation, in **Power Plant Creation** Fill in the power station related information in the interface.

Step 3 Click "Save and Exit" power station creation completed, no devices are added in

the power station at this time; or click "Save and Continue" Enter the Add Device interface and input the relevant device information based on the actual situation. Supports adding multiple devices.

SEMS0011



3

Create Plant

Owner's email address
Enter owner's email address

Plant Name*
12345678900000

Plant Address*
Select your plant address

Plant Time Zone*
Select your plant time zone

Detailed Plant Address
Enter your detailed address

Plant Category*
Select your plant category

Currency*
GBP

Plant Capacity*
Enter your plant capacity/ kWp

Modules
Enter the number of solar panels

Rate of revenue*
0.22 GBP/kWh

Plant Profile Photo
Add Photo

4

Save & Continue
Save & Exit

6

7

Done

5

Enter Plant Name/Inverter SN/Email address

11 All 2 Running 0 Waiting 9 Offline

Current Power ↑ By Default

DEMO 3.00 kWp

DEMO 3.00 kWp

DEMO 33.00 kWp

DEMO 3.96 kWp

DEMO 3.69 kWp 3.02 kW

DEMO 33.00 kWp 5.23 kW

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8 System Commissioning

8.1 Commissioning Method Overview

For frameless Inverter, users need to use SoSet parameters using the larGo APP. For the Inverter with a screen, users can use The SolarGo APP can also be used for parameter configuration. LCD screen setting parameters.

8.2 Configuration via LCD

8.2.1 LCD Overview

Through the LCD screen, users can:

1. View the device's operational data, software version, alarm information, etc.
2. Set parameters, safety regulation regions, power limit, etc.

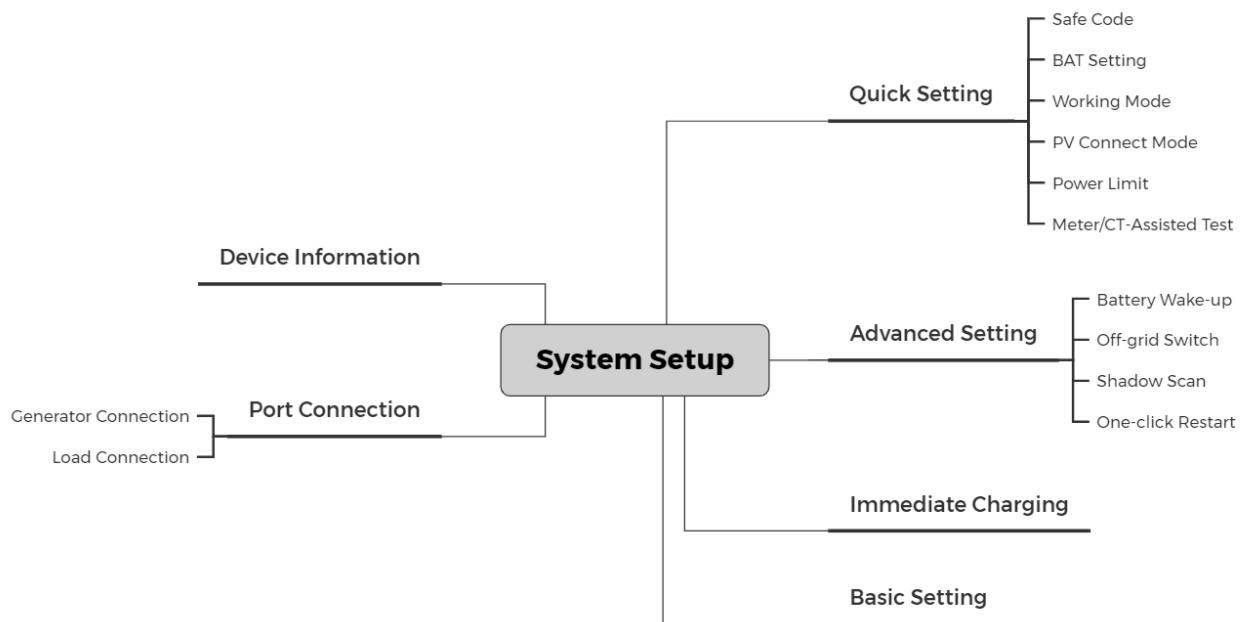
Introduction to LCD Interface

The LCD supports both touch and button operation.



Name/Icon	Description
	Upward
	Downward
	Confirm
	<ul style="list-style-type: none"> Short press: Exit page  Press and hold for 5 seconds simultaneously: Restart the device
	Used to view PV current, voltage, and power generation information.
	Used to view Battery model, status, and other information.
	Used to view the alarms and fault information of Inverter.
	Used to access the settings interface of Inverter
	Used to view the status information of Utility grid
	To view the status of the generator
	To view the load information of Inverter
	Return to the main interface
Cancel	Return to the previous menu
Next	Proceed to the next setup page
Back	Return to the previous settings page

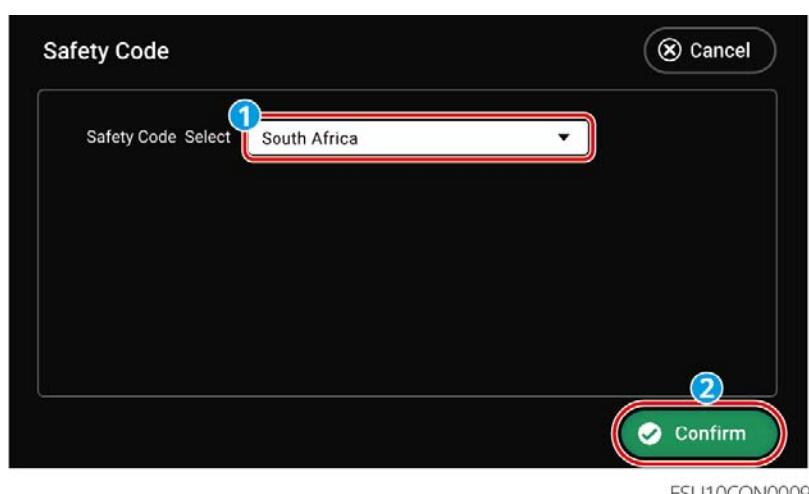
LCD setting interface structure



8.2.2 Quick Settings

Set safety regulations

1. Through the main interface, click > Quick Settings > Safe Code, enter the parameter configuration interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" indicating the parameters have been successfully set.



Parameter Name	safety code	Description
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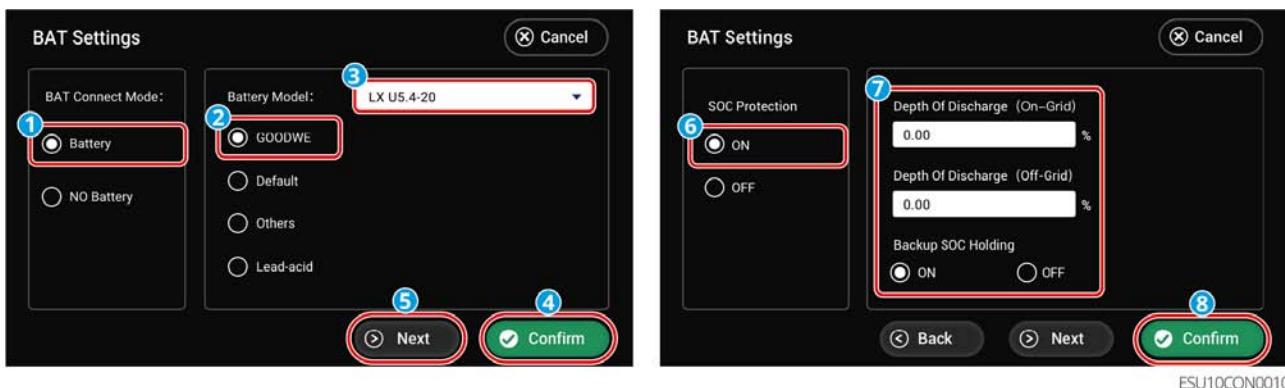
Safety Code select	South Africa	Select the corresponding safety code based on the country or region where the equipment is located.
	Pakistan	
	Argentina	
	Philippines	
	60Hz Default	
	50Hz Default	
	IEC61727 60Hz	

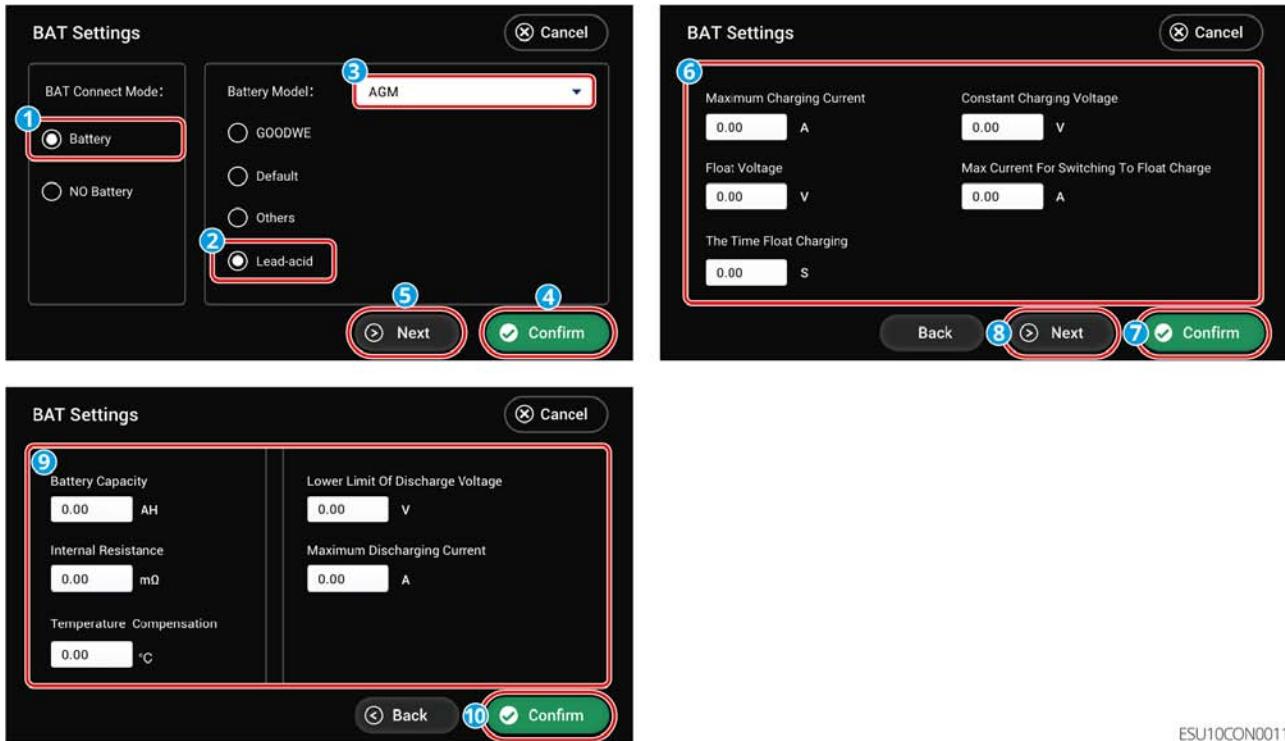
Set Battery parameters

1. Through the main interface, click > Quick Settings > BAT Setting, enter the parameter configuration interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" indicating the parameters have been successfully set.

NOTICE

Please ensure to click "Confirm" on each page to ensure the parameters take effect; otherwise, the system will operate with default parameters.





ESU10CON0011

Basic parameter settings

BAT Connection Mode	Type	Description
Battery	GOODWE	If the system is connected to a GoodWe brand lithium Battery, select GOODWE and choose the correct model.
	Default	If the third-party lithium Battery model connected to the system is not listed, please select based on actual conditions: <ul style="list-style-type: none"> Lithium 50Ah Lithium 100Ah
	Others	If the third-party lithium Battery model connected in the system is listed here, please select the correct model based on the actual situation.
	Lead acid	If the system is connected to a lead-acid Battery, select Lead acid and choose the correct lead-acid type. Currently supported types are GEL, AGM, and Flooded.
NO Battery		No Battery is connected to the system

BAT Setting	Set according to the actual connected Battery in the system.
-------------	--

Lithium Battery parameter settings

Parameter Name	Description
SOC Protection	Enable or disable the SOCProtection function.
Depth Of Discharge (On-Grid)	During operation of the Inverteron-grid, the maximum depth of dischargeProtection point of the Battery.
Depth Of Discharge (Off-Grid)	During off-grid operation, the maximum depth of discharge Protection point of Battery.
Backup SOC Holding	To ensure that the Battery SOC is sufficient to maintain normal system operation during off-grid conditions, when the system operates in on-grid mode, the Battery will charge via Utility grid or PV Charge until the preset SOC Protection value is reached.

Lead-acid Battery parameter settings

Parameter Name	Description
Maximum Charging Current	Battery charge defaults to constant charging mode; The maximum Charge voltage and maximum Charge current in this mode must be set; please configure according to Battery Technical Data.
Constant Charging Voltage	When Battery charge is less than Maximum Current For Switch To Float Charge and the duration reaches The Time Float Charging, the Battery charge status changes from constant charge mode to float charge mode.
Float Voltage	Float Voltage is the maximum Battery Charge voltage in float charging mode. Please set it according to Battery Technical Data.
The Time Float Charging	
Maximum Current For Switch To Float Charge	
Battery Capacity	Set the Battery capacity according to the actual connection parameters of the Battery.
Internal Resistance	The internal resistance present in Battery should be set according to Battery Technical Data.

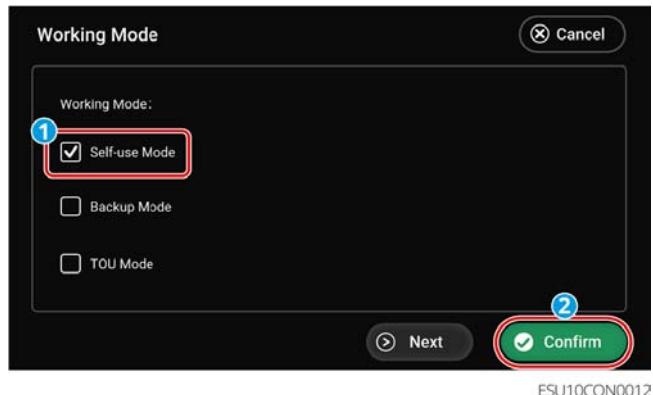
Temperature Compensation	When the default temperature exceeds 25°C, the upper limit of Charge voltage decreases by 3mV for every 1°C increase. Please adjust the settings based on the actual Battery Technical Data.
Lower Limit Of Discharge Voltage	Please configure according to Battery Technical Data.
Maximum Discharging Current	Please set according to Battery Technical Data. The larger the Discharge current, the shorter the working time of Battery.

Set working mode

1. Through the main interface, click  > Quick Settings > Working Mode, enter the parameter setting interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" to indicate successful parameter configuration.

NOTICE

Please ensure to click "Confirm" on each page to validate the parameters; otherwise, the system will operate with default settings.

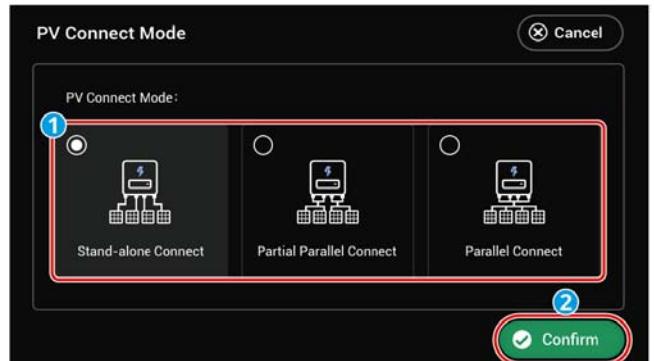


Parameter Name	Description

Self-use Mode		When the working mode is set to Self-use Mode, both Back-up Mode and TOU Mode can be enabled simultaneously. Please select according to actual conditions. The priority of working mode operation is: Back-up Mode > TOU Mode > Self-use Mode.
Back-up Mode	Charging From Grid	Enable this function to allow the system to buy power from the grid.
	Rated Power	The percentage of Power to Inverter Nominal power when purchasing electricity.
TOU Mode	Time	Within the Start Time and End Time, the Battery performs Charge or Discharge based on the set charging Discharge mode and Nominal power.
	Charge/Discharge	Set to Charge or Discharge based on actual requirements.
	Power (%)	The percentage of Power to Inverter Nominal power during Charge or Discharge.
	Bat (%)	When the Battery reaches the set SOC, the Charge is stopped.
		To set the stop SOC for Battery discharge, please refer to 9.2.2.2 Set Battery parameters Chapter: Set Depth of Discharge (On-Grid) and Depth of Discharge (Off-Grid) via the LCD screen.

Set PV connection mode

1. Through the main interface, click  > Quick Settings > PV Connect Mode, enter the parameter configuration interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" to indicate successful parameter configuration.

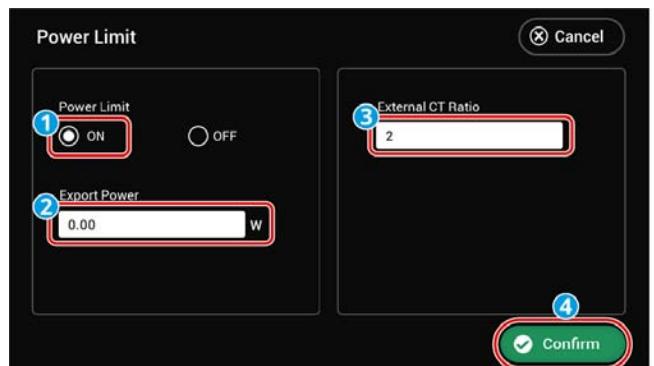


ESU10CON0015

Parameter Name	Description
Stand-alone Connect	The PV String is connected in a one-to-one correspondence with the MPPT port on the Inverter side.
Partial Parallel Connect	When a string of PV String is connected to one MPPT port on the Inverter side, other PV modules are simultaneously connected to other MPPTs port on the Inverter side.
Parallel Connect	When the external PV String is connected to the Inverter-side PV input port, one PV String is connected to multiple PV inputs port.

Set Export power limit

1. Through the main interface, click > Quick Settings > Power Limit, enter the parameter setting interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" to indicate successful parameter configuration.



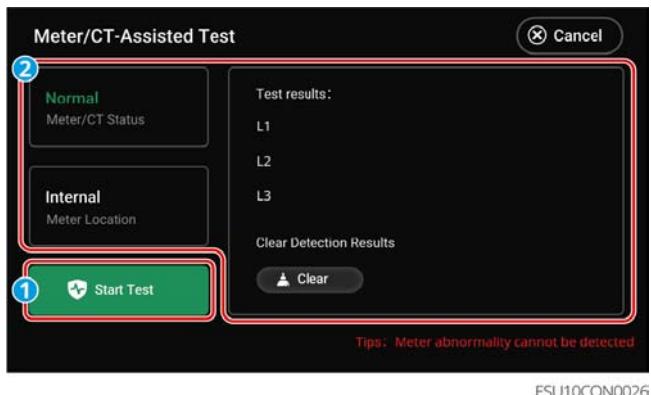
ESU10CON0016

Parameter Name	Description
----------------	-------------

Power Limit	According to the Utility grid standard requirements of certain countries or regions, this function should be enabled when it is necessary to limit the output Power.
Export Power	Set according to the maximum Power that can actually be input to Utility grid.
External CT Ratio	<p>Set as the ratio of the primary side to the secondary side current of the external CT.</p> <ul style="list-style-type: none"> • Built-in meter or GMK110: No setup required. Default settings are 120A/40mA. • GM330: CT can be sourced from GoodWe or purchased separately, with a CT ratio requirement of nA/5A. • nA: Primary side input of CT current, range of n is 200-5000. • 5A: CT secondary side output current.

Electric Meter/CT Auxiliary Testing

1. Through the main interface, click > Quick Settings > Meter/CT Assisted Test, enter the parameter configuration interface.
2. Click Start Test to begin the detection. After completion, determine the test result based on the interface prompts.

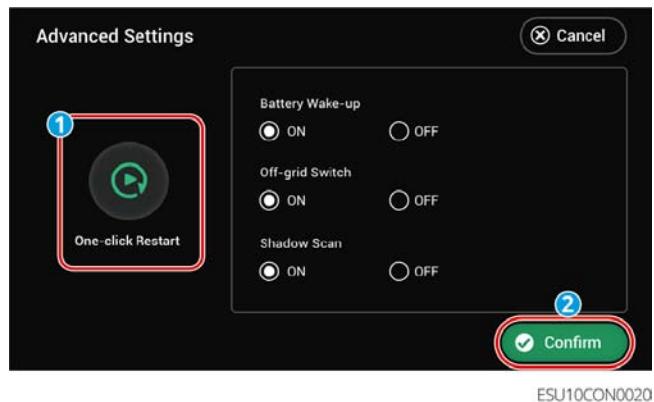


ESU10CON0026

8.2.3 Setting Advanced Parameters

1. Through the main interface, click > Advanced Settings, enter the parameter configuration interface. Input the initial password: 1111.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm"

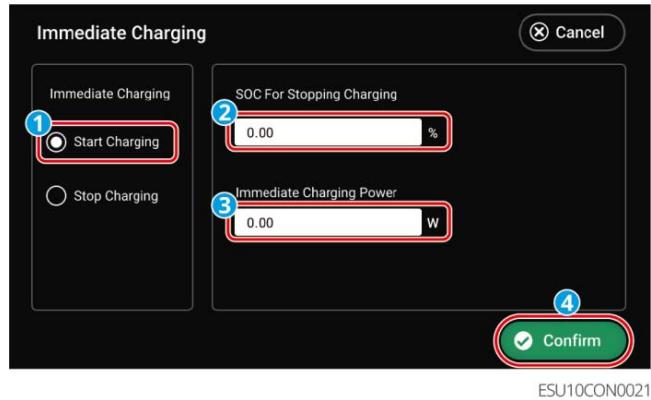
"OK" to indicate successful parameter configuration.



Parameter Name	Description
One-click restart	Using this function, you can quickly restart the Inverter.
Battery Wake-up	When enabled, it can wake up Battery after Battery shuts down due to undervoltage Protection. Only applicable to lithium breaker without Battery. After activation, the output voltage of Battery port is approximately 60V.
Off-grid Switch	In off-grid mode, the off-grid control switch controls the activation and deactivation of the Inverter off-grid function. Under On-grid mode, this function is not effective. The switch is in the ON state by default, enabling the off-grid function. After Inverter power on, Inverter activates the off-grid output function. In the off-grid state, turning the off-grid switch off and then on again clears the off-grid overload time and restarts the off-grid output.
Shadow Scan	When the photovoltaic panel is severely shaded, enabling the shadow scan function can optimize Inverter power generation Efficiency.

8.2.4 Setting Immediate Charging

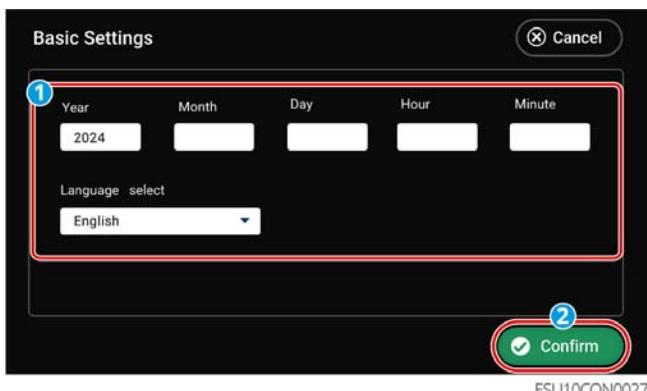
1. Through the main interface, click Immediate Charging, enter the parameter setting interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" indicating the parameters have been successfully configured.



Parameter Name	Description
Immediate Charging	After activation, Utility grid will immediately supply power to Battery charge. This effect is only triggered once. Please enable or disable it as needed.
SOC For Stopping Charging	When Battery (immediate charging) is enabled, charging to Battery charge will stop once the Battery SOC reaches the Charge cutoff SOC.
Immediate Charging Power	When Battery is enabled, the percentage of Charge Power to Inverter Nominal power. For example, for a Nominal power with a capacity of 10kW, when set to 60, the Charge Power is 6kW.

8.2.5 Setting the Basic Information

1. Through the main interface, click > Basic Settings, enter the parameter configuration interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" to indicate successful parameter configuration.

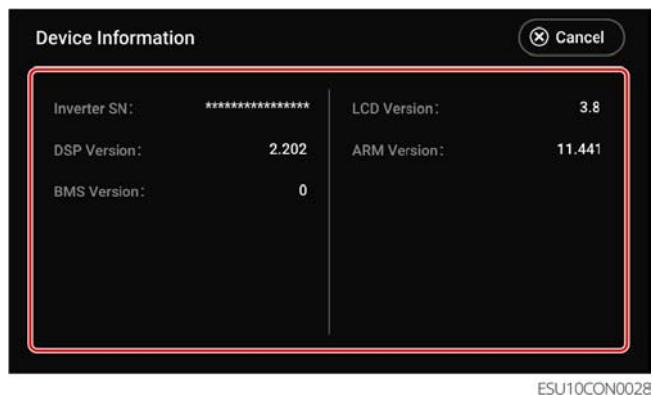


8.2.6 Viewing Device Information

1. Through the main interface, click  > Device Information, enter the parameter query interface.

NOTICE

You can query the Inverter serial number, DSP version, BMS version, LCD version, and ARM version.



8.2.7 Setting Port Connection

NOTICE

To set the relevant parameters of grid-tied PV inverter in microgrid mode, please connect SolarGo APP for configuration.

Setting Port Connection generator

1. Through the main interface, click  > Port Connection, enter the parameter setting interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" to indicate successful parameter configuration.

NOTICE

Please ensure to click "Confirm" on each page to validate the parameters; otherwise, the system will operate with default settings.

ETL10CON0004

No.	Parameter Name	Description
1	Generator ON/F _{OFF}	Control the start and stop of the generator. Only applicable to generators supporting dry contacts.
2	Rated Power	Generator's Nominal power.
3	Run Time	The continuous operation time of the generator. After exceeding the set operation time, the generator will automatically shut down. This function is only effective for generators that support dry contact connections.
4	Max Charging Power	Set as Max charge power with generator as Battery charge.
5	SOC for Starting Charging	Set the generator to start at Battery charge SOC. When the SOC of Battery falls below the set value, the generator will charge Battery charge.
6	SOC for Stopping Charging	Set the generator to stop charging Battery charge at the specified SOC. When the SOC of Battery reaches the set value, the generator will cease charging Battery charge.
7	Maximum Operation Voltage	Set the operational voltage upper limit for the generator.

8	Minimum Operation Voltage	Set the lower limit of the generator's operating voltage.
9	Upper Limit Of Operating Frequency	Set the operating Frequency upper limit of the generator.
10	Lower Limit Of Operating Frequency	Set the lower limit of the generator's operating Frequency.
11	Delay Before Load	No-load preheating time of the generator before loading.
12	Prohibited Working Hours	Please set the prohibited operating time of the generator according to the actual situation.

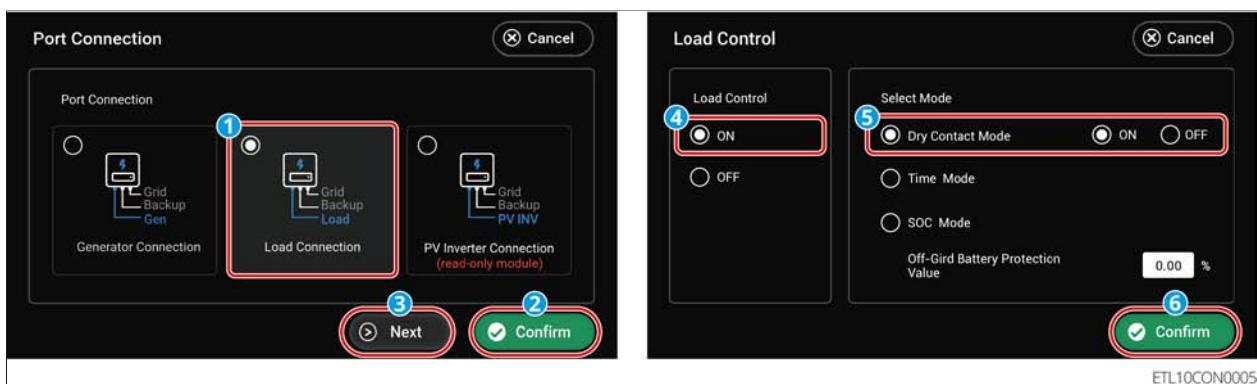
Setting Port Connection load control

1. Through the main interface, click > Port Connection, enter the parameter setting interface.
2. Please set the parameters according to the actual situation.
3. After completing the settings, click "Confirm". The interface will display "Confirm OK" to indicate successful parameter configuration.

NOTICE

Please ensure to click "Confirm" on each page to validate the parameters; otherwise, the system will operate with default settings.

Dry contact mode



Time mode

Port Connection

1. Load Connection selected (highlighted with a red box).

2. Confirm button (highlighted with a red box).

3. Next button.

Load Control

4. ON selected (highlighted with a red box).

5. Time Mode selected (highlighted with a red box).

6. Confirm button (highlighted with a red box).

Time Mode

7. Load control 1 selected (highlighted with a red box).

8. Time settings: 00:00 - 00:00 (highlighted with a red box).

9. Standard mode selected (highlighted with a red box).

10. Confirm button (highlighted with a red box).

SOC Mode

12. Load control 4 selected (highlighted with a red box).

13. Time settings: 00:00 - 00:00 (highlighted with a red box).

14. Standard mode selected (highlighted with a red box).

15. Confirm button (highlighted with a red box).

ETL10CON0007

SOC mode

Port Connection

1. Load Connection selected (highlighted with a red box).

2. Confirm button (highlighted with a red box).

3. Next button.

Load Control

4. ON selected (highlighted with a red box).

5. SOC Mode selected (highlighted with a red box).

6. Confirm button (highlighted with a red box).

ETL10CON0006

No.	Parameter Name	Description
1	Load Control ON/OFF	Enable/disable load control function
2	Dry Contact Mode	ON: When the switch status is set to ON, power supply to the load begins. OFF: When the switch status is set to OFF, power supply to the load is terminated.
3	Time Mode	Within the set time period, the load will automatically supply power to the load or POWER OFF. Standard mode or smart mode can be selected.

4	Load Control 1	Set the 1st group load control time, up to 4 groups can be set.
5	Mode: Standard/Intelligent	Standard mode: Power will be supplied to the load during the set time period. Smart Mode: During the set time period, when the remaining energy generated by photovoltaics exceeds the preset load Nominal power, it starts supplying power to the load.
6	Load Consumption Time	Minimum operating time after load is turned on to prevent frequent switching due to energy fluctuations. Only applicable in smart mode.
7	Load Rated Power	When the surplus energy generated by the PV exceeds this load Nominal power, it starts supplying power to the load. This applies only to smart mode.
8	SOC Mode	Inverter has built-in relay dry contact control port, which can control whether to supply power to the load through the relay.
9	Off-Grid Battery Protection Value	In off-grid mode, if an overload is detected at the BACK-UP terminal or the BatterySOC value falls below the off-grid BatteryProtection setpoint, power supply to the load connected to the relay port can be terminated. Please configure the off-grid BatteryProtection value according to actual requirements.

8.3 Configured via SolarGo APP

8.3.1 App Introduction

NOTICE

- The interface graphics or terms used in this article are based on SolarGo App V6.8.0. App version upgrades may lead to interface changes, and the data shown in the images is for reference only. Please refer to the actual content for specifics.
- The model of the equipment varies, and the displayed parameters will differ based on the configured safety regulation country. Please refer to the actual interface for specific parameters.
- Before setting the parameters, please carefully read this manual and the corresponding product user manual of the model to familiarize yourself with the product's functions and features. Incorrect Utility grid parameter settings may result in the Inverter being unable to on-grid or not operating in accordance with the Utility grid requirements, affecting the Inverter power generation.

The SolarGo App is a mobile application software that can communicate with Inverter or Charge piles via Bluetooth, WiFi, 4G, or GPRS. Below are the common features:

- View the device's operational data, software version, alarm information, etc.
- Set the safety regulation country, Utility grid parameters, Power limits, communication parameters, etc. for Inverter.
- Set the Charge pile Charge mode, etc.
- Maintenance equipment.

8.3.1.1 Download and install the Installation SolarGo App

Mobile phone requirements:

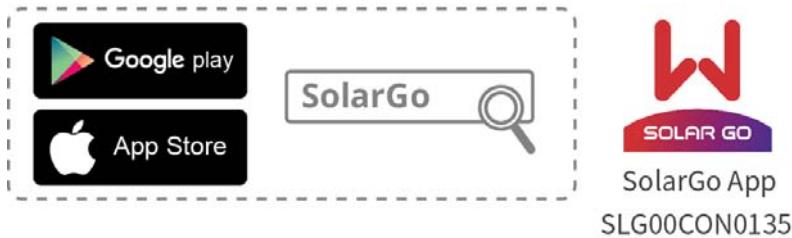
- Mobile operating system requirements: Android 5.0 and above, iOS 13.0 and above.
- The phone supports a web browser for connecting to the Internet.
- The phone supports WLAN/Bluetooth functionality.

NOTICE

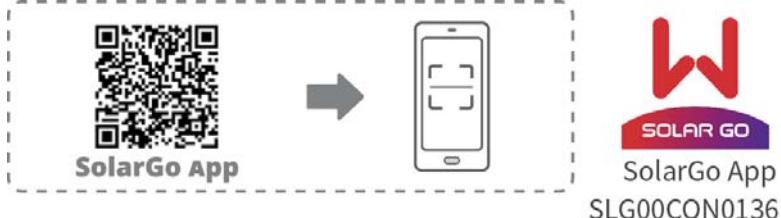
After the SolarGo App is Installation, subsequent version updates will automatically prompt for software upgrades.

Option 1: Search for SolarGo on Google Play (Android) or App Store (iOS) to download

and install.



Option 2: Scan the QR code below to download and Installation.

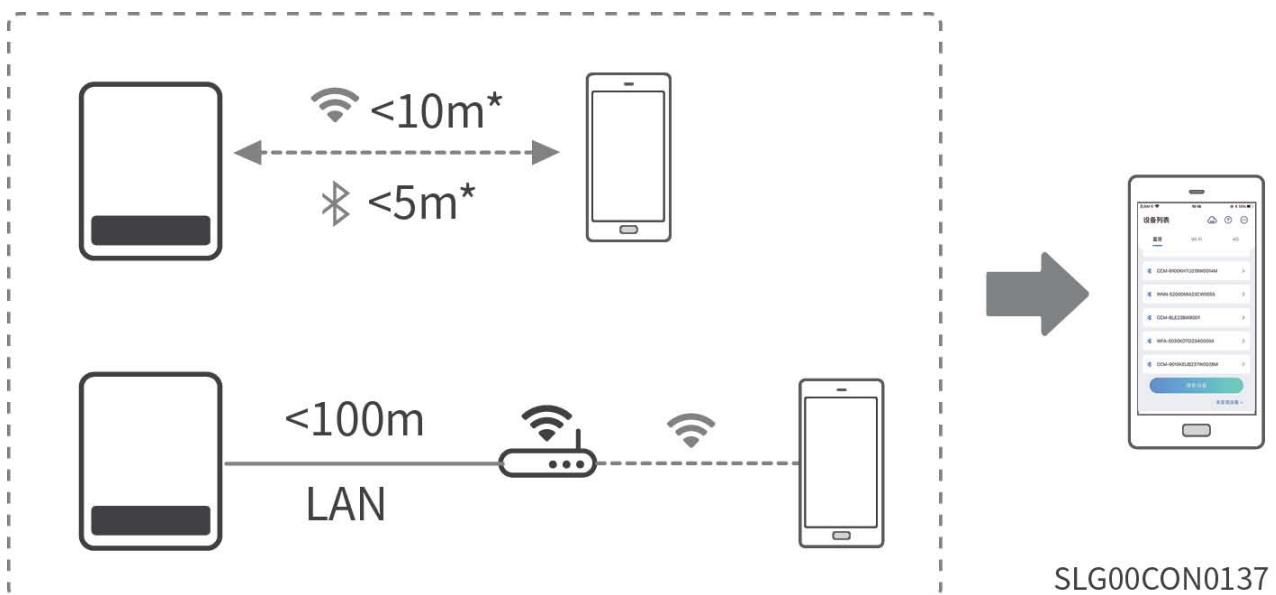


8.3.1.2 Connection method

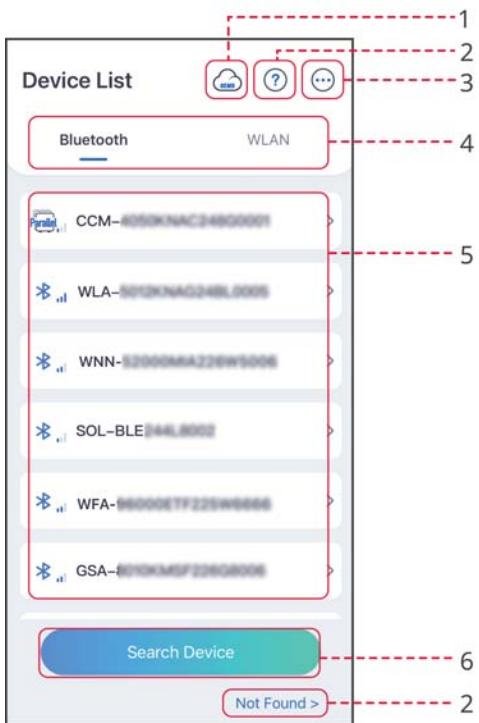
After the device power on is installed, it can be connected to the App via the following methods:

NOTICE

smart dongle may vary, and the specific connection distance could differ. Please refer to the actual smart dongle in use.



8.3.1.3 Login Interface Introduction



No.	Name/Icon	Description
1		Click the icon to jump to the download interface of Xiaogu Cloud Window.
2		View the device connection guide.
	No equipment found	
3		<ul style="list-style-type: none"> View information, such as App version and contact details. Other settings, such as updating data, switching languages, setting temperature display units, etc.
4	Bluetooth/Wi-Fi/4G	Select according to the actual communication method of the equipment. If in doubt, please click or No equipment found View more detailed instructions.

No.	Name/Icon	Description
5	Equipment List	<ul style="list-style-type: none"> Display the list of connectable devices. The device name corresponds to the device serial number. Please select the appropriate device based on the device serial number. When multiple Inverter units form a parallel system, select the corresponding equipment based on the Master inverter serial number. When the device model or communication stick model is different, the displayed device name varies: <ul style="list-style-type: none"> Wi-Fi/LAN Kit; Wi-Fi Kit; Wi-Fi Box: Solar-WiFi*** Bluetooth module or Inverter built-in Bluetooth module: SOL-BLE*** WiFi/LAN Kit-20: WLA-*** WiFi Kit-20: WFA-*** Ezlink3000: CCM-BLE***; CCM-***; *** 4G Kit-CN-G20/4G Kit-CN-G21: GSA-***; GSB-*** 4G Kit-G20: LGA-*** Microinverter: WNN*** Charge pile:*** Except for Solar-WiFi***, which is a WiFi signal, all other signals are Bluetooth signals.
6	Search equipment	When no corresponding device is found in the device list, click Search Device.

8.3.2 Connection hybrid inverter

8.3.2.1 Connect hybrid inverter (Bluetooth)

Step 1 Confirm that the Inverter is already power on, and both the smart dongle and Inverter are operating normally.

Step 2 Based on the smart dongle type, select the Bluetooth tab on the SolarGo App home screen.

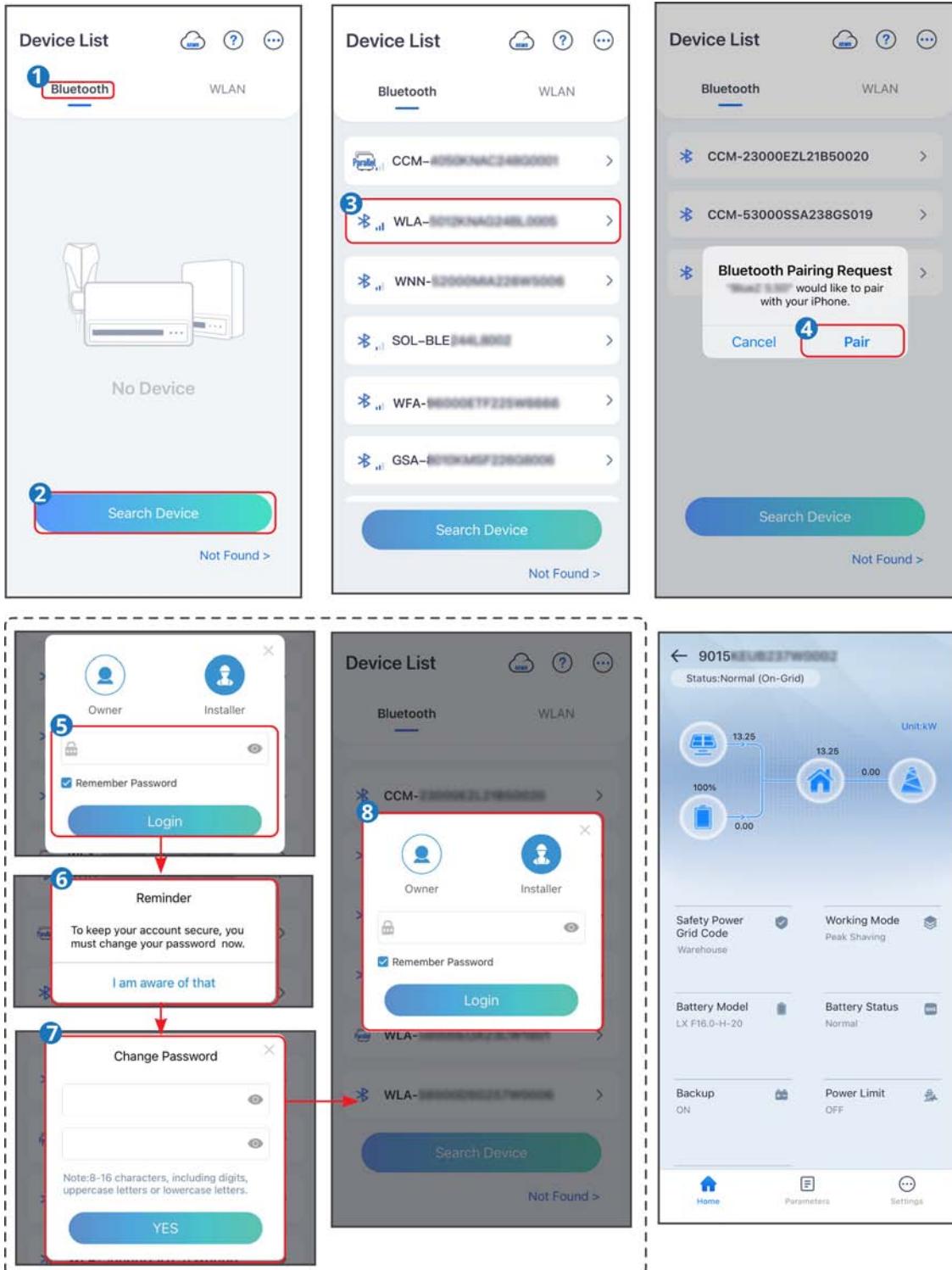
Step 3 Pull down or click the search device to refresh the device list. Confirm the Inverter signal name based on Inverter serial number, then click the Inverter signal

name to enter the login interface. When multiple Inverter units form a parallel system, select the corresponding device according to Master inverter serial number.

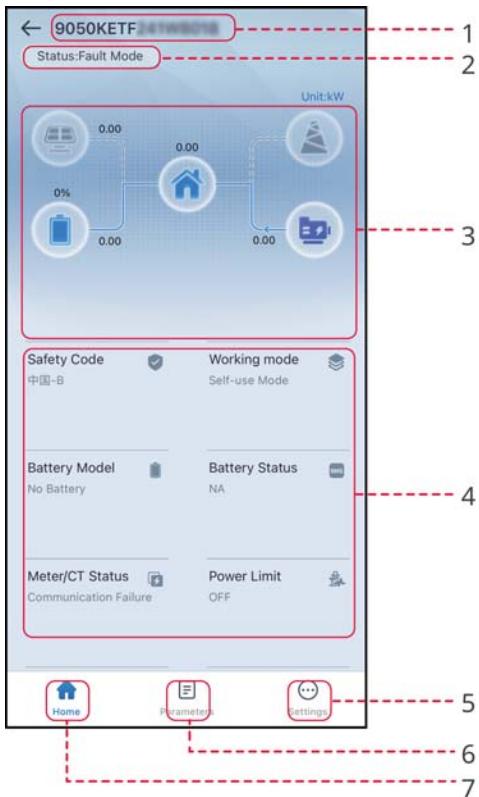
Step 4 When connecting to the device via Bluetooth for the first time, a Bluetooth pairing prompt will appear on the interface. Please click "Pair" to continue the connection and proceed to the login screen.

Step 5 Log in to the App according to your actual role, and follow the on-screen instructions to change your login password. The initial login password is 1234. After changing the password, log in again and enter the device details page.

Step 6 (Optional): If connecting to Inverter via WLA-*** or WFA-***, after entering the device details page, please enable Bluetooth to remain on as prompted by the interface. Otherwise, the Bluetooth signal will be turned off after the current connection ends.



8.3.3 hybrid inverter Interface Introduction



No.	Name/Icon	Description
1	Equipment serial number	Connected device serial number.
2	Equipment status	Display the Inverter status, such as running, fault, etc.
3	power diagram	Display the power diagram of the PV system. The interface display is subject to the actual situation.
4	Parallel system	<ul style="list-style-type: none"> When the system is a parallel system, it displays the total number of parallel units, parallel status, etc. For certain models, click to view the SN numbers of each device in the parallel system. Clicking on a device's SN number will take you to the single Inverter configuration interface.

No.	Name/Icon	Description
5	System Operation Status	Display the current system operating status, such as safety compliance zones, operating mode, Battery model, Battery status, power limit, three-phase imbalance, etc.
6		Home page interface. Click to view device serial number, operating status, power diagram, system operation status, and other information.
7		Parameter interface. Click to view the Inverter operating parameters.
8		<ul style="list-style-type: none"> Settings Interface. Click to perform Quick Settings, basic settings, advanced settings, etc., on Inverter. Access to Quick Settings and advanced settings requires login. Please contact the supplier or after-sales service to obtain the password. The password is for use by professional technical personnel only.

8.3.4 Set communication parameters

NOTICE

The communication configuration interface may vary depending on the communication method used or the smart dongle connected to Inverter. Please refer to the actual interface.

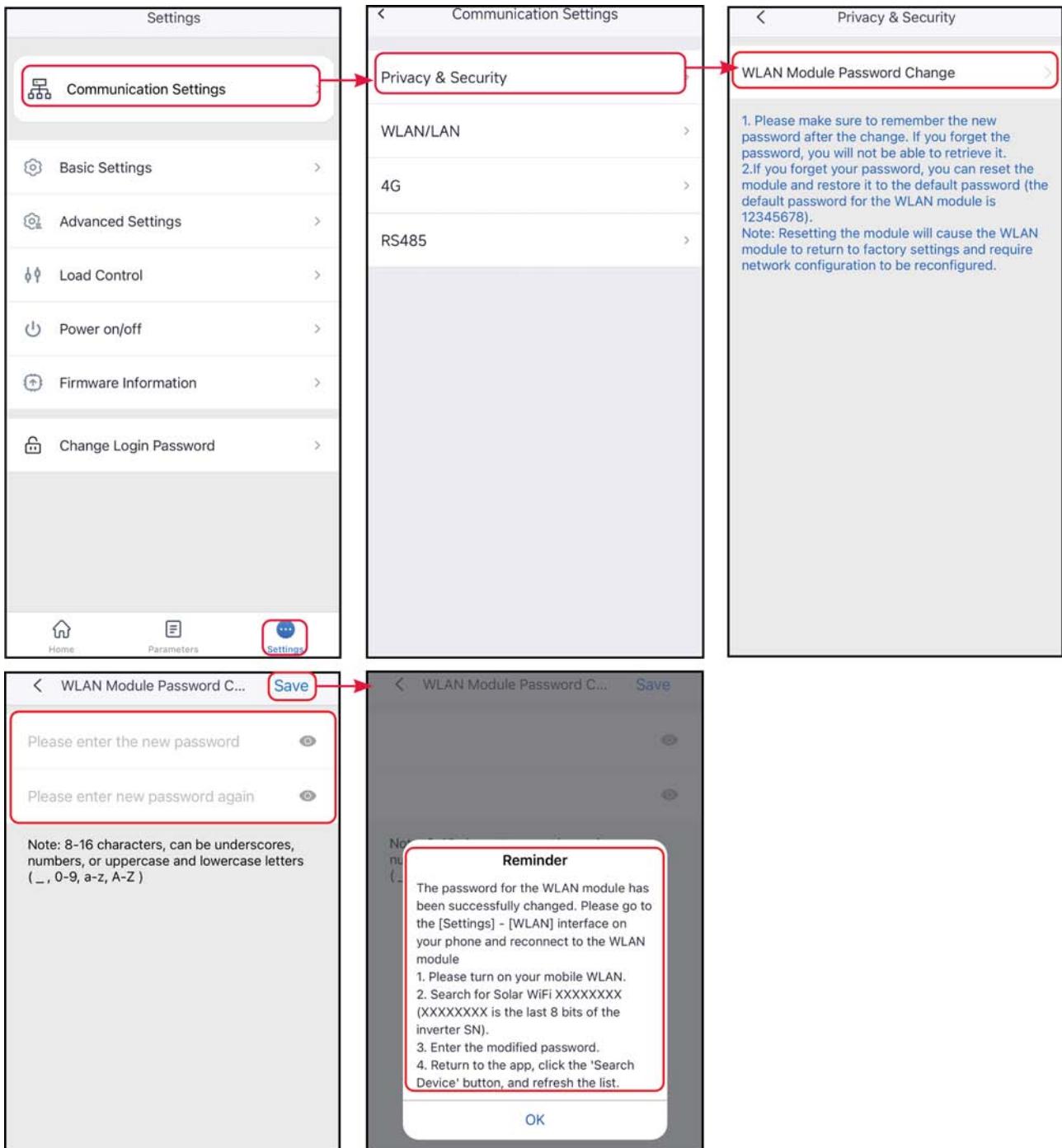
8.3.4.1 Configure privacy and security parameters

Type I

Step 1 Through **Home > Settings > Communication Configuration > Privacy & Security > WLAN Module Password Modification** Enter the settings page.

Step 2 Set a new smart dongle WiFi hotspot password according to actual needs, and click **Save** Setup completed.

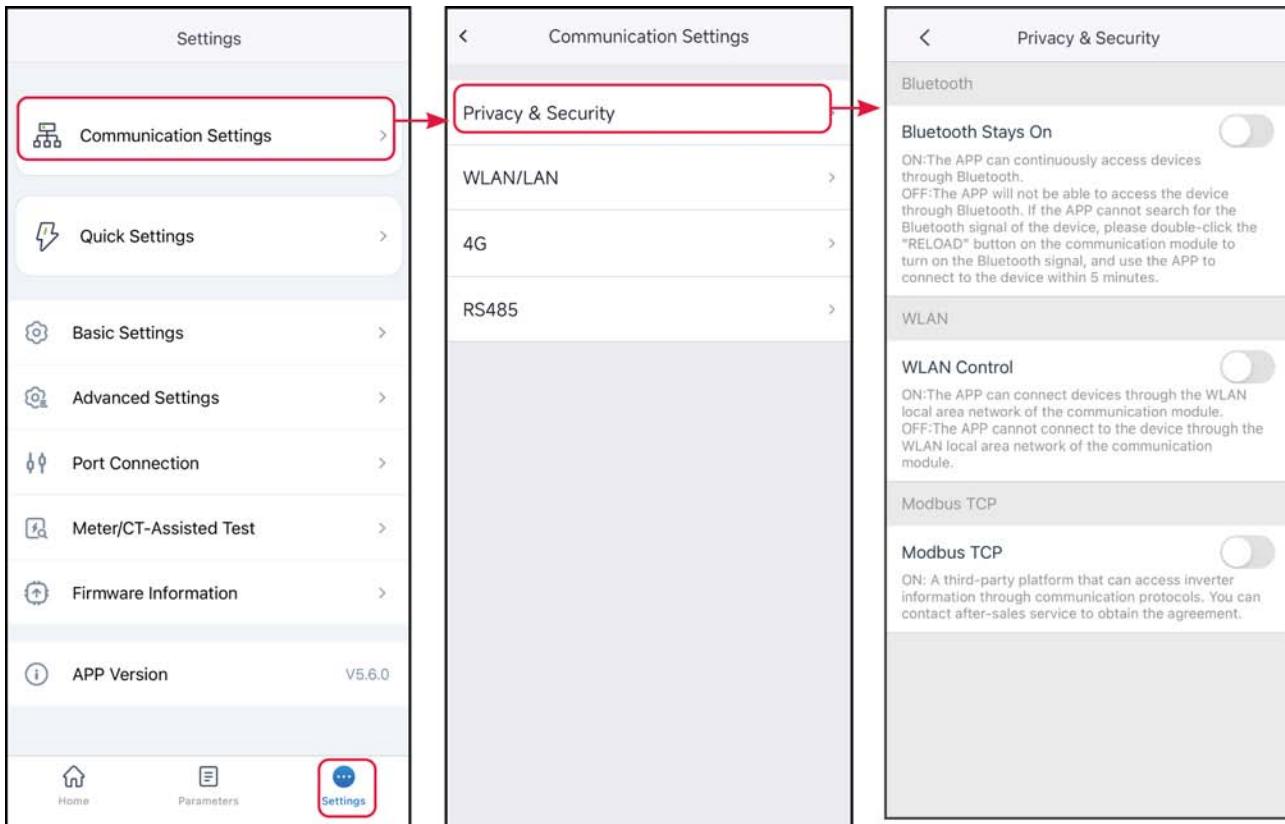
Step 3 Open the WiFi settings on your phone and connect to the Inverter WiFi signal using the new password.



Type II

Step 1 Through **Home > Settings > Communication Configuration > Privacy & Security** Enter the settings page.

Step 2 Enable the corresponding function based on actual requirements.

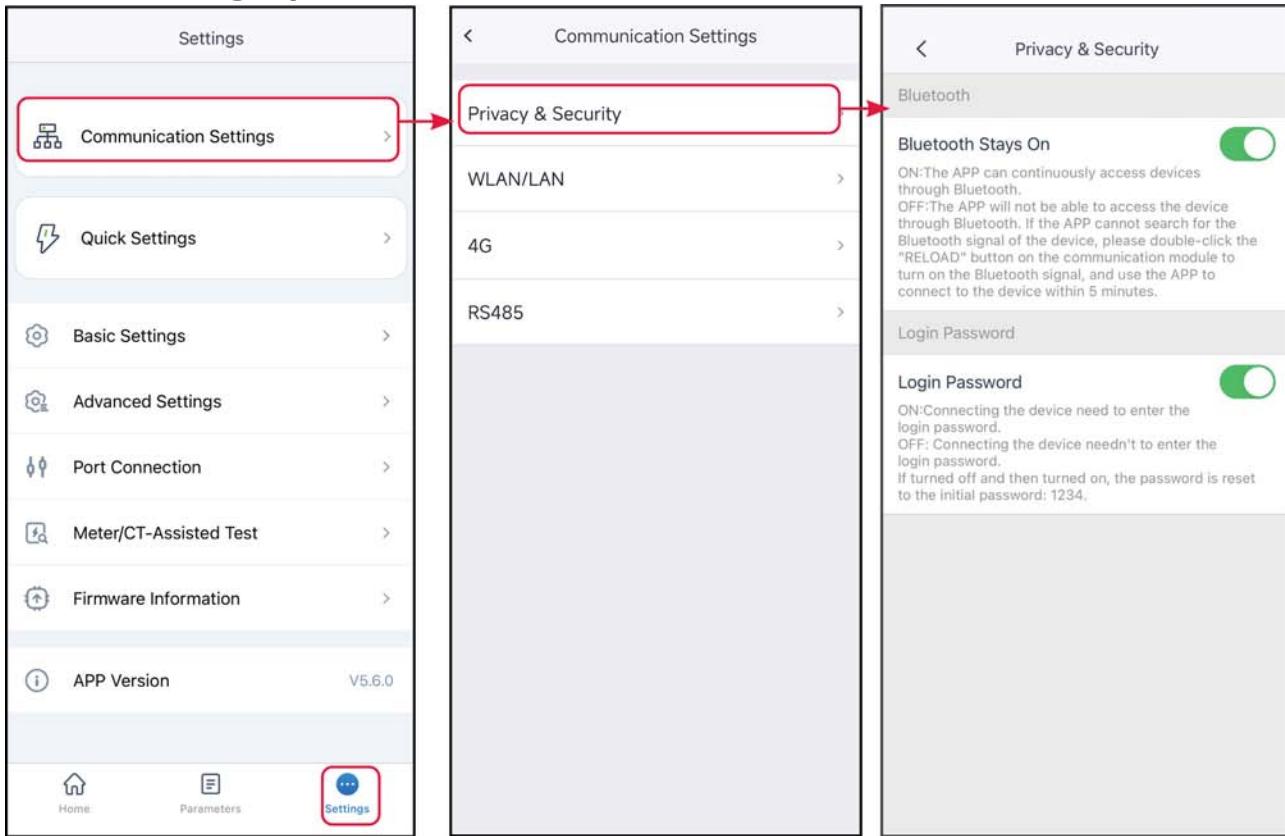


No.	Parameter Name	Description
1	Bluetooth continuously enabled	Default off. When enabled, the device's Bluetooth remains continuously active, maintaining the connection with SolarGo. Otherwise, the device's Bluetooth will turn off after 5 minutes, disconnecting from SolarGo.
2	WLANControl	Disabled by default. When enabled, SolarGo can connect to the device via WLAN if they are on the same local network; otherwise, connection will not be possible even within the same LAN.
3	Modbus-TCP	When this function is enabled, third-party platforms can access the Inverter via the Modbus TCP protocol to achieve monitoring capabilities.
4	SSH control Ezlink	When this function is enabled, third-party platforms can connect to and control the Linux system of EzLink.

Type III

Step 1 Through **Home > Settings > Communication Configuration > Privacy & Security** Enter the settings page.

Step 2 Enable according to actual requirements **Bluetooth continuously enabled** and **Login password** Function.



No.	Parameter Name	Description
1	Bluetooth continuously enabled	Default off. When enabled, the device's Bluetooth remains continuously active, maintaining the connection with SolarGo. Otherwise, the device's Bluetooth will turn off after 5 minutes, disconnecting from SolarGo.
2	Login password	Default off. When enabled, the device will prompt for a login password when connecting to SolarGo. For the first-time use of the login password, please use the initial password and follow the on-screen instructions to change it.

8.3.4.2 Configure WLAN/LAN parameters

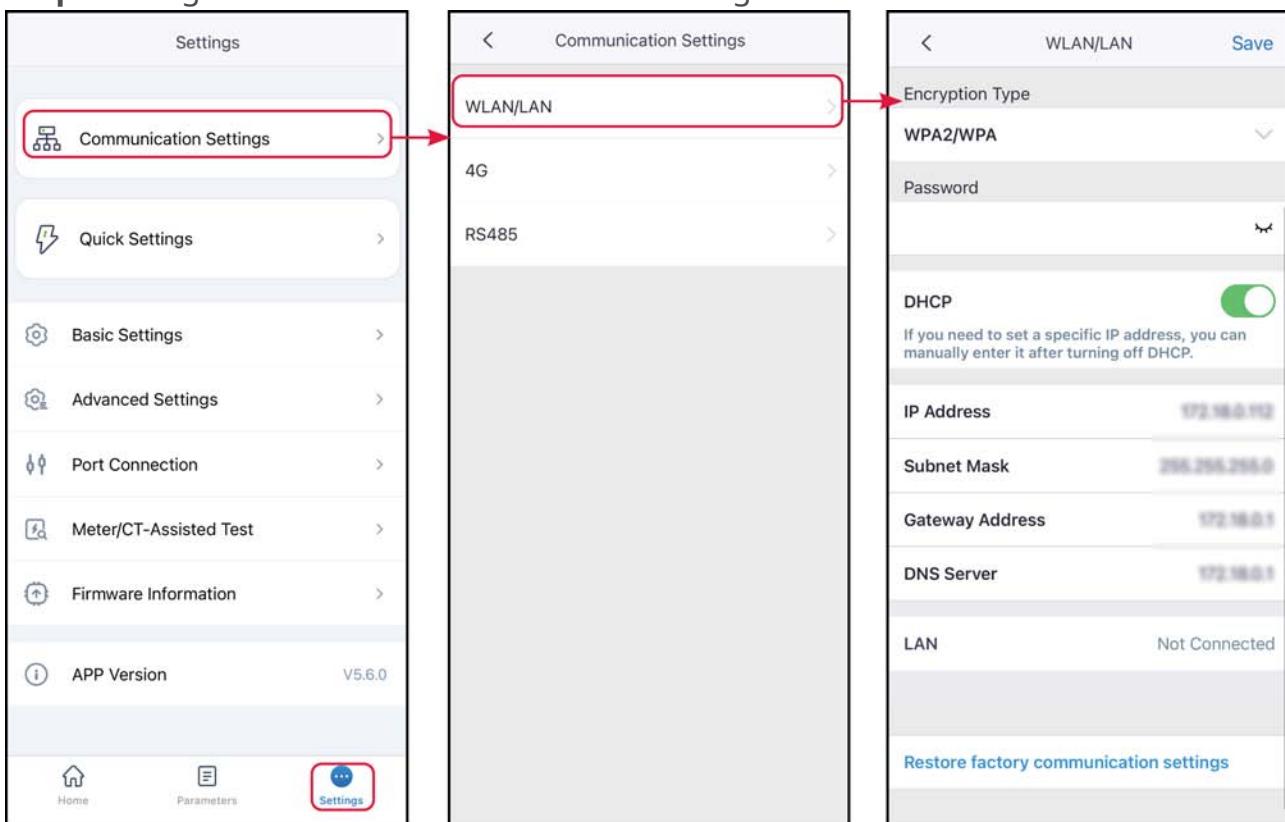
NOTICE

When the Inverter-connected smart dongle differs, the communication configuration interface may vary. Please refer to the actual interface.

Step 1 Through Home > Settings > Communication Configuration >

WLAN/LAN Enter the settings page.

Step 2 Configure WLAN or LAN network according to actual conditions.



No.	Parameter Name	Description
1	Network Name	Suitable for WLAN. Please select the corresponding network based on actual requirements to enable communication between the device and the Router or switch.
2	Password	Suitable for WLAN. Enter the password of the actually selected network.

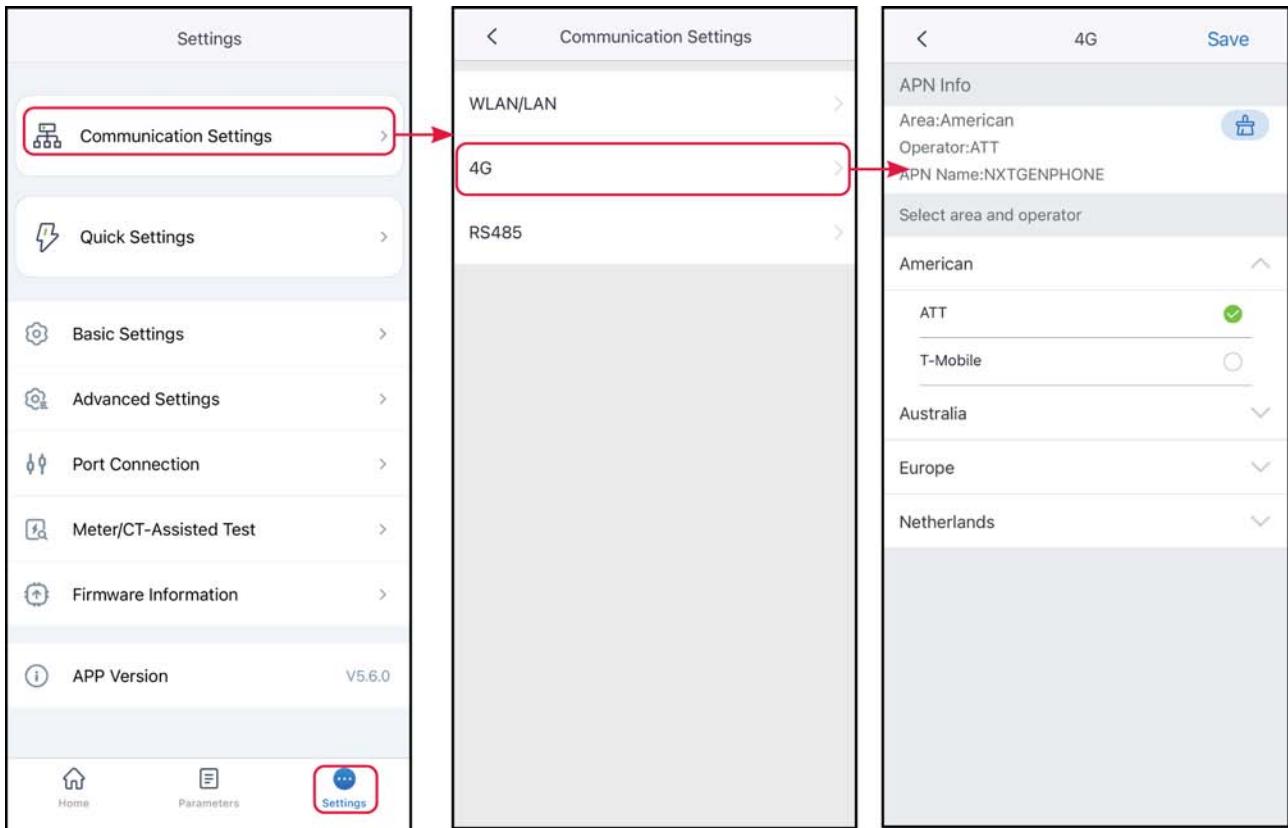
No.	Parameter Name	Description
3	DHCP	When Router employs dynamicIPIn mode, turn onDHCPFunction. When using Router as staticIPMode or when using a switch, turn offDHCPFunction.
4	IPAddress	WhenDHCPThis parameter does not need to be configured when turned on. whenDHCPWhen closing, configure this parameter according to Router or switch information.
5	Subnet Mask	
6	Gateway Address	
7	DNSServer	

8.3.4.3 Configure APN parameters

NOTICE
<ul style="list-style-type: none"> APN settings are only applicable for configuring SIM card information of 4G communication devices. If the 4G module does not provide Bluetooth signals, first configure the APN parameters via the Bluetooth module or WiFi module to enable 4G communication.

Step 1: Pass through **Home > Settings > Communication Configuration > 4G** Enter the settings page.

Step 2: Select the region and operator based on actual conditions, and configure the network.



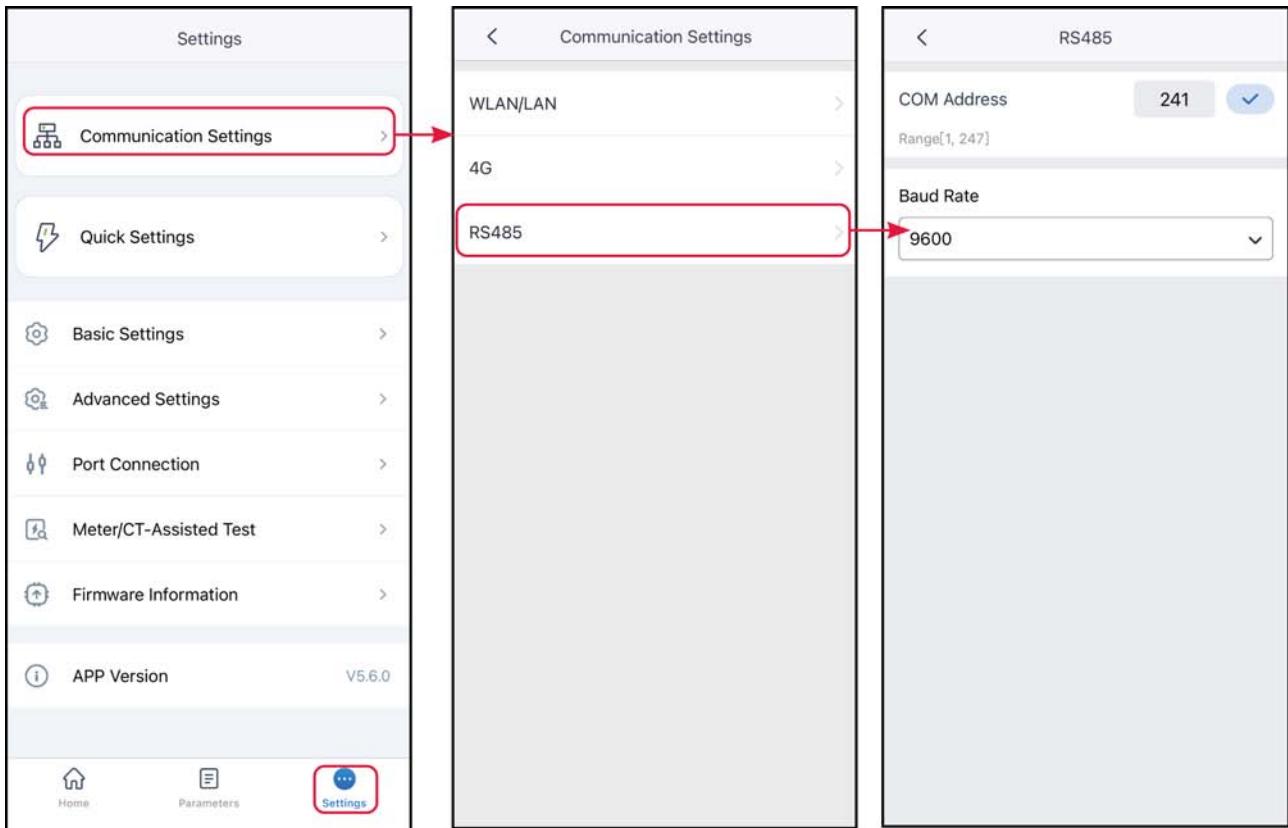
8.3.4.4 Set RS485 communication parameters

NOTICE

Set the host communication address for Inverter. For a single Inverter, set the communication address according to the actual situation. When multiple Inverter are connected, the address of each Inverter must be different, and none of the Inverter should have their communication address set to 247.

Step 1 Through **Home > Settings > Communication Configuration > RS485** Enter the settings page.

Step 2 Configure the communication address and baud rate according to the actual situation.



8.3.5 System Quick Settings

NOTICE

- When Inverter and model differ, the interface display and parameter settings may vary. Please refer to the actual situation.
- When selecting the safety regulation country/region, the system will automatically configure over/under voltage Protection, over/under frequency Protection, Inverteron-gridvoltage/Frequency, connection slope, Cos ϕ curve, Q(U) curve, P(U) curve, PF curve, high/low voltage ride-through, etc., according to the safety requirements of different regions. For specific parameter values, please navigate to Home > Settings > Advanced Settings > Safety Regulation Parameter Settings after configuring the safety regulation region.
- The power generation Efficiency of Inverter varies under different operating modes. Please configure it according to the actual local electricity usage.
 - Self-Use Mode: The basic operating mode of the system. PV generation prioritizes supplying power to the load, with excess electricity directed to the Battery charge. Any remaining electricity is then sold to the Utility grid. When

NOTICE

PV generation does not meet the Load consumption demand, the Battery supplies power to the load. If the Battery capacity also fails to meet the Load consumption demand, the Utility grid supplies power to the load.

- **Back-up Mode:** Recommended for use in unstable Utility grid areas. When Grid disconnected occurs, the Inverter switches to off-grid operation mode, and the Battery discharge supplies power to the load to ensure the BACKUP load does not POWER OFF. When Utility grid is restored, the Inverter operation mode switches back to on-grid operation.
- **TOU Mode:** In compliance with local laws and regulations, electricity trading is scheduled at different time periods based on the peak and valley price differences of Utility grid. According to actual demand, during the valley price period, Battery can be set to Charge mode, buy power from the gridCharge; during the peak price period, Battery can be set to Discharge mode, supplying power to the load via Battery.
- **Off-grid mode:** Suitable for areas without Utility grid. PV and Battery form a pure off-grid system, where PV generation supplies power to the load, and excess electricity charges the Battery charge. When PV generation cannot meet the Load consumption demand, the Battery supplies power to the load.
- **Delay Charge:** Applicable to areas with on-grid Power output restrictions. By setting peak Power limits and Charge time periods, excess photovoltaic generation beyond the on-grid limit can be used to charge the Battery charge, reducing photovoltaic waste.
- **Peakshaving:** Mainly applicable to scenarios with peak Power purchase restrictions. When the total Power of Load consumption exceeds the electricity quota within a short period, Battery discharge can be utilized to reduce the portion of electricity consumption that exceeds the quota.

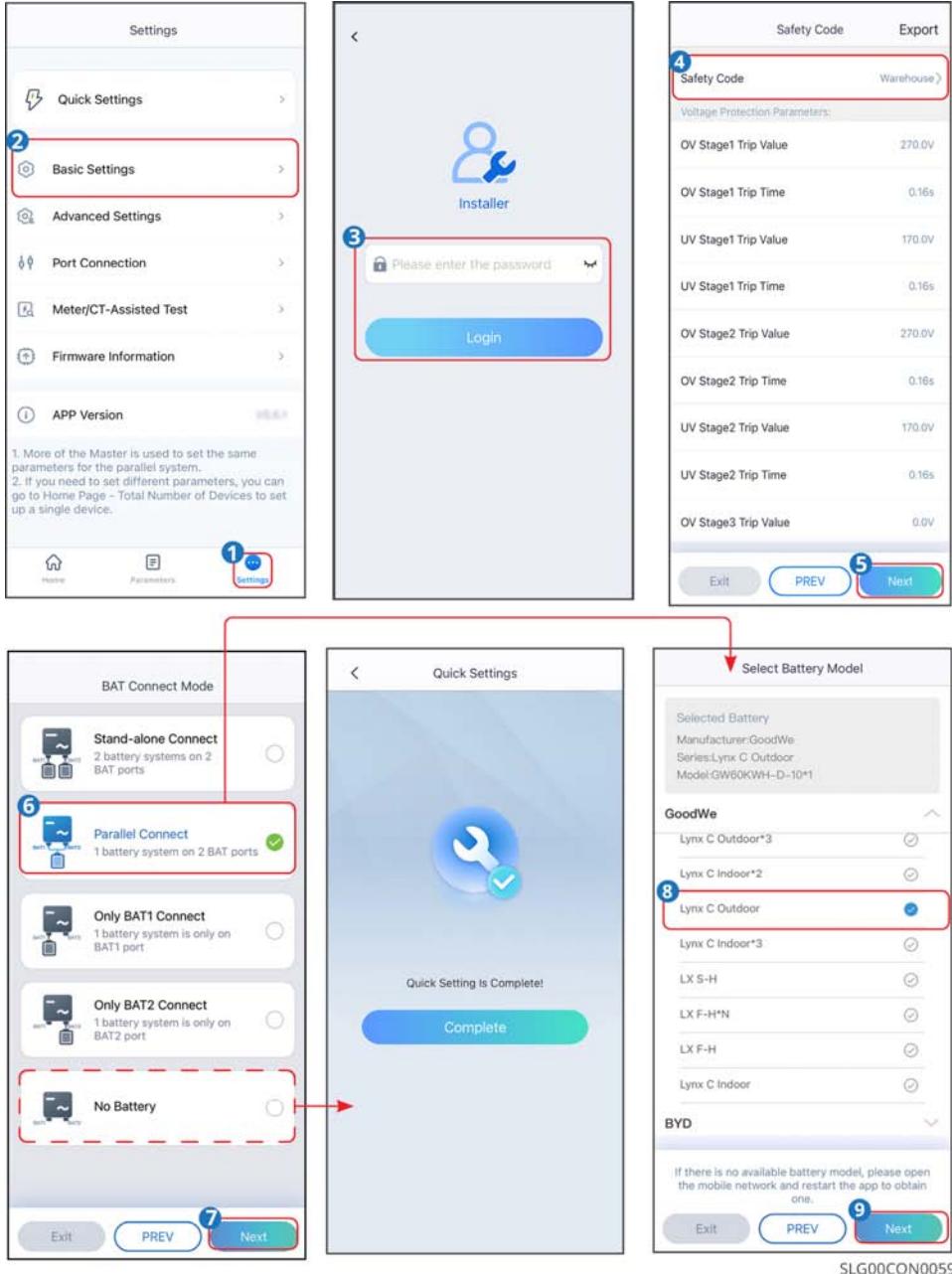
8.3.5.1 System Quick Settings (Type III)

Step 1 Through **Home > Settings > Quick Configuration** Enter the parameter settings page.

Step 2 Enter the login password to access the safety regulation settings interface. Only authorized vendors are allowed to configure.

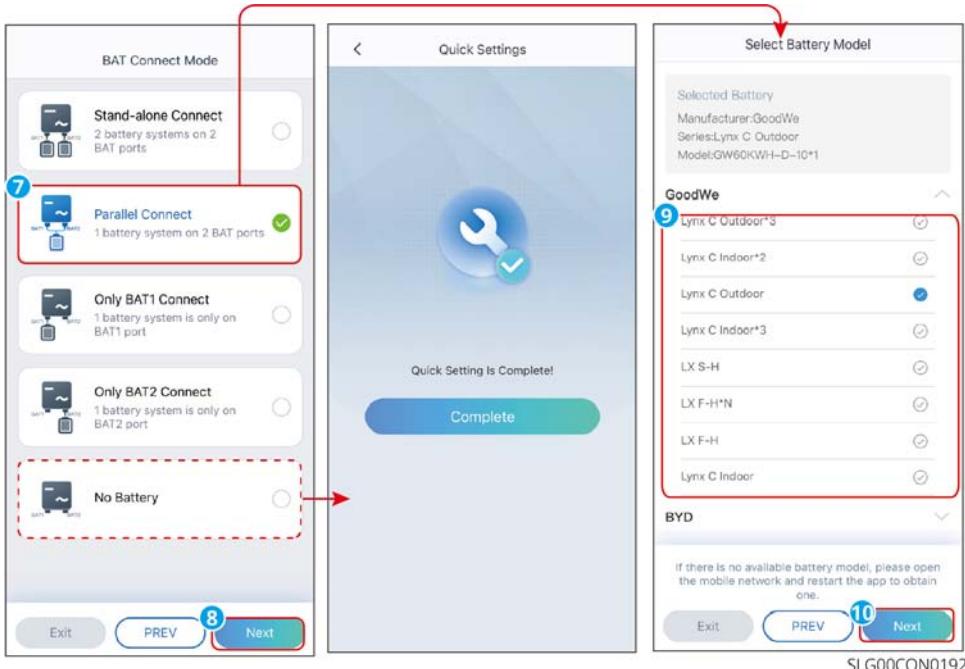
Step 3 Select the safety standard country based on the country or region where Inverter is located. After completing the setup, please click **Next step** Set the Battery access mode or configure the number of Inverter parallel units.

Step 4 Only parallel system. Set the number of Inverter parallel units. After completing the setup, click Next to configure the Battery access mode.

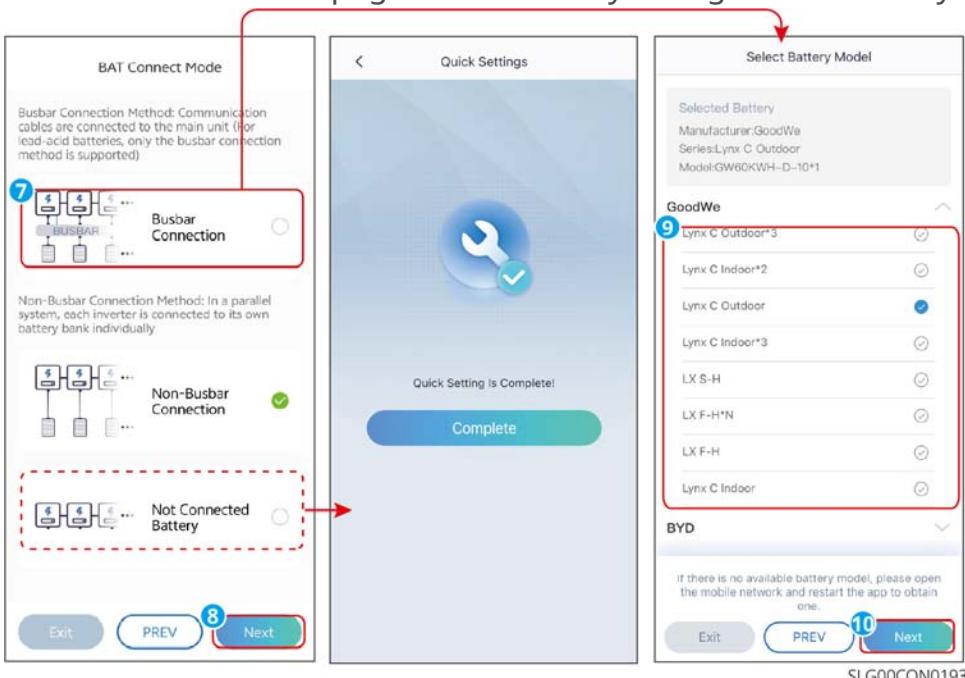


Step 5 Based on the actual situation of Battery connection, select the Battery connection mode. If there is no Battery connection, the basic parameter settings end here. If there is Battery connection, please click after completing the settings. **Next step** Set Battery model.

Step 6 Based on the actual connection of Battery, select Battery model. After completing the settings, please click **Next step** Set working mode.

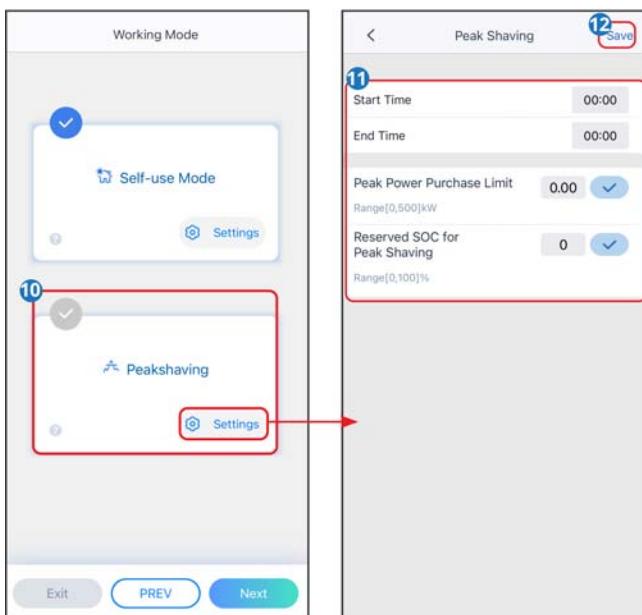


For certain models, when paralleling with Ezlink3000, please configure the Battery connection mode as either busbar mode or non-busbar mode based on actual conditions and select the Battery model. After the master unit is configured, the slave units will automatically synchronize the Battery settings. If the Battery connected to the slave unit differs from the master unit, access the Quick Settings interface via the slave SN on the homepage to individually configure the Battery model.



Step 7 Set the working mode according to actual requirements. After setting, please click **Next step** Entering device self-check.

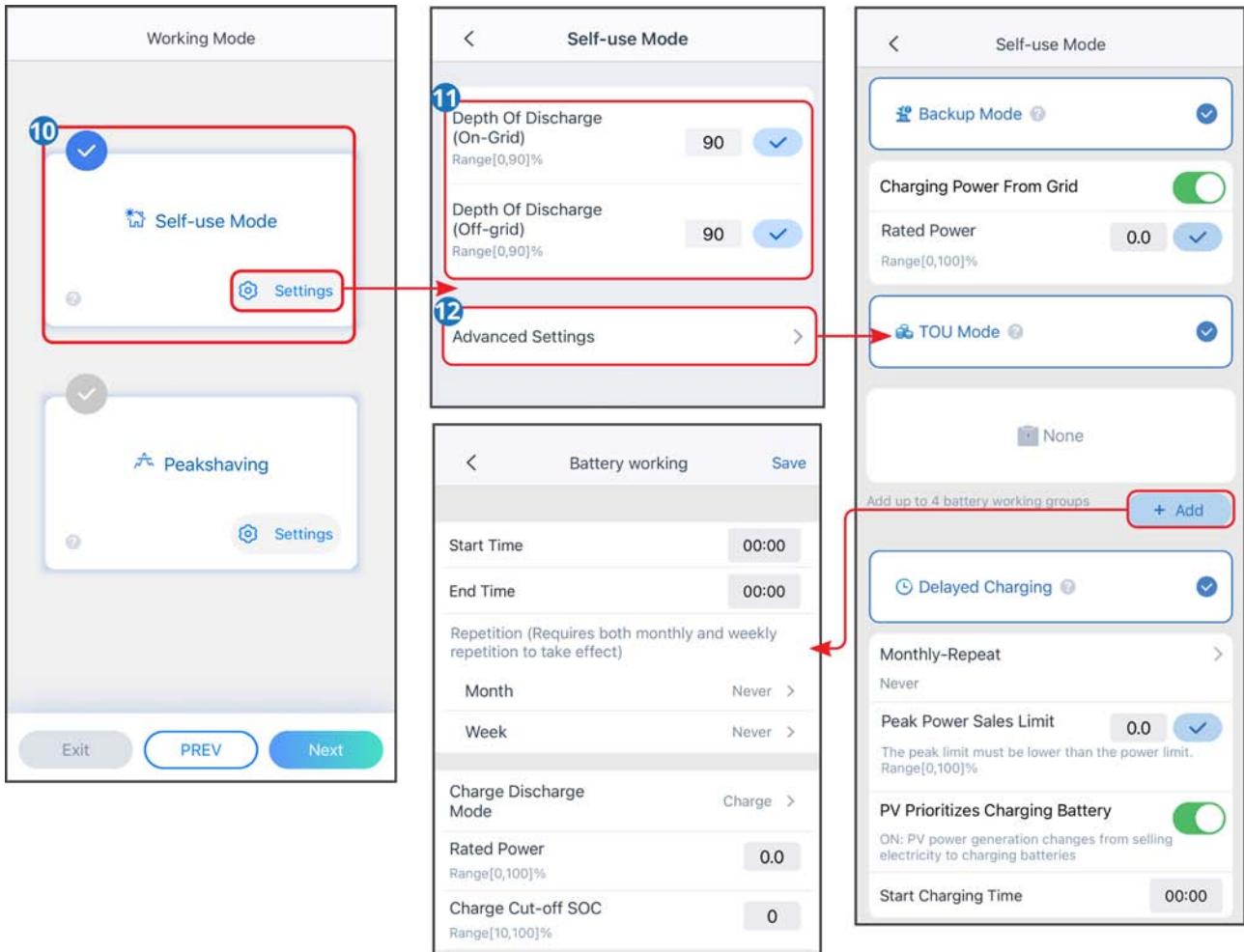
- When selecting the peak shaving mode, click Settings to enter the parameter configuration interface and set the Peakshaving related parameters.



No.	Parameter Name	Description
peak shaving		
1	Start Time	Within the start time and End Time, when Load consumption does not exceed the electricity purchase quota, Battery charge can be supplied via Utility grid. Outside the time range, only photovoltaic-generated Power can be used to supply Battery charge.
2	End Time	
3	Peak power purchase limit	Set the maximum Power limit allowed for buy power from the grid. When the load consumption Power exceeds the sum of the electricity generated by the PV system and this limit, the excess Power will be supplemented by Battery discharge.
4	Reserved SOC for Peakshaving	In Peakshaving mode, the Battery SOC is lower than the reserved SOC for Peakshaving. When the Battery SOC is higher than the reserved SOC for Peakshaving, the Peakshaving function is disabled.

- When selecting the self-use mode, click Settings to enter the self-use mode settings

interface, and configure the on-grid depth of discharge and off-grid depth of discharge under the self-use mode. Then click Advanced Settings to configure Back-up Mode, TOU mode, or delayed Charge according to actual needs. If TOU mode is selected, click Add to set the working hours and mode of the Battery task group.



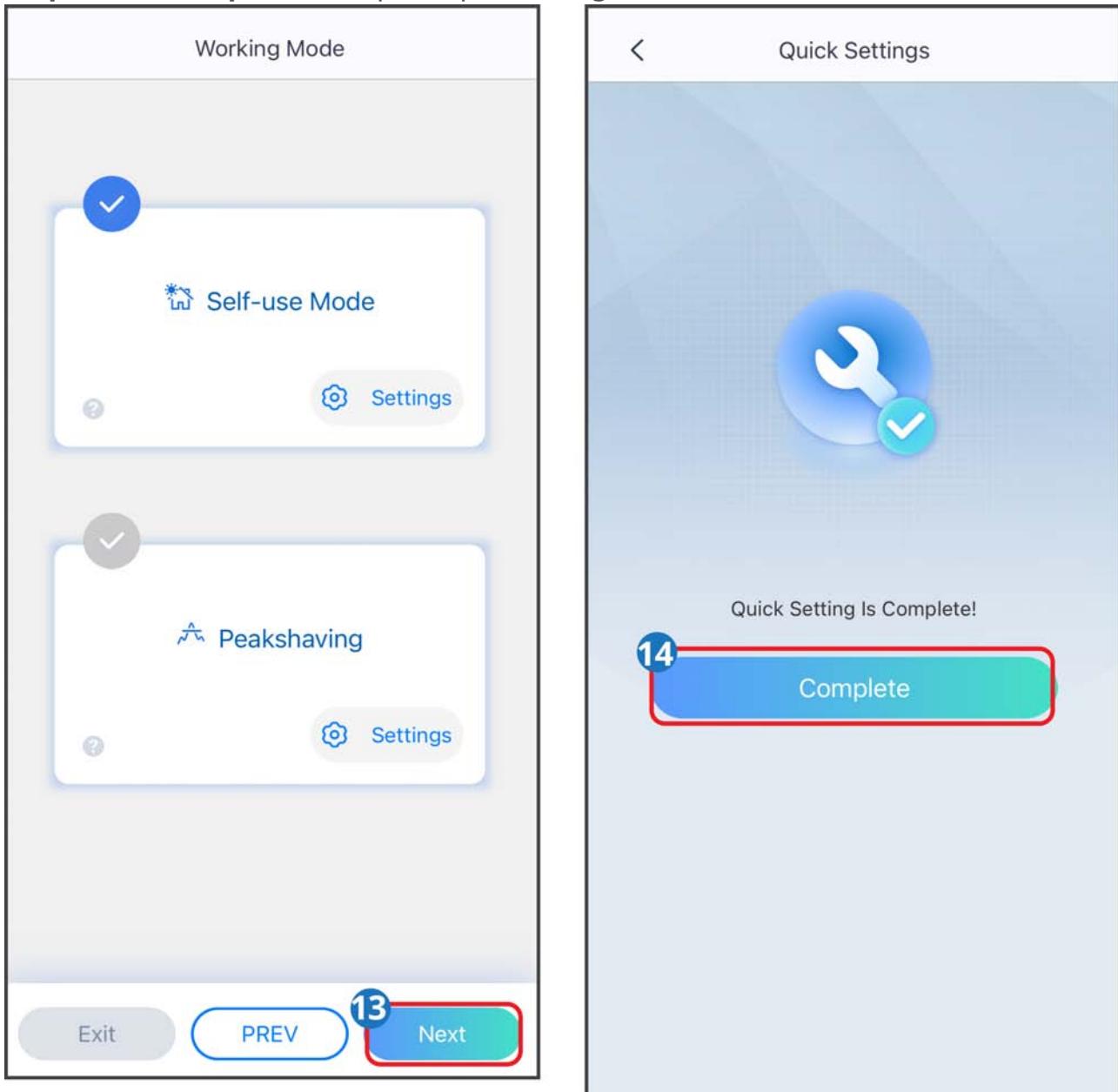
No.	Parameter Name	Description
Self-consumption mode		
1	on-grid depth of discharge	During the operation of on-grid, the maximum depth of discharge Protection point of Battery.
2	Off-grid depth of discharge	During off-grid operation, the maximum depth of discharge Protection point of Battery.

No.	Parameter Name	Description
Back-up Mode		
3	Utility grid Purchase of electricity Charge	Enable this function to allow the system to buy power from the grid.
4	Nominal power	The percentage of Power to Inverter Nominal power when purchasing electricity.
TOU mode		
5	Start Time	Within the Start Time and End Time, the Battery performs Charge or Discharge based on the set charging Discharge mode and Nominal power.
6	End Time	
7	Charging Discharge mode	Set to Charge or Discharge based on actual requirements.
8	Inverter Nominal power	The percentage of Power to Inverter Nominal power during Charge or Discharge.
9	Cut-off SOC	When the Battery reaches the set SOC, the Charge is stopped.
Delay Charge Mode		
10	Monthly repetition	Set the delay Charge months according to actual needs, and multiple months can be selected.
11	Peak power selling limit	Set the peak Power limit according to the Utility grid standard requirements of certain countries or regions. The peak Power limit value must be lower than the local specified output Power limit value.
12	PV prioritizes supplying power to Battery charge	Within the Charge timeframe, photovoltaic power generation is prioritized for supplying Battery charge.
13	Charge time	

Step 8 Perform device self-check or skip it based on actual requirements.

Step 9 Click according to actual needs **Retest** or **Next step**. Testing completed. To export the test results, please click **Export**.

Step 10 Click **Completed** to complete quick configuration.



8.3.6 Setting the Basic Information

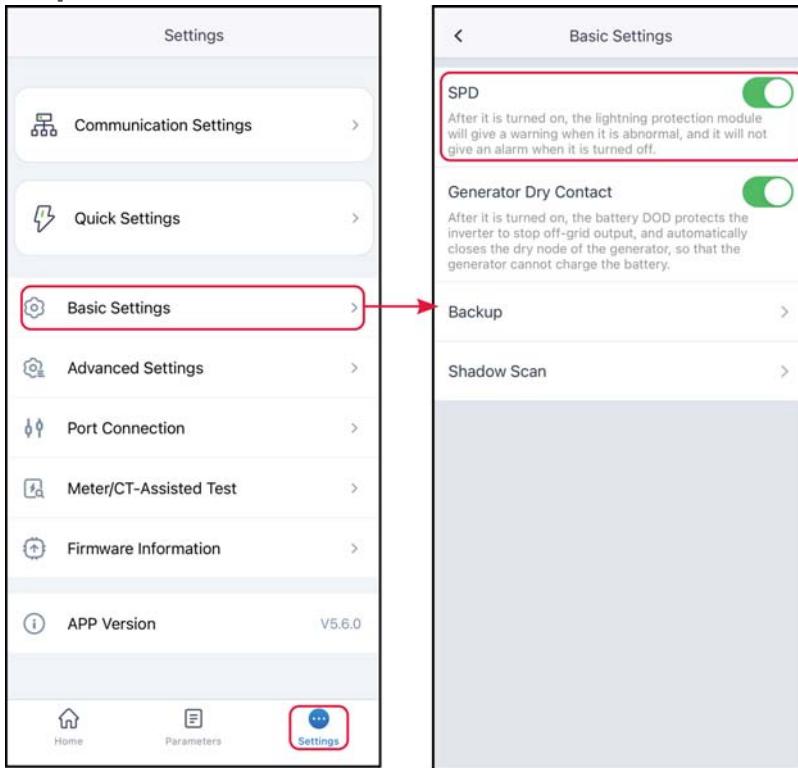
8.3.6.1 Set up lightning protection alarm function

After enabling the SPD secondary lightning protection alarm function, an alarm will be triggered to indicate an abnormality when the lightning protection module

malfunctions.

Step 1 Through **Home > Settings > Basic Settings > Lightning Protection Alarm** Set up lightning protection alarm.

Step 2 Enable or disable this function based on actual requirements.

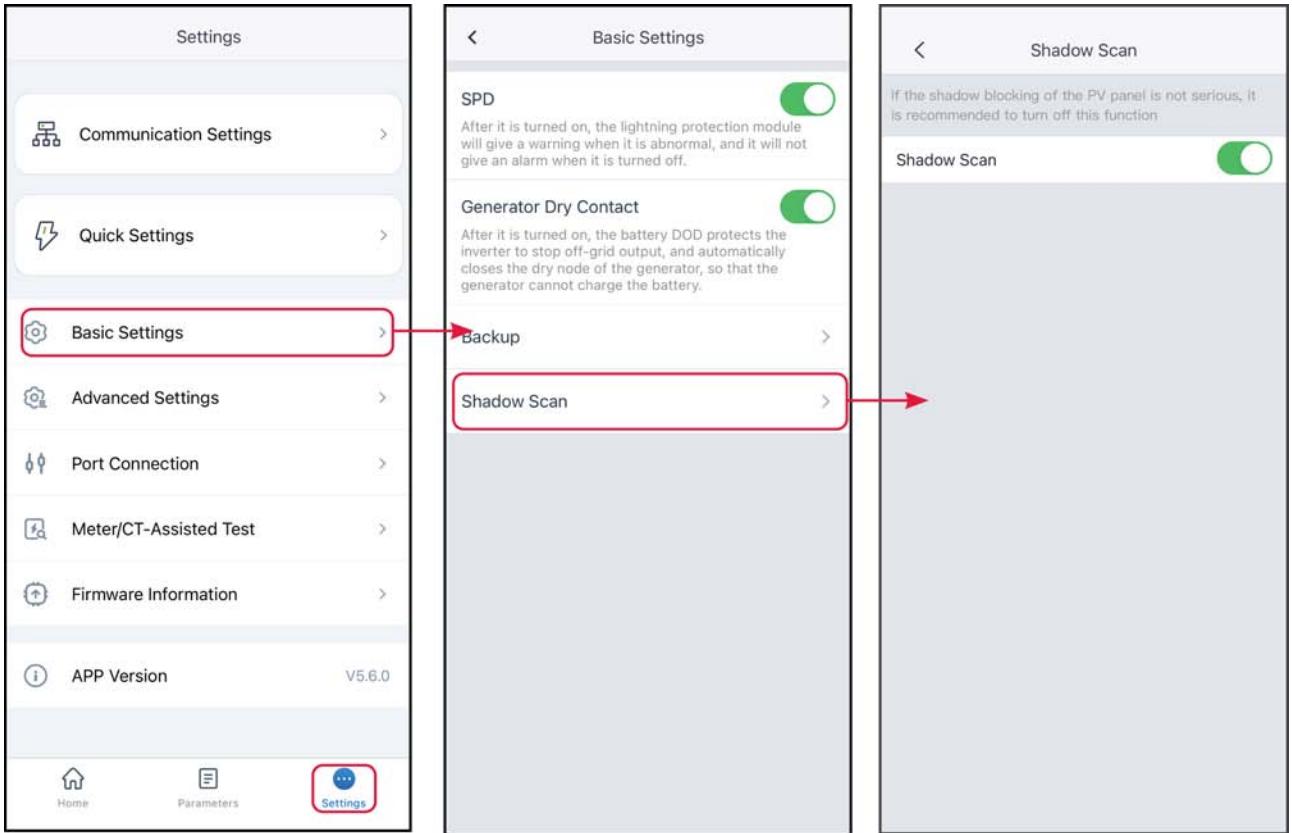


8.3.6.2 Enable shadow scan function

When the photovoltaic panels are severely shaded, enabling the shadow scan function can optimize Inverter power generation Efficiency.

Step 1 Through **Home > Settings > Basic Settings > shadow scan** Enter the settings page.

Step 2 Enable or disable this function based on actual needs. Some models support setting the scan interval time, MPPT shadow scan, etc. Please configure according to the actual interface.

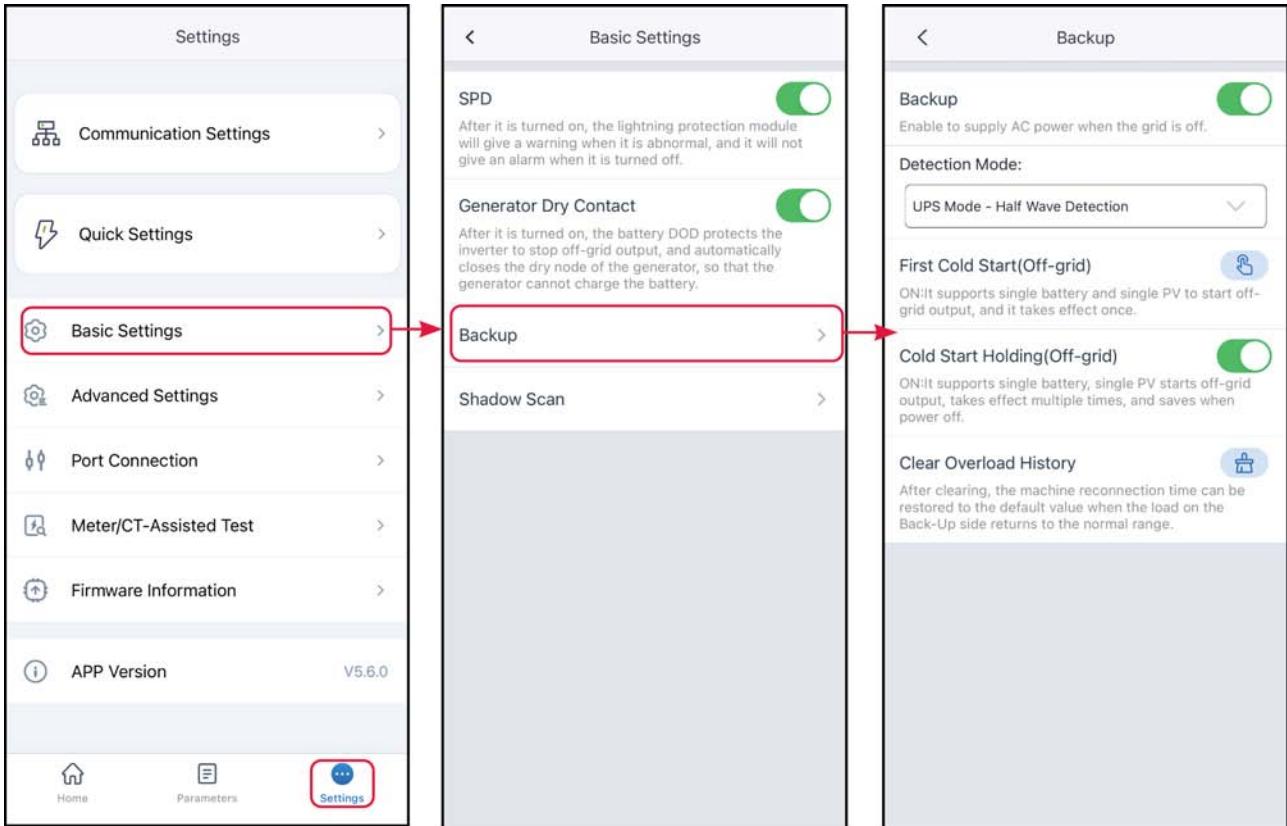


8.3.6.3 Set backup power supply parameters

After enabling the backup power function, when Grid disconnected occurs, the load connected to Inverter BACK-UP port can be powered by Battery, ensuring uninterrupted power supply to the load.

Step 1 Through **Home** > **Settings** > **Basic Settings** > **Backup Power** Enter the settings page.

Step 2 Set the backup power function according to actual needs.



No.	Parameter Name	Description
1	UPSMode-full-wave detection	Check if Utility gridvoltage is too high or too low.
2	UPSMode-Half-wave detection	Check if Utility gridvoltage is too low.
3	EPSMode-Supports low voltage ride-through (LVRT)	Disable the Utility gridvoltage detection function.
4	Off-grid first cold start	Only valid for a single activation. When this function is enabled, Battery or the PV system can output backup power in off-grid mode.
5	Off-grid Cold Start Retention	Multiple activations. When this function is enabled, the Battery or PV can output backup power in off-grid mode.

No.	Parameter Name	Description
6	Clear overload	When Inverter BACK-UP When the Power connected to port exceeds the rated load Power, the Inverter will restart and detect the load Power again. If not addressed promptly, the Inverter will restart multiple times for load detection, with progressively longer intervals between each restart. BACK-UP When the port load is reduced within the Nominal power range, you can click this switch to clear the Inverter restart interval and Inverter restart immediately.

8.3.7 Setting Advanced Parameters

NOTICE

- When logged in as a "Installation merchant", you can Setting Advanced Parameters.
- When entering the advanced settings page, the password required is: 1111 or goodwe2010.

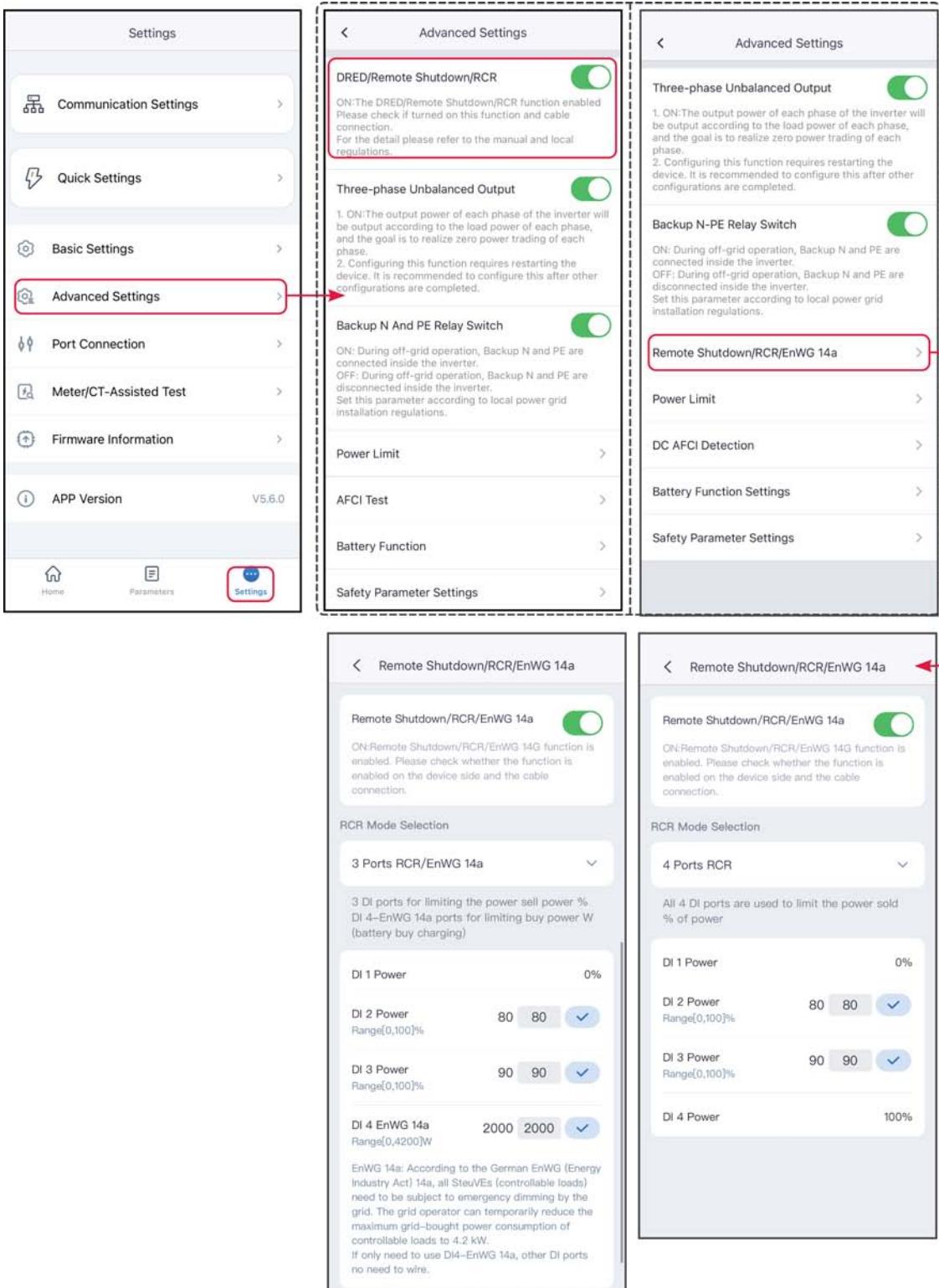
8.3.7.1 Configure DRED/Remote Shutdown/RCR/EnWG 14a functions

According to the Utility grid standard requirements of certain countries or regions, when it is necessary to connect third-party DRED/Remote Shutdown/RCR/EnWG 14a devices for signal control, please enable the DRED/Remote Shutdown/RCR/EnWG 14a function.

Step 1 Through **Home > Settings > Advanced Settings > DRED/Remote Shutdown/RCR/EnWG 14a** Set this function.

Step 2 Enable or disable this function based on actual requirements.

Step 3 For regions subject to the EnWG 14a regulation, when enabling the RCR function, it is necessary to select the RCR mode based on the actual type of connected equipment and set the DIportPower percentage value.



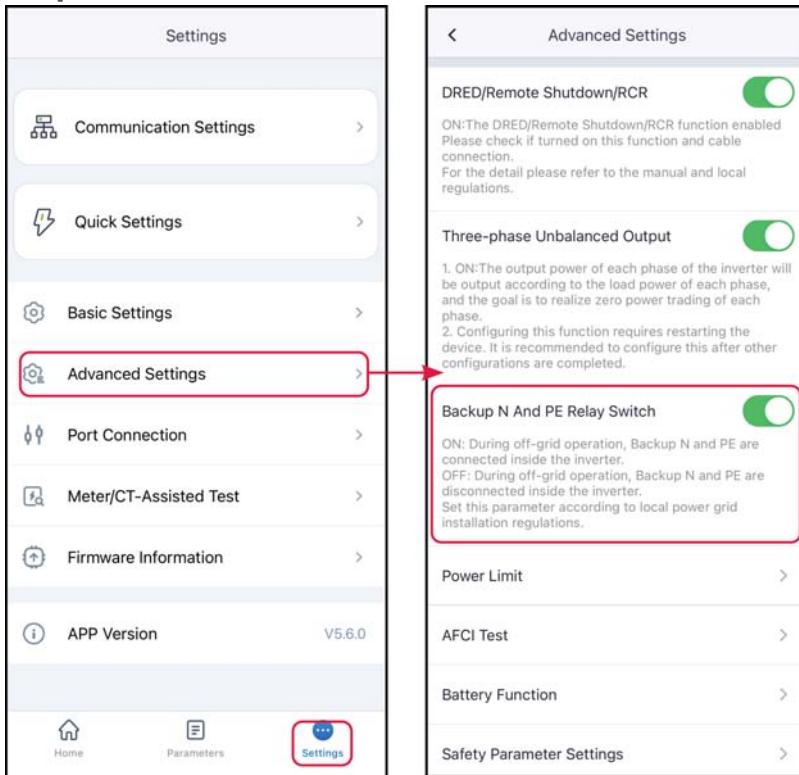
8.3.7.2 Set the BACK-UP N and PE relay switch

According to the Utility grid standard requirements in certain countries or regions, it is necessary to ensure that the internal relay of the BACK-UP port remains closed

during off-grid operation, thereby connecting the N and PE lines.

Step 1 Through **Home > Settings > Advanced Settings > Backup Power N and PE Relay Switch** Enter the parameter settings page.

Step 2 Enable or disable this function based on actual requirements.



8.3.7.3 Set Export power limit parameters

NOTICE

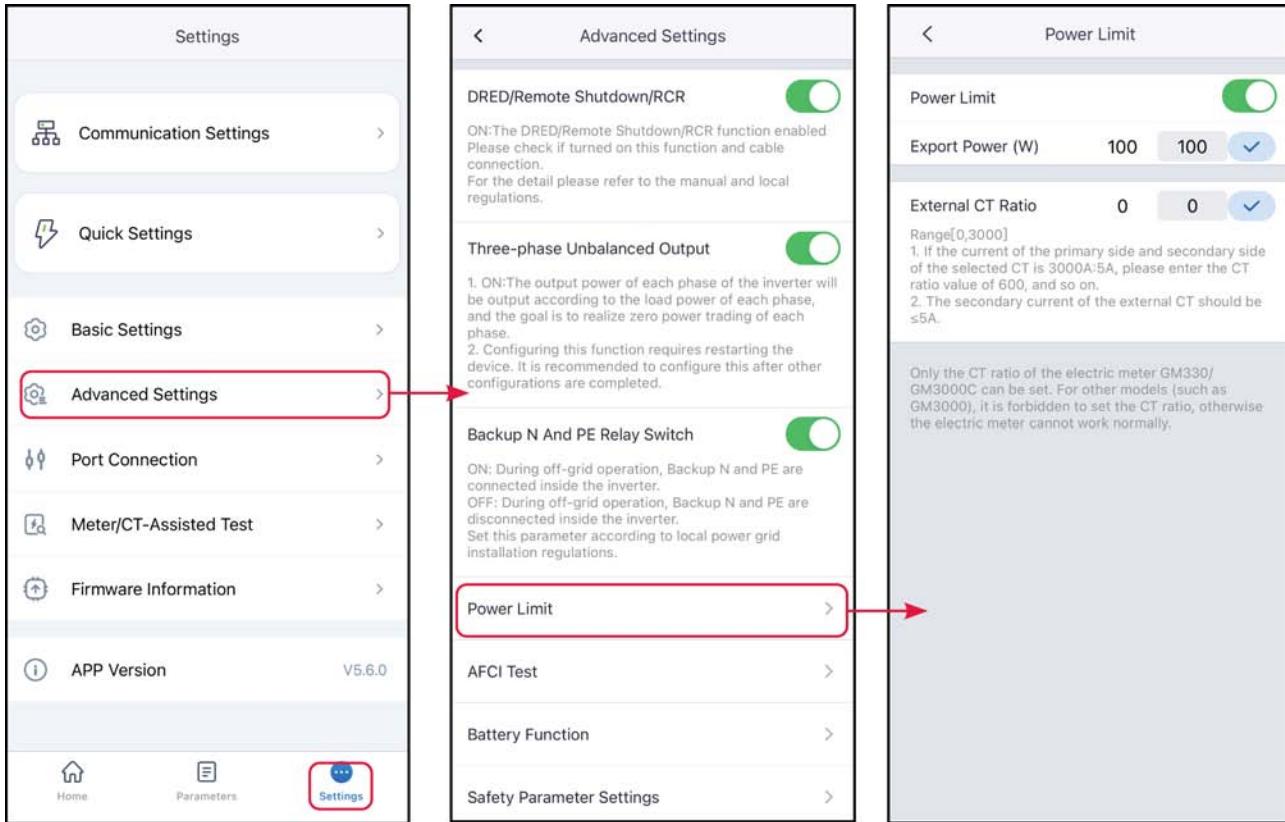
When binding dual meters in a photovoltaic system, it is necessary to separately configure the Export power limit parameters for both meters.

Step 1 Through **Home > Settings > Advanced Settings > Export power limit** Enter the parameter settings page.

Step 2 Turn the power limit function on or off based on actual needs.

Step 3 After enabling the power limit function, input the parameter values as needed and click "V" to confirm the parameter settings.

8.3.7.3.1 Set Export power limit parameters (General)

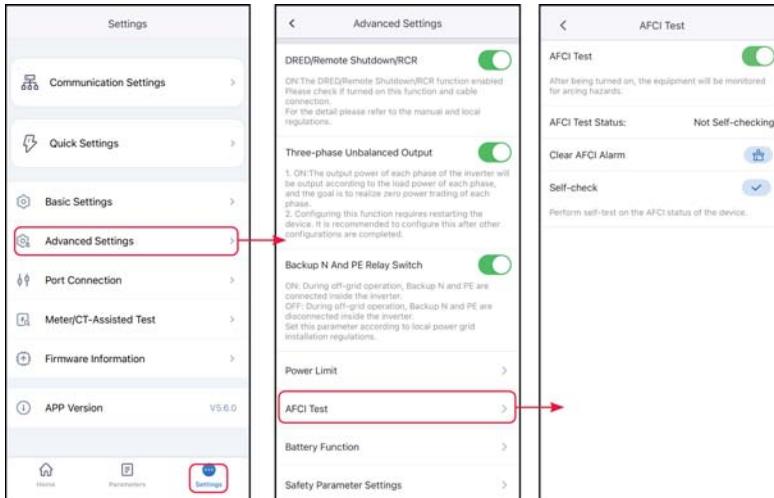


No.	Parameter Name	Description
1	Export power limit	According to the Utility grid standard requirements of certain countries or regions, this function should be enabled when it is necessary to limit the output Power.
2	Power limit	Set according to the maximum Power that can actually be input to Utility grid.
3	External Meter CT Ratio	Set to external connection CT The ratio of the primary side to the secondary side current.

8.3.7.4 Enable arc detection function

Step 1 Through **Home > Settings > Advanced Settings > DC Arc Detection** Enter the settings page to configure the AFCI detection function.

Step 2 Detect arc, clear fault alarms, or perform self-tests on the AFCI as needed.



No.	Parameter Name	Description
1	arc detection	Please enable or disable the Inverterarc function as needed.
2	arc detection status	Display detection status, such as undetected, detection failed, etc.
3	ClearAFCIfault Alarm	Clear arc fault alarm records.
4	Self-check	Click Settings to check if the arc module function of the detectable device is normal.

8.3.7.5 Enable Battery function

NOTICE

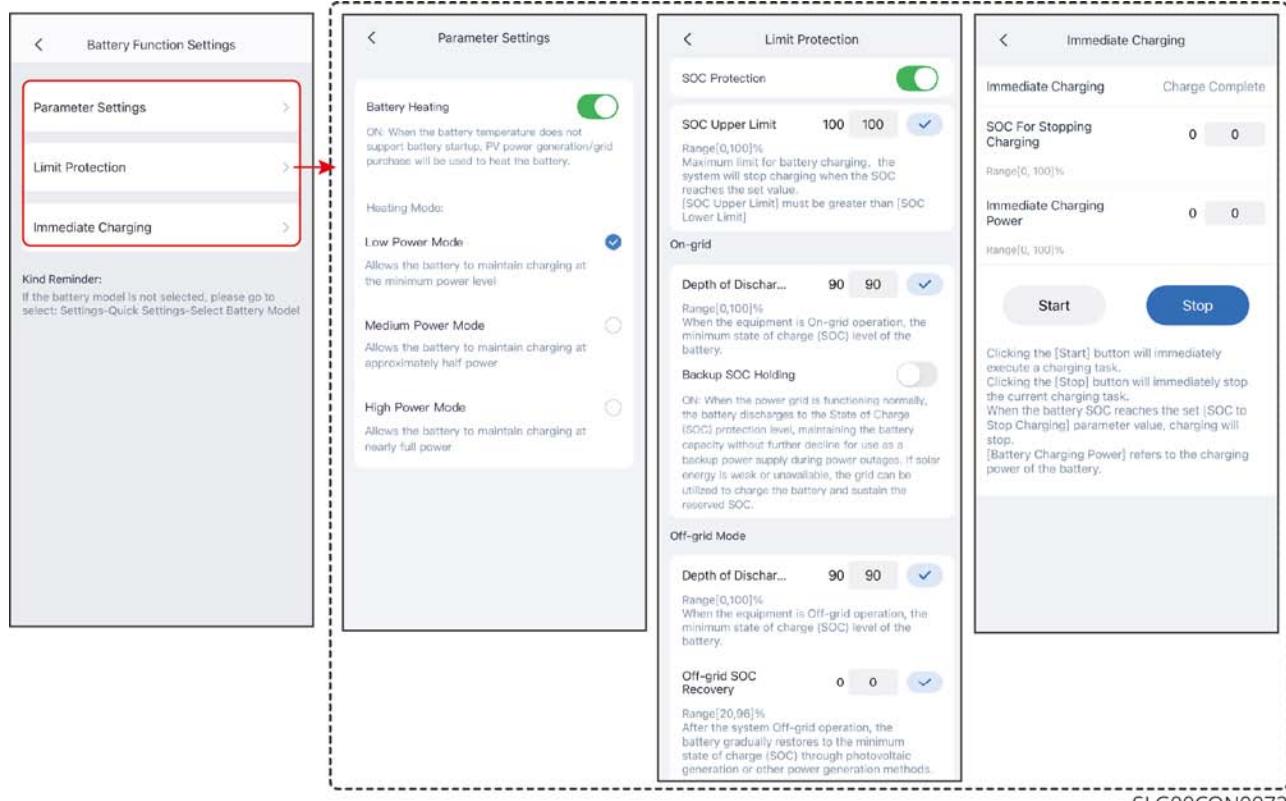
When the PV-storage system is a parallel system:

- If connected via RS485 for parallel operation, it supports selecting whether to synchronize the master and slave Battery settings in the "Battery Function" interface.
- If parallel operation is achieved through other methods, the master and slave Battery settings will be automatically synchronized. To modify the slave Battery settings, please enter the configuration interface separately via the slave SN on the homepage.

8.3.7.5.1 Set lithium Battery parameters

Step 1 Through **Home > Settings > Battery Function Settings** Enter the parameter setting interface.

Step 2 Enter parameter values as required.



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No.	Parameter Name	Description
Parameter setting		
1	Maximum Charge current	Applicable to certain models. Set the maximum Charge current for Battery charge based on actual requirements.
2	Maximum Discharge current	Applicable to certain models. Set the maximum Battery discharge Discharge current according to actual requirements.

No.	Parameter Name	Description
3	Battery heating	<ul style="list-style-type: none"> When a Battery with heating function is selected and connected, this option will be displayed on the interface. After enabling the Battery heating function, if the Battery temperature does not support Battery startup, PV generation or grid power will be used to heat the Battery. Heating mode: <ul style="list-style-type: none"> GW5.1-BAT-D-G20/GW8.3-BAT-D-G20 <ul style="list-style-type: none"> Low Power mode: Maintain the minimum Battery input capability. It turns on when the temperature is below -9°C and turns off when the temperature is greater than or equal to -7°C. Power mode: Maintain moderate Battery input capacity. Turn on when temperature is below 6°C, and turn off when temperature is 8°C or higher. High Power mode: Maintains high Power input capability for Battery. Activated when temperature is below 11°C and deactivated when temperature reaches or exceeds 13°C. GW14.3-BAT-LV-G10 <ul style="list-style-type: none"> Low Power mode: Maintain the minimum Power input capability of Battery. It turns on when the temperature is below 5°C and turns off when the temperature is greater than or equal to 7°C. Power mode: Maintain appropriate Battery input capacity. Turn on when temperature is below 10°C, and turn off when temperature is 12°C or higher. High Power mode: Maintains high Power input capability of Battery, activates when temperature is below 20°C, and deactivates when temperature reaches or exceeds 22°C.

No.	Parameter Name	Description
4	Battery wake-up	When enabled, it can wake up Battery after Battery shuts down due to undervoltage Protection. Only applicable to lithium Battery without breaker. After activation, the output voltage of Batteryport is approximately 60V.
Limit Protection		
5	SOC (State of Charge)	When enabled, the Protection function can be activated for Battery if the Battery capacity falls below the set depth of discharge.
6	SOC upper limit	The upper limit value of Battery charge, when the Battery SOC reaches the upper limit, Charge stops.
7	depth of discharge(on-grid)	Inverter During operation, the maximum allowable value of Battery for Discharge.
8	Back-up SOC retention	To ensure the Battery SOC is sufficient to maintain normal system operation when off-grid, during on-grid operation, the Battery will purchase electricity through the Utility grid to charge up to the set SOC Protection value.
9	depth of discharge(Off-grid)	Inverter During off-grid operation, Battery allows the maximum value of Discharge.
10	Off-grid recovery SOC	During off-grid operation, if the Battery SOC drops to the lower limit, the Inverter stops output and is only used to supply power to the Battery charge until the Battery SOC recovers to the off-grid recovery SOC value. If the lower SOC limit is higher than the off-grid recovery SOC value, the Charge will increase to the lower SOC limit +10%.
Battery charge on demand		

No.	Parameter Name	Description
11	Battery charge on demand	After activation, Utility grid will immediately supply power to Battery charge. This effect is only triggered once. Please enable or disable it as needed.
12	Stop the SOC of Charge	When Battery (immediate charging) is enabled, charging to Battery charge will stop once the Battery SOC reaches the Charge cutoff SOC.
13	Battery charge immediately Power	When Battery is enabled, the percentage of Charge Power to Inverter Nominal power.
		For example, for a Nominal power with a capacity of 10kW, when set to 60, the Charge Power is 6kW.
14	Start	Start immediately.
15	Stop	Immediately stop the current Charge task.

8.3.7.5.2 Set lead-acid Battery parameters

Step 1 Through **Home > Settings > Battery Function Settings** Enter the parameter setting interface.

Step 2 Enter parameter values as required.

No.	Description
-----	-------------

No.	Parameter Name	Description
1	Rated capacity	Set the Battery capacity based on actual parameters.
2	internal resistance	Set the internal resistance of Battery according to actual parameters.
3	Temperature compensation	When the temperature changes, the Battery charge voltage is affected. Taking 25°C as the reference, for every degree of temperature change in Battery, the upper limit of Charge voltage is adjusted according to the set value. For example, if the Charge temperature influence coefficient is set to 10, when the Battery temperature rises to 26 degrees, the Charge voltage upper limit will decrease by 10mV.
4	Lower limit	Set the minimum voltage when configuring Battery discharge based on actual requirements.
5	Maximum Discharge current	Set the maximum Discharge current according to actual needs when configuring Battery discharge.
6	Maximum Charge current	Set the maximum Charge current for Battery charge according to actual requirements.
7	Constant Charge voltage	Set the voltage value for Battery constant charging according to actual requirements.
8	floating Charge voltage	Set the voltage value for Battery floating charge according to actual requirements.
9	Switch to floating Charge maximum current	The maximum Charge current after switching from constant/equalizing charge to float charge in Battery charge mode.
10	Time to switch to float charge	Duration required for the Battery charge mode to switch from constant/equalizing charge to float charge.

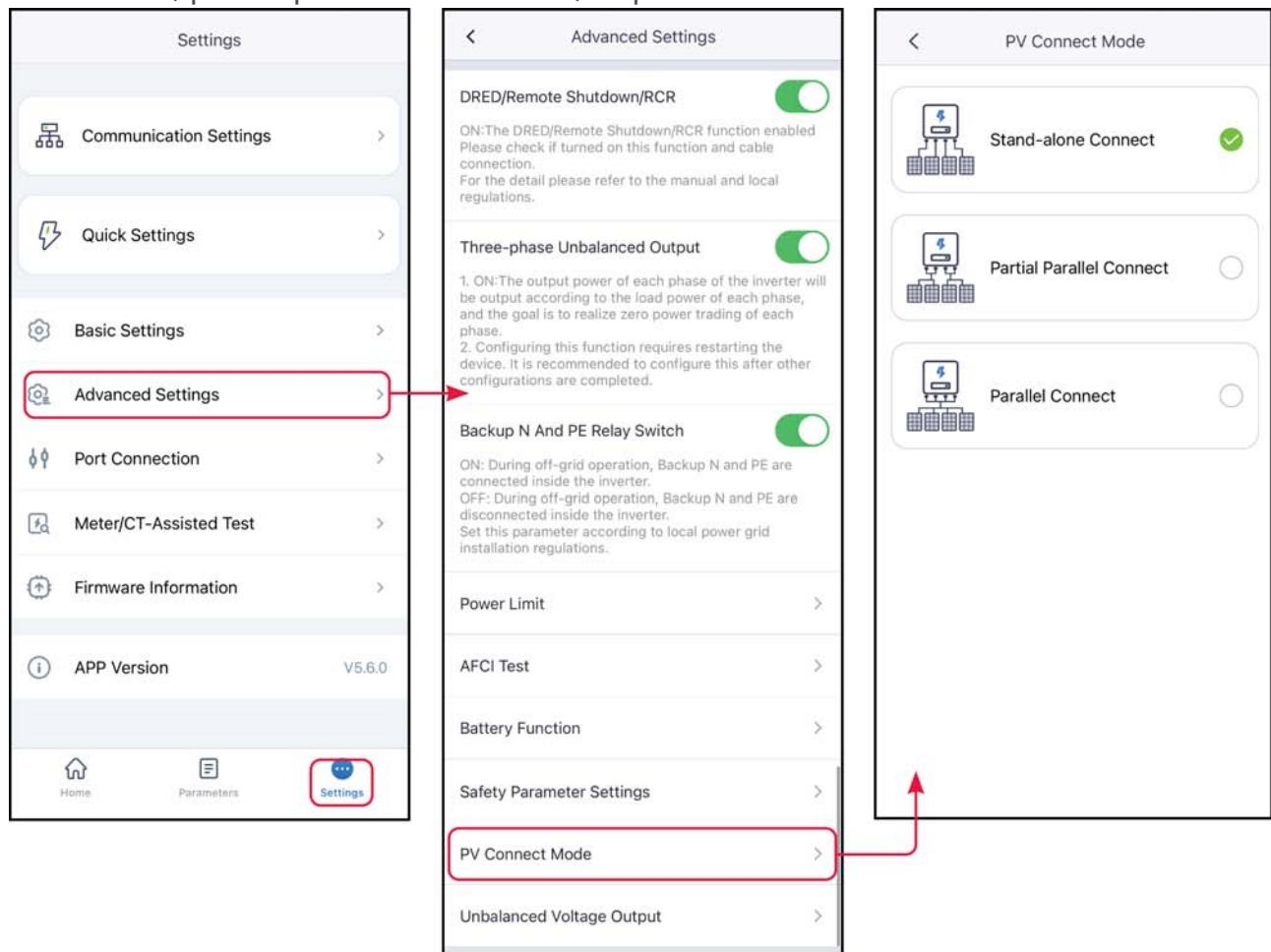
No.	Parameter Name	Description
11	Equalization charging cycle	Set the interval days for Battery equalization charging.
Limit Protection		
12	SOCProtection	When enabled, the Protection function can be activated for Battery if the Battery capacity falls below the set depth of discharge.
13	SOCLower Limit (on-grid)	Inverter During operation, on-grid requires maintaining a minimum charge level.
14	Back-up SOC retention	To ensure the Battery SOC is sufficient to maintain normal system operation when off-grid, during on-grid operation, the Battery will purchase electricity through the Utility grid to charge up to the set SOC Protection value.
15	SOCLower limit (off-grid)	During off-grid operation, Inverter requires the minimum power level that Battery needs to maintain.
16	Off-grid recoverySOC	During off-grid operation, if the Battery SOC drops to the lower limit, the Inverter stops output and is only used to supply power to the Battery charge until the Battery SOC recovers to the off-grid recovery SOC value. If the lower SOC limit is higher than the off-grid recovery SOC value, the Charge will increase to the lower SOC limit +10%.
Battery charge on demand		
17	Stop ChargeSOC	Battery When charging is enabled, when BatterySOCReach the Charge cut-offSOCWhen Battery charge is detected, the system will stop supplying power to it.
18	Battery charge immediately Power	When Battery is enabled, the percentage of Charge Power to Inverter Nominal power. For example, for a Nominal power of 10kW Inverter, set to 60 At the time, Charge Power was 6kW.
19	Start	Start immediately.
20	Stop	Immediately stop the current Charge task.

8.3.7.6 Set PV connection mode

For certain models, the InverterMPPTport PV Stringconnection method can be manually configured to prevent misidentification of string connection modes.

Step 1 Through **Home > Settings > Advanced Settings > PV Connection Mode** Enter the settings page.

Step 2 Based on the actual connection method of PV String, set it to independent connection, partial parallel connection, or parallel connection.



No.	Parameter Name	Description
1	stand-alone connection	The external PV String is connected one-to-one with the Inverter side photovoltaic input port.

No.	Parameter Name	Description
2	Partial parallel connection	When a string of PV String is connected to one MPPT port on the Inverter side, other PV modules are simultaneously connected to other MPPTs port on the Inverter side.
3	parallel connection	When the external PV String is connected to the Inverter-side PV input port, one PV String is connected to multiple PV inputs port.

8.3.8 Set custom safety parameters

NOTICE

Safety parameters shall be set according to the requirements of Utility grid company. Any modifications require prior approval from Utility grid company.

The screenshots illustrate the navigation path to the Safety Parameter Settings:

- Step 1: In the main Settings menu, the 'Advanced Settings' option is highlighted (circled in red).
- Step 2: In the 'Advanced Settings' screen, the 'Safety Parameter Settings' option is highlighted (circled in red).
- Step 3: The 'Safety Parameter Settings' screen is shown, which is currently empty.

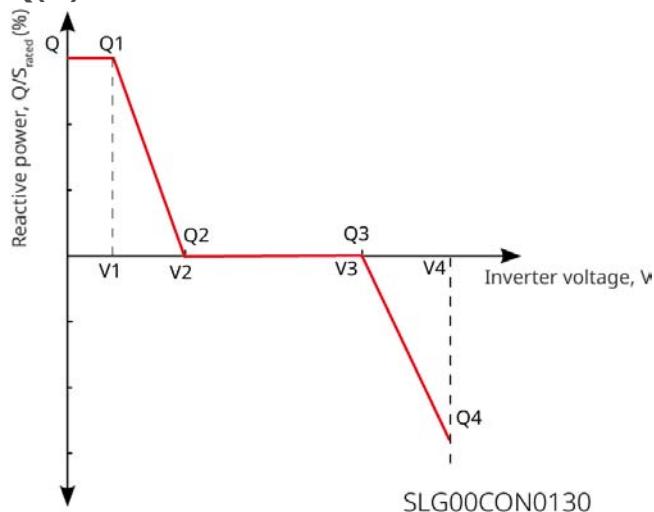
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8.3.8.1 Set reactive power mode

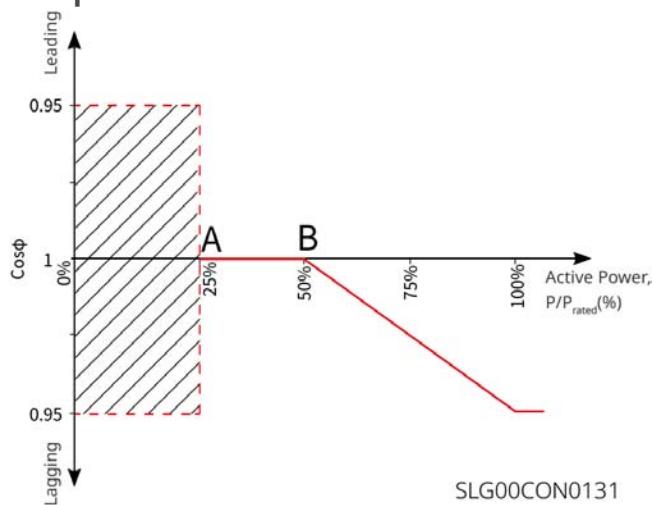
Step 1 Through **Home > Settings > Advanced Settings > Safety Parameter Settings > Reactive Power Mode Settings** Enter the parameter settings page.

Step 2 Enter parameters as required.

Q(U) curve



Cosφ curve



No.	Parameter Name	Description
Fixed PF		

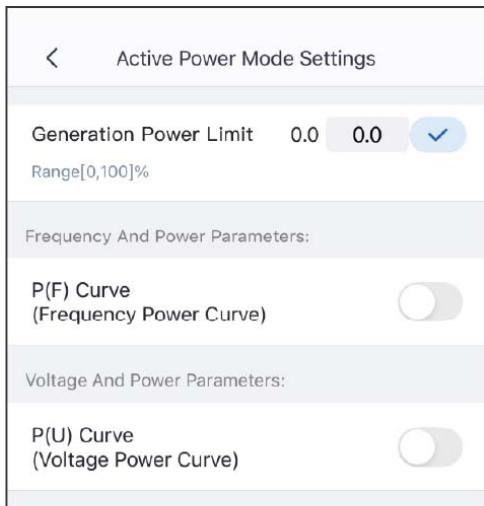
No.	Parameter Name	Description
1	Fixed PF	According to the Utility grid standard requirements of certain countries or regions, when a fixed PF value is required, enable this function. After the parameter is successfully set, the Output Power Factor remains unchanged during the operation of the Inverter.
2	under-excitation	Set the Output Power Factor to a positive or negative value based on the Utility grid standard requirements of the country or region and actual usage needs.
3	overexcitation	
4	Output Power Factor	Set the Output Power Factor according to actual needs, with a range of -1 to -0.8 and +0.8 to +1.
Fixed Q		
1	Fixed Q	According to the Utility grid standard requirements of certain countries or regions, this function should be enabled when fixed reactive Power is required.
2	Over-excited/Under-excited	Set the reactive Power to inductive or capacitive reactive power according to the Utility grid standard requirements of the country or region and actual usage needs.
3	Reactive Power	Set the ratio of reactive Power to apparent Power.
Q(U) curve		
1	Q(U) curve	When the Q(U) curve needs to be set according to the Utility grid standard requirements of certain countries or regions, enable this function.
2	Mode selection	Set Q(U) curve mode, supporting basic mode and slope mode.
3	Vn	The ratio of the actual value of Vn point to the rated value, where n=1, 2, 3, 4. For example: when set to 90, it means: V/Vrated%=90%.

No.	Parameter Name	Description
4	Vn reactive power	The ratio of reactive power Power to apparent power Power at the Vn point Inverter output, where n=1, 2, 3, 4. For example: when set to 48.5, it means: Q/Srated% = 48.5%.
5	dead-time width	When the Q(U) curve mode is set to slope mode, set the voltage deadband. Within the deadband range, there is no requirement for reactive power output.
6	Over-excitation slope	When the Q(U) curve mode is set to slope mode, configure the Power variation slope as a positive or negative number.
7	Under-excitation slope	
8	Vn reactive power	The ratio of reactive power Power to apparent power Power at the Vn point Inverter output, where n=1, 2, 3, 4. For example: when set to 48.5, it means: Q/Srated% = 48.5%.
9	Q(U) curve response time constant	Power must reach 95% within 3 response time constants following a first-order low-pass curve.
10	Extended Function Enable	Enable extended functions and set corresponding parameters.
11	Entering curve Power	When the ratio of the reactive Inverter output to Nominal power falls between the entry curve Power and the exit curve Power, it meets the Q(U) curve requirements.
12	Exit curve	
cosφ(P) curve		
1	cosφ(P) curve	When setting the Cosφ curve is required according to the Utility grid standard of certain countries or regions, select this function.
2	Mode selection	Set the cosφ(P) curve mode, supporting basic mode and slope mode.

No.	Parameter Name	Description
3	N-point Power	N-point Inverter active power output Power/Nominal power percentage. N=A, B, C, D, E.
4	N-point $\cos\varphi$ value	N-point Output Power Factor. N = A, B, C, D, E.
5	Over-excitation slope	When the $\cos\varphi(P)$ curve mode is set to slope mode, configure the Power variation slope as a positive or negative number.
6	Under-excitation slope	
7	n-point Power	N-point Inverter active power output Power/Nominal power percentage. N=A, B, C.
8	n-point $\cos\varphi$ value	N-point Output Power Factor. N = A, B, C.
9	$\cos\varphi(P)$ curve response time constant	Power must reach 95% within 3 response time constants following a first-order low-pass curve.
10	Extended Function Enable	Enable extended functions and set corresponding parameters.
11	Enter curve voltage	When the Utility gridvoltage is between the entry curve voltage and the exit curve voltage, the voltage meets the $\cos\varphi$ curve requirements.
12	Exit Curve	
Q(P) curve		
1	Q(P) curve enable	When setting the Q(P) curve is required according to the Utility grid standards of certain countries or regions, enable this function.
2	Mode selection	Set Q(P) curve mode, supporting basic mode and slope mode.
3	Pn point	The ratio of reactive power at Pn point to Nominal power, where n=1, 2, 3, 4, 5, 6. For example: when set to 90, it means: Q/Prated% = 90%.

No.	Parameter Name	Description
4	Reactive power at Pn point	The ratio of active Power to Nominal power at Pn point, where 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 a positive or negative value.
6	Under-excitation slope	
7	Pn point	The ratio of reactive power at point Pn to Nominal power, where n=1, 2, 3. For example: when set to 90, it means: Q/Prated% = 90%.
8	Reactive power at Pn point	The ratio of active Power to Nominal power at point Pn, where n=1, 2, 3. For example: when set to 90, it means: P/Prated% = 90%.
9	response time constant	Power must reach 95% within 3 response time constants following a first-order low-pass curve.

8.3.8.2 Set active power mode



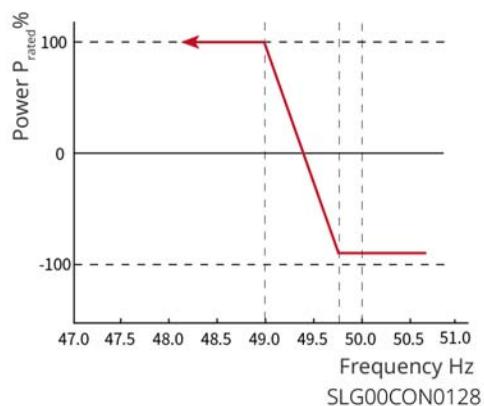
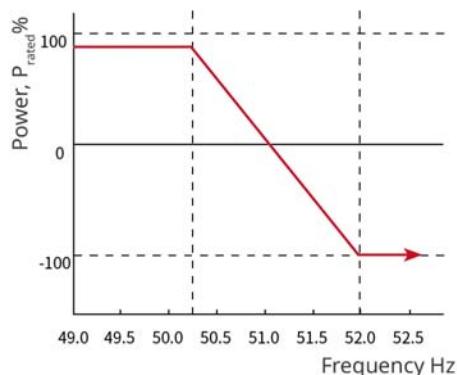
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Step 1 Through **Home > Settings > Advanced Settings > Safety Regulation Parameter Settings > Active Power Mode Settings** Enter the parameter settings

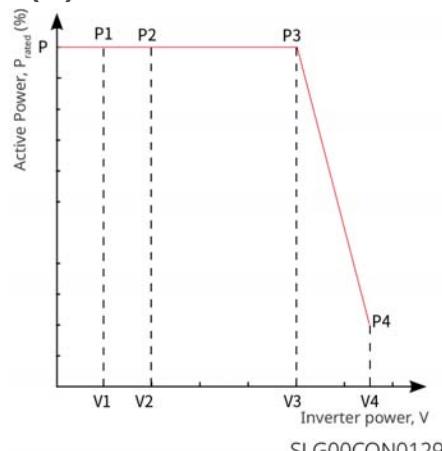
page.

Step 2 Enter parameters as required.

P(F) curve



P(U) curve



No.	Parameter Name	Description
1	Active power output setting	Set the Inverter output Power limit value.
2	variation gradient	Set the rate of change for active power output when it increases or decreases.
Over-frequency load shedding		
1	P(Fcurve	According to the Utility grid standard requirements of certain countries or regions, it is necessary to install P(F). Enable this function when drawing curves.

No.	Parameter Name	Description
2	Over-frequency load shedding mode	<p>Set the over-frequency load shedding mode according to actual requirements.</p> <ul style="list-style-type: none"> • SlopeMode: Based on over-frequency point and derating slope adjustment Power. • StopMode: Adjust Power based on the over-frequency start point and over-frequency end point.
3	Overfrequency starting point	When the Utility grid Frequency is too high, the Inverter reduces its active power output Power. When the Utility grid Frequency exceeds this value, the Inverter begins to decrease its output Power.
4	Electricity Trading Conversion Frequency	When the set Frequency value is reached, the system switches from selling electricity to buying electricity.
5	Overfrequency endpoint	When the Utility grid Frequency is too high, the Inverter reduces its active Power output. If the Utility grid Frequency exceeds this value, the Inverter output Power will not decrease further.
6	Overfrequency Power slope reference Power	Adjust the active power output of the Inverter based on Nominal power, current Power, apparent Power, or maximum active Power.
7	Overfrequency Power slope	When the Utility grid Frequency is above the over-frequency point, the Inverter output Power reduces the output Power according to the slope.
8	Tentional Delay Ta	When the frequency is above the over-frequency point, the Inverter output Power change delay response time.
9	Hysteresis Function enable	Enable Hysteresis Function.

No.	Parameter Name	Description
10	hysteresis point	During the over-frequency load shedding process, if Frequency decreases, Power outputs Power according to the lowest point of the load shedding Power until Frequency is less than the hysteresis point, and Power is restored.
11	Hysteresis waiting time	For over-frequency load shedding and Frequency reduction, when Frequency is less than the hysteresis point, the recovery waiting time for Power is required, meaning a certain period must elapse before Power can be restored.
12	Hysteresis Power recovery slope reference Power	For over-frequency derating and Frequency reduction, when Frequency is less than the hysteresis point, the reference for Power recovery is based on the recovery slope.*The rate of change of the reference Power is restored to Power. Support:PnNominal power、PsApparent Power,PmCurrent Power,PmaxMaximum Power, Power difference (ΔP).
13	Hysteresis recovery slope	For over-frequency derating and Frequency reduction, when Frequency is less than the hysteresis point, the slope of Power change during Power recovery.
Underfrequency load shedding		
1	P(Fcurve	According to the Utility grid standard requirements of certain countries or regions, it is necessary to install P(F)Enable this function when drawing curves.
2	Underfrequency Load Shedding Mode	Set the under-frequency load shedding mode according to actual requirements. <ul style="list-style-type: none"> SlopeMode: Based on under-frequency point and load slope regulation Power. StopMode: Adjust Power based on underfrequency start point and underfrequency end point.
3	Underfrequency starting point	When the Utility grid Frequency is too low, the active Power output of the Inverter increases. When the Utility grid Frequency is less than this value, the Inverter output Power begins to rise.

No.	Parameter Name	Description
4	Electricity Trading Conversion Frequency	When the set Frequency value is reached, the system switches from selling electricity to buying electricity.
5	Underfrequency endpoint	When the Utility grid Frequency is too low, the active Power output of the Inverter increases. When the Utility grid Frequency is less than this value, the Power output of the Inverter does not continue to rise.
6	Overfrequency Power slope reference Power	Adjust the active power output of the Inverter based on Nominal power, current Power, apparent Power, or maximum active Power.
7	Underfrequency Power slope	When the Utility grid and Frequency are too low, the active Power output of the Inverter increases. The slope when the Power output of the Inverter rises.
8	Tentional Delay Ta	When the frequency is below the under-frequency point, the Inverter output Power change delay response time.
9	Hysteresis Function enable	Enable Hysteresis Function.
10	hysteresis point	During the under-frequency load shedding process, if Frequency increases, Power outputs Power according to the lowest point of the load shedding Power until Frequency exceeds the hysteresis point, and Power is restored.
11	Hysteresis waiting time	For under-frequency load shedding, when the Frequency increases and the Frequency exceeds the hysteresis point, the recovery waiting time of the Power must elapse before the Power can be restored.

No.	Parameter Name	Description
12	Hysteresis Power Slope Compensation Reference Power	For under-frequency load shedding, when the Frequency increases and the Frequency exceeds the hysteresis point, the reference for Power recovery is determined based on the recovery slope.*The rate of change of the reference Power is restored to Power. Support:PnNominal power、PsApparent Power,PmCurrent Power,PmaxMaximum Power, Power difference (ΔP).
13	Hysteresis recovery slope	For under-frequency load shedding, when the Frequency increases and the Frequency exceeds the hysteresis point, the slope of the Power change during Power recovery.
14	P(UCurve Enable	According to the Utility grid standard requirements of certain countries or regions, it is necessary to install P(U)Enable this function when drawing curves.
15	VnVoltage	VnThe ratio of the actual value of voltage to the rated voltage.n=1,2,3,4. For example: set to 90When, it indicates: V/Vrated% = 90%.
16	Vnactive power	VnThe ratio of active Power to apparent Power at the output of Inverter.n=1,2,3,4. For example: set to 48.5When, it indicates: P/Prated% = 48.5%.
17	Output Response Mode	Set active power Output Response Mode. Support: <ul style="list-style-type: none">First-order low-pass filtering, within the response time constant, achieves output regulation according to the first-order low-pass curve.Slope scheduling, achieving output regulation based on the set Power change slope.
18	variation gradient	When Output Response Mode is set to slope scheduling, active power dispatch is implemented according to the variation gradient of Power.
19	PT-1 Behavior Tau	When Output Response Mode is set as a first-order low-pass filter, the time constant for the active Power to change according to the first-order low-pass filter curve.

No.	Parameter Name	Description
20	Overload function switch	After activation, the maximum active Power output is 1.1 times the Nominal power value; otherwise, the maximum active Power output aligns with the Nominal power value.

8.3.8.3 Set Utility grid Protection parameters

Step 1 Through **Home > Settings > Advanced Settings > Safety Regulation Settings > Utility grid Protection Parameters** Enter the parameter settings page.

Step 2 Enter parameter values as required.

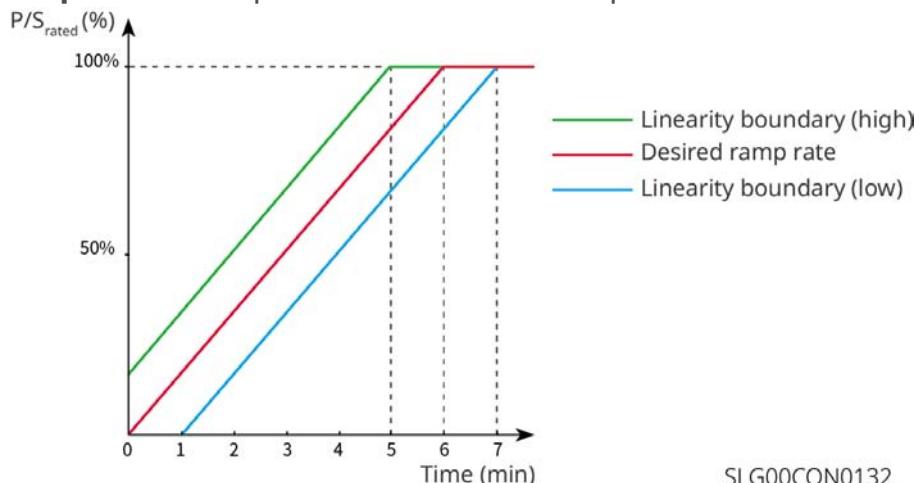
No.	Parameter Name	Description
1	Ovvoltage triggeringnthreshold value	Set Utility grid overvoltage trigger n-th Protection point, n=1,2,3,4.
2	Ovvoltage triggeringnStep-out time	Set Utility grid overvoltage trigger nStep trip timen=1,2,3,4.
3	Undvvoltage triggernthreshold value	Set Utility grid undvvoltage trigger nStep Protection point,n=1,2,3,4.
4	Undvvoltage triggernStep-out time	Set Utility grid undvvoltage trigger nStep trip time,n=1,2,3,4.
5	10minOvvoltage trigger value	Setting 10minOvvoltage trigger value.
6	10minOvvoltage trip time	Setting 10minOvvoltage trip time.
7	Over-frequency triggeringnthreshold value	Set Utility grid over-frequency trigger nStep Protection point,n=1,2,3,4.
8	Over-frequency triggeringnStep-out time	Set Utility grid over-frequency trigger nStep trip time,n=1,2,3,4.

No.	Parameter Name	Description
9	Underfrequency triggernthreshold value	Set Utility grid underfrequency triggernStep Protection point,n=1,2,3,4.
10	Underfrequency triggernStep-out time	Set Utility grid underfrequency triggernStep trip time,n=1,2,3,4.

8.3.8.4 Set Utility grid connection parameters

Step 1 Through **Home > Settings > Advanced Settings > Safety Regulation Parameter Settings > Utility grid Connection Parameters** Enter the parameter settings page.

Step 2 Enter the parameter values as required.



No.	Parameter Name	Description
Start-up		
1	Connection voltage upper limit	When Inverter is first connected to Utility grid, if the Utility grid voltage exceeds this value, Inverter will be unable to connect to Utility grid.
2	Lower connection limit	When Inverter is first connected to Utility grid, if the Utility grid voltage is below this value, Inverter will not be able to connect to Utility grid.

No.	Parameter Name	Description
3	Connection Frequency upper limit	When Inverter is first connected to Utility grid, if the Frequency of Utility grid is higher than this value, Inverter will not be able to connect to Utility grid.
4	Connection lower limit	When Inverter is first connected to Utility grid, if the Frequency of Utility grid is below this value, Inverter will not be able to connect to Utility grid.
5	on-grid waiting time	When Inverter is first connected to Utility grid, the Utility grid voltage and Frequency must meet the on-grid requirements before waiting for connection time with Utility grid.
6	Startup loading slope enable	Enable the startup slope function.
7	Startup loading slope	According to certain national or regional standard requirements, the incremental percentage of Power that can be output per minute during the initial startup of Inverter.
Reconnection		
8	Connection voltage upper limit	When Inverter reconnects with Utility grid after a fault occurs, if the Utility grid voltage exceeds this value, Inverter will be unable to connect with Utility grid.
9	Connection voltage lower limit	When Inverter reconnects with Utility grid after fault occurs, if the Utility grid voltage is below this value, Inverter will be unable to connect with Utility grid.
10	Connection Frequency upper limit	When Inverter reconnects with Utility grid after a fault, if the Utility grid Frequency exceeds this value, Inverter will be unable to connect with Utility grid.
11	Connection lower limit	When Inverter reconnects with Utility grid after fault occurs, if the Utility grid Frequency is below this value, Inverter will be unable to connect with Utility grid.
12	on-grid waiting time	After a Inverter occurs and reconnects with Utility grid, the Utility grid voltage and Frequency wait for the connection time with Utility grid after meeting the on-grid requirements.

No.	Parameter Name	Description
13	Reconnection load slope enable	Enable the startup slope function.
14	Reconnection load ramp rate	According to the standards and requirements of certain countries or regions, the incremental percentage of Power that can be output per minute during on-grid when it is not the first time Inverter. For example: set to 10When it indicates that the reconnection load slope is:10%P/Srated/min.

8.3.8.5 Set voltagefault ride-through parameters

Step 1 Through **Home > Settings > Advanced Settings > Safety Parameter Settings > voltagefault Ride-Through** Enter the parameter settings page.
Step 2 Enter parameter values as required.

No.	Parameter Name	Description
Low Voltage Ride Through (LVRT)		
1	UVnvoltage	The ratio of the ride-through voltage at the low-voltage ride-through characteristic point to the rated voltage. n=1,2,3,4,5,6,7.
2	UVnPoint time	The crossing time of the low voltage ride-through characteristic points during the LVRT process.n=1,2,3,4,5,6,7
3	Entering low voltage ride-through threshold	When Utility grid and voltage are between the low-voltage ride-through (LVRT) entry threshold and exit threshold, Inverter does not immediately disconnect from Grid disconnected.
4	Low voltage ride-through (LVRT) exit threshold	

No.	Parameter Name	Description
5	slopeK1	During the low voltage ride-through process, reactive power Power supportKCoefficient of value.
6	Zero-sequence mode enable	After enabling, the system outputs zero current during the low voltage ride-through process.
7	Entry threshold	Threshold for entering zero-sequence mode.
High Voltage Ride Through (HVRT)		
1	OVnvoltage	The ratio of the crossing voltage at the high-voltage ride-through characteristic point to the rated voltage during the high-voltage ride-through process. n=1,2,3,4,5,6,7.
2	OVnPoint time	The crossing time of high voltage ride-through characteristic points during the HVRT process.n=1,2,3,4,5,6,7.
3	Entering high voltage ride-through threshold	When Utility grid and voltage are between the high-voltage ride-through entry threshold and the exit threshold, Inverter does not immediately disconnect from Grid disconnected.
4	Exit high ride-through threshold	
5	slopeK2	During the high voltage ride-through process, reactive power Power support isKCoefficient of value.
6	Zero-sequence mode enable	During the high voltage ride-through process, the system outputs zero current.
7	Entry threshold	Threshold for entering zero-sequence mode.

8.3.8.6 Set Frequencyfault ride-through parameters

Step 1 Through **Home > Settings > Advanced Settings > Safety Parameter Settings > Frequencyfault Ride-Through** Enter the parameter settings page.

Step 2 Enter parameter values as required.

No.	Parameter Name	Description
1	ride-through enable	Enable Frequency ride-through function.
2	UFnpoint Frequency	Set underfrequency _n Frequency of the point _n =1,2,3.
3	UFnPoint time	Set underfrequency _n Underfrequency time of the point. _n =1,2,3.
4	OFnpoint Frequency	Set overfrequency _n Frequency of the point _n =1,2,3.
5	OFnPoint time	Set over-frequency _n Over-frequency time of the point. _n =1,2,3.

8.3.9 Set generator/load control parameters

8.3.9.1 Set load control parameters

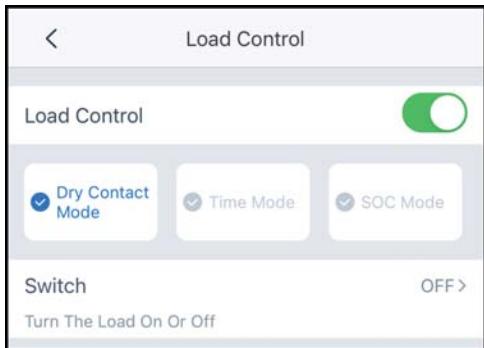
NOTICE

- When Inverter supports the load control function, the load can be controlled via the SolarGo App.
- For the ET40-50kW series Inverter, the load control function is only supported when the Inverter is paired with STS. The Inverter supports load control for GENERATOR port or load control for BACKUP LOAD port.
- For the ET50-100kW series Inverter, the load control function is only supported when the Inverter is paired with STS. Inverter supports SMART PORT port load control.

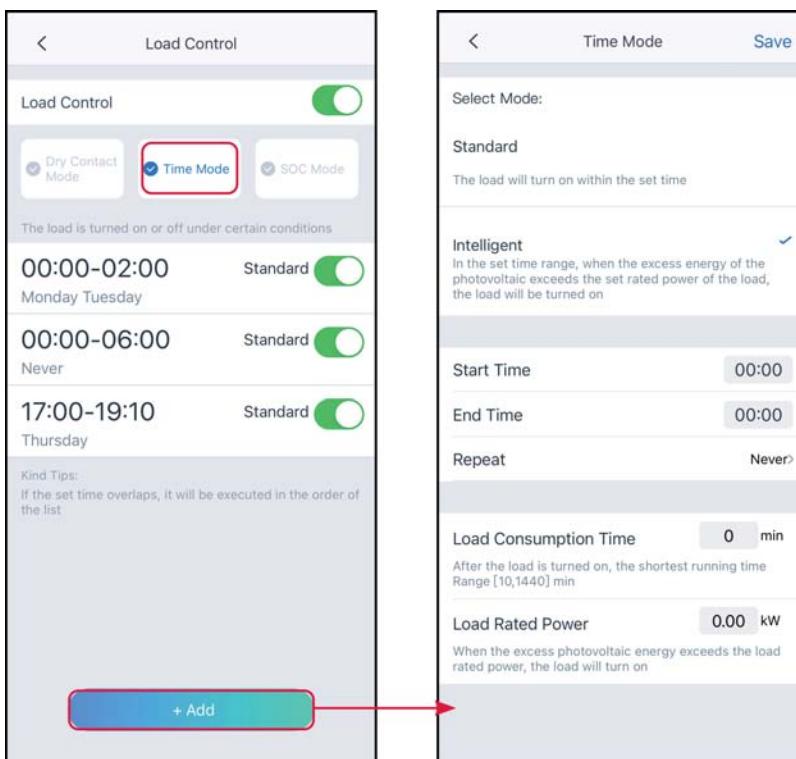
Step 1 Through **Home > Settings > port Connection** Enter the settings page.

Step 2 Based on the actual interface, select **load control** Enter the load control interface to set the control mode.

- Dry contact mode: When the switch status is set to ON, power supply to the load begins; when the switch status is set to OFF, power supply to the load stops. Please set the switch status to ON or OFF as required.



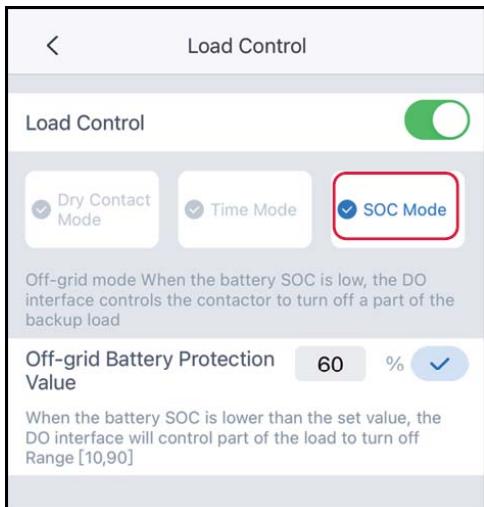
- Time Mode: Within the set time period, the load will automatically supply power to the load or POWER OFF. Standard mode or smart mode can be selected.



No.	Parameter Name	Description
1	Standard mode	It will supply power to the load during the set time period.

No.	Parameter Name	Description
2	Smart Mode	During the set time period, when the surplus energy generated by the photovoltaic system exceeds the preset load Nominal power, it begins to supply power to the load.
3	Turn-on time	The time mode will be activated during the period between the start time and the stop time.
4	Turn-off time	
5	Repeat	Set repeat Frequency.
6	Minimum load operation time	Minimum operating time after load is turned on to prevent frequent switching due to energy fluctuations. Only applicable in smart mode.
7	load Nominal power	When the surplus energy generated by the PV exceeds this load Nominal power, it starts supplying power to the load. This applies only to smart mode.

- SOC Mode: The Inverter built-in relay dry contact controls the port, enabling or disabling power supply to the load. In off-grid mode, if overload is detected at the BACK-UP or GENERATOR terminals, or if the Battery SOC Protection function is triggered, power supply to the load connected to the port can be stopped.



8.3.9.2 Set generator parameters

NOTICE

- When the Inverter supports generator control function, the generator can be controlled via the SolarGo App.
- For the ET40-50kW series Inverter, generator connection and control are only supported when the Inverter is used in conjunction with an STS.
- For the ET50-100kW series Inverter, generator access and control are only supported when the Inverter is paired with an STS.

Step 1 Through **Home > Settings > port Connection** Enter the settings page.

Step 2 Based on the actual interface prompts, enter the generator control interface and set the generator parameters according to specific requirements.

Step 3 When setting the generator control function, please select the generator type based on the actual connection situation. Currently supported: **Generator not connected, manual start/stop generator, automatic start/stop generator** And set the corresponding parameters according to the selected generator type.

- Generator not connected: Select "Generator not connected" when no generator is connected to energy storage system.
- Manual control of generator (dry contact connection not supported): Manual control is required for generator start/stop, Inverter cannot control generator start/stop.
- Automatic Control Generator (Supports Dry Contact Connection): When the generator has a dry contact control port and is connected to Inverter, the generator control mode in the SolarGo App should be set to switch control mode or automatic control mode for Inverter.
 - Switch control mode: When the switch status is on, the generator operates; the generator can automatically stop working after reaching the set operating time.
 - Automatic control mode: The generator is prohibited from operating during the set prohibited working time period and operates during the set operating time period.

The image displays three separate screenshots of a 'Generator Control' application interface. Each screenshot shows a different 'Generator Type' selected in a dropdown menu at the top.

- Not Installed generator:** Shows basic generator information settings. Parameters include: Rated Power (9.00), Upper Voltage (280), Lower Voltage (160), Upper Frequency (55.00), Lower Frequency (45.00), Delay Time Before Loading (10), and a 'Generator To Charge The Battery' section with a switch and charging parameters (Max Charging Power 1%, SOC for Starting Charging 20%, SOC For Stopping Charging 90%).
- Manual control of generator (Doesn't support dry node connection):** Shows the same basic information settings as the first screen, but with a note: 'Doesn't support dry node connection'.
- Automatic control generator (Supports dry node connection):** Shows the same basic information settings as the first screen, but with a note: 'Supports dry node connection'.

SLG00CON0079

No.	Parameter Name	Description
1	Dry contact control method	Switch control mode/Automatic control mode.
Switch control mode		
2	Generator dry contact switch	Only applicable to switch control mode.
3	Operating time	Generator continuous operation time, the generator stops running after reaching the time.

No.	Parameter Name	Description
Automatic control mode		
4	No working during operation	Set the prohibited generator operation time period.
5	Operating time	After the generator starts and operates, it continues to run for the specified duration. Once the duration is reached, the generator stops operating. If the generator's operating period includes prohibited working hours, the generator will cease operation during that time. After the prohibited working hours, the generator resumes operation and the timing restarts.

No.	Parameter Name	Description
Generator Information Settings		
1	Nominal power	Set the Nominal power for generator operation.
2	Operating time	Set the continuous operation time of the generator. The generator will be shut down once the continuous operation time is reached.
3	upper limit	Set the voltage range for generator operation.
4	lower limit	
5	upper limit	Set the AC Grid Frequency Range for generator operation.
6	Lower limit	
7	Preheating time	Set generator no-load warm-up time.
Generator parameter settings for Battery charge		
8	Switch	Choose whether to use the generator to supply power to Battery charge.
9	Max charge power(%)	Generator power generation to Battery charge when the Charge Power.

No.	Parameter Name	Description
10	Start Charge SOC	When the Battery SOC is below this value, the generator supplies power to the Battery charge.
11	Stop Charge SOC	When the Battery SOC is higher than this value, stop charging the Battery charge.

8.3.9.3 Set microgrid parameters

NOTICE

When Inverter supports microgrid functionality, microgrid parameters can be configured via the SolarGo App.

Step 1 Through **Home > Settings > port Connection** Enter the settings page.
Step 2 Based on the actual interface prompts, enter the microgrid control interface and set the microgrid parameters according to actual requirements.



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No.	Parameter Name	Description
1	Maximum SOC	Set the Charge SOC upper limit, and stop Charge once the upper limit is reached.
2	Manual wake-up	<ul style="list-style-type: none"> When the Utility grid fault, if the Battery power level is too low to support the hybrid inverter off-grid operation, click this button to forcibly activate the hybrid inverter to output voltage to the grid-tied PV inverter, thereby starting the grid-tied PV inverter. Single activation.
3	Auto wake-up	<ul style="list-style-type: none"> Utility gridfault, if the Battery battery level is too low to support hybrid inverter off-grid operation. When this function is enabled, the system will forcibly activate the hybrid inverter to output voltage to the grid-tied PV inverter at a fixed time, thereby starting the grid-tied PV inverter. Multiple activations.
4	Utility grid Power Purchase Power Bias Limitation	Set the adjustable range for the maximum Power that the equipment can actually purchase from Utility grid.

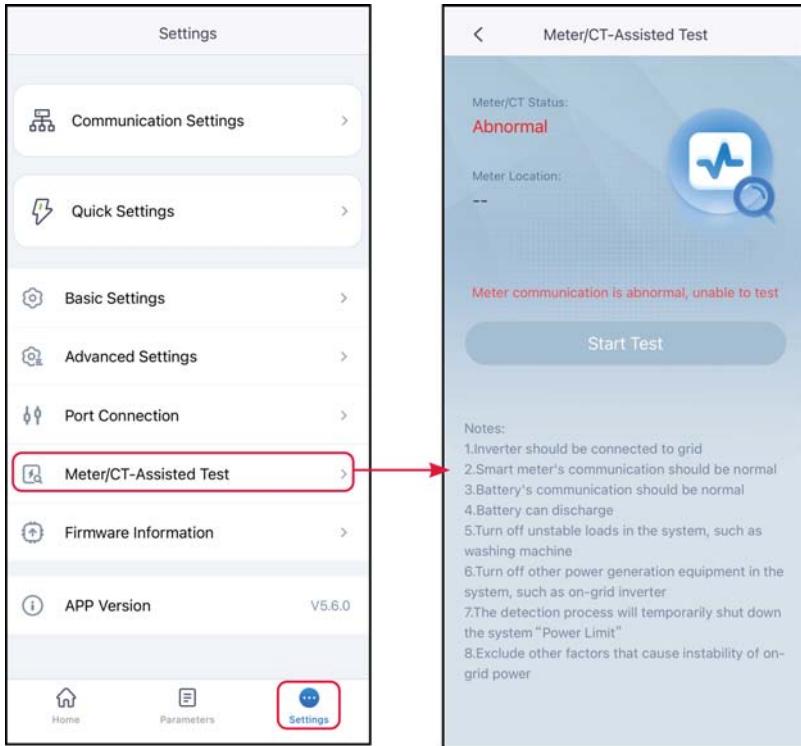
8.3.10 Set meter parameters

8.3.10.1 Electric Meter/CT Auxiliary Testing

Use the meter detection function to check whether the CT of the meter is correctly connected and its current operating status.

Step 1 Through **Homepage > Setting > Meter function > Electric Meter/CT Auxiliary Testing** Enter the detection page.

Step 2 Click **Start detection** After the test is completed, check the test results.



8.3.11 Equipment maintenance

8.3.11.1 View Firmware Information/Firmware Upgrade

Through firmware information, you can view or upgrade the DSP version, ARM version, BMS version, AFCI version, STS version, and communication module software version of Inverter. Some devices do not support software version upgrades via the SolarGo App. Please refer to the actual situation.

NOTICE

After logging in, if a firmware upgrade dialog box pops up, clicking on "Firmware Upgrade" will directly navigate you to the firmware information viewing interface.

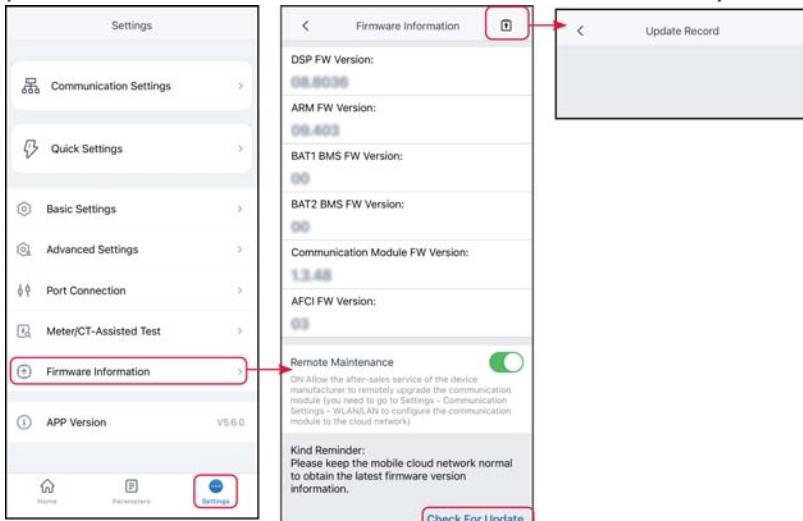
8.3.11.1.1 Regular firmware upgrade

NOTICE

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

Step 1 Through **Home > Settings > Device Information** Enter the device information interface.

Step 2 When the device information indicates that a version update is available, please follow the on-screen instructions to complete the update.



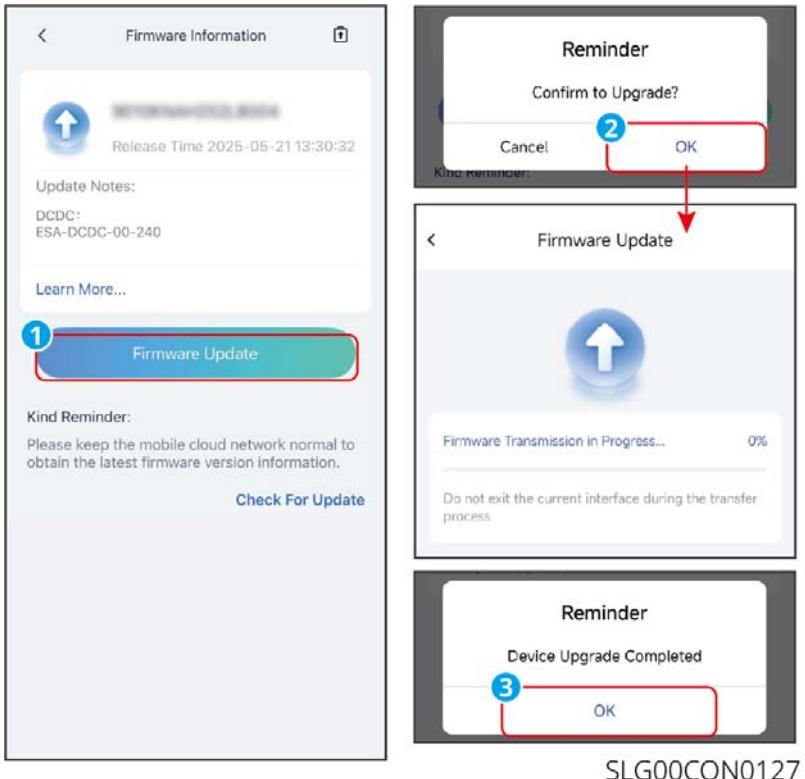
8.3.11.1.2 One-click firmware upgrade

NOTICE

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

Step 1 Through **Home > Settings > Device Information** Enter the device information interface.

Step 2 Complete the upgrade according to the interface prompts.



8.3.11.1.3 Automatic firmware upgrade

NOTICE

- When using the WiFi/LAN Kit-20 or WiFi Kit-20 module for communication, and the module firmware version is V2.0.1 or above, the device auto-upgrade function can be enabled.
- After enabling the automatic device upgrade feature, if there is a module version update and the device is already connected to the network, the corresponding firmware version will be automatically upgraded.

Step 1 Through **Home > Settings > Firmware Information** Enter the firmware information viewing interface.

Step 2 Enable or disable the automatic upgrade function of the equipment based on actual requirements.

8.3.11.2 Change login password

NOTICE

The login password for connecting the SolarGo App to Inverter can be modified. After changing the password, please remember it. If you forget the password, contact the after-sales service center for assistance.

Step 1Through**Home > Settings > Change Login Password**Enter the settings page.

Step 2Modify the password according to the actual situation.



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 Power Plant Monitoring

9.1 SEMS+

9.1.1 App Introduction

The SEMS+ App is a software designed for Power Plant Monitoring, enabling remote Power Plant Management and device management, as well as viewing operational data and alarm information of power station.

9.1.1.1 Supporting products

Supports monitoring and managing GoodWe brand equipment, such as Inverter, Smart Meter, data loggers, Charge piles, Battery, etc.

9.1.1.2 Download the Installation App

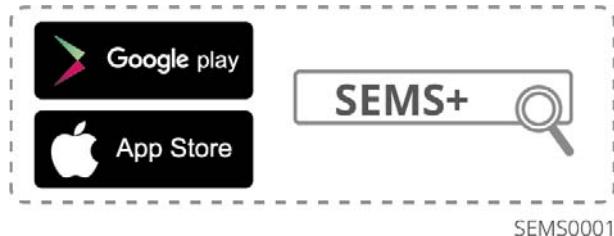
Mobile phone requirements:

- Mobile operating system requirements: Android 6.0 and above, iOS 13.0 and above.
- The phone supports a web browser for connecting to the Internet.
- The phone supports WLAN/Bluetooth functionality.

Download method:

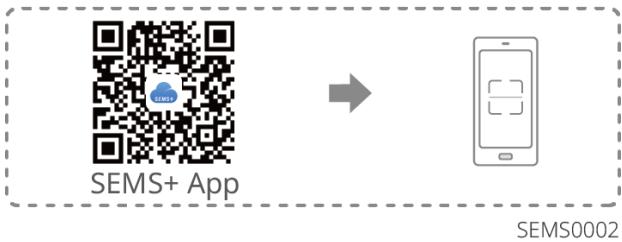
Mode 1:

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

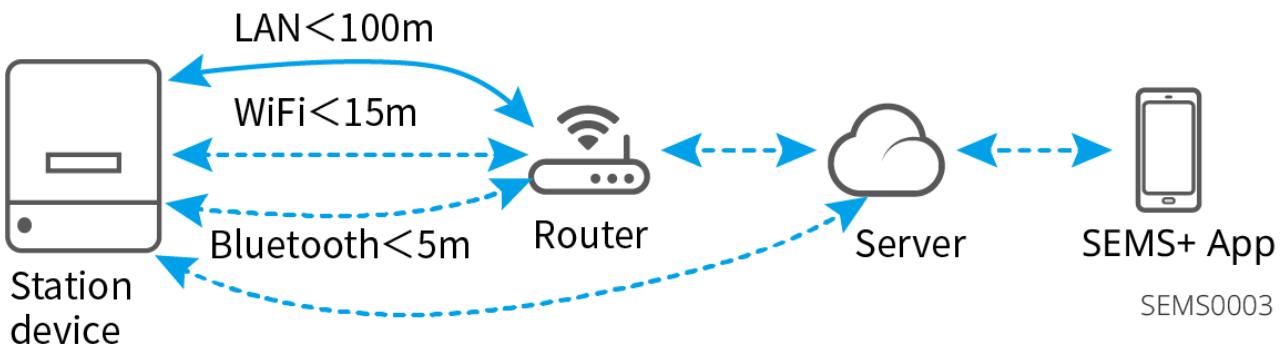


Mode 2:

Scan the QR code below to download and Installation.



9.1.1.3 Connection method

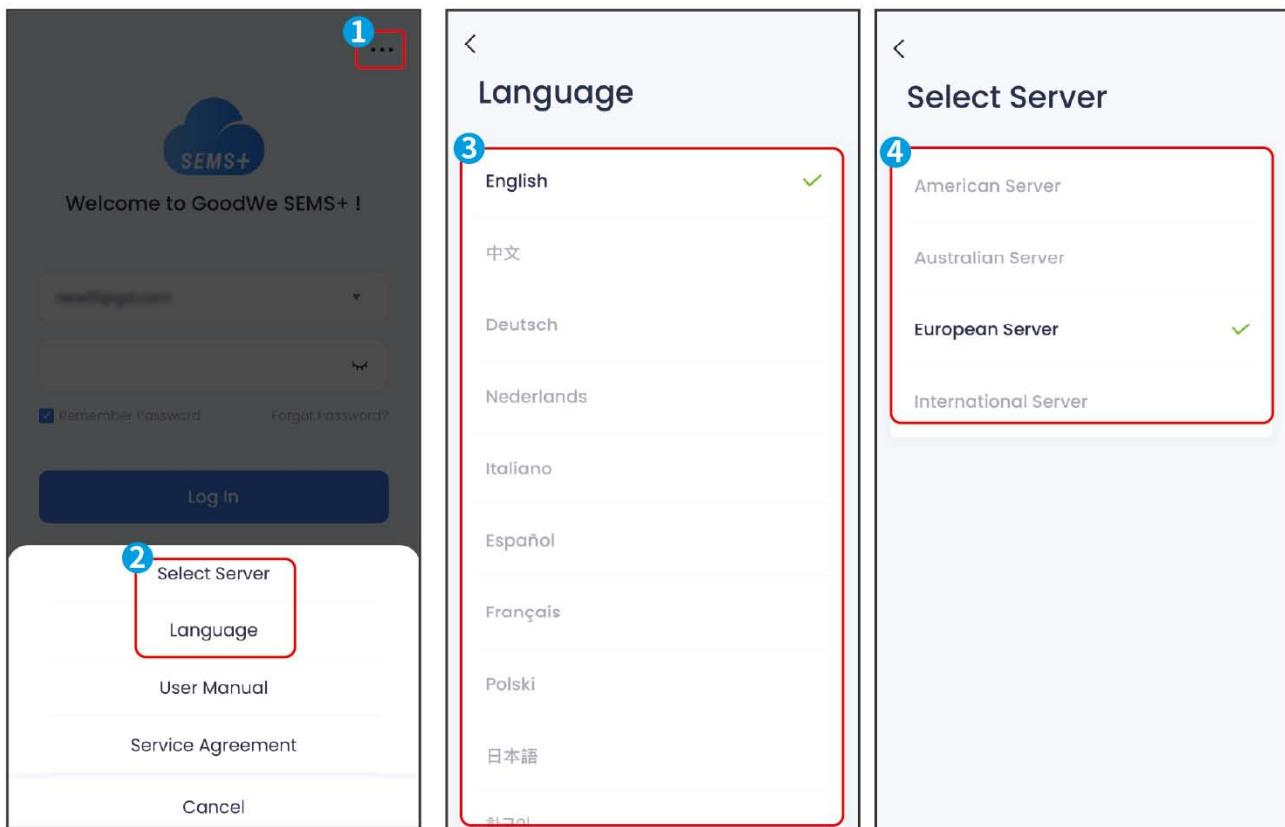


9.1.1.4 Set language and Server

NOTICE

The system supports automatic Server adaptation based on login account information. For manual configuration, when selecting a Server, please ensure the chosen region matches the account's associated region; otherwise, login will not be possible.

Please select the App display language according to your actual needs, and choose the corresponding Server based on your region.



9.1.1.5 Set communication parameters

The SEMS+ App supports connecting to devices via Bluetooth or WiFi, configuring network parameters for remote monitoring or device management.

NOTICE

The displayed device name varies depending on the model or smart dongle type of the equipment, with *** representing the device serial number:

- Wi-Fi/LAN Kit; Wi-Fi Kit; Wi-Fi Box: Solar-WiFi***
- WiFi/LAN Kit-20: WLA-***
- WiFi Kit-20: WFA-***
- Ezlink3000: CCM-BLE***; CCM-***; ***
- 4G Kit-CN-G20/4G Kit-CN-G21: GSA-***; GSB-***
- Charge pile:***

9.1.2 Account Management

9.1.2.1 Register an account

Step 1: On the App homepage, click "Register" to enter the account registration interface.

Step 2: Select the account type based on actual needs and click "Next".

Step 3: Enter the account information according to the actual situation, and click "Register" to complete the registration.

The image shows three sequential screens from the SEMS+ app registration process:

- Step 1:** Home screen with a "Register" button highlighted (1).
- Step 2:** "Account Type" screen. Step 2 (2) highlights the "International Server" dropdown. Step 3 (3) highlights the "Owner" (User who will own or already own stations) and "Dealer/installer" (Users who provide services for owners) options. Step 4 (4) highlights the "Next" button.
- Step 3:** "Account Details" screen. Step 5 (5) highlights the "Country/Region" dropdown. Step 6 (6) highlights the "Register" button.

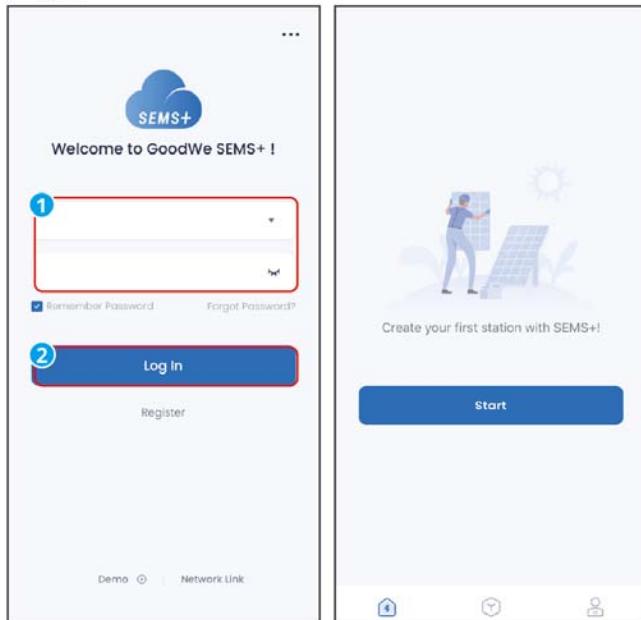
9.1.2.2 Login account

NOTICE

- Before logging into the App, please register or obtain your account and password through a distributor.
- After logging into your account, you can view or Power Plant Management information. The specific interface is subject to the actual display. Depending on the account type, region, and power station type, the displayed power station information may vary.

Step 1: Enter the account and password, read and check the login agreement, then click "Login".

SEMS0006

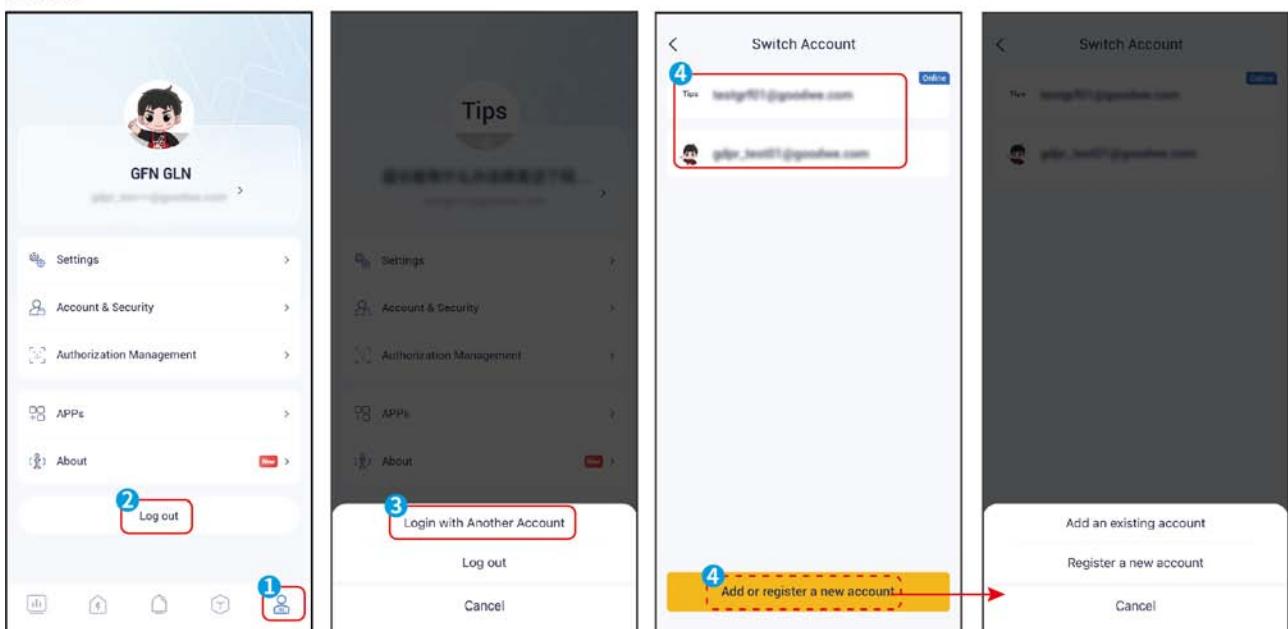


9.1.2.3 Switch account

Step 1 In "mine" Interface, click "Log Out" > "Log In with Another Account".

Step 2 Select an existing account or add a new account based on actual requirements.

SEMS0007

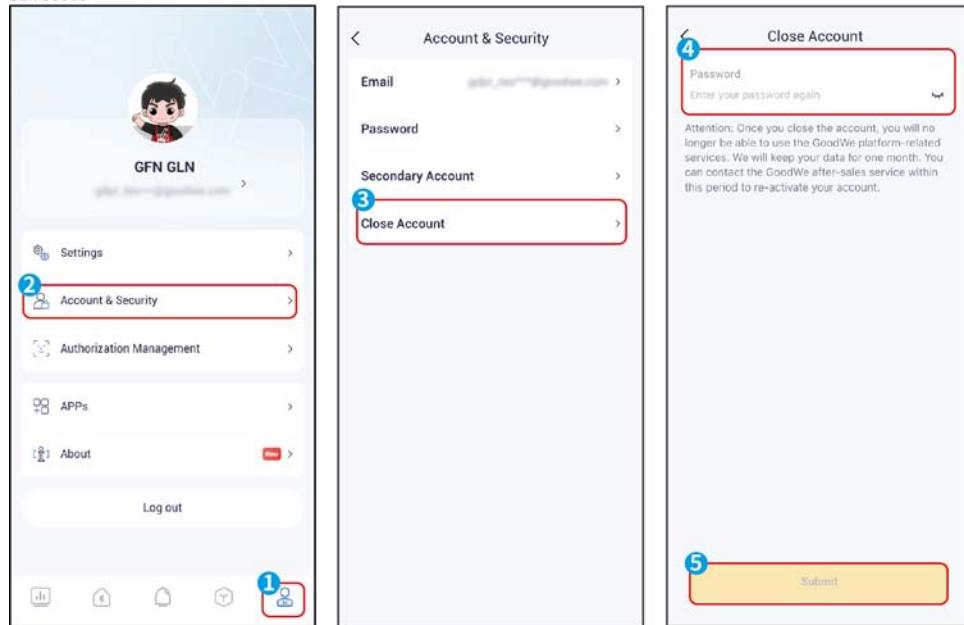


9.1.2.4 Delete account

Step 1 In mine Interface, click "Account Security"

Step 2 Click "Close account" Enter the account and password, then click "Submit"

SEMS0008



9.1.2.5 Account Permission Description

The SEMS+ App supports different account types with varying permissions. The operational permissions for each account type differ. For details, please refer to the table below.

Primary Menu	Secondary Menu	Third-level menu	Level 4 Menu	Level 5 menu	Permission Description
Login & Register	-	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
Overview	Monitoring Information	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Create Station	-	-	-	Administrator, Installation personnel, owner, visitor
Station	Station List	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor

Primary Menu	Secondary Menu	Third-level menu	Level 4 Menu	Level 5 menu	Permission Description
Station Details	Device	Monitoring	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
					Administrator, Installation personnel, owner
					Administrator, Installation personnel, marketing staff, owner, visitor
					Administrator, Installation personnel, property owner
					Administrator, Installation personnel, owner
		Device List	Device Details	Search Device	Administrator, Installation personnel, marketing staff, owner, visitor
				Replace Device	Administrator, Installation personnel, property owner
				Edit Device	Administrator, Installation personnel, owner
				Delete Device	Administrator, Installation personnel, owner
				Device Monitoring Info	Administrator, Installation personnel, marketing staff, owner, visitor
				Device Remote Control	Administrator, Installation personnel, owner
				Device Remote Upgrade	Administrator, Installation personnel
		Alarms	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Station Configuration	Edit Station	-	Administrator, Installation personnel, owner

Primary Menu	Secondary Menu	Third-level menu	Level 4 Menu	Level 5 menu	Permission Description
			Delete Staion	-	Administrator, Installation personnel, owner
			Replacement History	-	Administrator, Installation personnel, marketing personnel, owner
			User Information	-	Administrator, Installation personnel, owner
			Home Configuration	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Create Station	-	-	-	Administrator, Installation personnel, owner, visitor
Alarm	-	-	-	-	Administrator, Installation personnel, marketing personnel
Services	Services	Warranty	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Report Center	-	-	Administrator, Installation personnel, marketing personnel, owner
		GoodWe News	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Announcements	-	-	Administrator, Installation personnel, marketing staff, owner, visitor

Primary Menu	Secondary Menu	Third-level menu	Level 4 Menu	Level 5 menu	Permission Description
Tools	Community	Community	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Create Station	-	-	Administrator, Installation personnel, owner, visitor
		Network Link	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		DNSP	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Help	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
My	User Profile	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	User Information	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Setting	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Account Security	Email	-	-	Administrator, Installation personnel, marketing staff, owner, visitor

Primary Menu	Secondary Menu	Third-level menu	Level 4 Menu	Level 5 menu	Permission Description
System Management	User Management	Password	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Secondary Account	-	-	Administrator, Installation personnel, marketing personnel
		Close Account	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Auth Management	Remote Control Auth	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Monitoring Auth	-	-	Owner
	Apps	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	About	-	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
	Logout	Logout	-	-	Administrator, Installation personnel, marketing staff, owner, visitor
		Login another Account	-	-	Administrator, Installation personnel, marketing staff, owner, visitor

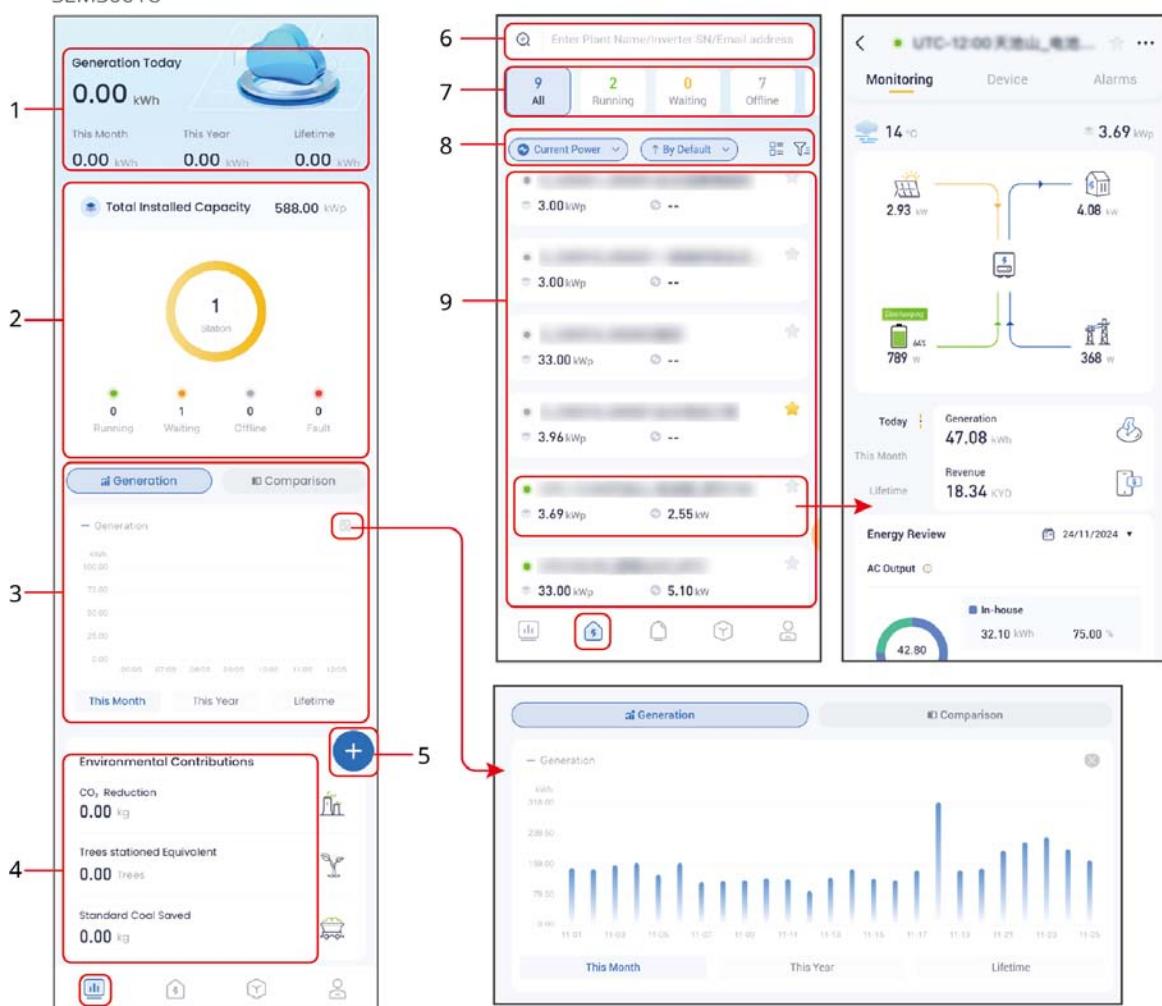
9.1.3 Viewing Power Plant Information

9.1.3.1 View all power station overview information

After logging into the SEMS+ App using your account and password, you can view the power generation status overview of all power station in the current account.

Or on the power station page, arrange all power station lists by different sorting and filtering conditions to view the detailed information of power station.

SEMS0018



No.	Description
1	Display the overall power generation of all power station, including: today's power generation, this month's power generation, this year's power generation, and total power generation. When the number of power station is greater than or equal to 10, the annual power generation is not displayed.

No.	Description
2	Display the total installed capacity and the power station operating status. The power station operating status is categorized as: Running, Waiting, Offline, Faulted. The power station status is only marked as Running when all devices in the power station are operating normally.
3	Display power station monthly power generation, annual power generation, or total power generation statistics chart, or a comparison chart with the previous year's power generation statistics. Click  Zoomable statistical charts.
4	Display environmental contribution data, such as CO₂ Reduction , Trees Stationed Equivalent and Standard Coal Saved .
5	Create new power station.
6	Query power station. Enter the device SN, power station name, or email address to quickly search for the corresponding power station.
7	power station operating status. Displays the current power station operating status and the number of power station running in each state. Clicking on the operating status allows filtering of power station under the corresponding operating status.
8	<ul style="list-style-type: none"> Set power station list to display KPI indicators: Current Power, Rev. Today, Rev. Total, Gen. Today, Gen. Total Set power station list sorting method: By Default, By Capacity Set power station list display mode: Station Card, Station List Set the power station list filter conditions: Scope, Category, Capacity
9	power station list. Click the power station name to view detailed information about the power station. The display content varies for different types of power station, please refer to the actual content.

9.1.3.2 View single power station details

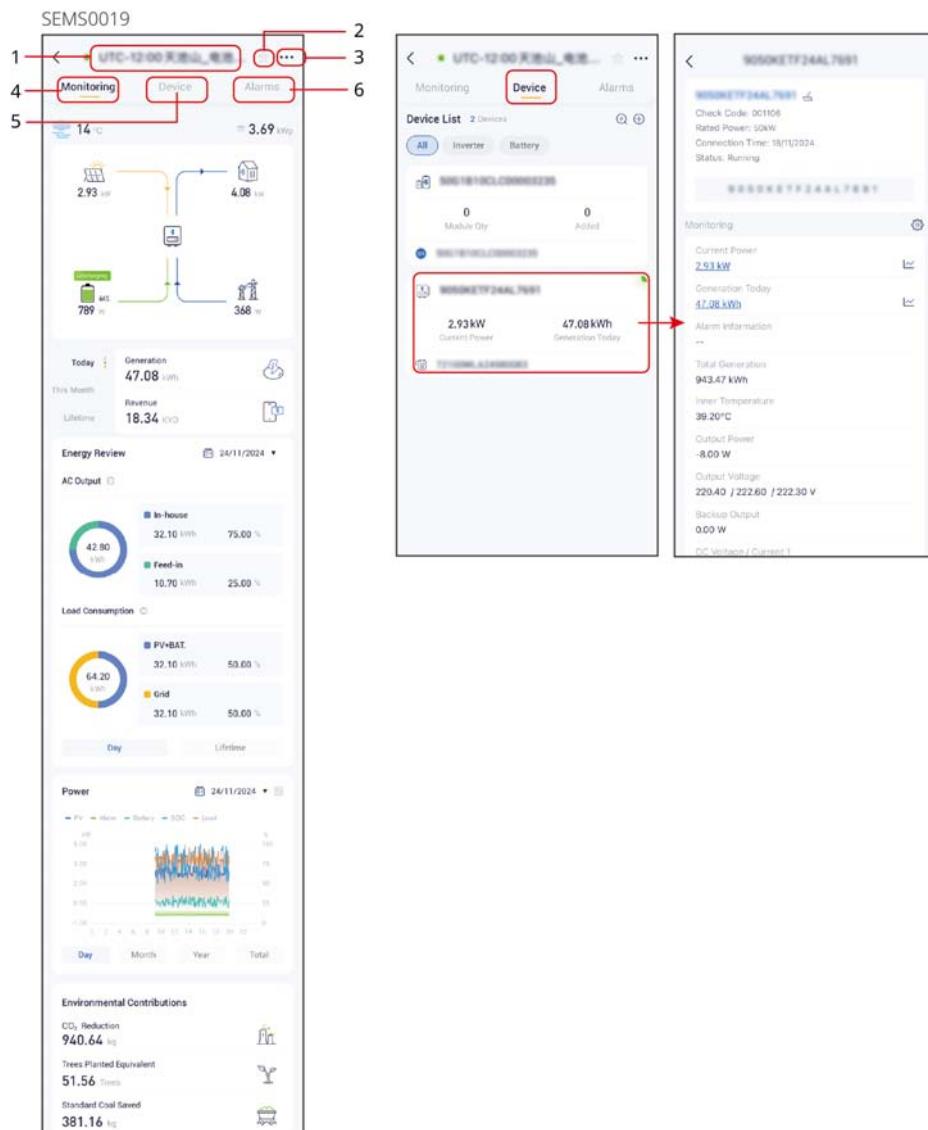
Step 1 If there are multiple power station, you can quickly search for power station on the power station page by entering the device SN, power station name, or email address.

Step 2 Click the power station name to enter the power station details page and view detailed information.

SEMS0052



9.1.3.2.1 View power station details (traditional mode)



No.	Description
1	Current power station name.
2	Collection power station.
3	Configure power station information. Supports: configuring power station basic information, modifying user information, adding power station photos, setting PV module layout, etc.
4	The chart displays the current power station operation information, such as the power diagram, power generation, Load consumption quantity, AC output, and other data.

No.	Description
5	<ul style="list-style-type: none"> Equipment List. Displays the current devices in the power station, such as Inverter, Battery, data collectors, Charge piles, etc. Click on the device card to view detailed device information.
6	power station alarm message.

9.1.4 Viewing Alarm Information

9.1.4.1 View all power station alarm information

Step 1 Click the Alarm tab to enter the alarm query interface.

Step 2 (Optional) Enter the power station name or device SN in the search box to quickly locate the power station or device you want to view.

Step 3 Click the alarm name to view alarm details.

SEMS0020



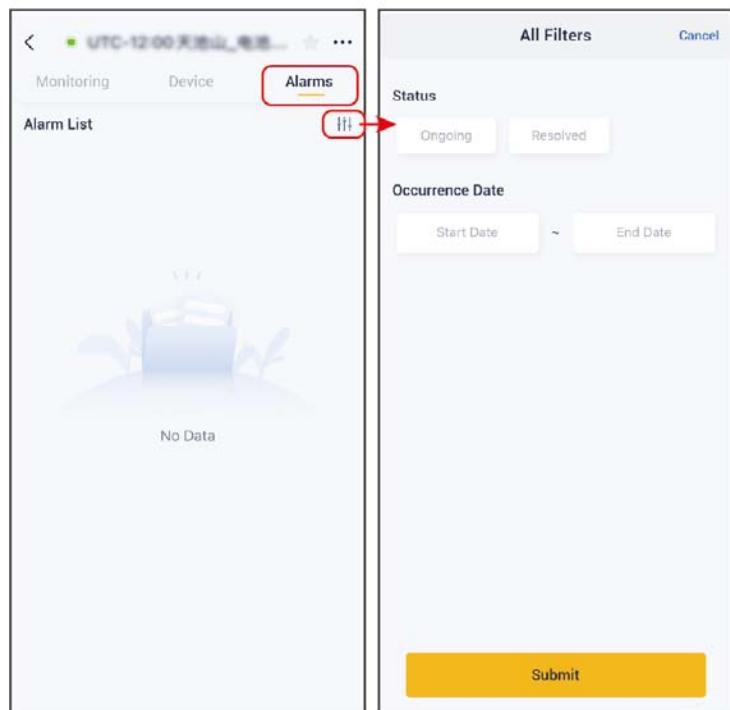
9.1.4.2 View the current power station alarm information.

9.1.4.2.1 View current power station alarm information (legacy mode)

Step 1 If there are multiple power station, click the power station name on the power station list page to enter the power station details page.

Step 2 Click **Alarms** Enter the alarm page to view alarm details. Click  Alarm information can be filtered based on actual requirements.

SEMS0021



9.1.4.3 View the alarm information of the current device.

Step 1 If there are multiple power station, click the power station name on the power station list page to enter the power station details page.

Step 2 Select the device from the device list to enter the device details page. If there are any alarms, the device details page will directly display the 10 latest active alarms.

SEMS0022

5081810CLC000003242

5081810CLC000003242

Brand: GoodWe

Status: --

Alarm Information

[BMS1 Cluster2 Acquisition line fault](#)
[RSVD](#)
[BMS1 Cluster2 external equipment failure](#)
[BMS1 Cluster2 Relay or MOS short-circuit fault](#)
[RSVD](#)

Monitoring

SN
5081810CLC000003242

Version
--

Running Status
--

SOC
--

9.1.5 View power station report information

View power station report

Step 1 Click "Service" > "Report Center" Enter the report center interface.

Step 2 Select the time period to query, search for the power station you need to inquire about, and click the power station name to enter the report interface. To download the report, click > Click "Export" to download.

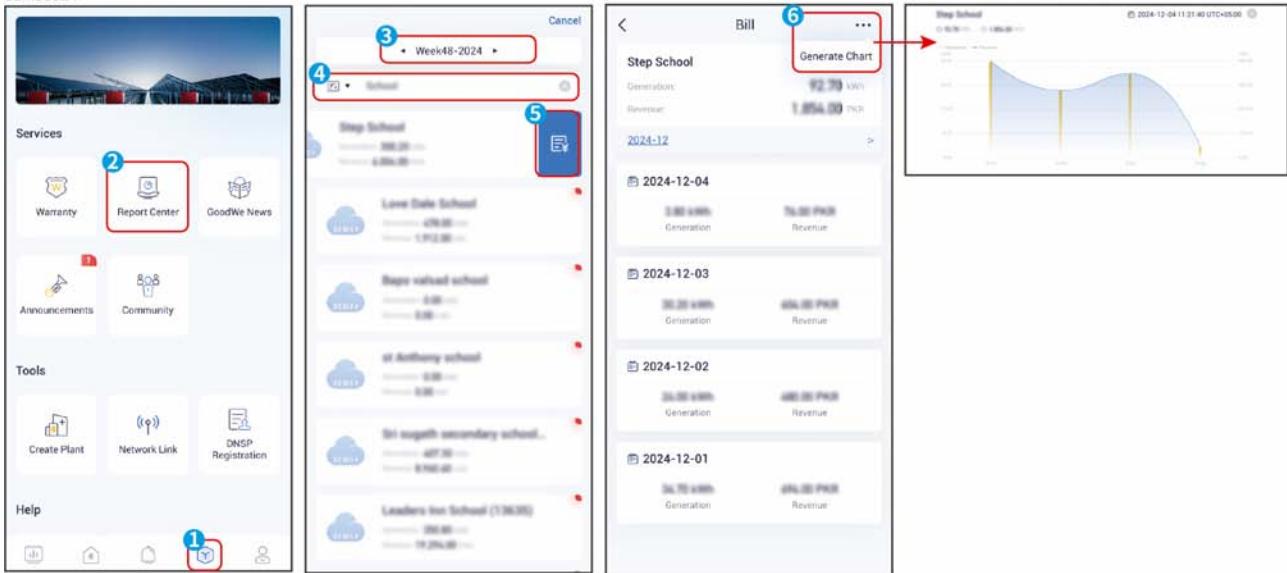
SEMS0023



View power station bill

Step 1 Click "Service" > "Report Center" to enter the Report Center interface.

Step 2 Select the time period to be queried, search for the power station to be queried, swipe left and click. Enter the Bill interface to view the bill.



9.1.6 Power Plant Management

9.1.6.1 Power Plant Creation

Step 1 Click on the homepage or power station list page .

Step 2 Based on the actual situation, in Power Plant Creation Fill in the power station related information in the interface.

Step 3 Click "Save and Exit" power station creation completed, no devices are added in the power station at this time; or click "Save and Continue" Enter the Add Device interface and input the relevant device information based on the actual situation. Supports adding multiple devices.

1

2

3

4

5

6

7

9.1.6.2 Configure power station information

NOTICE

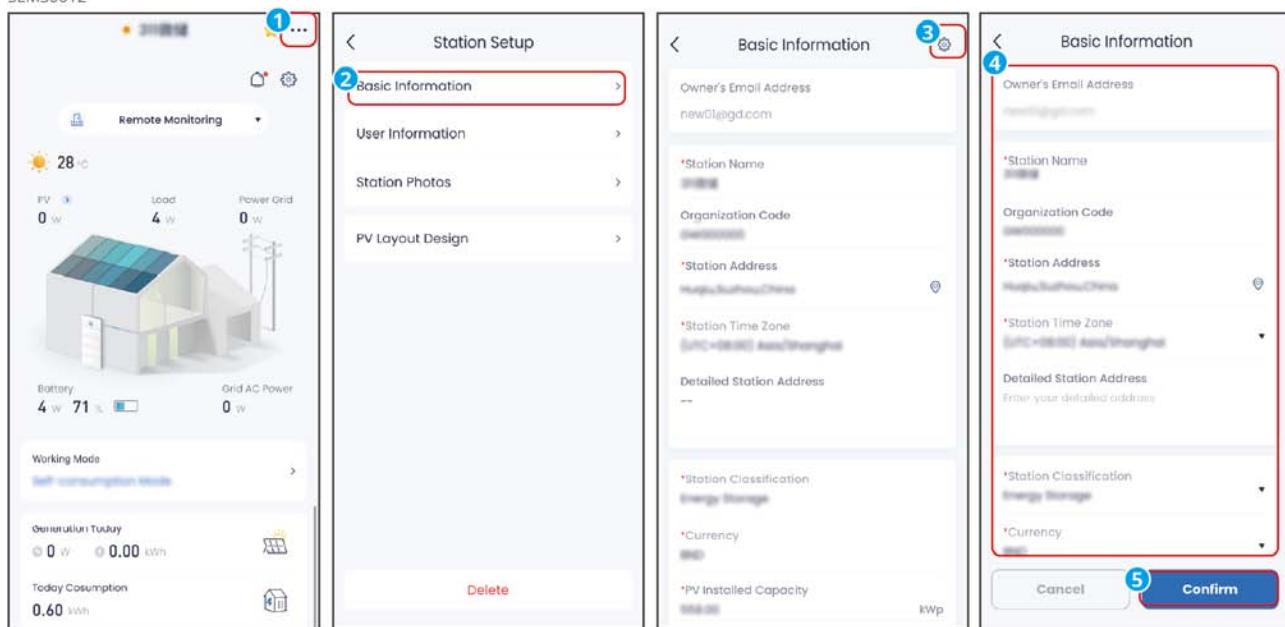
After the power station is successfully created, the power station configuration information can be updated according to actual requirements. If the entered configuration information contradicts the actual situation of the power station, the power station actual data shall prevail, and the basic information provided here is for reference only.

Step 1(Optional) If there are multiple power station, select the power station that needs to be configured in the power station list interface.

Step 2On the power station details page, via "Basic Information" enters the information viewing interface.

Step 3Click Enter the information modification interface, modify the information according to actual needs, and click "Confirm" to save the changes.

SEMS0012



9.1.6.3 Power Plant Management visitor

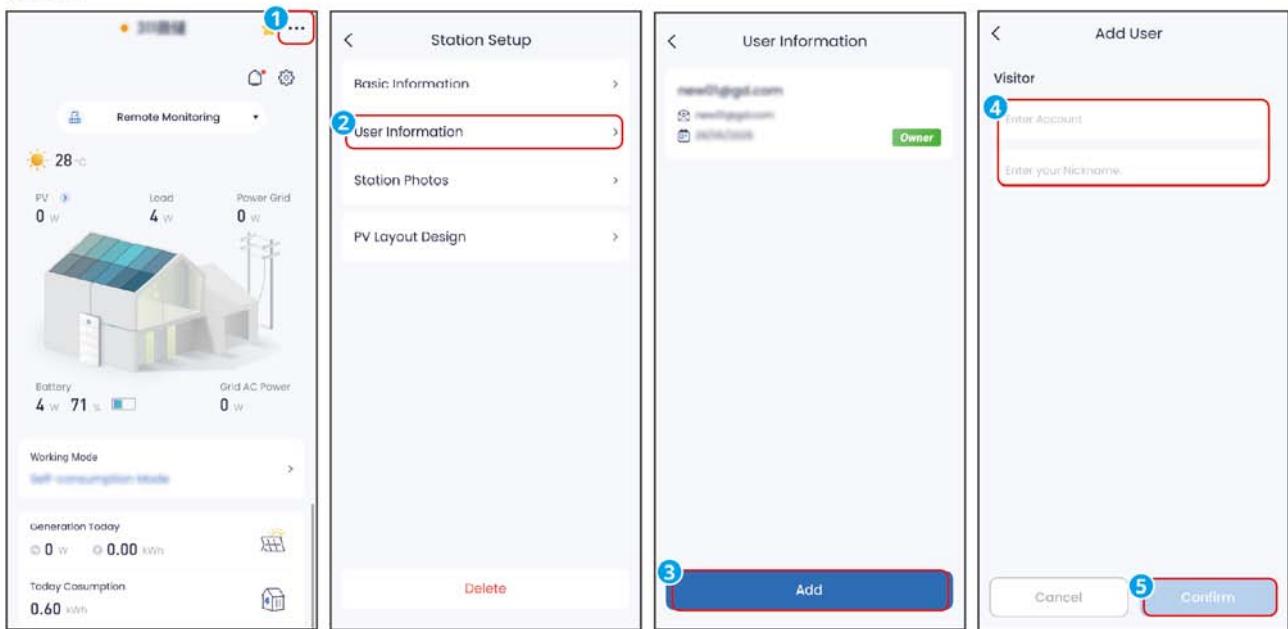
Supports adding power station for visitors to view power station basic information. power station Visitors cannot view all interfaces; please refer to the actual interface.

Step 1(Optional) If there are multiple power station, select the power station to be configured in the power station list interface.

Step 2:On the power station details page,Pass through > "User Information">> "Add" Enter the Add Visitor interface.

Step 3Enter visitor information and click "Confirm" to complete the addition.

SEMS0013



To delete an added visitor, User information Select the guest you want to delete, swipe right and click Delete.

SEMS0054



9.1.6.4 Power Plant Management photo

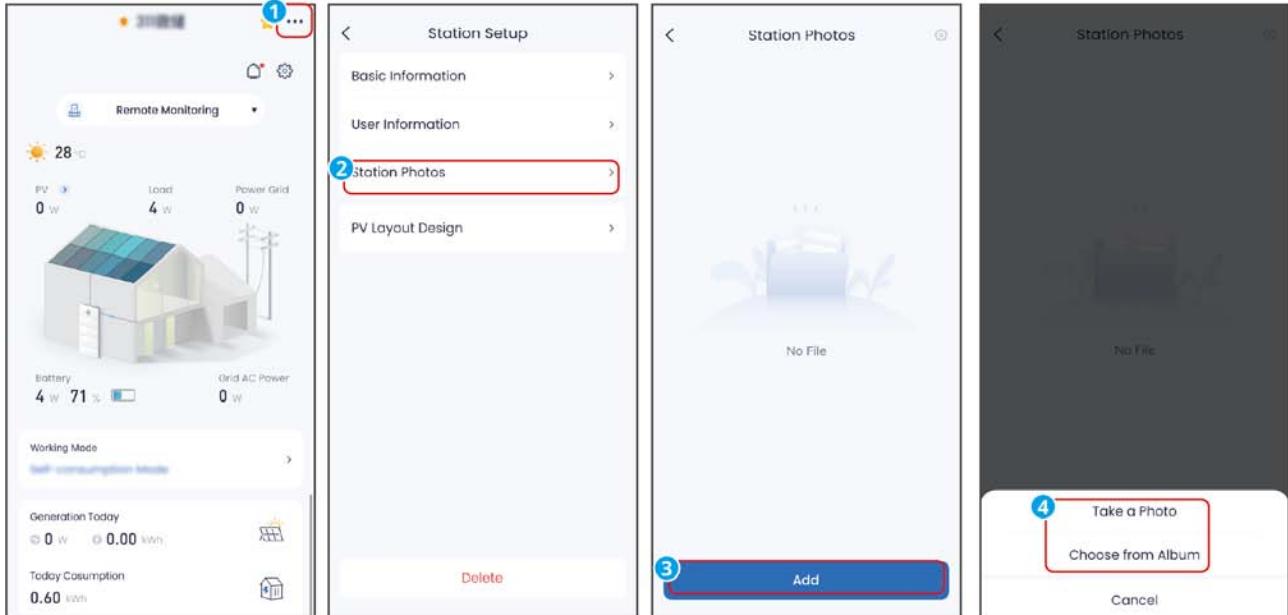
Add power station photos, which can be used to quickly identify different power station.

Step 1(Optional) If there are multiple power station, select the power station to be configured in the power station list interface.

Step 2: On the power station details page, click > "power station photo album" > "Add" Enter the power station photo interface.

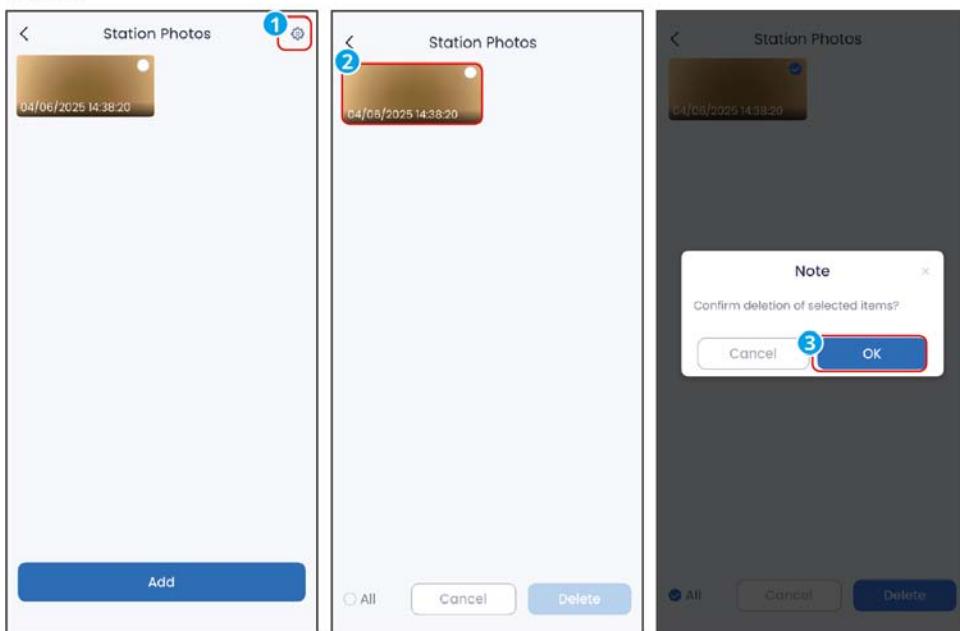
Step 3: Select via the interface prompt "Take a photo" or "Select from album" to add photos.

SEMS0014



To delete power station photos, please follow the steps below.

SEMS0055



9.1.6.5 Set PV module layout

Set the PV Layout Design parameters according to the actual PV module conditions. The information here is only for recording the PV layout and will not alter the actual

PV layout.

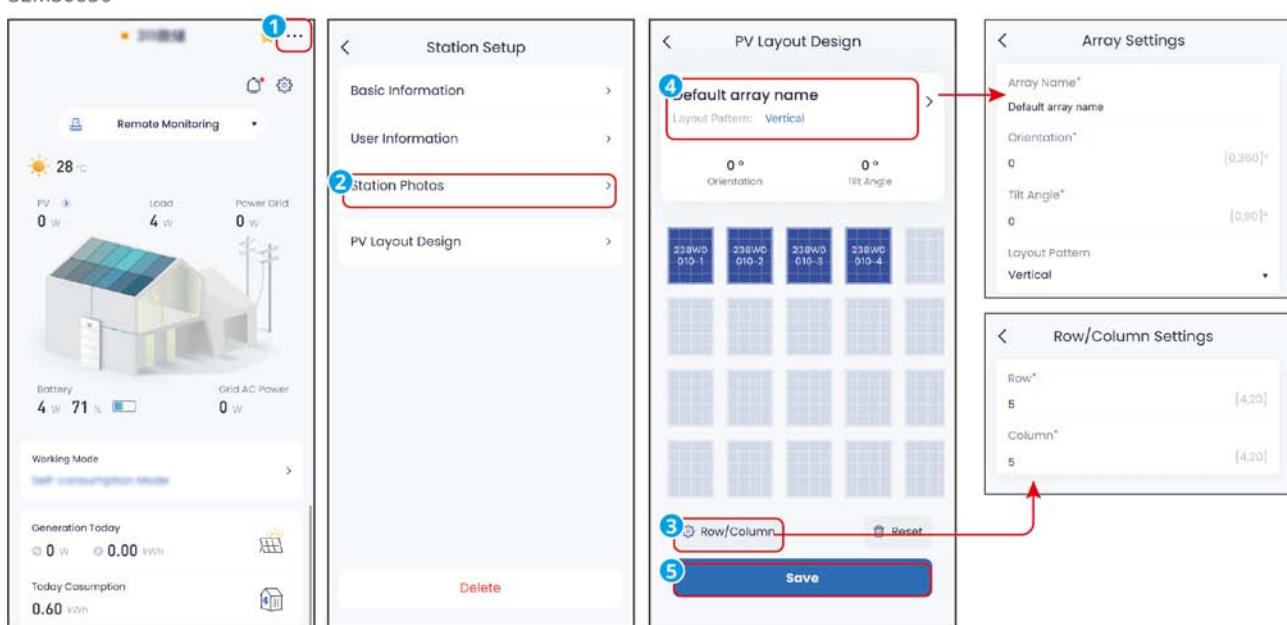
Step 1(Optional) If there are multiple power station, select the power station to be configured in the power station list interface.

Step 2Through **...** > **PV Layout Design**Enter the adjustment interface.

Step 3Click**Row/Column**Based on the actual PV module Installation conditions, the arrangement of modules in each row and column.

Step 4Click**Array Name**Enter**Array Settings**Interface, set the name, angle, and orientation information of the PV array according to the actual situation.

SEMS0056



9.1.6.6 Adjust the display information on the power station details page.

The content displayed on the power station details page can be adjusted according to actual needs, such as showing or hiding power diagram, or power diagram placed at the top or bottom of the interface, etc.

Step 1(Optional) If there are multiple power station, select the power station to be configured in the power station list interface.

Step 2: In power station Details page, click **...** > "Monitoring Homepage Configuration".

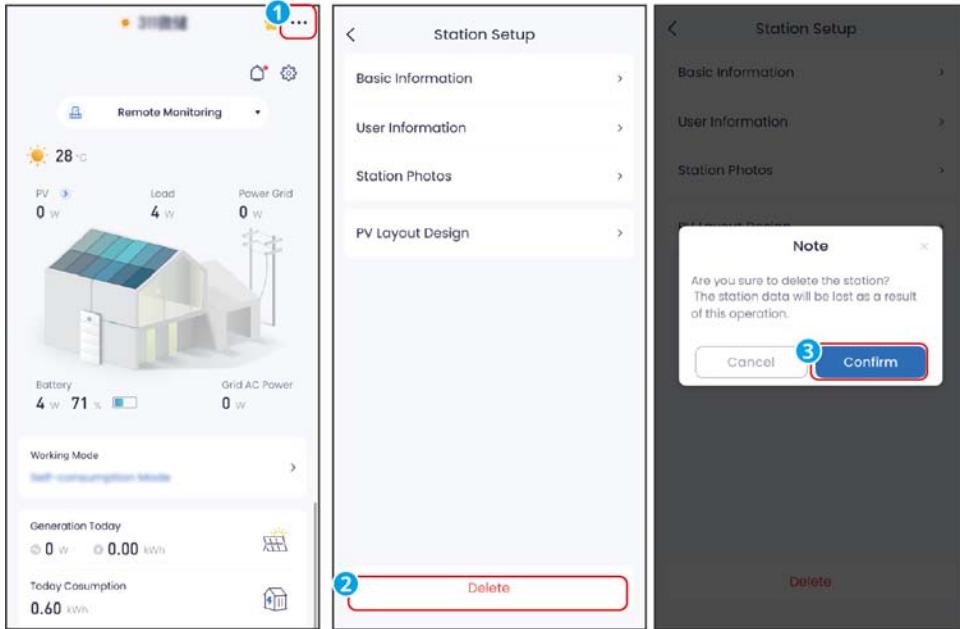
Step 3Based on actual needs, refer to the interface prompts to select the displayed information content or adjust the display order of various information items.

(Optional) If there are multiple power station, click the power station name to enter the power station details page.

Step 2 Click on the power station details interface .

Step 3 Click "Delete" > "Confirm" to delete the current power station.

SEMS0016



9.1.6.8 Collection

If there are any power station that require attention, click the right side of power station.  Click to favorite power station. Click again to unfavorite.

Click  screening "Collection", can display all collected power station.



9.1.7 Managing the Equipment in the Power Plant

9.1.7.1 New equipment

NOTICE

- When the power station type differs, the supported device types that can be added will vary. Please refer to the actual interface for details.
- Environmental Monitoring DeviceWhen connected to the data logger, it can be added to power station for viewing. Environmental Monitoring DeviceCollected data.

Step 1On the power station list page, click the power station name to enter the power station details page.

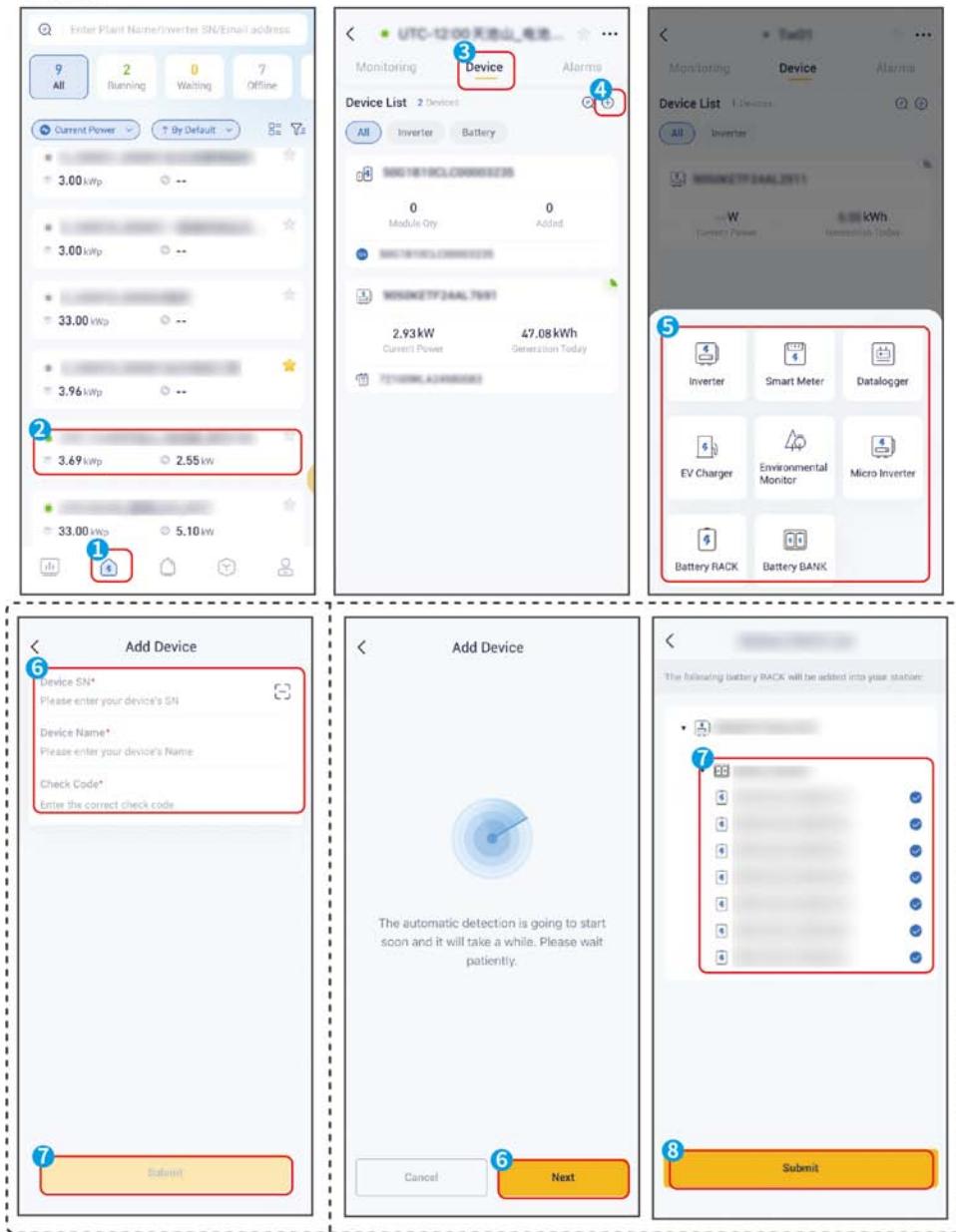
Step 2Click "Equipment" > Enter the Add Device interface.

Step 3Select the required equipment type to be added based on actual needs.

Step 4According to the interface prompts, scan the device or manually add the device. When scanning to add, select the desired device from the scanned devices to add it. When adding manually, scan the device QR code or manually enter the device information to add the device. The interface for adding devices varies depending on the device type. Please refer to the actual interface.

Step 5When manually adding devices, if there is a need to add multiple devices, return to the power station details interface and repeat the steps 3 and steps 4.

SEMS0025



9.1.7.2 Edit device information

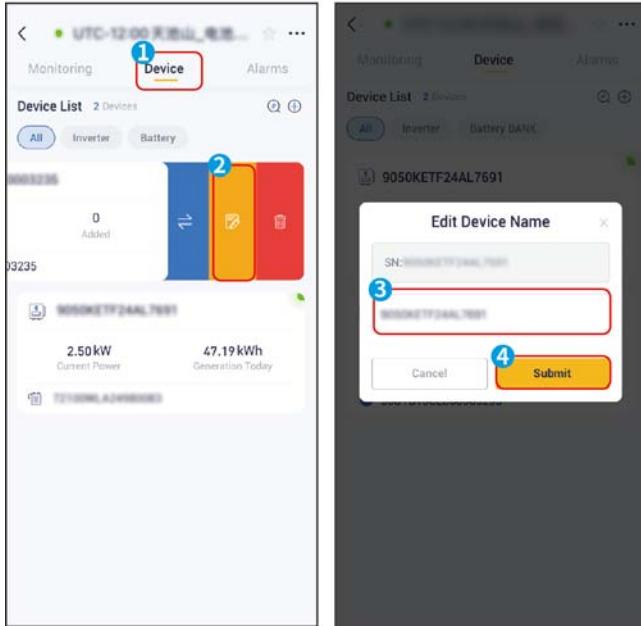
Supports modifying the device name in power station.

Step 1(Optional) If there are multiple power station, click the power station name to enter the power station details page.

Step 2:On the power station details page, Click "Equipment" Enter the device information page. Select the device you need to edit and swipe left, then click .

Step 3 Enter the new device name and click "Confirm"

SEMS0027



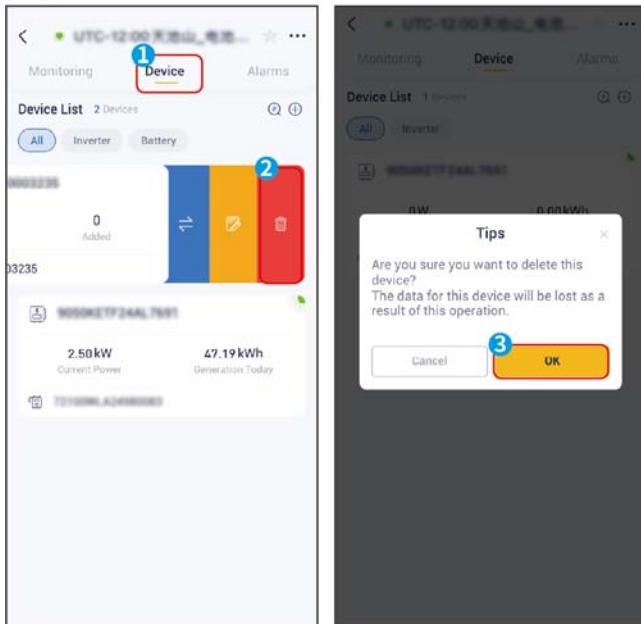
9.1.7.3 Delete device

Step 1:(Optional) If there are multiple power station,Click the power station name to enter the power station details page.

Step 2:On the power station details page,Click**Device**Enter the device information page. Select the device that needs to be replaced and swipe left, then click.

Step 3Read pop-up prompt, click**OK**The current device can be deleted.

SEMS0028



9.1.7.4 Upgrade the firmware version of the equipment

Step 1(Optional) If there are multiple power station, select the power station to be configured in the power station list interface.

Step 2Click "equipment"Enter the device information page and select the device that requires firmware version upgrade.

Step 3Click on the equipment serial number in the middle of the page to enter."Firmware Version"Page. If an upgrade version is required, click."Upgrade", complete the device upgrade as prompted by the interface. Click Firmware upgrade history can be viewed.

SEMS0029

The screenshot displays the SEMS0029 mobile application interface, divided into several sections:

- Device List:** Shows 2 devices. A specific device entry (3) is highlighted with a red box. The entry shows "2.93kW" Current Power and "47.08 kWh" Generation Today.
- Device Details:** Shows monitoring data for device 9050KETF24AL7681. The device is connected and running. The monitoring section shows Current Power: 2.93 kW, Generation Today: 47.08 kWh, and Total Generation: 943.47 kWh. It also displays inner temperature (39.20°C), output power (-8.00 W), output voltage (220.40 / 222.60 / 222.30 V), and backup output (0.00 W).
- Firmware Version:** Shows the current version for ARM (0.0.0.0) and the latest version (0.0.0.1). It also lists the latest versions for DSP, BAT BMS, BMS-F225, BMS-F450, and BMS-F2/U2. A "Upgrade" button (4) is highlighted with a red box.
- Firmware Upgrade (ARM):** Shows the current version (0.0.0.0) and new version (0.0.0.1). The "Upgrade" button (5) is highlighted with a red box. A "Reminder" section provides instructions for the upgrade process.
- Firmware Upgrade (ARM):** Shows the upgrade status as "Firmware Transfer Successful". The "Reminder" section provides instructions for the upgrade process.

Reminder:

1. Firmware transfer successful, device internal upgrade in progress...
2. It will take about 15 minutes for the internal upgrade of the device to be completed.
3. During the internal upgrade process of the device, do not set other functions of the device. You can return to browse other data.

9.1.8 Remote management device

NOTICE

- After completing Power Plant Creation and adding the device to power station, you can remotely configure the device parameters via the SEMS+ App.
- Before setting the parameters, please carefully read this manual and the corresponding equipment user manual model to familiarize yourself with the product's functions and features. Incorrect Utility grid parameter settings may result in the device being unable to on-grid or failing to on-grid as required by Utility grid when issuing start on-grid or stop on-grid commands, which could affect power generation.
- Only for use by professionals who are familiar with local regulatory standards and electrical systems, have received specialized training, and possess in-depth knowledge of this product.
- Different account permissions allow for remote configuration of different parameters. The interface displays based on the actual account in use. Please refer to the actual interface for details.
- The parameter setting interface varies depending on the model equipment. Please refer to the actual device for accurate configuration.

9.1.8.1 Set hybrid inverter parameters

Step 1:(Optional) If there are multiple power station, select the power station to be configured in the power station list interface.

Step 2Click**Device**Enter the device information page and select the device for which parameters need to be set.

Step 3Click Read the interface prompts and set the Inverter parameters according to actual requirements.

SEMS0031

The screenshot displays the SEMS0031 interface with several panels:

- Device List:** Shows 2 devices. A red box highlights the "Device" tab in the top navigation bar. A red box also highlights the "4" icon next to a device entry.
- Monitoring:** Shows real-time data for an inverter. A red box highlights the "5" icon in the top right corner. A red box highlights the "6" icon next to the "I agree to the above conditions" checkbox.
- Device Remote Control - Safety:** A list of safety codes. A red box highlights the "7" icon in the top right corner. A red box highlights the "Battery" icon.
- Device Remote Control - Battery:** Settings for battery model, capacity, voltage, current, and depth of discharge. A red box highlights the "8" icon in the bottom right corner.
- Device Remote Control - Mode:** Settings for working mode, on-grid power limitation, and reactive power/voltage curves. A red box highlights the "9" icon in the bottom right corner.
- Device Remote Control - Others:** Settings for backup supply and shadow scan. A red box highlights the "10" icon in the bottom right corner.

No.	Parameter Name	Description
1	Safety	According to the Utility grid standards of the country/region where Inverter is located, and the application scenario settings of Inverter.
2	Battery Model	Set Battery model.

No.	Parameter Name	Description
3	Depth of Discharge (On-Grid)	During the operation of on-grid, the maximum depth of discharge Protection point of Battery.
4	Depth of Discharge (Off-Grid)	During off-grid operation, the maximum depth of discharge Protection point of Battery.
5	Backup SOC Holding	To ensure that the Battery SOC is sufficient to maintain normal system operation during off-grid conditions, when the system operates in on-grid mode, the Battery will charge via Utility grid or PV Charge until the preset SOC Protection value is reached.
6	SOC Protection	When enabled, the Protection function can be activated for Battery if the Battery capacity falls below the set depth of discharge.

No.	Parameter Name	Description
7	Battery Heating	<p>When connecting a Battery with heating support, this option is displayed on the interface. After enabling the Battery heating function, if the Battery temperature does not support Battery startup, PV generation or grid power will be used to heat the Battery.</p> <p>Heating mode:</p> <ul style="list-style-type: none"> • GW5.1-BAT-D-G20/GW8.3-BAT-D-G20 <ul style="list-style-type: none"> ◦ Low Power mode: Maintain the minimum Battery input capability. It turns on when the temperature is below -9°C and turns off when the temperature is greater than or equal to -7°C. ◦ Power mode: Maintain moderate Battery input capacity. Turn on when temperature is below 6°C, and turn off when temperature is 8°C or higher. ◦ High Power mode: Maintains high Power input capability for Battery. Activated when temperature is below 11°C and deactivated when temperature reaches or exceeds 13°C. • GW14.3-BAT-LV-G10 <ul style="list-style-type: none"> ◦ Low Power mode: Maintain the minimum Power input capability of Battery. It turns on when the temperature is below 5°C and turns off when the temperature is greater than or equal to 7°C. ◦ Power mode: Maintain appropriate Battery input capacity. Turn on when temperature is below 10°C, and turn off when temperature is 12°C or higher. ◦ High Power mode: Maintains high Power input capability of Battery, activates when temperature is below 20°C, and deactivates when temperature reaches or exceeds 22°C.
8	Daily Heating Period	Set the Battery heating time period according to actual needs.
9	Battery Wake-up	When enabled, it can wake up Battery after Battery shuts down due to undervoltage Protection.

No.	Parameter Name	Description
10	Battery Breathing Light	<ul style="list-style-type: none"> Only applicable to ESA 3-10kW series Inverter. Sets the duration of the device's breathing light flash. Supported options: Always on, Always off, 3min. The default mode is that the power on stays on for three minutes and then automatically turns off.
Mode		

No.	Parameter Name	Description
11	Working Mode	<p>Set the working mode of Inverter according to actual requirements.</p> <ul style="list-style-type: none"> • Self-consumption mode: <ul style="list-style-type: none"> ◦ Back-up Mode: Recommended for use in areas with unstable Utility grid. When Grid disconnected occurs, the Inverter switches to off-grid operation mode, and the Battery discharge supplies power to the load to ensure the BACKUP load does not POWER OFF. When Utility grid is restored, the Inverter operation mode switches back to on-grid operation. ◦ Economic Mode: In compliance with local laws and regulations, electricity trading is set for different time periods based on the peak-valley price difference of Utility grid. According to actual needs, during the valley electricity price period, Battery can be set to Charge mode, buy power from the grid Charge; during the peak electricity price period, Battery can be set to Discharge mode, supplying power to the load via Battery. • Delay Charge: Applicable to areas with on-grid Power output restrictions. By setting peak Power limits and Charge time periods, excess photovoltaic generation beyond the on-grid limit can be used to charge the Battery charge, reducing photovoltaic waste. • peak shaving: Mainly applicable to scenarios with peak Power purchase restrictions. When the total Power of Load consumption exceeds the electricity quota within a short period, Battery discharge can be utilized to reduce the portion of electricity consumption that exceeds the quota.
12	On-Grid Power Limitation	According to the Utility grid standard requirements of certain countries or regions, this function should be enabled when it is necessary to limit the output Power.

No.	Parameter Name	Description
13	Maximum On-Grid Output Power	Set according to the maximum Power that can actually be input to Utility grid.
14	Power Factor	Set the Output Power Factor according to actual requirements.
15	Q(U)	When the Q(U) curve needs to be set according to the Utility grid standard requirements of certain countries or regions, enable this function.
16	COS(φ)	When the Cos φ curve needs to be set according to the Utility grid standard requirements of certain countries or regions, enable this function.
17	P(F)	When the P(F) curve needs to be set according to the Utility grid standard requirements of certain countries or regions, enable this function.
Others		
18	Backup Supply	After enabling the backup power function, when Grid disconnected occurs, the load connected to Inverter BACK-UP port can be powered by Battery, ensuring uninterrupted power supply to the load.
19	Shadow Scan	When the photovoltaic panels are severely shaded, enabling the shadow scan function can optimize Inverter power generation Efficiency.

10 Maintenance

10.1 Power OFF the System

DANGER

- When performing operation and maintenance on equipment in the system, please handle the Power OFF the System properly. Operating live equipment may cause equipment damage or electric shock DANGER.
- After the equipment is POWER OFF, the internal components Discharge require a certain amount of time. Please wait until the equipment is fully Discharge according to the time indicated on the label.
- Restart Battery should be performed using the circuit breaker power on method.
- When closing Battery system, strictly adhere to the Battery system power off requirements to prevent damage to Battery system.
- When there are multiple Battery in the system, power off any one Battery can power off all Battery.

NOTICE

- The Inverter between Battery and the breaker between Battery system must be Installation in accordance with local laws and regulations.
- To ensure effective protection of the Battery system, the cover plate of the Battery system switch must remain closed, and the Protective coverP should automatically close after being opened. If the Battery system switch is not in use for an extended period, it should be secured with the screw.

Next current process

1. Disconnect the BACK-UP breaker.
2. Disconnect the ON-GRID breaker.
3. (Optional) Disconnect GEN breaker.
4. (Select according to local regulations) Disconnect the breaker between the PV modules and the Inverter.

5. Disconnect the DC switch of Inverter.
6. (Select according to local regulations) Disconnect the switch between Inverter and Battery.
7. Disconnect the Battery system switch.
8. Disconnect the Battery system switch (LX A5.0-10, LX A5.0-30). Close the Battery system integrated breaker or press and hold the Battery system button for ≥ 5 seconds, and the Battery system integrated breaker will automatically disconnect (only applicable to LX U5.0-30, GW14.3-BAT-LV-G10).

10.2 Removing the Equipment

DANGER

- Ensure the equipment is POWER OFF.
- When operating the equipment, please wear personal protective equipment.
- When connecting dismantle, use standard disassembly tools to avoid damaging terminal or the equipment.
- Unless otherwise specified, the disassembly method of the equipment is the reverse sequence of the Installation method, and this document will not elaborate further.

1. Perform power off on the system.
2. Label the connected cables in the system to indicate their types.
3. Disconnect the cables in the system, such as DC cables, AC cables, Communication cable, and PE cable, from Inverter, Battery, and Smart Meter.
4. dismantle, smart dongle, Inverter, Battery, Smart Meter, and other equipment.
5. Store the equipment properly. If it is to be put into use again, ensure that the storage conditions meet the requirements.

10.3 Disposing of the Equipment

When the equipment can no longer be used and requires scrapping, it must be disposed of in accordance with the electrical waste disposal regulations of the country/region where the equipment is located. The equipment must not be treated as general household waste.

10.4 Routine Maintenance

WARNING

- If any issues are found that may affect the Battery or hybrid inverter system, please contact after-sales personnel. Unauthorized disassembly is strictly prohibited.
- If exposed copper wires are found inside the conductive line, do not touch them. High voltage DANGER, please contact after-sales personnel. Disassembly by unauthorized personnel is prohibited.
- In case of any other emergencies, please contact the after-sales personnel immediately. Follow their instructions for operation or wait for on-site assistance from the after-sales team.

Maintenance content	Maintenance Method	Maintenance cycle	Maintenance purpose
System Cleaning	<p>Check for any foreign objects or dust in the heat sink, fan, and air inlet/outlet.</p> <p>Check if the Installation space meets the requirements, and inspect whether there is debris accumulation around the equipment.</p>	Once every six months	Prevent heat dissipation.
System Installation	<p>Check whether the equipment Installation is secure and whether the fasteners screw are loose.</p> <p>Check the equipment for any damage or deformation on the exterior.</p>	Once every six months to once a year	Verify the stability of the equipment Installation.
Electrical connection	Check for loose electrical connections, damaged cable insulation, and exposed copper conductors.	Once every six months to once a year	Verify the reliability of electrical connections.

Maintenance content	Maintenance Method	Maintenance cycle	Maintenance purpose
Sealing	Check whether the cable entry hole Sealing of the equipment meets the requirements. If the gap is too large or unsealed, reseal it.	Once per year	Confirm that the machine's sealing and waterproof performance are intact.
Battery maintenance	If the Battery has not been used or fully charged for an extended period, it is recommended to perform regular Charge on the Battery.	Once/15 days	ProtectionBattery service life.

10.5 fault

10.5.1 Viewing Fault/Alarms Information

All energy storage system and alarm details are displayed on [**SolarGo App**]、 [**SEMS Portal App**] And in the LCD display, if your product malfunctions and is not covered in [**SolarGo App**]、 [**SEMS Portal App**] Or if you see relevant fault information on the LCD display, please contact the after-sales service center.

- **Option 1: LCD screen**

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

- **Option 2: SolarGo App**

pass through [**Home**]>[**Parameter**]> [**Alarm**] View the energy storage system alarm information.

- **Option 3: SEMS Portal App**

1. Open the SEMS Portal App and log in with any account.
2. pass through [**power station**] >[**Alarm**] You can view all power station fault information.
3. Click on the specific fault name to view the detailed occurrence time, possible

causes, and solutions of the fault.

10.5.2 Fault Information and Troubleshooting

Please troubleshoot according to the following method for fault. If the troubleshooting method does not help, please contact the after-sales service center. When contacting the after-sales service center, please collect the following information to facilitate a quick resolution.

1. Product information, such as: serial number, software version, device Installation time, fault occurrence time, fault occurrence Frequency, etc.
2. Equipment Installation environment, such as weather conditions, whether the modules are shaded, have shadows, etc. Installation environment recommendations can provide photos, videos, and other files to assist in problem analysis.
3. Utility grid situation.

10.5.2.1 System fault

If the system encounters an issue not listed, or if following the instructions fails to prevent the problem or abnormality, immediately cease system operation and contact your distributor without delay.

No.	fault	Solution measures
1	Unable to detect the smart dongle wireless signal	<ol style="list-style-type: none">1. Please ensure that no other devices are connected to the smart dongle wireless signal.2. Please ensure the SolarGo app is updated to the latest version.3. Ensure the intelligent communication stick is powered normally, with the blue signal light flashing or steadily lit.4. Ensure the smart device is within the communication range of the smart dongle.5. Refresh the device list of the App.6. Restart Inverter.

No.	fault	Solution measures
2	Unable to connect to smart dongle wireless signal	<ol style="list-style-type: none"> 1. Please ensure that no other devices are connected to the smart dongle wireless signal. 2. Restart the Inverter or communication stick, and attempt to reconnect to the smart dongle wireless signal. 3. Ensure that Bluetooth is successfully encrypted and paired.
3	 Ezlinkindicator flashes twice	<ol style="list-style-type: none"> 1. Please ensure that Router is turned on. 2. When using LAN communication, ensure that the LAN cable is properly connected and the communication configuration is correct. Enable or disable the DHCP function based on actual conditions. 3. When using WiFi communication, ensure that the wireless network connection is stable and the wireless signal strength meets the requirements. Enable or disable the DHCP function based on actual conditions.
4	 Ezlink indicator flashes four times	<ol style="list-style-type: none"> 1. Please ensure that the communication stick is properly connected to the Router via WiFi or LAN, and that the Router has normal internet access. 2. If the problem persists, please contact the after-sales service center.
5	 Ezlinkindicator extinguishing	Please ensure that Inverter has been power on. If the issue persists, please contact the after-sales service center.
6	 Ezlinkindicator extinguishing	Please ensure that Inverter has been power on.
7	Unable to find Router SSID	<ol style="list-style-type: none"> 1. Place the Router close to the Smart dongle, or add WiFi repeater devices to enhance the WiFi signal. 2. Reduce the number of devices connected to the Router.

No.	fault	Solution measures
8	After all configurations are completed, Smart dongle fails to connect with Router.	<ol style="list-style-type: none"> 1. Restart Inverter. 2. Check if the network name, encryption method, and password in the WiFi configuration are the same as those in Router. 3. Restart Router 4. Place the Router closer to the Smart dongle, or add WiFi repeater devices to enhance the WiFi signal.
9	After all configurations are completed, the Smart dongle fails to connect with the Server.	Restart Router and Inverter.

10.5.2.2 Inverterfault

fault code	fault name	fault cause	Troubleshooting recommendation
F01	Grid disconnected	<ol style="list-style-type: none"> 1. Utility grid power outage. 2. AC line or AC Switch disconnected. 	<ol style="list-style-type: none"> 1. The alarm automatically disappears after Grid connected recovery. 2. Check whether the AC line or AC Switch is disconnected.
F02	Grid Overvoltage	Utility grid voltage exceeds the allowable range, or the duration of overvoltage surpasses the high voltage ride-through setting.	<ol style="list-style-type: none"> 1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention.

fault code	fault name	fault cause	Troubleshooting recommendation
			<p>2. If it occurs frequently, check whether Utility gridvoltage is within the allowable range.</p> <ul style="list-style-type: none"> • If the Utility gridvoltage exceeds the permissible range, please contact the local power operator. • If the Utility gridvoltage is within the allowable range, it is necessary to modify the InverterGrid Overvoltage point after obtaining approval from the local power operator. HVRTEnable or disable the Grid Overvoltage function. <p>3. If the issue persists for an extended period, please check whether the AC-side breaker and output cables are properly connected.</p>
F03	Grid Undervoltage	Utility gridvoltage is below the permissible range, or the duration of low voltage exceeds the low voltage ride-through setting value.	1. If it occurs occasionally, it may be due to a temporary anomaly in Utility grid. The Inverter will resume normal operation after detecting that Utility grid is functioning properly,

fault code	fault name	fault cause	Troubleshooting recommendation
			<p>without requiring manual intervention.</p> <p>2. If it occurs frequently, check whether Utility grid voltage is within the allowable range.</p> <ul style="list-style-type: none"> • If Utility grid voltage exceeds the permissible range, please contact the local power operator. • If the Utility grid voltage is within the allowable range, it is necessary to modify the InverterGrid Undervoltage point after obtaining consent from the local power operator. LVRTEnable or disable the Grid Undervoltage function. <p>3. If the issue persists for an extended period, please check whether the AC-side breaker and output cables are properly connected.</p>
F04	Grid Rapid Overvoltage	Abnormal detection of Utility grid voltage or ultra-high voltage triggers fault.	1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility

fault code	fault name	fault cause	Troubleshooting recommendation
			<p>grid is normal, without requiring manual intervention.</p> <p>2. If it occurs frequently, check whether Utility grid voltage is within the allowable range.</p> <ul style="list-style-type: none"> • If Utility grid voltage exceeds the permissible range, please contact the local power operator. • If the Utility grid voltage is within the allowable range, it is necessary to modify the InverterGrid Undervoltage point after obtaining consent from the local power operator. LVRTEnable or disable the Grid Undervoltage function. <p>3. If the issue persists for an extended period, please check whether the breaker on the AC side and the output cables are properly connected.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F05	10minOvervoltage Protection	In 10min, the sliding average of Utility grid voltage exceeds the safety regulation range.	<ol style="list-style-type: none"> 1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. Check whether Utility grid voltage has been operating at a high voltage for an extended period. If this occurs frequently, verify whether Utility grid voltage is within the allowable range. <ul style="list-style-type: none"> • If the Utility grid voltage exceeds the permissible range, please contact the local power operator. • If the Utility grid voltage is within the allowable range, the Utility grid must be modified with the consent of the local power operator. 10minOvervoltage Protection point.

fault code	fault name	fault cause	Troubleshooting recommendation
F06	Grid Overfrequency	<p>Utility grid anomaly: Utility grid actual Frequency exceeds local Utility grid standard requirements.</p>	<ol style="list-style-type: none"> 1. If it occurs occasionally, it may be due to a temporary anomaly in Utility grid. The Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If frequent occurrences, check whether Utility grid Frequency is within the allowable range. <ul style="list-style-type: none"> • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If Utility gridFrequency is within the allowable range, the Grid Overfrequency point needs to be modified after obtaining consent from the local power operator.

fault code	fault name	fault cause	Troubleshooting recommendation
F07	Grid Underfrequency	<p>Utility grid anomaly: Utility grid actual Frequency is below the local Utility grid standard requirement.</p>	<ol style="list-style-type: none"> 1. If it occurs occasionally, it may be due to a temporary anomaly in Utility grid. The Inverter will resume normal operation after detecting that Utility grid is functioning properly, without requiring manual intervention. 2. If it occurs frequently, please check whether Utility grid and Frequency are within the allowable range. <ul style="list-style-type: none"> • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If the Utility gridFrequency is within the allowable range, the Grid Overfrequency point needs to be modified after obtaining consent from the local power operator.

fault code	fault name	fault cause	Troubleshooting recommendation
F08	Grid Frequency Instability	Utility grid anomaly: Utility grid actual Frequency variation rate does not comply with local Utility grid standard.	<p>1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is normal, without requiring manual intervention.</p> <p>2. If it occurs frequently, check whether Utility grid and Frequency are within the allowable range.</p> <ul style="list-style-type: none"> • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If Utility gridFrequency is within the allowable range, please contact your dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F163	Grid Phase Instability	Utility grid anomaly: Utility grid voltage phase variation rate does not comply with local Utility grid standard.	<p>1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is normal, without requiring manual intervention.</p> <p>2. If it occurs frequently, check whether Utility grid and Frequency are within the allowable range.</p> <ul style="list-style-type: none"> • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If Utility gridFrequency is within the allowable range, please contact your dealer or after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F09	Anti-islanding Protection	<p>Utility grid has been disconnected, maintaining Utility grid voltage due to the presence of load. According to safety regulation Protection, on-grid has been stopped.</p>	<p>1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is normal, without requiring manual intervention.</p> <p>2. If it occurs frequently, check whether Utility grid and Frequency are within the allowable range.</p> <ul style="list-style-type: none"> • If Utility gridFrequency exceeds the permissible range, please contact the local power operator. • If the Utility gridFrequency is within the allowable range, please contact your dealer or after-sales service center.
F10	LVRT Undervoltage	<p>Utility grid anomaly: Utility grid voltage duration exceeds the specified high-low transition time limit.</p>	

fault code	fault name	fault cause	Troubleshooting recommendation
F11	HVRT Overvoltage	Utility grid anomaly: Utility grid voltage duration exceeds the specified high-low transition time.	<p>1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is normal, without requiring manual intervention.</p> <p>2. If this occurs frequently, please check whether Utility grid, voltage, and Frequency are within the allowable range and stable. If not, contact the local power operator; if yes, contact your dealer or after-sales service center.</p>
F43	Grid Waveform Abnormal	Utility grid anomaly: Utility grid voltage detection triggered fault due to abnormality.	
F44	Grid Phase Loss	Utility grid anomaly: Utility grid voltage has a single-phase voltage dip.	

fault code	fault name	fault cause	Troubleshooting recommendation
F45	Grid Voltage Imbalance	Utility grid phase voltage difference is too large.	<p>1. If it occurs occasionally, it may be due to a temporary abnormality in Utility grid. Inverter will resume normal operation after detecting that Utility grid is normal, without requiring manual intervention.</p> <p>2. If it occurs frequently, please check whether Utility grid, voltage, and Frequency are within the allowable range and stable. If not, contact the local power operator; if yes, contact your dealer or after-sales service center.</p>
F46	Grid Phase Sequence Failure	Inverter and Utility grid wiring abnormality: wiring is not in positive sequence	<p>1. Check whether the wiring of Inverter and Utility grid is in positive sequence. After the wiring is corrected (e.g., by swapping any two live wires), fault will automatically disappear.</p> <p>2. If the wiring is correct and fault persists, please contact the dealer or GoodWe Customer Service Center.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F47	Grid Rapid Shutdown Protection	Quickly shut down the output upon detecting the Grid disconnected operating condition.	1. The Grid connected automatically disappears after recovery.
F48	Utility grid neutral line loss	Split-phase Utility grid neutral loss	1. The alarm automatically disappears after Grid connected recovery. 2. Check whether the AC line or AC Switch is disconnected.
F160	EMS/Forced off-grid	EMSIssue forced off-grid command, but the off-grid function is not enabled.	Enable off-grid function
F161	Passive Anti-islanding Protection	-	-
F162	Grid Type Fault	Actual Grid type (two-phase or split-phase) does not match the set safety regulations.	Switch the corresponding safety regulations according to the actual Grid type.

fault code	fault name	fault cause	Troubleshooting recommendation
F12	30mAGfciProtection	During operation, the input-to-ground insulation resistance becomes low.	<p>1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. The fault will clear automatically and resume normal operation without manual intervention.</p> <p>2. If the issue occurs frequently or persists for an extended period without recovery, please check whether the PV String ground impedance is too low.</p>
F13	60mAGfciProtection	During operation, the input-to-ground insulation resistance becomes low.	<p>1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. After the fault is cleared, normal operation will resume without manual intervention.</p> <p>2. If the issue occurs frequently or persists for an extended period, please check whether the PV String ground impedance is too low.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F14	150mAGfcProtection	During operation, the input-to-ground insulation resistance becomes low.	<p>1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. The fault will clear automatically and resume normal operation without manual intervention.</p> <p>2. If the issue occurs frequently or persists for an extended period, please check whether the PV String ground impedance is too low.</p>
F15	Gfcislowly varying Protection	During the operation of Inverter, the input-to-ground insulation resistance becomes low.	<p>1. If it occurs occasionally, it may be caused by temporary abnormalities in the external circuit. It will return to normal operation after fault is cleared, without requiring manual intervention.</p> <p>2. If the issue occurs frequently or persists for an extended period, please check whether the PV String ground impedance is too low.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F16	DCIPrimary Protection	The DC component of the inverter output current exceeds the safety regulations or the default allowable range of the equipment.	<p>1. If the abnormality is caused by an external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention.</p> <p>2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the distributor or GoodWe after-sales service center.</p>
F17	DCISecondary Protection	The DC component of the inverter output current exceeds the safety regulations or the default allowable range of the machine.	<p>1. If the abnormality is caused by an external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention.</p> <p>2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the distributor or GoodWe after-sales service center.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F18	Low Insulation Resistance	<p>1. PV String is short-circuited to ground with Protection.</p> <p>2. The environment of PV String Installation is consistently humid, and the line-to-ground insulation is poor.</p> <p>3. Battery port line-to-ground Low Insulation Resistance.</p>	<p>1. Check the impedance between PV String/Battery port and ground Protection. A resistance greater than 80kΩ is normal. If the measured resistance is less than 80kΩ, locate and rectify the short circuit point.</p> <p>2. Check whether the PE cable of the Inverter is properly connected.</p> <p>3. If it is confirmed that the impedance is indeed lower than the default value in rainy weather, please reset the "Inverter" "insulation resistanceProtection point" via the App.</p> <p>Australia and New Zealand markets Inverter. In the event of insulation resistance fault, alarms can also be triggered through the following methods:</p> <p>1. Inverter is equipped with a buzzer, which will sound continuously for 1 minute when a fault occurs; if the fault is not resolved, the buzzer will sound again every 30</p>

fault code	fault name	fault cause	Troubleshooting recommendation
			<p>minutes.</p> <p>2. If Inverter is added to the monitoring platform and the alarm notification method is configured, alarm information can be sent to customers via email.</p>
F19	Grounding Abnormal	<p>1. The PE cable of Inverter is not connected.</p> <p>2. When the output of PV String is grounded, the output side of Inverter is not connected to an isolation transformer.</p>	<p>1. Please confirm whether the Inverter of PE cable is not connected properly.</p> <p>2. In the scenario where the output of PV String is grounded, please confirm whether the output side of Inverter is connected to an isolation transformer.</p>
F49	L-PE Short Circuit	Output phase line toPELow impedance or short circuit	<p>Detect output phase line toPELow impedance, find out Locations with low impedance and repair them.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F50	DCVPrimary Protection	Abnormal load fluctuation	<p>1. If the abnormality is caused by an external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention.</p> <p>2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the distributor or GoodWe after-sales service center.</p>
F51	DCVSecondary Protection	Abnormal load fluctuation	<p>1. If the abnormality is caused by an external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention.</p> <p>2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the distributor or GoodWe after-sales service center.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F20	Hardware power limit Protection	Abnormal load fluctuation	<p>1. If the abnormality is caused by an external fault, the Inverter will automatically resume normal operation after the fault disappears, without requiring manual intervention.</p> <p>2. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the distributor or GoodWe after-sales service center.</p>
F21	Internal Comm Loss	Reference specific subcode reason	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F52	Leakage currentGFCIMultiple fault shutdowns	North American safety regulations require that after multiple fault, the system must not automatically recover and requires manual intervention or waiting.24hPost-recovery	<ol style="list-style-type: none"> 1. Please check if the PV String ground impedance is too low.
F53	DC arcAFCIMultiple fault shutdowns	North American safety regulations require that after multiple fault, the system must not automatically recover and requires manual intervention or waiting.24hpost-recovery	<ol style="list-style-type: none"> 1. After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero. 2. Check whether the DC-side terminal is securely connected.
F54	External Comm Loss	Inverter external device communication lost, possibly due to peripheral power supply issues, Communication Protocols mismatch, or unconfigured corresponding peripherals.	Judgment is made based on the actual model and detection enable bits. Peripherals not supported by certain models will not be detected.

fault code	fault name	fault cause	Troubleshooting recommendation
F55	Back-upport overload fault	1. Prevent Inverter from continuous overload output.	1. Disconnect some off-grid loads to reduce the off-grid output power of the inverter.
F56	Back-upport overvoltage fault	2. Prevent damage to the load caused by Inverter output overvoltage.	1. If it occurs occasionally, it may be caused by load switching and does not require manual intervention. 2. If it occurs frequently, please contact the dealer or GoodWe after-sales service center.
F107	On-grid PWM Sync Failure	Abnormal occurrence in carrier synchronization on-grid	1Check if the synchronization line connection is normal. 2Check if the master-slave configuration is normal. 3Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F57	External connectionBoxfault	Waiting for grid disconnectionBoxExcessive relay switching time	<ol style="list-style-type: none"> 1. InspectionBoxIs it functioning properly; 2. InspectionBoxIs the communication wiring correct?
-	Generator Failure		<ol style="list-style-type: none"> 1. When the generator is not connected, ignore this fault;
F22	Generator Waveform Detection Fault		<ol style="list-style-type: none"> 1. This fault will always be displayed when the generator is not connected.
F23	Generator Abnormal Connection		<ol style="list-style-type: none"> 2. When the generator is in operation, failure to meet the generator safety regulations will trigger this fault.
F24	Generator Low Voltage		<ol style="list-style-type: none"> 2. When the generator is in operation, failure to meet the generator safety regulations will trigger this fault.
F25	Generator High Voltage		<ol style="list-style-type: none"> 2. When the generator is in operation, failure to meet the generator safety regulations will trigger this fault.
F26	Generator Low Frequency		<ol style="list-style-type: none"> 2. When the generator is in operation, failure to meet the generator safety regulations will trigger this fault.
F27	Generator High Frequency		<ol style="list-style-type: none"> 2. When the generator is in operation, failure to meet the generator safety regulations will trigger this fault.
F109	External connectionSTSfault	Inverter andSTSAbnormal connection cable	Check the Inverter andSTSIs the wiring sequence of the harness connection one-to-one corresponding in order.

fault code	fault name	fault cause	Troubleshooting recommendation
F58	CTMissing fault	CTConnection line disconnected (Japanese safety regulation requirement)	InspectionCTWhether the wiring is correct.
F110	Export Limit Protection	1. Fault reporting and grid disconnection 2. meterUnstable communication 3. Reverse power flow condition occurs	1. Check if there are any other error messages in Inverter. If so, perform targeted troubleshooting. 2. InspectionmeterIs the connection reliable? 3. If this alarm occurs frequently and affects the normal power generation of the power station, please contact the distributor or GoodWe after-sales service center.
F111	Bypassoverload	-	-
F112	Black Start Failure	-	-
F28	Parallel operationIOSelf-check abnormality	Parallel communication cable is not securely connected or parallel operation failed.IOChip damage	Check if the parallel communication cable is securely connected, and then inspect again.IOIs the chip damaged? If so, replace it.IOChip.

fault code	fault name	fault cause	Troubleshooting recommendation
F59	Parallel operationCANCommunication anomaly	Parallel communication line is not securely connected or some machines are offline.	Check whether all machines are power on and ensure the parallel communication cables are securely connected.
F29	Parallel Grid Line Reversed	Some machines have the Utility grid line connected in reverse with others.	Reconnect the Utility grid line.
F60	Parallel operationBack-upreverse connection	Partial machines backup Line reversed with other connections	reconnection backupLine.
F61	INV Soft Start Failure	Off-grid cold start INV Soft Start Failure	Check whether the inverter module of the machine is damaged.
F113	Offgrid AC Ins Volt High	-	-
F30	AC HCT Check Abnormal	AC sensor sampling anomaly	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F62	AC HCT Failure	HCTSensor abnormality detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F31	GFCI HCT Check Abnormal	Leakage current sensor sampling anomaly detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F63	GFCI HCT Failure	Leakage current sensor anomaly detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F32	Relay Check Abnormal	Relay abnormality, reason: 1Relay abnormality (relay short circuit) 2Relay sampling circuit abnormality. 3Abnormal AC side wiring (possible loose connection or short circuit)	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F64	Relay Failure	1Relay abnormality (relay short circuit) 2Relay sampling circuit abnormality. 3Abnormal AC measurement wiring (possible loose connection or short circuit)	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F164	DC arc fault (string)17~32)	1DC side connection terminal loose; 2DC side connection terminal loose contact; 3Core damage and poor contact	1After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero. 2Check if the DC-side terminal is securely connected.

fault code	fault name	fault cause	Troubleshooting recommendation
F165	DC arc fault (string)33~48)	1DC side connection terminal loose; 2DC side connection terminal loose contact; 3Core damage and poor contact	1After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero. 2Check if the DC-side terminal is securely connected.
F33	FlashRead/Write Error	Possible causes: flashContent has been modified;flashEnd of life;	1. Upgrade to the latest version of the program 2. Contact the distributor or GoodWe after-sales service center.
F42	DC arc fault (string)1~16)	1DC side connection terminal loose; 2DC side connection terminal loose contact; 3Core damage and poor contact	1After the machine is re-on-grid, check whether the voltage current of each circuit is abnormally reduced to zero. 2Check if the DC side terminal is securely connected.
F34	AFCI Check Failure	During the arc self-test process, the arc module failed to detect the arc fault.	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F65	AC Terminal Overtemperature	AC Terminal Overtemperature, possible causes: 1InverterInstallation Location non-ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	1Check if the ventilation of InverterInstallation Location is adequate and if the ambient temperature exceeds the maximum allowable range. 2If there is no ventilation or the ambient temperature is too high, please improve its ventilation and heat dissipation conditions.
F35	Cabinet Overtemperature	Cabinet Overtemperature, Possible causes: 1InverterInstallation Location non-ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	3If ventilation and ambient temperature are normal, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F66	INVModule temperature too high	<p>Inverter module temperature too high, possible causes:</p> <p>1InverterInstallation Location is not ventilated.</p> <p>2Ambient temperature is too high.</p> <p>3Internal fan operation abnormal.</p>	
F67	BoostModule temperature too high	<p>BoostModule temperature too high, possible causes:</p> <p>1InverterInstallation Location non-ventilated.</p> <p>2Ambient temperature is too high.</p> <p>3Internal fan operation abnormal.</p>	

fault code	fault name	fault cause	Troubleshooting recommendation
F68	AC Capacitor Overtemperature	<p>Output filter capacitor temperature is too high, possible causes:</p> <p>1InverterInstallation Location non-ventilated.</p> <p>2Ambient temperature is too high.</p> <p>3Internal fan operation abnormal.</p>	
F114	Relay Failure2	<p>Relay abnormality, reason:</p> <p>1Relay abnormality (relay short circuit)</p> <p>2Relay sampling circuit abnormality.</p> <p>3Abnormal AC side wiring (possible loose connection or short circuit)</p>	<p>Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.</p>
F69	PV IGBT Short circuit	<p>Possible causes:</p> <p>1. IGBT short circuit</p> <p>2Abnormal sampling circuit</p>	<p>Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
F70	PV IGBTOpen-circuit voltage	1. Software issue causing failure to send waves. 2. Drive circuit abnormality 3. IGBTOpen circuit	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F71	NTCabnормall	NTCTemperature sensor abnormality detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F72	PWM Abnormal	PWMAbnormal waveform detected	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F73	CPU Interruption exception	CPU Interruption anomaly occurred	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F74	Microelectronic Failure	Functional safety detects an anomaly	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F75	PV HCT fault	boostcurrent sensor abnormality	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F76	1. 5V Baseline anomaly	Reference Circuit	

fault code	fault name	fault cause	Troubleshooting recommendation
F77	0.3VBaseline anomaly	Reference Circuit	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F78	CPLDVersion identification error	CPLDVersion identification error	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F79	CPLDCommunication fault	CPLDandDSPCommunication content error or timeout	Disconnect the AC output side switch and DC input side switch, 5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F80	Model Type Error	Regarding the model identification error fault	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F115	SVGPrecharge failure	SVGPrecharge hardware failure	Contact the distributor or GoodWe after-sales service center.
F116	nightSVG PIDPrevention of fault	PIDPrevent hardware anomalies	Contact the distributor or GoodWe after-sales service center.
F117	DSPVersion identification error	DSPSoftware version identification error	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F36	Bus Overvoltage		Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F81	P-Bus Overvoltage		
F82	N-Bus Overvoltage		
F83	DeputyCPU1)		

fault code	fault name	fault cause	Troubleshooting recommendation
F84	DeputyCPU1)	BUSOvervoltage, possible causes: 1. PVvoltage too high	
F85	DeputyCPU1)	2InverterBUSSampling anomaly; 3The poor isolation effect of the rear-end double-split Inverter causes mutual interference	
F86	Bus Overvoltage(Deputy CPU2)		
F87	DeputyCPU2)		
F88	DeputyCPU2)		
F89	P-Bus Overvoltage(CPLD)		
F90	N-Bus Overvoltage (CPLD)		
F118	MOSContinuous Overvoltage	1. Software issue causes the inverter drive to shut down earlier than the flyback drive. 2. Inverter drive circuit abnormality prevents turn-on. 3. PVvoltage too high 4. MosSampling anomaly;	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F119	Bus Short Circuit	1. Hardware damage	In case of occurrence BUSA After the fault short circuit, the Inverter remains in an off-grid state. Please contact the dealer or GoodWe after-sales service center.
F120	Bus Sample Abnormal	1. BusSampling hardware	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F121	DCLateral Sampling Anomaly	1. Bus sampling hardware 2. Batteryvoltage Sampling Hardware fault 3. DcrlyRelay Failure (Note: The term "Dcrly" appears to be a placeholder or code that cannot be directly translated without additional context. If it refers to a specific technical term in the photovoltaic or electrical field, please provide further details for accurate translation.)	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F37	PVInput overvoltage	PVvoltage input is too high, possible causes: Incorrect PV array configuration, with too many PV Battery panels connected in series, causing the open-circuit voltage of the string to exceed the maximum operating voltage of the Inverter.	Check the series configuration of the corresponding PV array strings to ensure that the open-circuit voltage of the strings does not exceed the maximum working voltage of the Inverter. Once the PV array is correctly configured, the Inverter alarm will automatically disappear.
F38	PVContinuous hardware overcurrent	1. Unreasonable module configuration 2. Hardware damage	Disconnect the AC output side switch and DC input side switch,5After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F39	PVContinuous software overcurrent	1. Unreasonable module configuration 2. Hardware damage	Disconnect the AC output side switch and DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F91	FlyCap Software Overvoltage	Flying capacitor overvoltage, possible causes: 1. PVvoltage too high 2Flying capacitor sampling anomaly	

fault code	fault name	fault cause	Troubleshooting recommendation
F92	FlyCap Hardware Overvoltage	Flying capacitor overvoltage, possible causes: 1. PV voltage too high 2 Flying capacitor sampling anomaly	Disconnect the AC output side switch and DC input side switch, 5After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F93	FlyCap Undervoltage	FlyCap Undervoltage, Possible causes: 1. PV Energy deficit; 2 Flying capacitor sampling anomaly	
F94	FlyCap Precharge Failure	FlyCap Precharge Failure, Possible causes: 1. PV Energy deficiency; 2 Flying capacitor sampling anomaly	
F95	FlyCap Precharge Abnormal	1. Unreasonable control loop parameters 2. Hardware damage	
F96	String overcurrent(String1 ~16)	Possible causes: 1. String Overcurrent 2. String current sensor anomaly	
F97	String overcurrent(String1 7~32)		

fault code	fault name	fault cause	Troubleshooting recommendation
F40	String reverse connection(String1~16)	PVString reverse connection	Check if the string is reverse-connected.
F98	String reverse connection(String17~32)	PVString reverse connection	Check if the strings are reverse connected.
F99	String loss(String1~16)	String fuse disconnected (if applicable)	Check if the fuse is blown.
F100	String loss(String17~32)	String fuse disconnected (if applicable)	Check if the fuse is blown.
F122	PVIncorrect access mode setting	PVThere are three access modes in total, with four channels.MPPTFor example: 1. Parallel mode: that isAAAAMode(homol	InspectionPVIs the access mode correctly set?ABCD、AACC、AAAA), reset in the correct mannerPVConnection mode. 1. Confirm the actual connected circuitsPVIs the

fault code	fault name	fault cause	Troubleshooting recommendation
		<p>ogous mode),PV1-PV4homologous4RoadPVConnect the same photovoltaic panel</p> <p>2. Partial Parallel Mode: That isAACCMODE,PV1andPV2homologous connection,PV3andPV4homologous connection</p> <p>3. Stand-alone mode: i.e.ABCDMode(non-homologous),PV1、PV2、PV3、PV4Independent connection,4RoadPVEach connected to a photovoltaic panel</p> <p>IfPVThe actual connection mode and equipment configurationPVThis fault will be reported if the access mode does not match.</p>	<p>connection correct.</p> <p>2. IfPVCorrectly connected, passedAppor screen check the current settingsPVDoes the "connection mode" correspond to the actual connection mode?</p> <p>3. If the currently setPVThe "access mode" does not match the actual access mode and needs to be adjusted.Appor screen willPVSet the "Access Mode" to the mode consistent with the actual situation. After setting is completed,PVandACPower supply disconnect and restart.</p> <p>4. After the settings are completed, if the currentPVThe access mode is consistent with the actual access mode, but this fault is still reported. Please contact the dealer or GoodWe after-sales service center.</p>

fault code	fault name	fault cause	Troubleshooting recommendation
-	String reverse connection(String33~48)	PVString reverse connection	Check if the strings are reverse connected.
-	String loss(String33~48)	String fuse disconnected (if applicable)	Check if the fuse is blown.
-	String overcurrent(String33~48)	Possible causes: 1. String Overcurrent 2. String current sensor anomaly	
F123	Multi-string PV Phase Mismatch Failure	PV input mode setting error	Check whether the PV connection mode is correctly set (ABCD, AACC, AAAA) and reset it to the correct PV connection mode. 1. Verify that all connected PV strings are correctly wired. 2. If the PV is correctly connected, check whether the currently set "PV connection mode" corresponds to the actual connection mode via the App or screen. 3. If the currently set "PV

fault code	fault name	fault cause	Troubleshooting recommendation
			<p>Connection Mode" does not match the actual connection mode, it is necessary to set the "PV Connection Mode" to the mode consistent with the actual situation via the App or screen. After completing the setting, disconnect the PV and AC power supply and restart.</p> <p>4. After completing the settings, if the current "PV Connection Mode" matches the actual connection mode but this fault still appears, please contact the dealer or GoodWe after-sales service center.</p>
F101	Battery1Precharge fault	Battery1Pre-Charge circuit fault (such as pre-Charge resistor burnout, etc.)	Check whether the pre-Charge circuit is in good condition. Only after Battery power on, verify whether the Battery voltage matches the busbar voltage. If they do not match, please contact the distributor or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F102	Battery1Relay Failure	Battery1The relay fails to operate normally.	After Batterypower on, check whether the Battery relay operates and if a closing sound is heard. If it does not function, please contact the dealer or GoodWe after-sales service center.
F103	Battery1overvoltage at connection point	Battery1The input voltage exceeds the rated range of the machine.	Verify if Batteryvoltage is within the machine's rated range.
F104	Battery2Precharge fault	Battery2Pre-Charge circuit fault (pre-Charge resistance burnout, etc.)	Check whether the pre-Charge circuit is in good condition. Only after Battery power on, verify whether the Battery voltage matches the busbar voltage. If they do not match, please contact the distributor or GoodWe after-sales service center.
F105	Battery2Relay Failure	Battery2The relay fails to operate normally.	After Batterypower on, check whether the Battery relay operates and if a closing sound is heard. If it does not function, please contact the distributor or GoodWe after-sales service center.
F106	Battery2overvoltage at connection point	Battery2The input voltage exceeds the rated range of the machine.	Verify if Battery voltage is within the machine's rated range.

fault code	fault name	fault cause	Troubleshooting recommendation
F124	Battery1Reverse connection	Battery1Reverse polarity of positive and negative terminals	Check whether the polarity of Battery and the machine terminals is consistent.
F125	Battery2Reverse polarity fault	Battery2Reverse polarity of positive and negative terminals	Check whether the polarity of Battery and the machine's wiring terminals is consistent.
F126	BAT Connection Abnormal	BAT Connection Abnormal	Check if the Battery is functioning properly.
-	BMS Status Bit Error	BMS Module fault	
F127	BAT Overtemperature	Battery temperature is too high, possible causes: 1InverterInstallation Location is not ventilated. 2Ambient temperature is too high. 3Internal fan operation abnormal.	Disconnect the AC output side switch and DC input side switch, wait for 5 minutes, then close the AC output side switch and DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F128	Ref Voltage Abnormal	Reference Circuit	

fault code	fault name	fault cause	Troubleshooting recommendation
F129	Cabinet Under Temperature	Cabinet Under Temperature, Possible causes: 1. The ambient temperature is too low.	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.
F130	ACsideSPDfault	ACFailure of lateral lightning protection device	ReplacementACSide lightning protection device.
F131	DCsideSPDfault	DCFailure of lateral lightning protection device	ReplacementDCLateral lightning protection device.
F132	Internal Fan Abnormal	Internal Fan Abnormal, Possible causes: 1Abnormal fan power supply; 2mechanical interlock(Locked rotor); 3Fan aging and damage.	Disconnect the AC output side switch and DC input side switch,5 After a few minutes, close the AC output side switch and the DC input side switch. If fault persists, please contact the dealer or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F133	External Fan Abnormal	External Fan Abnormal, Possible causes: 1Abnormal fan power supply; 2Mechanical fault(Locked rotor); 3Fan aging and damage.	
F134	PIDDiagnosis of abnormalities	PIDHardware fault orPVvoltage too highPIDPause	PVExcessive voltagePIDSuspend WARNING without processing,PIDHardware fault can be turned off by closingPIDSwitch Reclosing ClearancePIDfault, replacementPIDdevice

fault code	fault name	fault cause	Troubleshooting recommendation
F135	Trip-Switch Trip Warning	Possible causes: Overcurrent orPVReverse connection causes the trip switch to trip.	Please contact the dealer or GoodWe after-sales service center. The reason for disconnection is due to an occurrence.PVShort circuit or reverse connection, need to check for any historical issues.PVShort circuit or historyPVReverse connection of WARNING. If present, maintenance personnel should inspect the corresponding issue.PVSituation. After confirming there is no fault, the trip switch can be manually closed, and then pass throughAppInterface Clear History fault Operation Clears This WARNING.

fault code	fault name	fault cause	Troubleshooting recommendation
F136	HistoryPV IGBT Short Circuit	Possible causes: Overcurrent caused the trip switch to open.	Please contact the distributor or GoodWe after-sales service center. Maintenance personnel should follow the historicalPVShort circuit WARNING subcode, check for short circuit occurrenceBoostCheck whether there is any fault in the hardware and external string; After confirming there is no fault, it can pass. AppInterface Clear History fault Operation Clears This WARNING.
F137	HistoryPVReverse polarity WARNING(String1~16)	Possible causes: OccurrencePVReverse connection causes the trip switch to trip.	Contact the distributor or GoodWe after-sales service center. The maintenance personnel must follow the historicalPVReverse connection WARNING subcode, check whether the corresponding string has a reverse connection, inspectPVIIs there a voltage difference in the panel configuration? After checking, if there is no fault, it can be passed. AppInterface Clear History fault operation clears this WARNING.

fault code	fault name	fault cause	Troubleshooting recommendation
F138	historyPVReverse polarity WARNING(String17~32)	Possible causes: OccurrencePVReverse connection causes the trip switch to trip.	Contact the distributor or GoodWe after-sales service center. Maintenance personnel must follow the historicalPVReverse connection WARNING subcode, check whether the corresponding string has a reverse connection, inspectPVIIs there a voltage difference in the panel configuration? After the inspection is completed and no fault is found, it can be passed. AppInterface Clear History fault Operation Clears This WARNING.
F139	FlashRead/Write Error	Possible causes: flashContent has been modified; flashEnd of life;	1. Upgrade to the latest version of the program. 2. Contact the distributor or GoodWe after-sales service center.

fault code	fault name	fault cause	Troubleshooting recommendation
F140	Meter Comm Loss	<p>This alarm may only be reported after enabling the power limit function. Possible causes:</p> <ol style="list-style-type: none"> 1. Meter not connected; 2. The communication line connection between the meter and Inverter is incorrect. 	Check the meter wiring and ensure the meter is correctly connected. If fault persists after inspection, please contact the distributor or GoodWe after-sales service center.
F141	PVPanel type identification failed	PVPanel identification hardware anomaly	Contact the distributor or GoodWe after-sales service center.
F142	PV String Mismatch	PVPV String Mismatch, same circuitMPPTThe configurations of the next two strings are different.	Check the two strings of open-circuit voltage, and configure the strings with the same open-circuit voltage to the same circuit.MPPTProlonged PV String Mismatch poses safety hazards.
F143	CTNot connected	CTNot connected	InspectionCTWiring.
F144	CTReverse connection	CTreverse connection	InspectionCTWiring.
F145	PE Loss/PE Loss	Ground wire not connected	Check the ground wire.

fault code	fault name	fault cause	Troubleshooting recommendation
F146	String terminal temperature high(String1~8)	37176RegisterPVterminal temperature alarm subcode1Set	-
F147	String terminal temperature high(String9~16)	37177RegisterPVterminal Temperature Alarm Subcode2Set position	-
F148	String terminal temperature high(String17~20)	37178registerPVterminal temperature alarm subcode3Set position	-
F149	historyPVReverse polarity WARNING(String33~48)	Possible causes: OccurrencePVReverse connection causes the trip switch to trip.	Please contact the dealer or GoodWe after-sales service center; maintenance personnel should follow the history.PVReverse connection WARNING subcode, check whether the corresponding string has a reverse connection, inspectPVIs there a voltage difference in the panel configuration? After the inspection is completed and no fault is found, it can be passed.AppInterface Clear History fault operation clears this WARNING.
F150	Battery1voltage low	Batteryvoltage is below the set value	-
F151	Battery2voltage low	Batteryvoltage is below the set value	-

fault code	fault name	fault cause	Troubleshooting recommendation
F152	Low Voltage of BAT Power	Battery non-Charge mode, voltage below shutdown voltage	-
F153	BAT1 Voltage High	-	-
F154	BAT2 Voltage High	-	-
F155	On Line Low Insulation Resistance	PV String is short-circuited to the Protection ground. 2. The environment of PV StringInstallation is consistently humid, and the line-to-ground insulation is poor.	1. Check the impedance between PV String and Protection to ground. If a short circuit is found, rectify the short circuit point. 2. Check whether the PE cable of the Inverter is properly connected. 3. If it is confirmed that the impedance is indeed lower than the default value under rainy or cloudy conditions, please reconfigure the "insulation resistanceProtection point."
F156	Micro-grid Overload Warning	Excessive input at the backup terminal	Occasional occurrences do not require action; if this alarm appears frequently, please contact the dealer or GoodWe after-sales service center.
F157	Manual Reset	-	-

fault code	fault name	fault cause	Troubleshooting recommendation
F158	Generator Phase Sequence Abnormal	-	-
F159	Multiplexed Port Configuration Abnormal	Reuse (Generator) port configured for microgrid or large load, but actually connected to a generator.	Use the App to change the reuse (generator) port configuration.
F41	Generator Port Overload	<ol style="list-style-type: none"> 1. Off-grid side output exceeds the specifications stated in the technical documentation. 2. Off-grid side short circuit 3. Off-grid terminal voltage too low 4. When used as a high-power load port, the load exceeds the specifications stated in the datasheet. 	Confirm the off-grid side output voltage, current, Power, and other data to identify the cause of the issue.
F108	DSP Communication Fail	-	-

fault name	fault cause	Troubleshooting recommendation
Parallel Comm Timeout Shutdown	In parallel operation, if the slave unit exceeds 400 No communication with the host within seconds	Check whether the parallel communication harness is securely connected and verify that there are no duplicate slave addresses.
One-click Remote Shutdown	Check via the App whether the one-touch shutdown function is enabled.	Deactivate one-touch shutdown.
Offline Shutdown	-	-
Remote Shutdown	-	-
Child Node Communication Failure	Internal communication exception	Restart the machine and observe whether the fault is eliminated.
DG Communication Failure	Abnormal communication link between the control board and the diesel generator	<ol style="list-style-type: none"> 1. Check the link communication harness and observe whether fault is eliminated; 2. Attempt to restart the machine and observe whether the fault is eliminated; 3. If the fault persists after restarting, please contact GoodWe's after-sales service center.
Battery Over Voltage	1. The voltage of a single cell is too high. 2. voltage collection line anomaly	

fault name	fault cause	Troubleshooting recommendation
	1. Battery total pressure too high 2. Abnormal voltage collection line	
Battery Under Voltage	1. Single cell voltage too low 2. Abnormal voltage collection line	Record the fault phenomenon, restart the Battery, wait for a few minutes, and confirm whether the fault disappears. If the problem persists after restarting, please contact the GoodWe after-sales service center.
	Battery total pressure is too low 2. voltage collection line anomaly	
Battery Over Current	1. Charge current is too large, Battery current limiting is abnormal: sudden changes in temperature and voltage value 2. Inverter response anomaly	
	Battery discharge current is too large	
Battery Over Temperature	1. Ambient temperature too high 2. Temperature sensor abnormality	
	1. Ambient temperature is too high 2. Temperature sensor abnormality	
Battery Under Temperature	1. Ambient temperature is too low 2. Temperature sensor abnormality	
	1. Ambient temperature is too low 2. Temperature sensor abnormality	
Battery Pole Over Temperature	Pole temperature too high	

fault name	fault cause	Troubleshooting recommendation
Battery Imbalance	<p>1. Excessive temperature difference in different stages. Battery will impose restrictions on BatteryPower, that is, limit the charging Dischargecurrent. Therefore, this issue is generally unlikely to occur.</p> <p>2. The cell capacity degrades, leading to excessive internal resistance, which causes significant temperature rise and large temperature differences during current.</p> <p>3. Poor welding of battery cell tabs, leading to excessive current and rapid temperature rise in the cell.</p> <p>4. Temperature sampling issue;</p> <p>5. power cable loose connection</p>	
	<p>1. Inconsistent aging levels of battery cells</p> <p>2. Issues with the board chips can also lead to excessive voltage differences in the battery cells.</p> <p>3. Imbalance issues in the battery pack can also lead to excessive voltage differences between cells.</p> <p>4. Wiring harness issues leading to</p>	
	<p>1. Inconsistent aging levels of battery cells</p> <p>2. Issues with the board chip can also lead to excessive voltage differences between battery cells.</p> <p>3. Imbalance issues in the battery pack can also lead to excessive voltage differences between cells.</p> <p>4. Wiring harness issues lead to</p>	

fault name	fault cause	Troubleshooting recommendation
Insulation Resistance	Insulation resistance failure	Check if the ground wire is properly connected and restart the Battery. If the issue persists after restarting, please contact GoodWe after-sales service center.
Pre-charge Failure	Precharge failure	It indicates that during the precharge process, the voltage across the precharge MOS consistently exceeds the specified threshold. After restarting the system, observe whether this fault persists, and check if the wiring is correct and if the precharge MOS is damaged.
Collection Line Failure	Collection line poor contact or disconnect	Check the wiring and restart the Battery. If the issue persists after restarting, please contact the GoodWe after-sales service center.
	Single PV module voltage collection line poor contact or disconnected	
	Monomer temperature acquisition line poor contact or disconnected	

fault name	fault cause	Troubleshooting recommendation
	Dual-channel current comparison error is too large, or current acquisition line circuit is abnormal.	Check the wiring and restart the Battery. If the issue persists after restarting, please contact GoodWe's after-sales service center.
	Dual-channel voltage comparison error is too large, or the comparison error between MCU and AFE voltage is too large, or the voltage acquisition line loop is abnormal.	
	Temperature acquisition line circuit abnormal or poor contact, disconnected	
	Overvoltage level 5 or overtemperature level 5, fuse the three-terminal fuse	To replace the three-section fuse, please contact the GoodWe after-sales service center to replace the main control board.
Relay or MOS Over Temperature	Relay or MOS Over Temperature	The fault indicates that the MOSFET temperature has exceeded the specified threshold. Power off and let it stand for 2 hours to allow temperature recovery.
Shunt Over Temperature	Shunt Over Temperature	The fault indicates that the shunt tube temperature has exceeded the specified threshold. Power off and allow it to stand for 2 hours to wait for temperature recovery.

fault name	fault cause	Troubleshooting recommendation
BMS1 Other Failure 1 (RES)	Relay or MOS open circuit	<p>Upgrade the software, power off and let it sit for 5 minutes, then check if fault persists after restarting.</p> <p>2. If the problem persists, replace the Battery package.</p>
	Relay or MOS short circuit	<p>1. Upgrade the software, power off and let it sit for 5 minutes, then restart to check if fault persists.</p> <p>2. If the issue persists, replace the Battery package.</p>
	Communication abnormality between the master cluster and slave cluster, or inconsistency of battery cells among clusters.	<p>1. Check the Battery information and software version of the slave unit, as well as whether the communication line connection with the master unit is normal.</p> <p>2. Upgrade the software</p>
	Abnormal circuit harness in Battery system, resulting in no loop formation in interlocking signal	Check if the Terminal resistorInstallation is correct

fault name	fault cause	Troubleshooting recommendation
	Abnormal communication between BMS and PCS	<ol style="list-style-type: none"> 1. Verify that the interface definition of the communication line between Inverter and Battery is correct. 2. Please contact GoodWe's after-sales service center to check the backend data and verify whether the Inverter and Battery software are correctly matched.
	Abnormal communication harness between BMS master and slave control	<ol style="list-style-type: none"> 1. Check the wiring and restart the Battery; 2. Upgrade the Battery.
	Communication loss between main and negative chips	<ol style="list-style-type: none"> If the issue persists after restarting, please contact GoodWe's after-sales service center.
	Circuit breaker, shunt trip abnormality	<ol style="list-style-type: none"> 1. Let the device stand powered off for 5 minutes, then restart to check if fault persists. 2. Check for any looseness or misalignment in the blind-mating connectors and communication pins at the bottom of the PACK and PCU.

fault name	fault cause	Troubleshooting recommendation
	MCU self-test failed	Upgrade the software and restart the Battery. If the issue persists after restarting, please contact the GoodWe after-sales service center.
	1. The software version is too low or the BMS board is damaged. 2. The number of Inverter parallel units is large, and the Battery experiences excessive impact during pre-charging.	1. Upgrade the software and observe whether fault persists. 2. In the case of parallel operation, perform a black start on Battery first, then start Inverter.
	Internal fault of MCU	Upgrade the software and restart the Battery. Typically, this is to detect damage to the MCU or external components. If the issue persists after restarting, please contact the GoodWe after-sales service center.
	Total control current exceeds the specified threshold	1. Let the system stand idle for 5 minutes, then restart and check if fault persists. 2. Check if the Inverter is set with Power too high, causing it to exceed the bus load.

fault name	fault cause	Troubleshooting recommendation
	Cell inconsistency in parallel clusters	Confirm whether the cells in the cluster Battery are consistent.
	Cluster Battery reverse polarity of positive and negative terminals	Check whether the positive and negative poles of the string combiner box are reversed.
	Severe overheating or overvoltage triggering the fire protection system	Contact GoodWe After-Sales Service Center.
Air Conditioner Failure	Air conditioning abnormal failure	Try restarting the system. If the fault persists, please contact GoodWe After-Sales Service Center.
	Cabinet door not closed	Check if the cabinet door is properly closed.
	Power supply voltage too high	Verify that the power supply voltage value meets the air conditioning input voltage requirements, and proceed with re-power on only after confirmation.
	Power supply shortage	
	No voltage input	
	Unstable power supply	
	Compressor voltage instability	Try restarting the system. If the fault persists, please contact GoodWe after-sales service center.
	Sensor poor contactor damaged	
	Abnormal air conditioning fan	
	There is an abnormality in the voltage or current inside the DCDC.	

fault name	fault cause	Troubleshooting recommendation
BMS2 Other Failure 2 (RES)	DCDC overload or heat sink temperature too high	Refer to the specific DCfault content for details.
	Abnormal cell acquisition or inconsistent aging levels	Please contact GoodWe After-Sales Service Center.
	Fan operation not executed properly	Please contact GoodWe after-sales service center.
	Output port screw loose or poor contact	1. Battery Shut down, check wiring and output port screw status 2. After confirmation, restart the Battery and observe whether the fault persists. If it does, please contact the GoodWe after-sales service center.
	Battery has been used for too long or the battery cell is severely damaged.	Please contact the GoodWe after-sales service center to replace the pack.
	1. The software version is too low or the BMS board is damaged. 2. The number of Inverter parallel units is large, and the Battery experiences excessive impact during pre-charging.	Upgrade the software and observe whether fault persists. 2. In the case of parallel operation, perform a black start on Battery first, then start Inverter.
	Heating film damaged	Please contact GoodWe After-Sales Service Center.

fault name	fault cause	Troubleshooting recommendation
	The three-terminal fuse of the heating film is blown, rendering the heating function unusable.	Please contact GoodWe after-sales service center.
	Software model, Cell Type, and hardware model mismatch	Check whether the software model, serial number (SN), Cell Type, and hardware model match. If they do not match, please contact GoodWe's after-sales service center.
	Thermal management board communication disconnection	Let the device stand powered off for 5 minutes, then restart to check if fault persists. 2. If the fault is not restored, contact GoodWe after-sales service to replace the pack.
	Thermal management board communication disconnection	Let the device stand powered off for 5 minutes, then restart to check if fault persists. 2. If the fault is not restored, contact GoodWe after-sales service to replace the pack.

fault name	fault cause	Troubleshooting recommendation
	Thermal management board communication disconnection	<p>Let the device stand powered off for 5 minutes, then restart to check if fault persists.</p> <p>2. If the fault is not restored, contact GoodWe after-sales service to replace the pack.</p>
	pack fan fault signal trigger	<p>Let the device stand powered off for 5 minutes, then restart to check if fault persists.</p> <p>2. If the fault is not restored, contact GoodWe after-sales service to replace the pack.</p>
DCDC Failure	Output portvoltage too high	<p>Check the output portvoltage. If the output portvoltage is normal and the fault still cannot be resolved after restarting Battery, please contact GoodWe after-sales service center.</p>

fault name	fault cause	Troubleshooting recommendation
	The DCDC module detected that the Battery voltage exceeded the maximum Charge voltage.	Stop Charge and Discharge until SOC drops below 90% or remains idle for 2 hours. If the issue persists and restarting fault does not resolve it, please contact GoodWe After-Sales Service Center.
	Radiator temperature too high	Let the radiator stand for 1 hour to allow the temperature to drop. If the issue persists and restarting the fault does not resolve it, please contact GoodWe's after-sales service center.
	Battery dischargecurrent is too large	Check if the load exceeds the Battery's Discharge capacity. Turn off the load or stop the PCS for 60 seconds. If the issue persists after restarting the fault, please contact GoodWe's after-sales service center.
	Output port power harness positive and negative poles are reversed with the combiner box Battery or PCS.	Turn off the Battery manual switch, check if the output port wiring is correct, and restart the Battery.

fault name	fault cause	Troubleshooting recommendation
	The output Power relay cannot close.	Check whether the output port wiring is correct and if there is a short circuit. If the issue persists after restarting fault, please contact GoodWe after-sales service center.
	Power device temperature too high	Let the Battery stand for 1 hour to allow the temperature of internal Power components to decrease. If the issue persists and restarting the fault does not resolve it, please contact GoodWe's after-sales service center.
	Relay sticking	Restart fault still exists. Please contact GoodWe after-sales service center.
Battery Rack Circulating Current Failure	1. Cell imbalance 2. First power on incomplete charge correction	-

fault name	fault cause	Troubleshooting recommendation
BMS2 Other Failure 3 (LES)	Communication exception with Linux module	1. Check if the communication link is functioning properly. 2. Upgrade the software, restart the Battery, and observe whether the fault persists. If it does, please contact GoodWe's after-sales service center.
	Excessive temperature rise of the battery cell	Abnormal battery cell, contact GoodWe after-sales service to replace the pack.
	SOC below 10%	Perform Charge on Battery.
	SN writing does not comply with the rules	Check if the SN digits are normal. If abnormal, please contact GoodWe after-sales service center.
	1. Battery Cluster Daisy Chain Communication Exception 2. Inconsistent aging levels of battery cells within Battery clusters	1. Check the contact condition of a single cluster Battery pack. 2. Verify the usage of each cluster Battery, such as cumulative charge Discharge capacity, cycle count, etc. 3. Please contact GoodWe after-sales service center.

fault name	fault cause	Troubleshooting recommendation
	Excessive Humidity within the pack	-
	Fuse tripped	Contact GoodWe after-sales service to replace the pack.
	Low battery level	Perform Charge on Battery.
BMS2 Other Failure 4 (LES)	Circuit breaker anomaly	Contact GoodWe after-sales service to replace the pack.
	External device abnormality	Contact GoodWe after-sales service to replace the pack.
Contactor Fault 1	-	-
Contactor Fault 2	-	-
Overload Protection (Jinggui)	Continuous overload (exceeding 690kVA) for 10s	Please contact GoodWe after-sales service center.
Overload (Smart Inverter)	Continuous overload (exceeding 690kVA) for 10s	Please contact GoodWe after-sales service center.
Communication Abnormality Between Host and Meter When AC is Powered On in Parallel System	1. The meter may not be connected to the host. 2. The meter communication cable may be loose.	1. Check if the meter is connected to the host. 2. Check if the meter communication cable is loose.

fault name	fault cause	Troubleshooting recommendation
Slave Power Meter in Parallel System is Abnormal	The meter is connected to the slave unit.	Set the meter connection machine as the master.
Slave Device in Parallel System Communication Timeout with Master After AC Power-On for More Than 10 Minutes	1. Incorrect slave address setting 2. Slave communication line is loose	1. Check whether the slave address is duplicated. 2. Check if the parallel communication cable is loose.

10.5.2.3 Batteryfault(LX A5.0-10)

When the BatteryALMindicator indicator turns red, troubleshoot by cross-referencing the SOCindicator display status for fault localizationfault.

No.	State of Charge (SOC)	fault name	Solution measures
1	oooo●	overvoltage	Power off and let it stand for 2 hours. If the issue persists after restarting, please contact the after-sales service center.
2	ooo●○	Undervoltage	Please contact the after-sales service center.
3	ooo●●	High cell temperature	Power off and let it stand for 2 hours. If the issue persists after restarting, please contact the after-sales service center.
4	○○●○○	low temperature	Shutdown and wait for temperature recovery. If the problem persists after restarting, please contact the after-sales service center.

No.	State of Charge (SOC)	fault name	Solution measures
5	○○●○●	Discharge low temperature	Shutdown and wait for temperature recovery. If the issue persists after restarting, please contact the after-sales service center.
6	○○●●○	overcurrent	Restart Battery. If the issue persists after restarting, please contact the after-sales service center.
7	○○●●●	overcurrent	Restart Battery. If the problem persists after restarting, please contact the after-sales service center.
8	○●○○○	Insulation resistance too low	Please contact the after-sales service center.
9	○●○○●	Excessive temperature difference	Power off and let it stand for 2 hours. If the issue persists after restarting, please contact the after-sales service center.
10	○●○○●	Excessive single-cell voltage difference	After restarting the Battery, let it stand for 12 hours. If the issue persists, please contact the after-sales service center.
11	○●●○○	Cell inconsistency	Please contact the after-sales service center.
12	○●●○●	Harness abnormality	Restart the Battery. If the problem persists after restarting, please contact the after-sales service center.
13	○●●●○	MOS cannot close	Restart Battery. If the issue persists after restarting, please contact the after-sales service center.
14	○●●●●	MOS cannot close	Restart Battery. If the issue persists after restarting, please contact the after-sales service center.
15	●○○○○	Cluster merging	Please check whether Battery model match. If not, please contact the after-sales service center.

No.	State of Charge (SOC)	fault name	Solution measures
16	●○○○●	interlocking signal fault	Check if the Terminal resistorInstallation is correct. If the problem persists after restarting, please contact the after-sales service center.
17	●○○●○	BMU Communication fault	Restart Battery. If the problem persists after restarting, please contact the after-sales service center.
18	●○○●●	MCU internal communication fault	Restart Battery. If the problem persists after restarting, please contact the after-sales service center.
19	●○●○○	Circuit breaker sticking	Please contact the after-sales service center.
20	●○●○●	Precharge failure	Restart Battery. If the problem persists after restarting, please contact the after-sales service center.
21	●○●●○	MOS Over-temperature	Power off and let it stand for 2 hours. If the issue persists after restarting, please contact the after-sales service center.
22	●○●●●	Shunt Over-temperature fault	Power off and let it stand for 2 hours. If the issue persists after restarting, please contact the after-sales service center.
23	●●○○○	Reverse connection	Please contact the after-sales service center.
24	●●●●●	Microelectronics fault	Please contact the after-sales service center.

10.5.2.4 Batteryfault(LX A5.0-30, LX U5.0-30)

Alarm status

- When the BatteryALMindicator indicator turns red, troubleshoot by checking the fault status in conjunction with the SOCindicator display.

No.	SOC (State of Charge)	fault name	Solution measures
1	○○○●	Battery overvoltage Protection Undervoltage	<ol style="list-style-type: none"> 1. Check via SolarGo whether the Inverter Charge current limit is 0. If it is 0, verify that the Communication cable connection between Battery and Inverter is reliable and communication is normal. 2. Power off and let it stand for 5 minutes. After restarting, confirm whether fault persists. 3. If the fault is not restored, please contact the after-sales service center.
2	○○●●	overcurrent	<ol style="list-style-type: none"> 1. Check via SolarGo whether Battery model is correct. Confirm if the real-time current of Battery exceeds the Charge current limit or the Discharge current limit value. Please contact the after-sales service center. 2. When it is less than, shut down the Battery or upgrade the program, and restart to confirm whether the fault persists. 3. If fault does not respond, please contact after-sales service.
3	○○●○	Over-temperature low temperature Pole Over-temperature	Power off and let it stand for 60 minutes to allow the temperature to recover. If the issue persists after restarting, please contact the after-sales service center.
4	○●○○	Imbalance Low SOH fault	Power off and let it stand for 30 minutes. If the issue persists after restarting, please contact the after-sales service center.

No.	SOC (State of Charge)	fault name	Solution measures
5		Precharge failure	<p>1. Verify whether the output terminal of the Battery is incorrectly connected to the Inverter.</p> <p>2. Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.</p>
6		Harvesting line	Check whether the Battery switch is closed. If the Battery switch is already closed and the problem persists, please contact the after-sales service center.
7		Relay or MOSFET overtemperature	Power off and let it stand for 30 minutes. If the problem persists after restarting, please contact the after-sales service center.
		Shunt Over-temperature	
8		BMS Other fault: Output port Overtemperature fault	<p>1. Check if the Battery power line is securely fastened.</p> <p>Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.</p>
		Other Protection: MOS cannot close	Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.
9		Others Protection: MOS Sticking	

No.	SOC (State of Charge)	fault name	Solution measures
10	●○○○	Others: Cluster Parallel Connection	<ol style="list-style-type: none"> 1. Verify whether the type used for Terminal resistor and Installation Location is correct 2. Verify whether the connections between Battery and Battery (Communication cable), and between Battery and Inverter (Communication cable) are reliable and the communication is normal. 3. If the fault is not restored, please contact the after-sales service center.
11	○○○○	Other Protection: Communication lost with Inverter	<ol style="list-style-type: none"> 1. Verify whether the connections between Battery and Battery (Communication cable), and between Battery and Inverter (Communication cable) are reliable and communication is functioning properly. 2. If the fault is not restored, please contact the after-sales service center.
12	●○○●	Others Protection: BMU Communication fault	<ol style="list-style-type: none"> 1. Verify whether the type used for Terminal resistor and Installation Location is correct 2. Verify whether the Communication cable between Battery and Battery, and the Communication cable between Battery and Inverter are reliably connected and communicating properly. 3. Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.
13	●○●○	Other Protection: Circuit breaker stuck fault	Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.

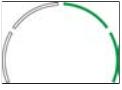
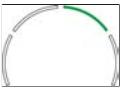
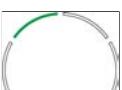
No.	SOC (State of Charge)	fault name	Solution measures
14		Other Protection: Software fault	Restart Battery. If the issue persists after restarting, please contact the after-sales service center.
15		Other Protection: Hardware Overcurrent fault	
16		Others: Microelectronics Abnormal three-terminal heating film	<ol style="list-style-type: none"> 1. Upgrade software 2. Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.

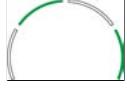
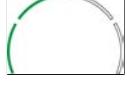
10.5.2.5 Batteryfault(GW14.3-BAT-LV-G10) (Note: The original text appears to be a code or model number with no direct translation. It has been retained as-is in the output.)

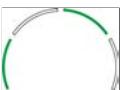
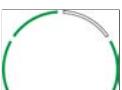
When the Battery alarm indicator displays red.  The outer ring running light

displays a red flashing.  When the operation light is off, locate and troubleshoot based on the SOC indicator display statusfault.

No.	State of Charge (SOC)	fault name	Solution measures
1		Battery overvoltage Protection	

		Undervoltage	<ol style="list-style-type: none"> 1. Check if the Inverter Charge current limit is 0 via SolarGo. If it is 0, verify whether the Communication cable connection between Battery and Inverter is reliable and communication is normal. 2. Power off and let it stand for 5 minutes. After restarting, confirm whether fault persists. 3. If the fault is not restored, please contact the after-sales service center.
2		overcurrent	<ol style="list-style-type: none"> 1. Check whether the Batterymodel is correct via SolarGo, confirm if the real-time Batterycurrent exceeds the Chargecurrent limit or the Dischargecurrent limit value, and contact the after-sales service center. 2. If it is less than, shut down the Battery or upgrade the program, then restart to confirm whether the fault continues to occur. 3. If the fault is not restored, please contact after-sales service.
3		Over-temperature	Power off and let it stand for 60 minutes to allow the temperature to recover. If the issue persists after restarting, please contact the after-sales service center.
		low temperature	
		Pole Over-temperature	
4		Imbalance	Power off and let it stand for 30 minutes. If the problem persists after restarting, please contact the after-sales service center.
		Low SOH fault	
5		Precharge failure	<ol style="list-style-type: none"> 1. Verify whether the output terminal of Battery is incorrectly connected to Inverter. 2. Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.

6		Harvesting line	Check whether the Battery circuit breaker is closed. If the Battery circuit breaker is already closed and the problem persists, please contact the after-sales service center.
7		Relay or MOSFET overtemperature	Power off and let it stand for 30 minutes. If the problem persists after restarting, please contact the after-sales service center.
7		Output port Over-temperature	1. Check if the Battery power line is securely fastened. 2. Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.
8		MOS cannot close	Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.
9		MOSFET adhesion	Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.
10		Cluster merging	1. Confirm whether the type of Terminal resistor used and the Installation Location are correct. 2. Verify that the Communication cable connection between Battery and Battery, as well as the Communication cable connection between Battery and Inverter, are secure and that communication is functioning properly. 3. If the fault is not restored, please contact the after-sales service center.
11		Inconsistent software and hardware versions	Restart Battery. If the problem persists after restarting, please contact the after-sales service center.

12		BMU Communication fault	
13		Circuit breaker sticking	Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.
14		Software fault	
15		Hardware Overcurrent	Restart the Battery. If the problem persists after restarting, please contact the after-sales service center.
16		Microelectronics fault	
		Abnormal three-terminal heating film	1. Upgrade the software 2. Power off and let it stand for 5 minutes. If the problem persists after restarting, please contact the after-sales service center.

10.5.3 Clear post-processing

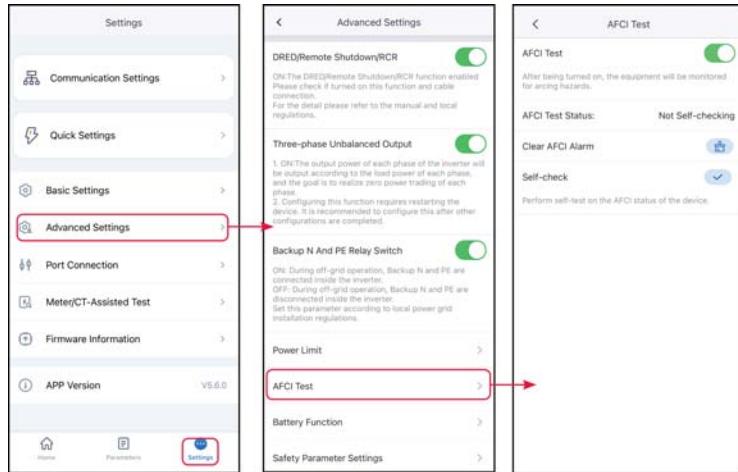
In energy storage system, after some Troubleshooting are completed, the system needs to be processed before it can resume normal operation.

10.5.3.1 Clear AFCIfaultWARNING

[Software Used]: SolarGo App

[Clearance Method]:

1. Pass through **[Home] > [Settings] > [Advanced Settings] > [DC Arc Detection]**.
2. Click **[Clear AFCIfault Alarm]** Button.



11 technical parameter

11.1 Inverter Parameters

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Battery Input Data				
Battery Type ^{*1}	Li-Ion/Lead-acid	Li-Ion/Lead-acid	Li-Ion/Lead-acid	Li-Ion/Lead-acid
Nominal Battery Voltage (V)	48	48	48	48
Battery Voltage Range (V)	40~60	40~60	40~60	40~60
Start-up Voltage (V)	44.2	44.2	44.2	44.2
Number of Battery Input	1	1	1	1
Max. Continuous Charging Current (A)	70	90	120	140
Max. Continuous Discharging Current (A)	70	90	120	140
Max. Charge Power (kW)	3.0 ^{*2}	3.6 ^{*2}	5.0 ^{*2}	6.0 ^{*2}
Max. Discharge Power (kW)	3.3 ^{*2}	3.96 ^{*2}	5.5 ^{*2}	6.6 ^{*2}
PV String Input Data				

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Max. Input Power (kW)	6.0	7.2	10.0	12.0
Max. Input Voltage (V) ^{*4}	600	600	600	600
MPPT Operating Voltage Range (V) ^{*5}	60~550	60~550	60~550	60~550
MPPT Voltage Range at Nominal Power (V)	180~500	120~500	150~500	180~500
Start-up Voltage (V)	58	58	58	58
Nominal Input Voltage (V)	360	360	360	360
Max. Input Current per MPPT (A)	20	20	20	20
Max. Short Circuit Current per MPPT (A)	26	26	26	26
Max. Backfeed Current to The Array (A)	0	0	0	0
Number of MPPT Trackers	1	2	2	2
Number of Strings per MPPT	1	1	1	1

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
AC Output Data (On-grid)				
Nominal Output Power (kW)	3.0	3.6	5.0	6.0
Nominal Apparent Power Output to Utility Grid (kVA)	3.0	3.6	5.0	6.0
Max. AC Active Power (kW) ^{*7*8}	3.3	3.96 ^{*9}	5.5	6.6
Max. Apparent Power Output to Utility Grid (kVA) ^{*7*8}	3.3	3.96 ^{*9}	5.5	6.6
Nominal Power at 40°C (kW)	3.0	3.6	5.0	6.0
Max. Power at 40°C (Including AC Overload) (kW) ^{*8}	3.0	3.6	5.0	6.0
Nominal Apparent Power from Utility Grid (kVA)	3.0	3.6	5.0	6.0
Max. Apparent Power from Utility Grid (kVA)	7.04	7.04	8.8	8.8
Nominal Power at 40°C (kW)	3.0	3.6	5.0	6.0

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Max. Power at 40°C (Including AC Overload) (kW)	3.0	3.6	5.0	6.0
Nominal Output Voltage (V)	220/230/240	220/230/240	220/230/240	220/230/240
Output Voltage Range (V)	170~280	170~280	170~280	170~280
Nominal AC Grid Frequency (Hz)	50/60	50/60	50/60	50/60
AC Grid Frequency Range (Hz)	45~55/55~65	45~55/55~65	45~55/55~65	45~55/55~65
Max. AC Current Output to Utility Grid (A)	15.0	18.0 ^{*10}	25.0	30.0
Max. AC Current From Utility Grid (A)	32.0	32.0	40.0	40.0
Nominal AC Current From Utility Grid (A)	13.7 at 220V 13.1 at 230V 12.5 at 240V	16.4 at 220V 15.7 at 230V 15.0 at 240V	22.8 at 220V 21.8 at 230V 20.9 at 240V	27.3 at 220V 26.1 at 230V 25.0 at 240V
Max. Output Fault Current (Peak and Duration) (A)	96A, 3μs	96A, 3μs	96A, 3μs	96A, 3μs
Inrush Current (Peak and Duration) (A)	96A, 3μs	96A, 3μs	96A, 3μs	96A, 3μs

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Nominal Output Current (A)	13.7 at 220V 13.1 at 230V 12.5 at 240V	16.4 at 220V 15.7 at 230V 15.0 at 240V	22.8 at 220V 21.8 at 230V 20.9 at 240V	27.3 at 220V 26.1 at 230V 25.0 at 240V
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
Max. Total Harmonic Distortion	<3%	<3%	<3%	<3%
Maximum Output Overcurrent Protection (A)	53	53	88	88
Type of Voltage (a.c. or d.c.)	a.c.	a.c.	a.c.	a.c.
AC Output Data (Back-up)				
Back-up Nominal Apparent Power (kVA)	3.0	3.6	5.0	6.0
Max. Output Apparent Power without Grid (kVA)	3.3(6.0, 10s)	3.96(7.2, 10s)	5.5(10.0, 10s)	6.6(12.0, 10s)
Max. Output Apparent Power with Grid (kVA)	7.04	7.04	8.8	8.8

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Nominal Output Current (A)	13.7 at 220V 13.1 at 230V 12.5 at 240V	16.4 at 220V 15.7 at 230V 15.0 at 240V	22.8 at 220V 21.8 at 230V 20.9 at 240V	27.3 at 220V 26.1 at 230V 25.0 at 240V
Max. Output Current without Grid (A)	15	18	25	30
Max. Output Current with Grid (A)	32	32	40	40
Max. Output Fault Current (Peak and Duration) (A)	96A, 3µs	96A, 3µs	96A, 3µs	96A, 3µs
Inrush Current (Peak and Duration) (A)	96A, 3µs	96A, 3µs	96A, 3µs	96A, 3µs
Maximum Output Overcurrent Protection (A)	53	53	88	88
Nominal Output Voltage (V)	220/230/240	220/230/240	220/230/240	220/230/240
Nominal Output Frequency (Hz)	50/60	50/60	50/60	50/60
Output THDv (@Linear Load)	<3%	<3%	<3%	<3%

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Switching from Grid Connected Mode to Standalone Mode	<10ms	<10ms	<10ms	<10ms
Switching from standalone mode to Grid connected mode	<10ms	<10ms	<10ms	<10ms
AC Data (Generator)				
Nominal Apparent Power from AC generator (kVA)	3.0	3.6	5.0	6.0
Max. Apparent Power from AC generator (kVA)	3.3	3.96	5.5	6.6
Nominal Input Voltage (V)	220/230/240	220/230/240	220/230/240	220/230/240
Input Voltage Range (V)	170~280	170~280	170~280	170~280
Nominal AC generator Frequency (Hz)	50/60	50/60	50/60	50/60
AC generator Frequency Range (Hz)	45~55 / 55~65	45~55 / 55~65	45~55 / 55~65	45~55 / 55~65

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Max. AC Current From AC generator (A)	32.0	32.0	40.0	40.0
Nominal AC Current From AC generator (A)	13.7 at 220V 13.1 at 230V 12.5 at 240V	16.4 at 220V 15.7 at 230V 15.0 at 240V	22.8 at 220V 21.8 at 230V 20.9 at 240V	27.3 at 220V 26.1 at 230V 25.0 at 240V
Efficiency				
Max. Efficiency	97.6%	97.6%	97.6%	97.6%
European Efficiency	96.2%	96.2%	96.2%	96.2%
CEC Efficiency	96.2%	96.2%	96.2%	96.2%
Max. Battery to AC Efficiency	95.5%	95.5%	95.5%	95.5%
MPPT Efficiency	99.9%	99.9%	99.9%	99.9%
Protection				
PV String Current Monitoring	Integrated	Integrated	Integrated	Integrated
PV Insulation Resistance Detection	Integrated	Integrated	Integrated	Integrated
Residual Current Monitoring	Integrated	Integrated	Integrated	Integrated
PV Reverse Polarity Protection	Integrated	Integrated	Integrated	Integrated

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Anti-islanding Protection	Integrated	Integrated	Integrated	Integrated
AC Overcurrent Protection	Integrated	Integrated	Integrated	Integrated
AC Short Circuit Protection	Integrated	Integrated	Integrated	Integrated
AC Overvoltage Protection	Integrated	Integrated	Integrated	Integrated
DC Switch	Integrated	Integrated	Integrated	Integrated
DC Surge Protection	Type III	Type III	Type III	Type III
AC Surge Protection	Type III	Type III	Type III	Type III
AFCI	Optional	Optional	Optional	Optional
Rapid Shutdown	Optional	Optional	Optional	Optional
Remote Shutdown	Integrated	Integrated	Integrated	Integrated
General Data				
Operating Temperature Range (°C)	-35~+60	-35~+60	-35~+60	-35~+60
Operating Environment	Outdoor	Outdoor	Outdoor	Outdoor
Storage Temperature (°C)	-40~+85	-40~+85	-40~+85	-40~+85
Relative Humidity	0~95%	0~95%	0~95%	0~95%

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Max. Operating Altitude (m)	3000	3000	3000	3000
Cooling Method	Natural Convection	Natural Convection	Natural Convection	Natural Convection
User Interface	LCD, WLAN+APP	LCD, WLAN+APP	LCD, WLAN+APP	LCD, WLAN+APP
Communication with BMS	CAN	CAN	CAN	CAN
Communication	RS485, WiFi+LAN+Bluetooth	RS485, WiFi+LAN+Bluetooth	RS485, WiFi+LAN+Bluetooth	RS485, WiFi+LAN+Bluetooth
Communication Protocols	Modbus-RTU, Modbus-TCP	Modbus-RTU, Modbus-TCP	Modbus-RTU, Modbus-TCP	Modbus-RTU, Modbus-TCP
Weight (kg)	14.5	15.5	15.5	15.5
Dimension (W×H×D mm)	560*415*204	560*415*204	560*415*204	560*415*204
Noise Emission (dB)	<30	<30	<30	<30
Topology	Non-isolated	Non-isolated	Non-isolated	Non-isolated
Self-consumption at Night (W)	<10	<10	<10	<10
Ingress Protection Rating	IP66	IP66	IP66	IP66

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
DC Connector	PV: jinko ((4~6 mm ²) BAT: OT (Max.35mm ²)	PV: jinko ((4~6 mm ²) BAT: OT (Max.35mm ²)	PV: jinko ((4~6 mm ²) BAT: OT (Max.35mm ²)	PV: jinko ((4~6 mm ²) BAT: OT (Max.35mm ²)
AC Connector	Tubulose (Max.10mm ²)			
Environmental Category	4K4H	4K4H	4K4H	4K4H
Pollution Degree	III	III	III	III
Overvoltage Category	DC II / AC III			
Protective Class	I	I	I	I
The Decisive Voltage Class (DVC)	Battery: A PV: C AC: C Com: A			
Mounting Method	Wall Mounted	Wall Mounted	Wall Mounted	Wall Mounted
Active Anti-islanding Method	SMS(Slip-mode frequency) +AFD	SMS(Slip-mode frequency) +AFD	SMS(Slip-mode frequency) +AFD	SMS(Slip-mode frequency) +AFD
Type of Electrical Supply System	single phase	single phase	single phase	single phase
Country of Manufacture	China	China	China	China
Certification				

Technical Data	GW3000-ES-C10	GW3600-ES-C10	GW5000-ES-C10	GW6000-ES-C10
Grid Standards	NRS 097-2-1, IEC 62116, IEC 61727			
Safety Regulation	IEC 62109-1, IEC 62109-2			
EMC	IEC 62920, IEC 61000, EN 300328, EN 301489, EN IEC 62311, EN 62479			

*1: The Li-Ion battery usually contain two mainstream type: LFP and Ternary Lithium battery.

*2: When the PV input voltage is higher than 500V, the battery charging and discharging power will be gradually limited, and the power limitation will be lifted after the input voltage is lowered.

*4: When the input voltage is 580V-600V, the inverter will enter standby mode, and the voltage returns to 580V to enter the normal operation state.

*5: Please refer to the user manual for the MPPT Voltage Range at Nominal Power.

*6: The maximum input current per string is 16A. Or For the MPPT with two strings, the current of each string is 16A.

*7: For Sri Lanka, Max. Output Power (kW) is 3.0kW for GW3000-ES-C10, 3.6kW for GW3600-ES-C10, 5.0kW for GW5000-ES-C10, 6.0kW for GW6000-ES-C10.

*9: For Jordan, Max. AC Current Output to Utility Grid is 15.7A for GW3600-ES-C10.

*10: For Jordan, Max. AC Active Power and Max. Apparent Power Output to Utility Grid are both 3.6kW/kVA for GW3600-ES-C10.

11.2 Battery Technical Data

11.2.1 LX A5.0-10

technical parameter	LX A5.0-10	2*LX A5.0-10	n*LX A5.0-10
usable energy(kWh)*1	5	10	n×5
battery module	LX A5.0-10: 51.2V 5.0kWh		

technical parameter	LX A5.0-10	2*LX A5.0-10	n*LX A5.0-10
Number of Modules	1	2	n
Cell Type	LFP (LiFePO4)		
Rated voltage (V)	51.2		
Operating Voltage range(V)	47.5~57.6		
The nominal charging and discharging current(A)*2	60	120	n×60*3
Rated charging Discharge Power (kW)*2	3	6	n×3*3
Operating Temperature Range(°C)	Charge: 0 ~ +50; Discharge: -10 ~ +50		
Relative Humidity	0~95%		
Max. Operating Altitude (m)	3000		
Communication	CAN		
Weight(kg)	40	80	n×40
Dimensions (W × H × D mm)	Single LX A5.0-10 module: 442×133×420 (excluding Handle); 483×133×452 (including Handle)		
Ingress Protection Rating	IP21		
Storage Temperature(°C)	0 to +40 (≤1 year); -20 to 0 (≤1 month); -40 to 45 (≤1 month)		
Mounting method	Cabinet Installation/Floor Stacking		
round-trip efficiency*4	95%		
Cycle count *5	≥5000		
Standards and Certification	Safety	IEC62619, IEC 63056, IEC62040-1, INmetro	
	EMC	EN IEC61000-6-1, EN IEC61000-6-2, EN IEC61000-6-3, EN IEC61000-6-4	
	Transportation	UN38.3, ADR	

technical parameter	LX A5.0-10	2*LX A5.0-10	n*LX A5.0-10
*1: New Battery 100% depth of discharge, measured under 25±2°C temperature range and 0.2C charging Discharge conditions; usable energy may vary depending on Inverter.			
*2: The nominal charging and discharging current and Power are affected by temperature and SOC status.			
*3: Under the condition of using the combiner box Installation accessory to achieve parallel connection of Battery.			
*4: New Battery, within the range of 2.5~3.65V, at a temperature range of 25±2°C, under 0.2C/0.2C charge Discharge conditions. The cell achieves 94%~95% under 0.6C/0.6C charge Discharge conditions.			
*5: Cell, within the range of 2.87~3.59V, at a temperature range of 25±2°C, reaches 70% EOL under 0.6C/0.6C chargeDischarge conditions.			
n: Maximum 15.			

11.2.2 LX A5.0-30

Technical Parameters	LX A5.0-30
Nominal Capacity (kWh)	5.12
Usable energy (kWh) * 1	5
Cell Type	LFP (LiFePO4)
Operating Voltage Range (V)	43.2~58.24
Nominal Charge Current (A) *2	60
Max. Continuous Charge Current (A) *2*3	90
Nominal Discharge Current (A) *2	100

Technical Parameters	LX A5.0-30
Max. Continuous Discharge Current (A) *2*3	150
Max. Pulse Discharge Current (A)*2*3	<200A (30s)
Max. Continuous Discharge Power (W)	7200
Communication	CAN
Operating Temperature Range (°C)	Charge: $0 < T \leq 55$ Discharge: $-20 < T \leq 55$
Maximum Operating Altitude (m)	4000
Weight (Kg)	44
Dimensions (W x H x D mm)	442*133*520 (Excluding hanger) 483*133*559 (Including hanger)
Ingress Protection Rating	IP20
Application Method	On-grid/On-grid + Backup/ off Grid
Scalability	Max. 30 in Parallel (150kWh) (Hand to hand /Combiner box /Busbar)
Mounting Method	19-inch standard rack, Floor-mounted, Wall-Mounted
Round-trip Efficiency ^{*1}	≥96%
Safety	IEC62619、IEC63056、N140
EMC	EN IEC61000-6-1、EN IEC61000-6-2、EN IEC61000-6-3、EN IEC61000-6-4
Transportation	UN38.3、ADR
Environment	ROHS

*1 Test conditions: 100% DOD, 0.2C charge & discharge at 25°C± 2°C, at the beginning of life.

*2 The system's working current and power values will be related to temperature and State of Charge (SOC)

*3 Max charge / discharge current and power values maybe variant with different inverter models.

11.2.3 LX U5.0-30

Technical Data	LX U5.0-30
Rated Battery Energy (kWh)	5.12
Available energy (kWh)*1	5
Cell Type	LiFePO4
Rated voltage (V)	51.2
Operating Voltage range(V)	43.2~58.24
Rated Chargecurrent (A)	60
Maximum Continuous Chargecurrent (A) *2*3	90
Rated Dischargecurrent (A)	100
Maximum continuous Dischargecurrent (A)*2*3	100
Pulse Dischargecurrent(A)*2*3	< 200A (30S)
Maximum Continuous Charge/Discharge Power (kW)	4.95
Communication	CAN
Charge Temperature Range (°C)	0<T≤55
Discharge Temperature Range (°C)	-20<T≤55

Technical Data	LX U5.0-30
Ambient Temperature (°C)	0 < T ≤ 40 (Recommended: 10 < T ≤ 30) Optional heating: -20 < T ≤ 40 (recommended 10 < T ≤ 30)
Relative Humidity	5~95%
Maximum storage time	12 months (maintenance-free)
Max. Operating Altitude(m)	4000
heating	Optional configuration
Fire protection function	Optional, aerosol
Unit Weight (kg)	50
Unit dimensions (Width × Height × Thickness mm)	460*580*160
Enclosure	IP65
Application	on-grid / on-grid + Backup Power / Off-Grid
Expand capacity	30P
Mounting method	Ground-mounted/wall-mounted
round-trip efficiency	≥96%
Cycle count	> 6000 @25±2°C 0.5C 70%SOH 90%DOD
Safety	VDE2510-50、IEC62619、IEC62040、N140、IEC63056
EMC	EN IEC61000-6-1, EN IEC61000-6-2, EN IEC61000-6-3, EN IEC61000-6-4
Transportation	UN38.3、ADR
Environmental Regulations	ROHS
Safe service life (years)	≥25
*1: Under the factory default settings of Battery, the test conditions are 100% DOD, 0.2C, with charging Discharge performed in an environment of 25°C ± 2°C.	
*2: The operating current and Power values of the system are related to temperature and SOC.	
*3: The maximum charge/discharge current value may vary depending on the specifications of different battery models.	

11.2.4 GW14.3-BAT-LV-G10

Technical Data	GW14.3-BAT-LV-G10
Rated Energy (kWh)	14.3
Usable Energy (kWh) ^{*1}	≥13.8
Battery Type	LFP (LiFePO ₄)
Nominal Voltage (V)	51.2
Max. Continuous Charging Current (A)	224
Max. Continuous Discharging Current (A)	260
Max. Input Power (System) (kW) ^{*2}	12
Max. Output Power (System) (kW) ^{*2}	12 (13.2 @10min)
Peak Output Power (System) (kW) ^{*2}	20 @15s
Charging Temperature Range (°C)	0~55
Discharging Temperature Range (°C)	-20~55
Relative Humidity	5~85%
Max. Operating Altitude (m)	4000
Noise Emission (dB)	≤35
Communication	CAN, RS485
Weight (kg)	125
Dimensions (W×H×D mm)	530*885*246 (Without the base) 530*918.6*246 (With base included)
Optional Function Configuration	Aerosol
Ingress Protection	IP20

Technical Data		GW14.3-BAT-LV-G10
Storage Temperature (°C)		-20~45
Ambient Temperature (°C)		0~45 (Standard configuration) 10~35 (Recommend) -20~45 (Optional)
Max. Storage time		12 months (-20°C~35°C) 6 months (35°C~45°C)
Scalability		30 pcs
Mounting Method		Floor-Mounted, Wall-Mounted
Cycle Life		≥6500 (25±2°C, 0.5C, 90%DOD, 70%EOL)
Country of Manufacture		China
Standard and Certification	Safety	IEC 62619, IEC 63056, IEC 60730-1
	EMC	EN IEC61000-6-1, EN IEC61000-6-2, EN IEC61000-6-3, EN IEC61000-6-4
	Transportation	UN38.3, ADR, MSDS

*1: Test conditions, 100% DOD (cell 2.85~3.6V voltage range), 0.2P charge & discharge at 25±2 °C for battery system at the beginning of life. Usable energy is defined by its initial design value. Actual available energy may vary depending on charge/discharge rate, environmental conditions (e.g. temperature), transport and storage factors.

*2: Max. Input Power /Max. Output Power/Peak. Output Power derating will occur related to Temperature and SOC.

11.3 Smart Meter Technical Data

11.3.1 GMK110

technical parameter		GMK110
Application		Single-phase
Input parameters	voltage	Rated voltage (V) 220
		Range (V) 85~288
		Rated voltage Frequency (Hz) 50/60
	current	CT ratio 120A/40mA Number of CTs 1
Communication		RS485
Communication distance (m)		1000
User Interface		2LED
Accuracy	voltage/current	Class I
	Active energy	Class I
	Reactive energy	Class II
Power consumption (W)		< 5
Mechanical Parameters	Dimensions (W x H x D mm)	19*85*67
	Weight(g)	50
	Mounting method	Guide rail
Environmental parameters	IP rating	IP20
	Operating Temperature Range(°C)	-30 ~ 60
	Storage Temperature range (°C)	-30 ~ 60
	Relative Humidity (condensation-free)	0~95%
	Max. Operating Altitude(m)	3000

11.3.2 GM330

technical parameter		GM330
Measurement range	Support Grid type	Three-phase, split-phase, single-phase
	Range L-L (Vac)	172~817
	Range L-N (Vac)	100~472
	Rated Frequency (Hz)	50/60
	CT ratio	nA:5A

technical parameter		GM330
Communication parameters	Communication method	RS485
	Communication distance (m/ft)	1000/3280
Accuracy parameter	voltage/current	Class 0.5
	Active energy	Class 0.5
	Reactive energy	Class 1
General Parameters	Dimensions (WxHxD mm/in)	72x85x72/2.83x3.35x2.83
	Housing	4-module
	Weight (g/lb)	240/0.53
	Mounting method	DIN rail
	User Interface	4 LED, Reset Button
	Power consumption (W)	≤5
Environmental parameters	IP rating	IP20
	Operating Temperature Range (°C/°F)	-30~+70/-22~+158
	Storage Temperature Range (°C/°F)	-30~70/-22~+158
	Relative Humidity (No Condensation)	0~95%
	Max. Operating Altitude (meters/feet)	3000/9842
Certification parameter	Certificate	UL1741/ANSI

11.4 Smart Dongle Technical Data

11.4.1 WiFi/LAN Kit-20

technical parameter		WiFi/LAN Kit-20
Output voltage (V)		5
Power Consumption (W)		≤2
Communication interface		USB
	Ethernet	10M/100Mbps Auto-negotiation

technical parameter		WiFi/LAN Kit-20
Communication parameters	wireless	IEEE 802.11 b/g/n @2.4 GHz
	Bluetooth	Bluetooth V4.2 BR/EDR and Bluetooth LE standards
Mechanical Parameters	Dimensions (W × H × D mm)	48.3*159.5*32.1
	Weight (g)	82
	Ingress Protection Rating	IP65
	Mounting method	plug and pull
Operating Temperature Range (°C)		-30~+60
Storage Temperature Range (°C)		-40~+70
Relative Humidity		0-95%
Max. Operating Altitude (m)		4000

11.4.2 4G Kit-CN-G20、4G Kit-CN-G21

technical parameter		WiFi/LAN Kit-20
Output voltage (V)		5
Power Consumption (W)		≤2
Communication interface		USB
Communication parameters	Ethernet	10M/100Mbps Auto-negotiation
	wireless	IEEE 802.11 b/g/n @2.4 GHz
	Bluetooth	Bluetooth V4.2 BR/EDR and Bluetooth LE standards
Mechanical Parameters	Dimensions (W × H × D mm)	48.3*159.5*32.1
	Weight (g)	82
	Ingress Protection Rating	IP65
	Mounting method	plug and pull
Operating Temperature Range (°C)		-30~+60
Storage Temperature Range (°C)		-40~+70
Relative Humidity		0-95%
Max. Operating Altitude (m)		4000

11.4.3 Ezlink3000

technical parameter		Ezlink3000
General Parameters		
Connection interface	USB	
Ethernet interface (optional)	10/100Mbps auto-adaptive, communication distance ≤100m	
Mounting method indicator	Plug and Play LED driver	
Dimensions (Width * Height * Thickness mm)	49*153*32	
gram (g)	130	
Ingress Protection Rating	IP65	
Power Consumption (W)	≤2W (typical value)	
Operating mode	STA	
Wireless parameters		
Bluetooth communication	Bluetooth 5.1	
WiFi communication	802.11 b/g/n (2.412GHz-2.484GHz)	
Environmental parameters		
Operating Temperature Range (°C)	-30 ~ +60	
Storage Temperature Range (°C)	-30 ~ +70	
Relative Humidity	0-100% (No condensation)	
Maximum operating altitude (m)	4000	

12 Appendix

12.1 FAQ

12.1.1 How to perform meter/CT auxiliary testing?

The meter detection function can verify whether the CT of the meter is correctly connected and check the current operating status of both the meter and the CT.

- Mode 1:

1. Through **[Home] > [Settings] > [Meter/CT Auxiliary Detection]** Enter the detection page.
2. Click Start Detection, wait for the detection to complete, and then view the detection results.

- Option 2:

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

12.1.2 How to Upgrade the Device Version

Through the firmware information, you can view or upgrade the DSP version, ARM version, BMS version, and communication module software version of the Inverter. Some smart dongle models do not support software version upgrades via the SolarGo App; please refer to the actual situation.

- **Prompt upgrade:**

When the user opens the APP, an upgrade prompt pops up on the homepage. The user can choose whether to upgrade. If they opt to upgrade, they can complete the process by following the on-screen instructions.

- **Routine upgrade:**

Pass through **[Home] > [Settings] > [Firmware Information]** Enter the firmware

information viewing interface.

Click to check for updates. If a new version is available, follow the on-screen instructions to complete the upgrade.

- **Forced upgrade:**

The APP pushes upgrade notifications, and users need to follow the prompts to upgrade; otherwise, the APP will be unusable. The upgrade can be completed by following the on-screen instructions.

12.2 Abbreviations

Abbreviation	English description	Chinese description
Ubatt	Battery Voltage Range	Battery voltage range
Ubatt,r	Nominal Battery Voltage	Nominal battery voltage
Ibatt,max (C/D)	Max. Charging Current Max. Discharging Current	Maximum charge/discharge current
EC,R	Rated Energy	Rated Energy
UDCmax	Max.Input Voltage	Max.Input Voltage
UMPP	MPPT Operating Voltage Range	MPPT voltage Range
IDC,max	Max. Input Current per MPPT	Each MPPT Max. AC Current From Utility Grid
ISC PV	Max. Short Circuit Current per MPPT	Maximum short-circuit current per MPPT
PAC,r	Nominal Output Power	Nominal output power
Sr (to grid)	Nominal Apparent Power Output to Utility Grid	Nominal Apparent Power Output to Utility Grid
Smax (to grid)	Max. Apparent Power Output to Utility Grid	Max. Apparent Power Output to Utility Grid
Sr (from grid)	Nominal Apparent Power from Utility Grid	buy power from the grid Nominal Output Apparent Power
Smax (from grid)	Max. Apparent Power from Utility Grid	buy power from the grid Max. Output Apparent Power
UAC,r	Nominal Output Voltage	Nominal output voltage
fAC,r	Nominal AC Grid Frequency	Nominal AC Grid Frequency

Abbreviation	English description	Chinese description
IAC,max(to grid)	Max. AC Current Output to Utility Grid	Max. AC Current Output to Utility Grid
IAC,max(from grid)	Max. AC Current From Utility Grid	Max. AC Current From Utility Grid
P.F.	Power Factor	Output Power Factor
S _r	Back-up Nominal apparent power	Off-grid rated apparent Power
S _{max}	Max. Output Apparent Power (VA) Max. Output Apparent Power without Grid	Max. Output Apparent Power
IAC,max	Max. Output Current	Max. Output Current
UAC,r	Nominal Output Voltage	Maximum Output Power
fAC,r	Nominal Output Frequency	Nominal output voltage Frequency
T _{operating}	Operating Temperature Range	Operating Temperature Range
IDC,max	Max. Input Current	Max. AC Current From Utility Grid
UDC	Input Voltage	voltage
UDC,r	DC Power Supply	DC input
UAC	Power Supply/AC Power Supply	Input voltage range/AC input
UAC,r	Power Supply/Input Voltage Range	AC input range
T _{operating}	Operating Temperature Range	Operating Temperature Range
Pmax	Max Output Power	Maximum Power
PRF	TX Power	emitter Power
PD	Power Consumption	Power consumption
PAC,r	Power Consumption	Power consumption
F (Hz)	Frequency	Frequency
ISC PV	Max. Input Short Circuit Current	Maximum input short-circuit current
Udcmin-Udcmax	Range of input Operating Voltage	Operating Voltage range
UAC,rang(L-N)	Power Supply Input Voltage	Adapter input voltage range

Abbreviation	English description	Chinese description
Usys,max	Max System Voltage	Maximum system voltage
Halitude,max	Max. Operating Altitude	Max. Operating Altitude height
PF	Power Factor	Output Power Factor
THDi	Total Harmonic Distortion of Current	current harmonic
THDv	Total Harmonic Distortion of Voltage	voltage harmonic
C&I	Commercial & Industrial	Commercial and Industrial
SEMS	Smart Energy Management System	Smart Energy Management System
MPPT	Maximum Power Point Tracking	Maximum Power Point Tracking (MPPT)
PID	Potential-Induced Degradation	Potential Induced Degradation (PID)
Voc	Open-Circuit Voltage	open-circuit voltage
Anti PID	Anti-PID	Anti-PID
PID Recovery	PID Recovery	PID recovery
PLC	Power-line Commucation	Power Line Carrier Communication (PLCC)
Modbus TCP/IP	Modbus Transmission Control / Internet Protocol	Modbus based on TCP/IP layer
Modbus RTU	Modbus Remote Terminal Unit	Modbus based on serial link
SCR	Short-Circuit Ratio	Short Circuit Ratio (SCR)
UPS	Uninterruptable Power Supply	uninterruptible power source
ECO mode	Economical Mode	Economic Mode
TOU	Time of Use	Operating Time
ESS	Energy Stroage System	energy storage system
PCS	Power Conversion System	Power Conversion System
RSD	Rapid shutdown	Rapid Shutdown
EPO	Emergency Power Off	Emergency Poweroff
SPD	Surge Protection Device	Lightning Protection
ARC	zero injection/zero export Power Limit / Export Power Limit	power limit
DRED	Demand Response Enabling Device	Command Response Device

Abbreviation	English description	Chinese description
RCR	Ripple Control Receiver	-
AFCI	AFCI	AFCI (Arc Fault Circuit Interrupter)
GFCI	Ground Fault Circuit Interrupter	Grounding Disconnector
RCMU	Residual Current Monitoring Unit	Residual Current Monitoring Device
FRT	Fault Ride Through	ride-through
HVRT	High Voltage Ride Through	High voltage ride-through
LVRT	Low Voltage Ride Through	low voltage ride-through (LVRT)
EMS	Energy Management System	Energy Management System
BMS	Battery Management System	Battery Management System
BMU	Battery Measure Unit	Battery Acquisition Unit
BCU	Battery Control Unit	Battery control unit
SOC	State of Charge	State of Charge (SOC) of Battery
SOH	State of Health	Battery health status
SOE	State Of Energy	Battery residual energy
SOP	State Of Power	Battery charging Discharge capability
SOF	State Of Function	Functional status of Battery
SOS	State Of Safety	safe state
DOD	Depth of discharge	depth of discharge

12.3 Explanation of Terms

- **Over voltage category interpretation**
 - **Category I overvoltage** Equipment connected to circuits with measures to limit transient overvoltage to a relatively low level.
 - **Category II overvoltage** Energy-consuming equipment powered by fixed electrical distribution installations. Such equipment includes appliances, portable tools, and other household and similar loads. If special requirements for reliability and suitability apply to such equipment, then voltage Category III is adopted.
 - **Overvoltage category III** The equipment in fixed electrical installations must meet special requirements for reliability and suitability. This includes switchgear in fixed electrical installations and industrial equipment permanently connected

to fixed electrical installations.

- **Overvoltage category IV** The upper equipment used in the power supply of distribution devices includes measuring instruments and prefixed overcurrent protection devices.
- **Definition of Wet Location Categories**

Environmental parameters	level		
	3K3	4K2	4K4H
Temperature range	0~+40°C	-33~+40°C	-33~+40°C
Humidity scope	5% to 85%	15% to 100%	4% to 100%

- **Explanation of Environmental Categories:**
 - **Outdoor type Inverter** The ambient air temperature range is -25 to +60°C, suitable for Pollution Degree3 environments;
 - **Indoor Type II Inverter** The ambient air temperature range is -25 to +40°C, suitable for Pollution Degree3 environments;
 - **Indoor Type I Inverter** The ambient air temperature range is 0 to +40°C, suitable for Pollution Degree2 environments;
- **Pollution Degree category definition**
 - **Pollution Degree1** No pollution or only dry non-conductive pollution;
 - **Pollution Degree2** Generally, there is only non-conductive pollution, but occasional temporary conductive pollution due to condensation must be considered.
 - **Pollution Degree3** Conductive contamination is present, or non-conductive contamination becomes conductive due to condensation.
 - **Pollution Degree4** Persistent conductive contamination, such as that caused by conductive dust or rain and snow.

12.4 BatterySN code meaning

*****2388*****


The 11th-14th digits

LXD10DSC0002

The 11th to 14th digits of the product SN code represent the production time code. The production date shown in the above image is 2023-08-08.

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

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

- The 14th digit represents the production date, e.g., the 8th is denoted as 8; Use numbers as the priority representation, such as 1~9 for the 1st to 9th day, and A for the 10th day, and so on. Among them, the letters I and O are not used to avoid confusion. The details are as follows:

Production Day	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Code	1	2	3	4	5	6	7	8	9

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

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

13 Contact Information

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