

SEC3000C

User Manual

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NOTICE

Due to product version upgrades or other reasons, the document content may be updated from time to time. Unless otherwise agreed, the document content does not replace the safety precautions on the product labels. All descriptions in the document are for guidance only.

About This Manual

Overview

This document mainly introduces the product information, installation and wiring, configuration and commissioning, fault troubleshooting, and maintenance of the smart energy control box. Please read this manual carefully before installing and using the product to understand the safety information and familiarize yourself with the product's functions and features. The document may be updated from time to time. Please obtain the latest version and more product information from the official website.

Applicable Model

This document applies to the Smart Energy Control Box model SEC3000C, referred to as the control box.

Symbol Definition

 DANGER
Indicates a highly potential hazard that, if not avoided, will result in death or serious injury.
 WARNING
Indicates a moderate potential hazard that, if not avoided, could result in death or serious injury.
 CAUTION
Indicates a low potential hazard that, if not avoided, could result in moderate or minor injury.
NOTICE
Emphasis and supplementary information, may also provide tips or tricks for optimal product use, helping you solve a problem or save time.

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1 Safety Precautions

Always follow the safety precautions information contained in this document when operating the device.

WARNING

The device has been designed and tested in strict compliance with safety regulations. However, as an electrical device, relevant safety instructions must be followed before any operation. Improper operation may result in serious injury or property damage.

1.1 General Safety

NOTICE

- Due to product version upgrades or other reasons, the document content will be updated from time to time. Unless otherwise agreed, the document content cannot replace the safety precautions on the product label. All descriptions in the document are for guidance only.
- Before installing the device, please read this document carefully to understand the product and precautions.
- All operations on the device must be performed by professional and qualified electrical technicians who are familiar with the relevant standards and safety regulations of the project location.
- When operating the device, use insulated tools and wear personal protective equipment to ensure personal safety. When touching electronic components, wear anti-static gloves, anti-static wrist strap, anti-static clothing, etc., to protect the device from electrostatic damage.
- Unauthorized disassembly or modification may cause damage to the device, and such damage is not covered by the warranty.
- Damage to the device or personal injury caused by failure to install, use, or configure the device in accordance with this document or the corresponding user manual are beyond the manufacturer's liability. For more product warranty information, please visit the official website:
<https://en.goodwe.com/warranty>.

1.2 Personnel Requirements

NOTICE

- Personnel responsible for installation and maintenance of equipment must first undergo strict training, understand all safety precautions, and master the correct operation methods.
- Installation, operation, maintenance, and replacement of equipment or components are only permitted to be performed by qualified professionals or trained personnel.

1.3 Grounding Safety

DANGER

- Before installing the device, ensure the installation location is reliable and stable.
- Before operating the device, ensure the device is reliably grounded.

1.4 Personal Safety

DANGER

- When operating the equipment, use insulated tools and wear personal protective equipment to ensure personal safety.
- If the equipment is short-circuited, do not approach or touch the equipment, and immediately turn off the power.
- Before making electrical connections to the equipment, disconnect all upstream switches to ensure the equipment is not powered.

1.5 Device Security

DANGER

Before installing the device, ensure that the installation location is reliable and stable.

WARNING

- When performing installation, maintenance, or other operations on the device, use appropriate tools and operate correctly.
- When operating the device, comply with local relevant standards and safety regulations.
- Unauthorized disassembly or modification may cause device damage, which is not covered by the warranty.

1.6 Safety Symbols and Certification Marks

DANGER

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

No.	Symbol	Explanation
1		Potential danger when the device is running. Please take protective measures when operating the device.
2		High voltage danger. High voltage exists when the device is running. Ensure the device is powered off before operating it.
3		Please read the product manual carefully before operating the device.
4		The device must not be disposed of as household waste. Please dispose of the device according to local laws and regulations, or return it to the manufacturer.
5		CE certification mark.

1.7 EU Declaration of Conformity

1.7.1 Equipment with Wireless Communication Modules

Equipment with Wireless Communication Modules sold on the European market must meet 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)

1.7.2 Equipment without wireless communication functions

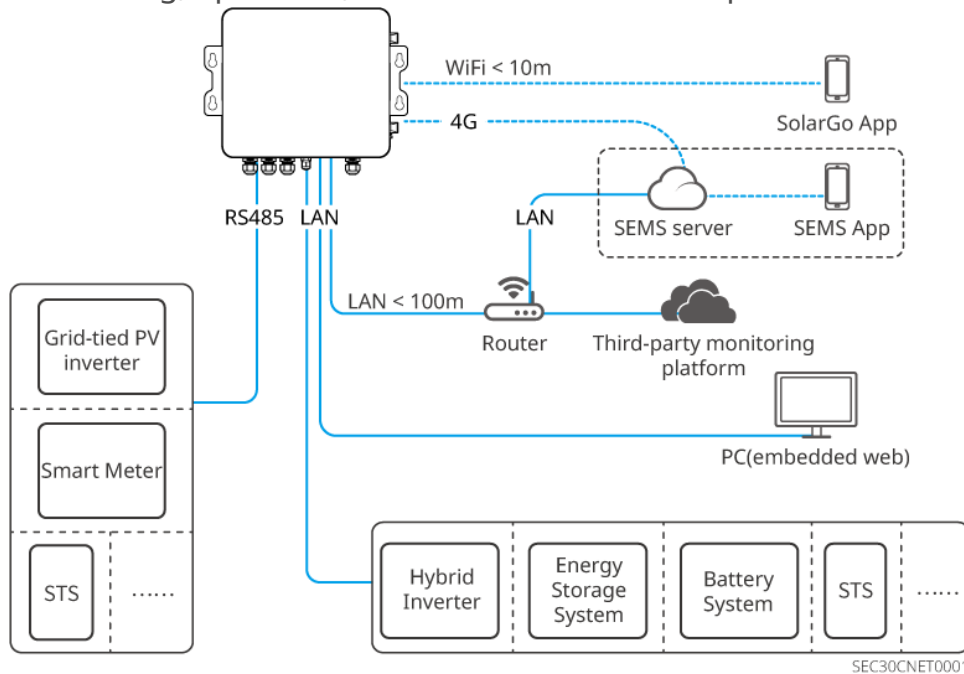
Equipment without wireless communication functions sold in the European market must comply with the following directives:

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

2 System Introduction

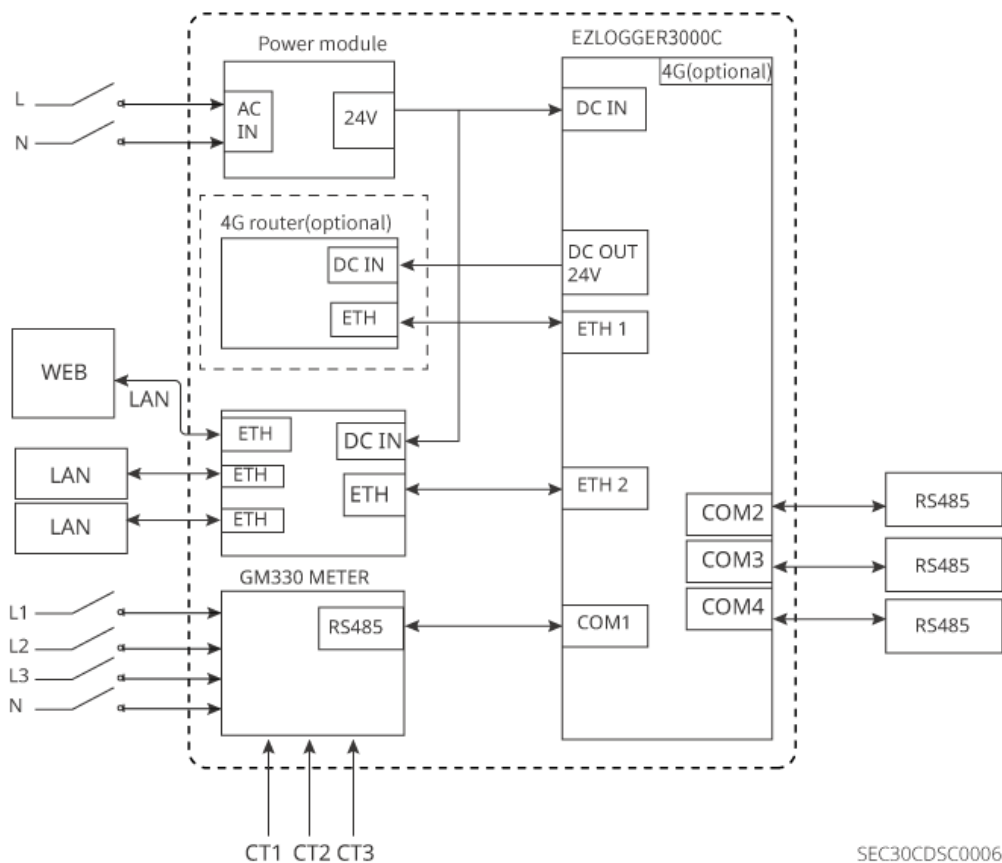
2.1 Function Description

The smart energy control box is a dedicated device for the monitoring and management platform of the photovoltaic-storage power generation system. It can be used to collect data from devices in the photovoltaic-storage power generation system, such as grid-tied inverters, hybrid inverters, meters, etc., store logs, and send the data to the monitoring and management platform, enabling centralized monitoring, operation, and maintenance of the photovoltaic-storage system.



- In the same RS485 bus, up to 20 grid-tied inverters can be connected.

2.2 Circuit Block Diagram



2.3 Model Description

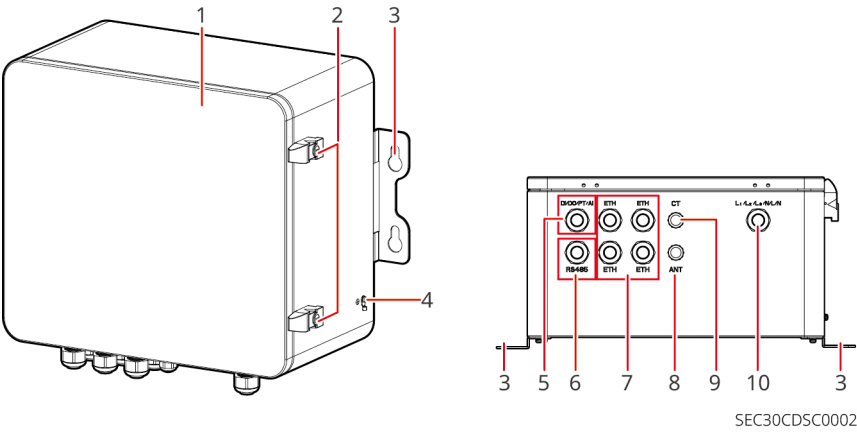
This article mainly covers the following product models:

SEC3000C

1 2 3

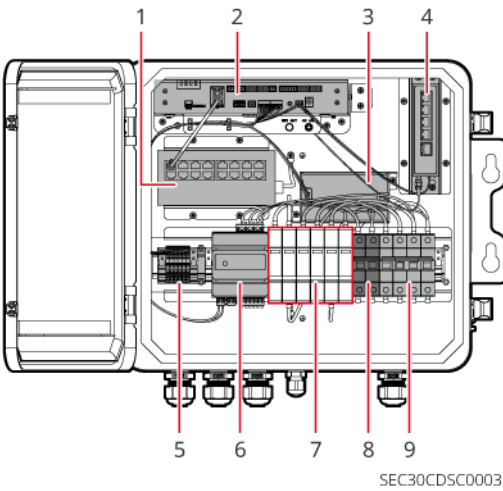
No.	Meaning	Explanation
1	Product Function	SEC: Smart Energy Control Box
2	Generation Code	3000: Third Generation Machine
3	Application Scenario	C: Industrial and Commercial Solar Storage System

2.4 Appearance Introduction



No.	Part	No.	Part
1	Cabinet door	2	Cabinet door lock
3	Mounting bracket	4	Cabinet grounding point
5	DI/DO/PT/AI communication wire threading hole	6	RS485 communication wire threading hole
7	Ethernet cable threading hole	8	Antenna threading hole
9	Meter CT wire threading hole	10	AC wire threading hole

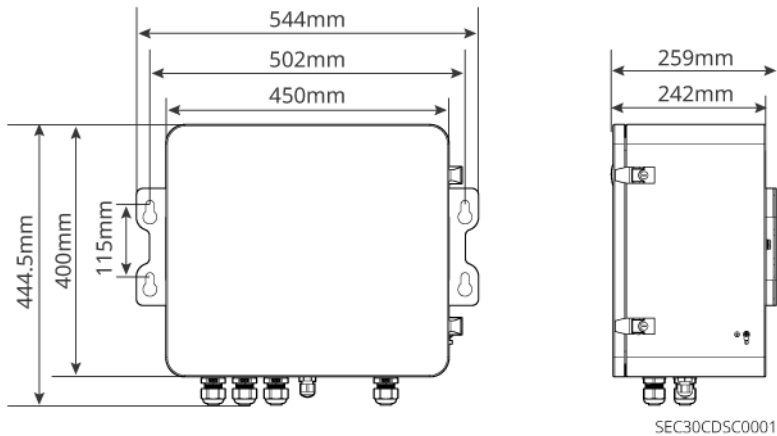
2.5 Component Introduction



No.	Name	Description
1	Switch	• Connect to devices such as the smart communication stick of the energy storage inverter, energy storage system, Battery, STS, etc., via Ethernet cable. • For currently supported inverter models and software versions, please refer to the Product Compatibility List. • Connect to a computer via Ethernet cable and log in to the embedded web to commission the device.
2	Data Collector	• Built-in smart data collector, model: EzLogger3000C. • To enable functions such as RCR and one-touch shutoff, connect third-party devices to the data collector. • ETH1 can be used for external network communication, such as a 4G Router. ETH2 is used for connecting to the switch. • Optional 4G function supported.
3	24V Power Module	Used to power the EzLogger3000C and switch inside the SEC3000C.
4	4G Router	• Optional component, available for purchase from GoodWe or self-purchased. • A DIN rail is reserved for installing a self-purchased 4G Router inside the SEC3000C enclosure. Recommended maximum dimensions: 185*80*155mm; power supply: 24V.

No.	Name	Description
5	RS485 Communication Terminal	• Connect to devices such as grid-tied inverters, Smart Meters, STS, etc., via RS485 communication cable. • For currently supported device models, refer to the actual situation: ◦ For inverter models and software version requirements, please refer to the Product Compatibility List. ◦ Smart Meter: GM330 or a meter supporting high-voltage anti-backflow, such as DTSD1352-CT/C. • The A1/B1 port is occupied and is connected to the internal meter of the SEC3000C by default. If the built-in meter is not used, the connection cable of the occupied port can be disconnected.
6	Meter	• Built-in GoodWe meter, model: GM330. • Used to detect grid connection point data and achieve grid-tied power regulation.
7	Surge Protection Module	If the surge protection module is damaged, please contact the after-sales service center.
8	Single-Phase Circuit Breaker	• Connect to the grid or backup power supply via AC cable to control the system power on/off of the SEC3000C. • Input voltage range: 100-240Vac.
9	Three-Phase Circuit Breaker	• Connect to the grid via AC cable to control the power on/off of the internal meter of the SEC3000C . • When connected to a three-phase four-wire grid, supported input voltage range: 172~817Vac (line voltage). • When connected to a three-phase three-wire grid, supported input voltage range: 100~472Vac (line voltage).

2.6 Size



2.7 Indicator Light Description

Please check the LED indicators of the SEC3000C built-in data collector and Smart Meter.

Data Collector

The indicator light description applies only to SEC3000C with software version 06 and above.

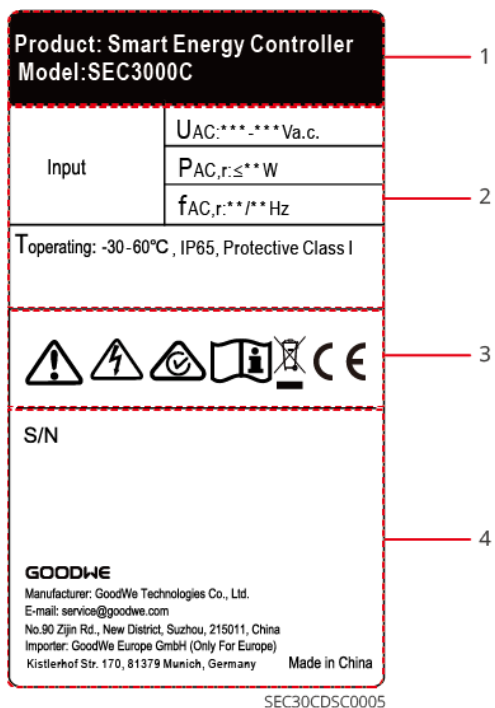
Indicator	Indicator Status	Description
PWR		Steady green: Device power supply normal.
		Green off: Device power off or abnormal power supply.
RUN		Steady green/green off: Device operation abnormal.
		
		Slow flashing green: Device operation normal.
NET		Steady green: Device connected to server normally.
		Fast flashing green: Device connected to router, but abnormal connection to server.

Indicator	Indicator Status	Description
		Slow flashing green: Device not connected to router.
ALM		Steady red: Device malfunction.
		Fast flashing red: Device is upgrading.
		Red off: No device malfunction.

Smart Meter

Type	Status	Description
Power light 	Steady on	Meter powered on, no RS485 communication.
	Flashing	Meter powered on, RS485 communication normal.
	Off	Meter powered off.
Communication light 	Off	Reserved
	Flashing	Press Reset button ≥5s, Power light, Buy/Sell electricity light flash: Meter reset.
Buy/Sell electricity light 	Steady on	buy power from the grid.
	Flashing	Sell power to the grid.
	Off	No buying, no selling.
	Reserved	

2.8 Nameplate Description



No.	Description
1	Product type and model
2	Product technical parameters
3	Product safety compliance and certification marks
4	Goodwe trademark, contact information, serial number information

3 Check and Storage

3.1 Check Before Receiving

Before signing for the product, please check the following in detail:

1. Check whether the outer packaging is damaged, such as deformation, holes, cracks, or any other signs that could indicate damage to the equipment inside the box. If damaged, do not open the packaging and contact your dealer.
2. Check whether the device model is correct. If not, do not open the packaging and contact your dealer.

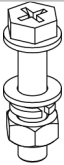
3.2 Deliverables

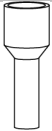
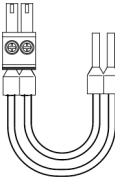
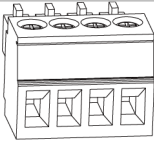
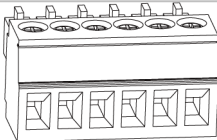
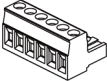
WARNING

- Check whether the delivery item type and quantity are correct and whether the appearance is damaged. If damaged, contact your dealer.
- After removing the delivery item from the packaging, do not place it on rough, uneven, or sharp surfaces to avoid paint chipping.

NOTICE

*4G antenna is optional. N=0 or N=1.

Component	Description	Component	Description
	Smart Energy Control Box x 1		M12 expansion bolt x 4
	M10 assembly bolt x4		PIN terminal x20

Component	Description	Component	Description
	PIN terminal x6 L1/L2/L3/N		Grounding OT terminal x1
	Key x4		4G router power cord x1 Only applicable when 4G router is not selected.
	2PIN communication terminal x4		4PIN communication terminal x4
	6PIN communication terminal x2		6PIN terminal x1 For meter CT.
	4G antenna x1 (optional)		Fireproofing mud x1
	Product documentation x1	-	-

3.3 Storage

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

Time requirements:

- If the storage time of the device exceeds two years, or the device is not operated for more than 6 months after installation, it is recommended to have it inspected and tested by professionals before putting it into use.
- To ensure good electrical performance of the internal electronic components, it is recommended to power on the device every 6 months during storage. If it has not

been powered on for more than 6 months, it is recommended to have it inspected and tested by professionals before use.

Packaging requirements:

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

Environmental requirements:

- Ensure the device is stored in a cool place, away from direct sunlight.
- Ensure the storage environment is clean, with appropriate temperature and humidity range, and no condensation. If there is condensation on the device ports, do not install the device.
- Ensure the device is stored away from flammable, explosive, and corrosive items.

Stacking requirements:

- Ensure the stacking height and direction of the device follow the label instructions on the packaging box.
- Ensure there is no risk of tipping after stacking.

4 Installation

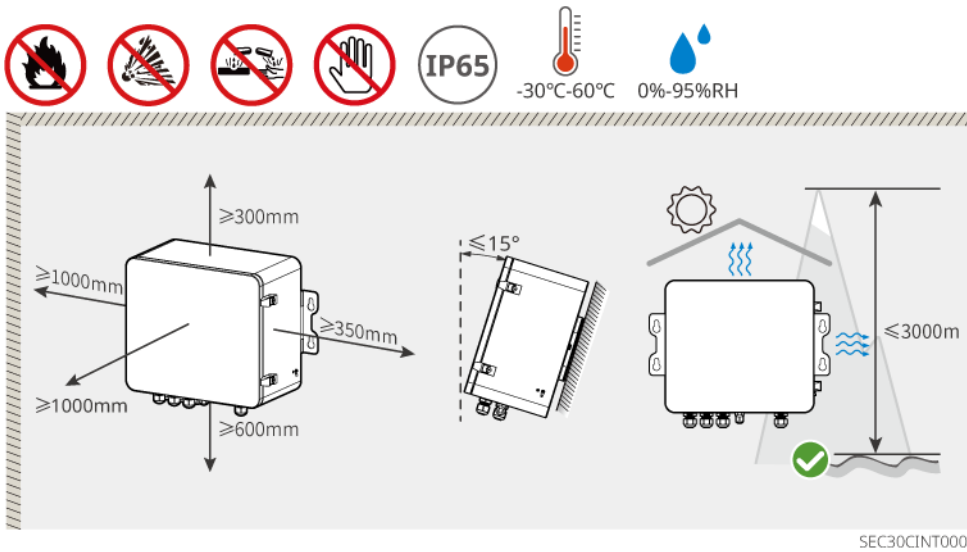
DANGER

When installing the equipment and making electrical connections, use the delivery items shipped with the box. Otherwise, equipment damage caused will not be covered by the warranty.

4.1 Installation Requirements

4.1.1 Installation Environment Requirements

1. The device must not be installed in flammable, explosive, or corrosive environments.
2. The temperature and humidity of the installation environment must be within the suitable range.
3. The installation location must be out of reach of children and avoid areas where it can be easily touched.
4. The device must be protected from direct sunlight, rain, snow, and other environmental conditions. It is recommended to install it in a sheltered location, and if necessary, build a sunshade.
5. The installation space must meet the requirements for device ventilation, heat dissipation, and operational clearance.
6. The device protection level must meet outdoor installation requirements.
7. The installation height of the device must facilitate operation and maintenance, ensuring that indicator lights, all labels are easily visible, and terminal connections are easy to handle.
8. The altitude of the installation location must be lower than the maximum operating altitude.
9. 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, ensure the distance between the device and the wireless electromagnetic interference source exceeds 30m.

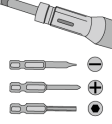


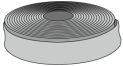
4.1.2 Tool Requirements

NOTICE

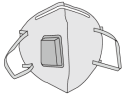
During installation, it is recommended to use the following installation tools. If necessary, other auxiliary tools may be used on site.

Installation Tools

Tool Type	Description	Tool Type	Description
	diagonal plier		crimping tool
	wire stripper		open-end wrench
	hammer drill (drill bit $\Phi 15\text{mm}$)		torque wrench M4, M5, M7
	rubber hammer		socket wrench

Tool Type	Description	Tool Type	Description
	marker pen		multimeter Range $\leq 1100V$
	heat shrink tubing		heat gun
	cable tie		vacuum cleaner
	Level bar	-	-

Personal Protective Equipment

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

4.2 Installing Control Box

CAUTION

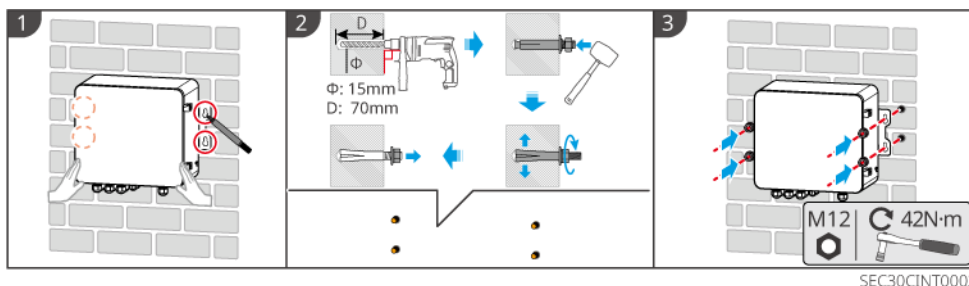
- When drilling, ensure the drilling position avoids water pipes, cables, etc. inside the wall to prevent danger.
- When drilling, wear safety goggles and a dust mask to avoid inhaling dust or getting it into your eyes.
- Ensure the equipment is securely installed to prevent it from falling and injuring people.

Wall-mounted installation

Step 1: Place the device horizontally on the wall and mark the drilling positions with a marker pen.

Step 2: Drill holes with a hammer drill and install expansion bolts.

Step 3: Mount the device onto the expansion bolts and tighten them with a torque wrench.



Bracket installation

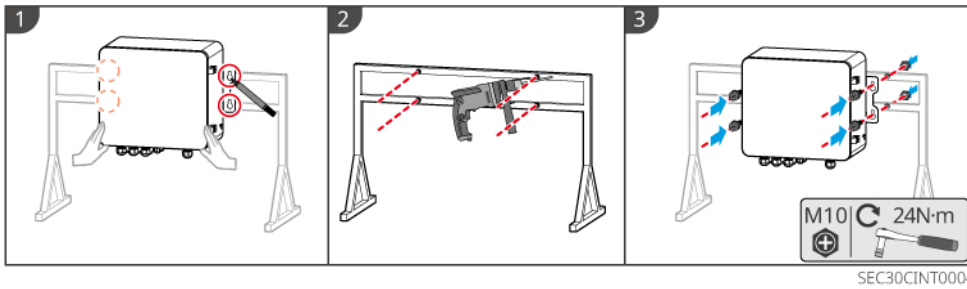
NOTICE

When installing with a bracket, users need to prepare a bracket of appropriate size.

Step 1: Confirm the bracket mounting holes and mark the drilling positions with a marker pen.

Step 2: Drill holes with a hammer drill.

Step 3: Use assembly bolts to mount the device onto the bracket and tighten the bolts with a torque wrench.



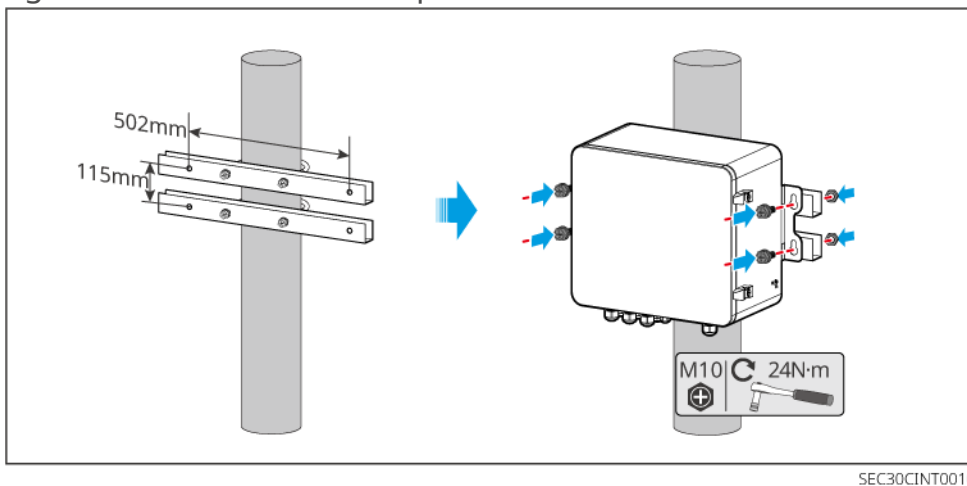
Pole-mounted installation

NOTICE

When using pole mounting, users need to prepare suitable pole mounting accessories of appropriate size.

Step 1: Secure the pole mounting bracket to the installation pole and tighten the bolts with a torque wrench.

Step 2: Use assembly bolts to mount the device onto the pole mounting bracket and tighten the bolts with a torque wrench.



5 System Wirings

DANGER

- All operations during electrical connection, as well as the cables and components used, must comply with local laws and regulations.
- Before making electrical connections, ensure the device is powered off. Operation with power on is strictly prohibited, otherwise there is a risk of electric shock or other hazards.
- Similar cables should be bundled together and routed separately from different types of cables. Do not twist or cross them.
- If the cable is under excessive tension, it may lead to poor connections. When making connections, leave a certain length of cable before connecting it to the device terminal.
- When crimping terminals, ensure that the conductor part of the cable is fully in contact with the terminal. Do not crimp the cable insulation together with the terminal, otherwise the device may fail to operate, or may overheat due to unreliable connections after operation, causing damage to the device terminal block, etc.

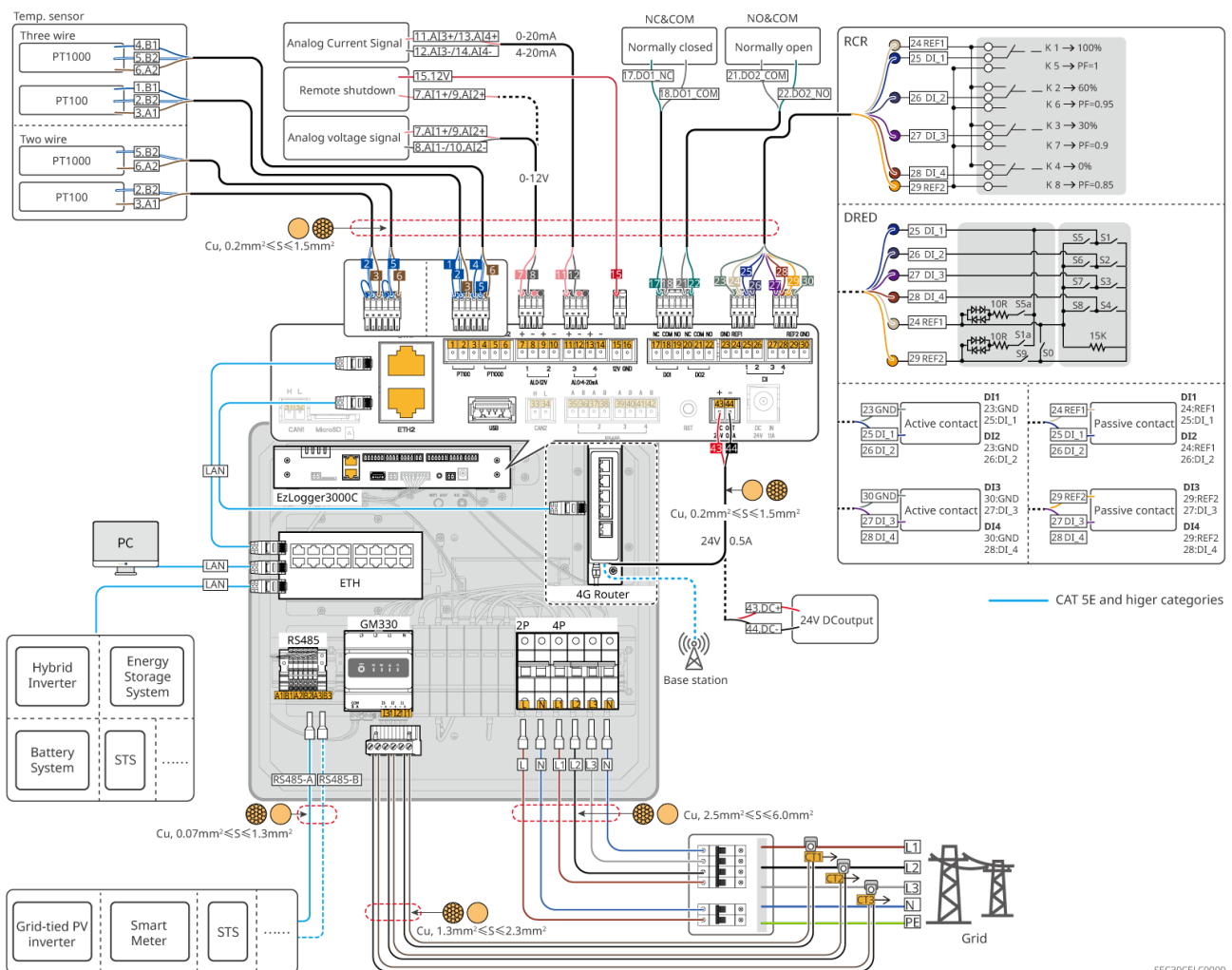
NOTICE

- When making electrical connections, wear personal protective equipment such as safety shoes, protective gloves, and insulating gloves as required.
- Only professionals are allowed to perform operations related to electrical connections.
- The cable colors in the graphics in this document are for reference only; the specific cable specifications must comply with local regulatory requirements.
- To ensure sealing, after installing the cable gland at the wiring hole, use fireproof putty to seal it.

5.1 Detailed System Wiring Diagram

NOTICE

- When the SEC3000C is paired with different energy storage inverters or all-in-one energy storage cabinets, the supported devices may vary. Please refer to the actual situation.
- In the wiring diagram, the active power and reactive power regulation values of the RCR device are default values. Please refer to the actual requirements of the grid company for specific values.
- When the built-in GM330 meter is used in a high-voltage scenario, the high voltage must be reduced to a low-voltage range that the meter can withstand via a transformer before connecting to the meter. Ensure that the CT used for the high-voltage side power line meets the corresponding high-voltage withstand requirements.

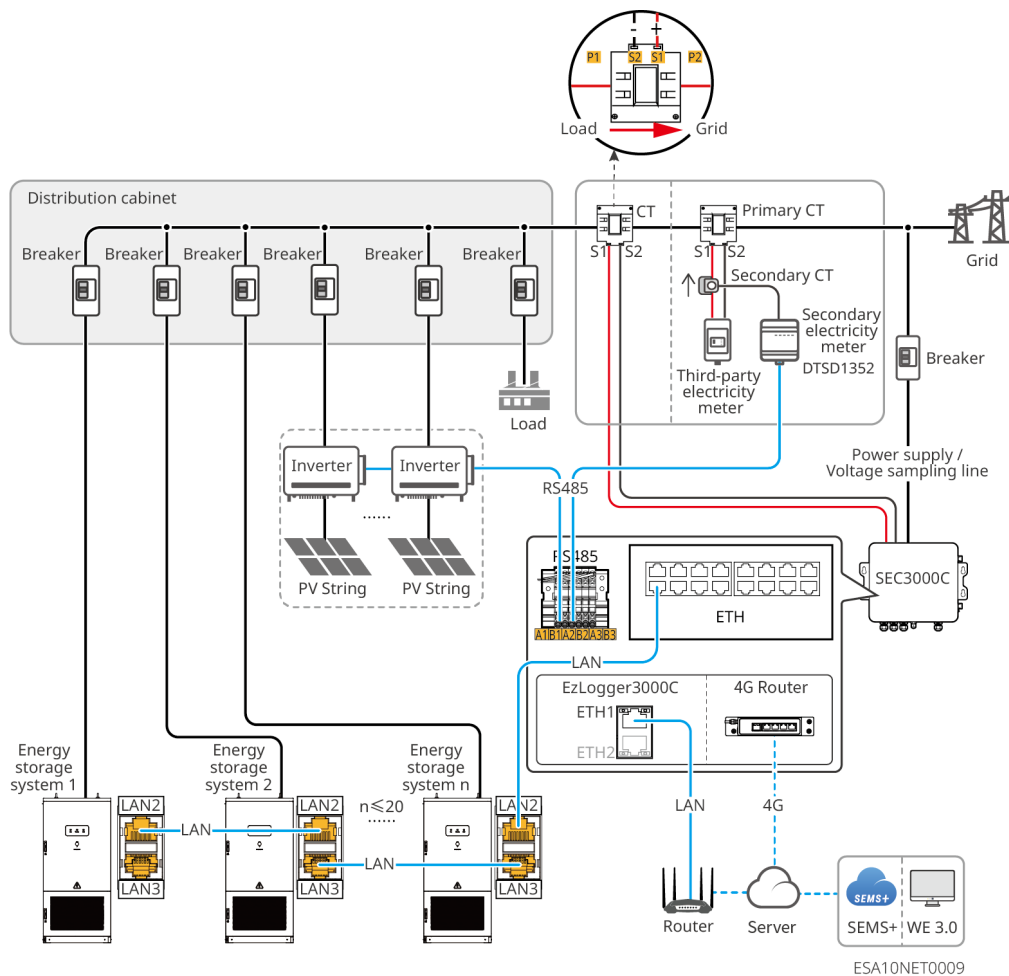


SEC3000C0009

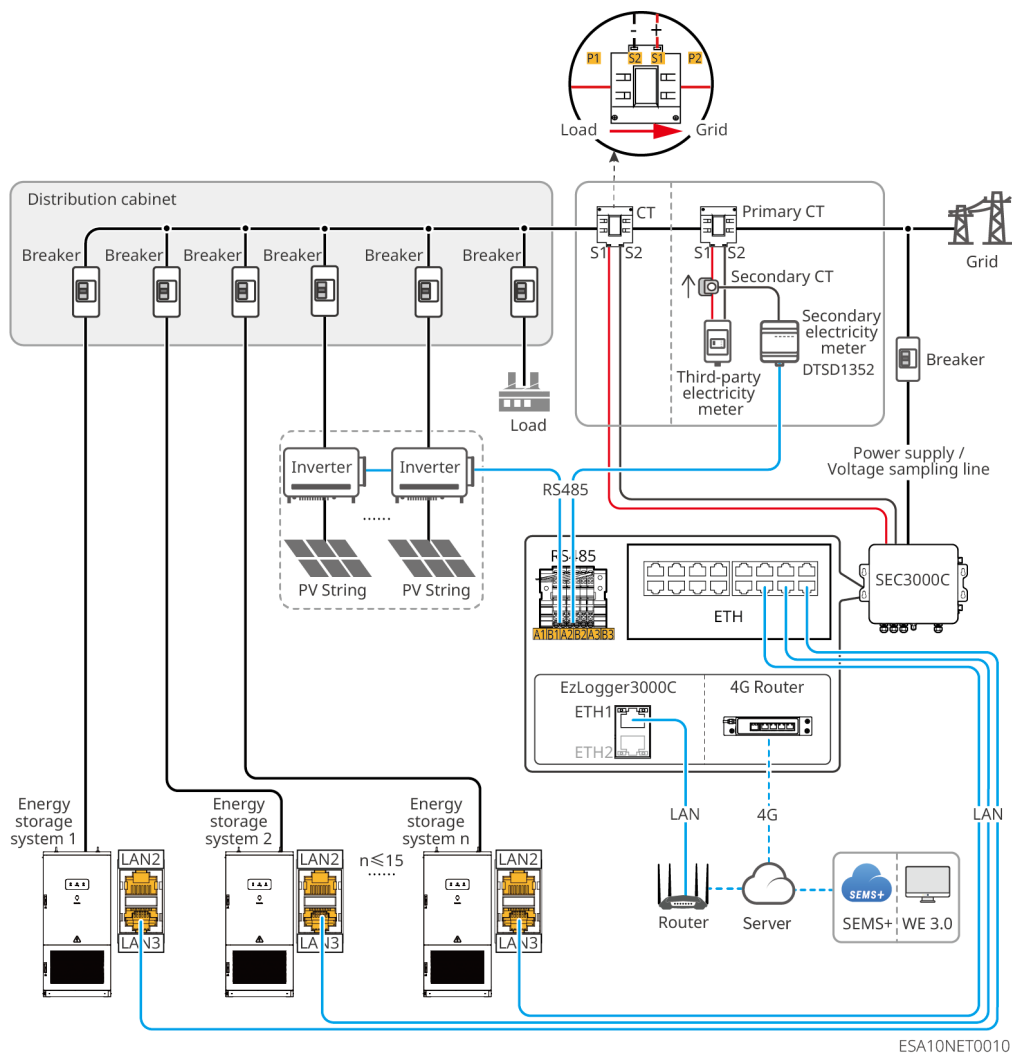
5.1.1 SEC3000C+ESA261 Series All-in-One Energy Storage Cabinet

For more system information, please refer to [ESA261kWh Series Solution User Manual \(On-Grid\)](#) or [ESA261kWh Series Solution User Manual \(Microgrid\)](#).

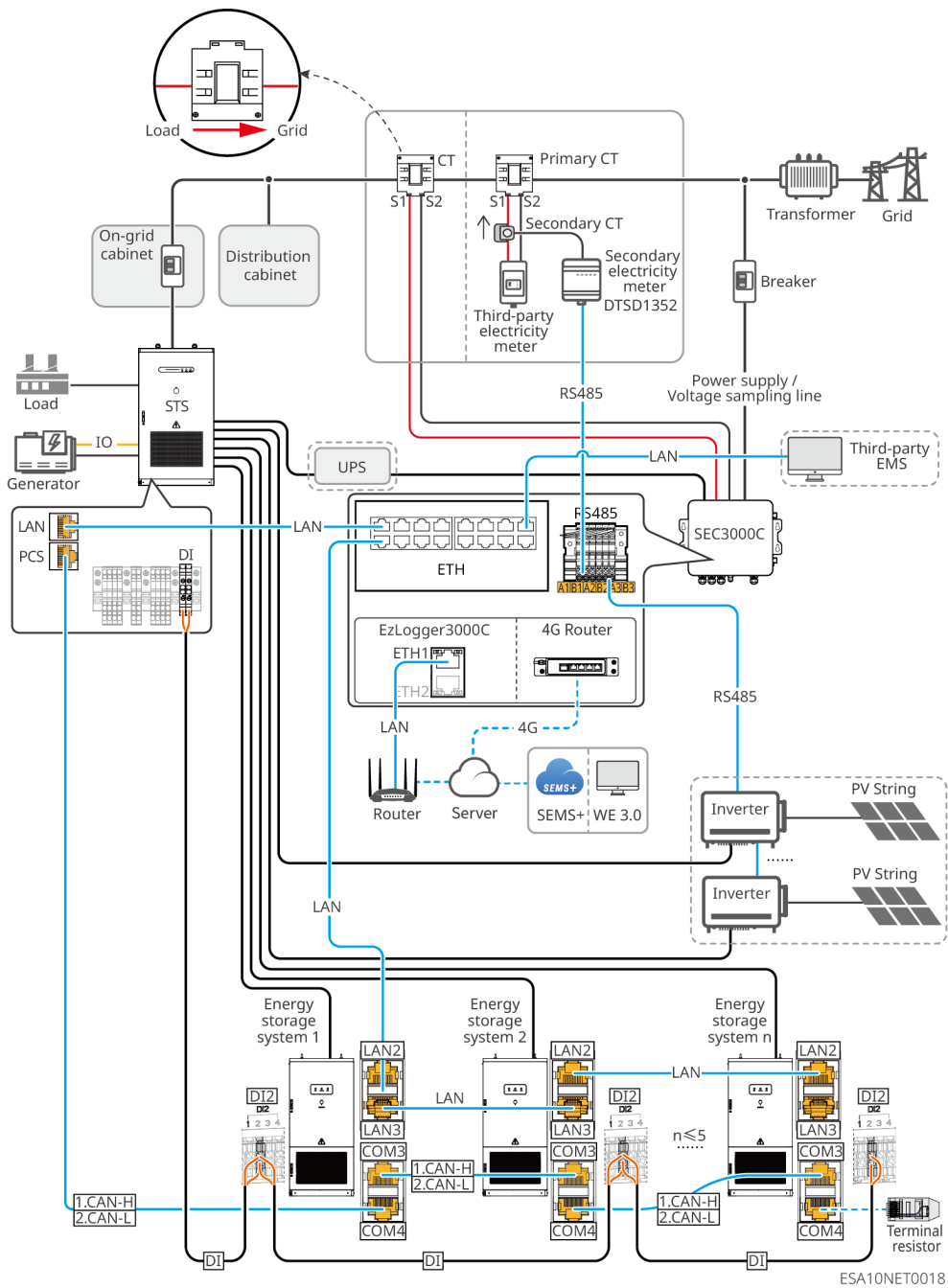
- On-grid scenario (daisy-chain wiring)



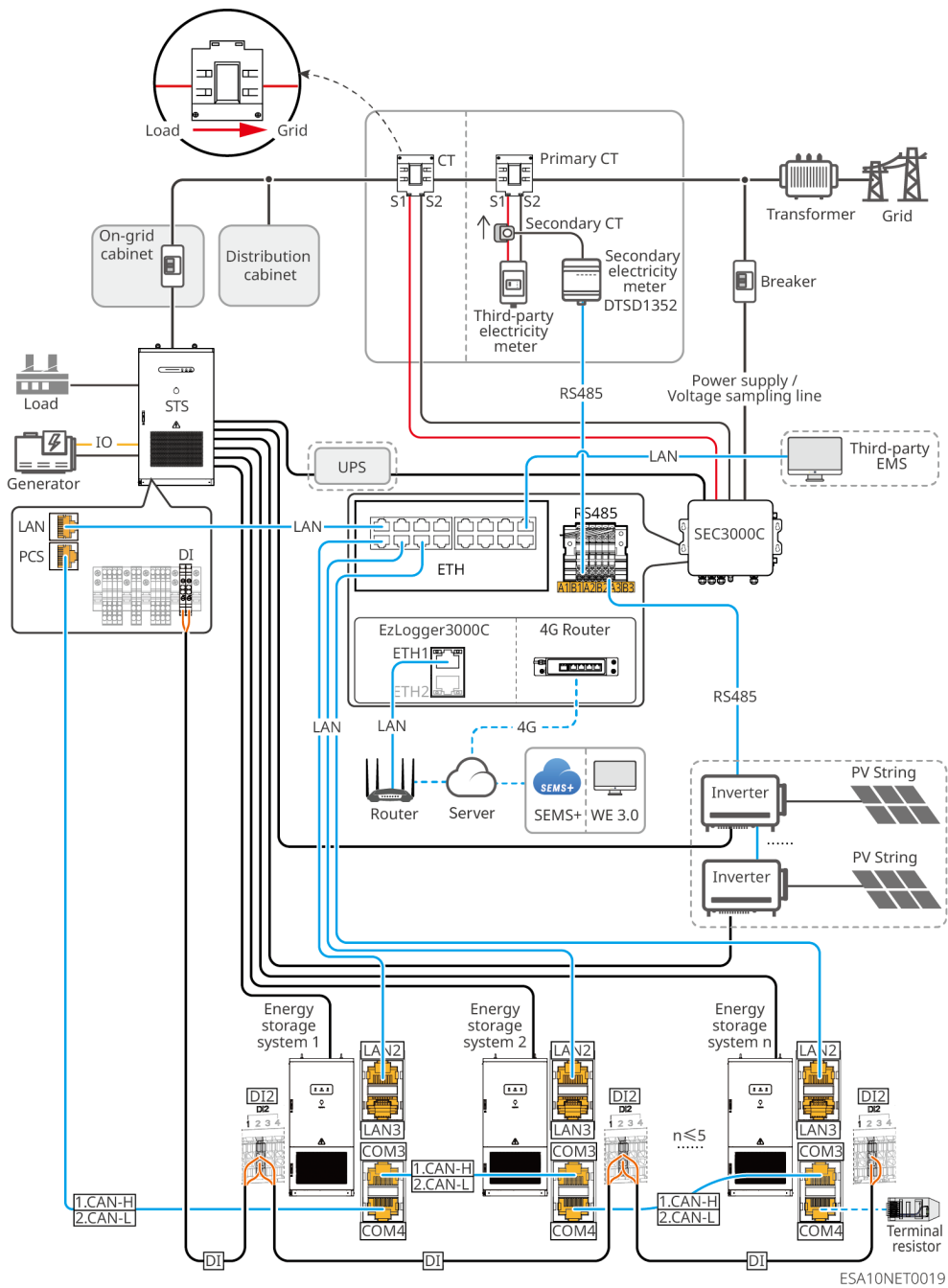
- On-grid scenario (star wiring)



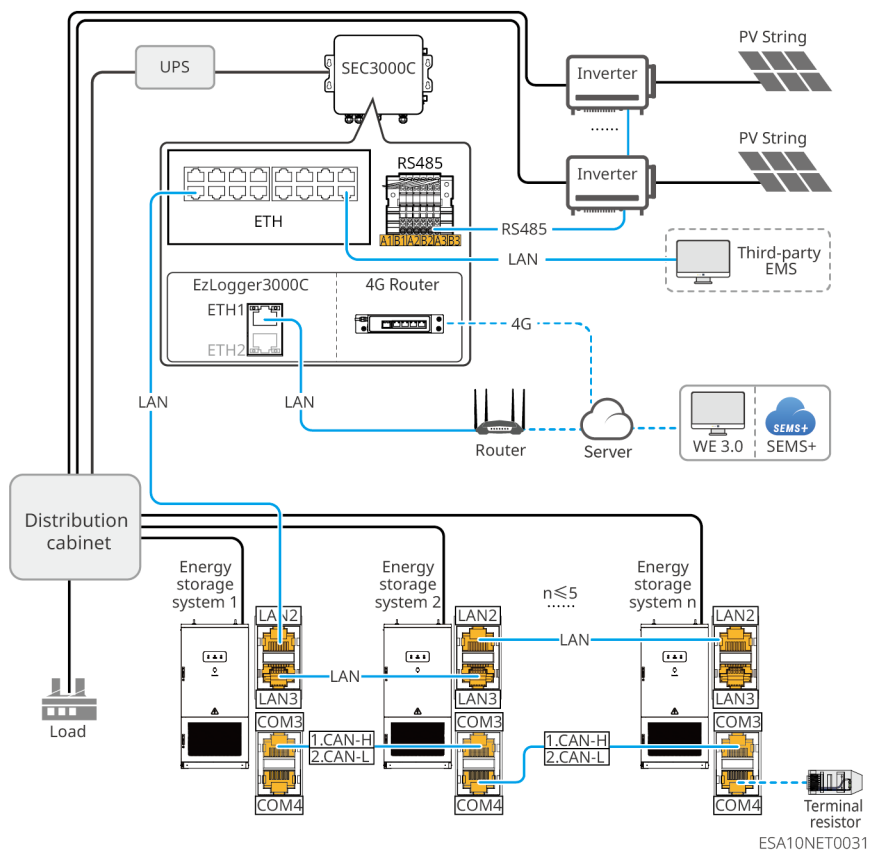
- On-grid and off-grid scenario (daisy-chain wiring)



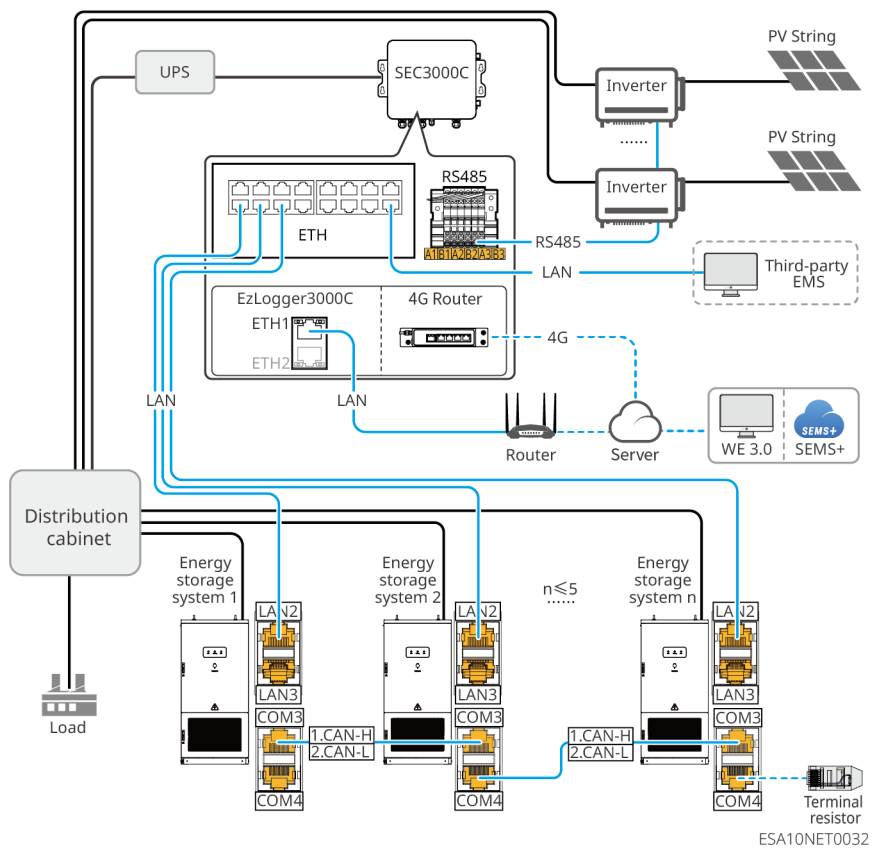
- On-grid and off-grid scenario (star wiring)



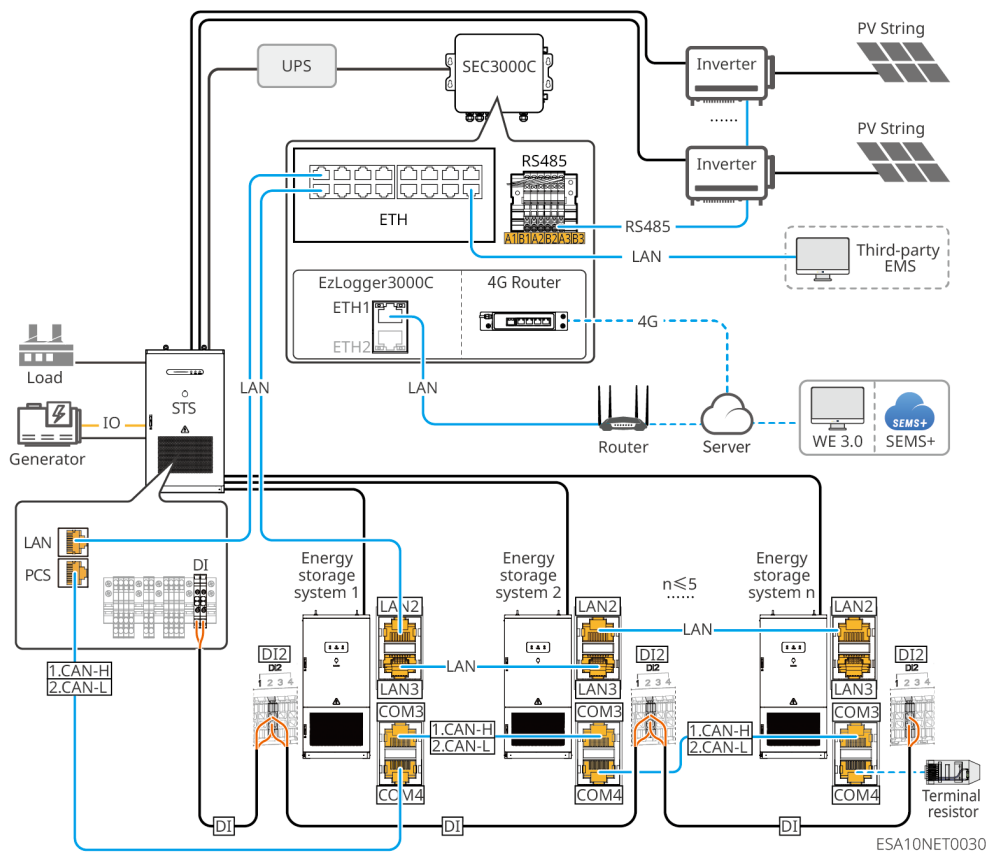
- PV + storage pure off-grid scenario (daisy-chain wiring)



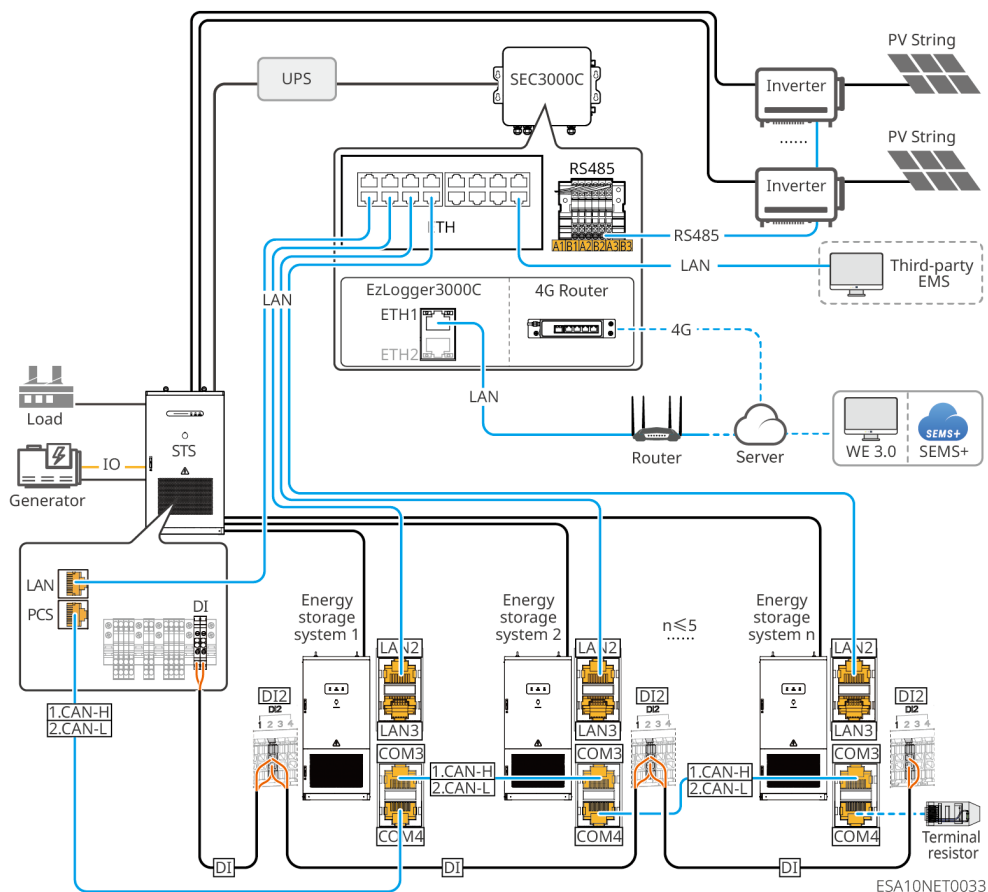
- **PV + storage pure off-grid scenario (star wiring)**



- **PV + storage + diesel pure off-grid scenario (daisy-chain wiring)**



- **PV + storage + diesel pure off-grid scenario (star wiring)**

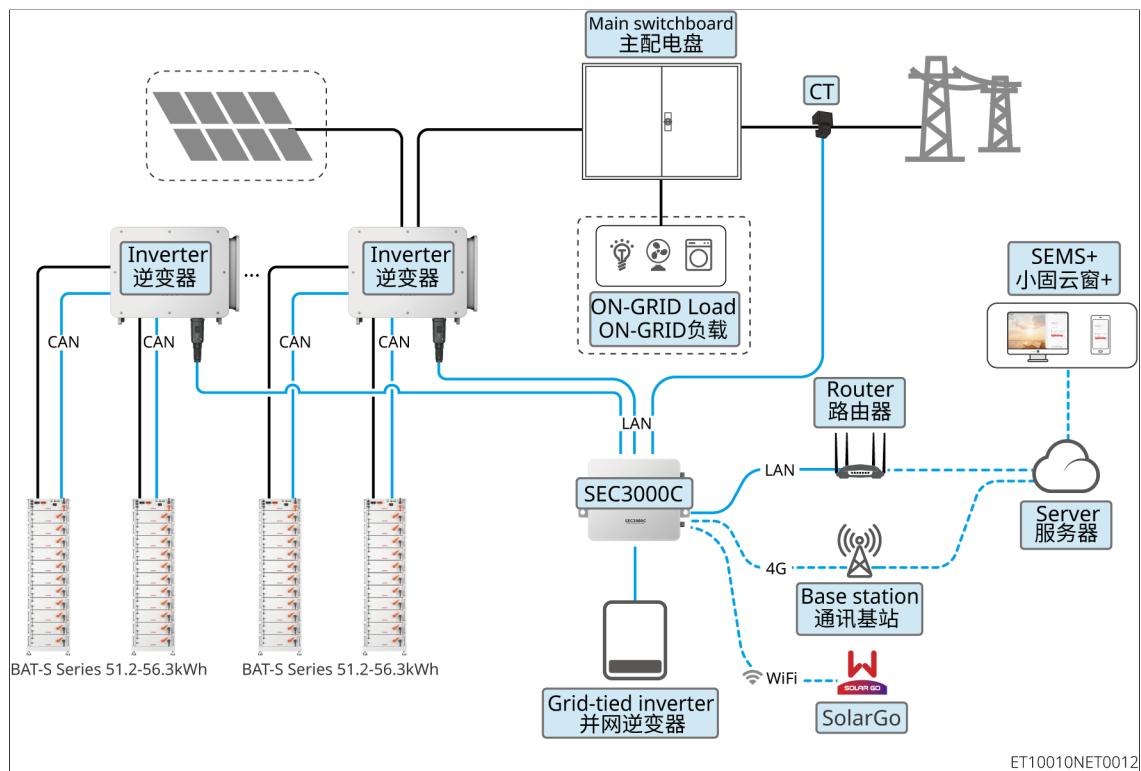


5.1.2 SEC3000C+ET100kW Series Inverter

For more system information, please refer to the [Inverter Solution User Manual](#).

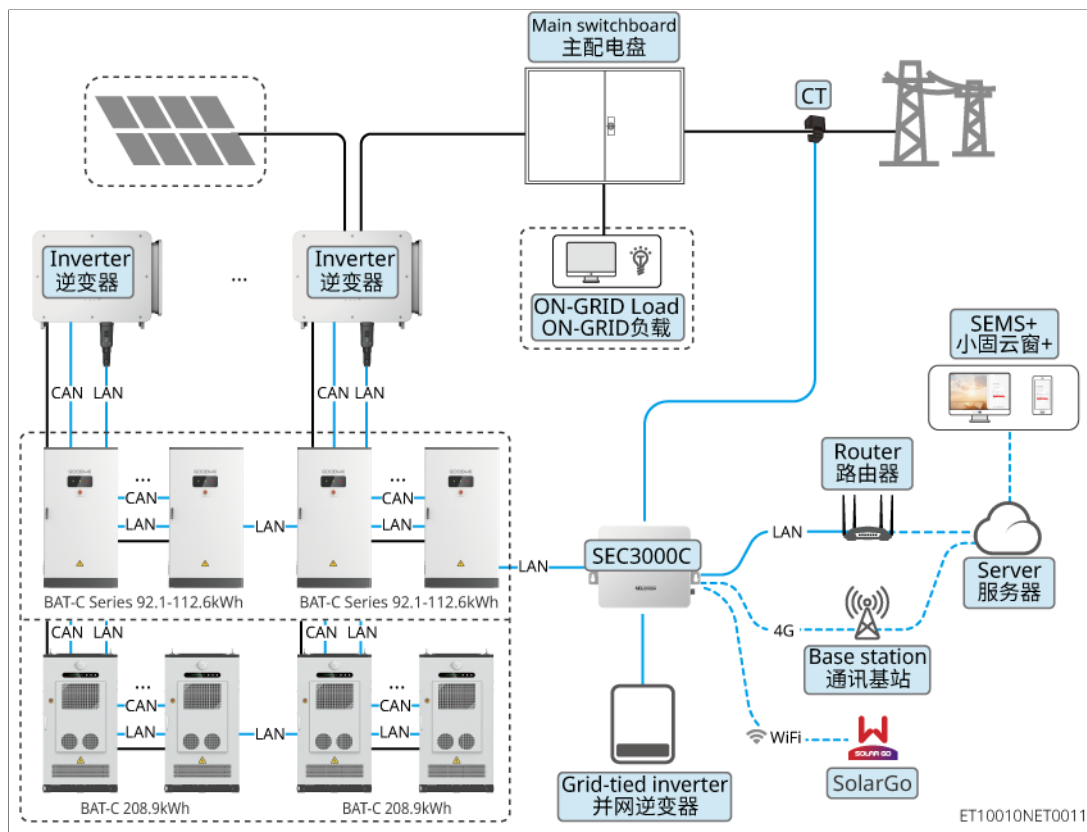
- **Parallel Grid-Tied Scenario Type 1**

The battery type used is BAT 51.2-56.3kWh, etc.



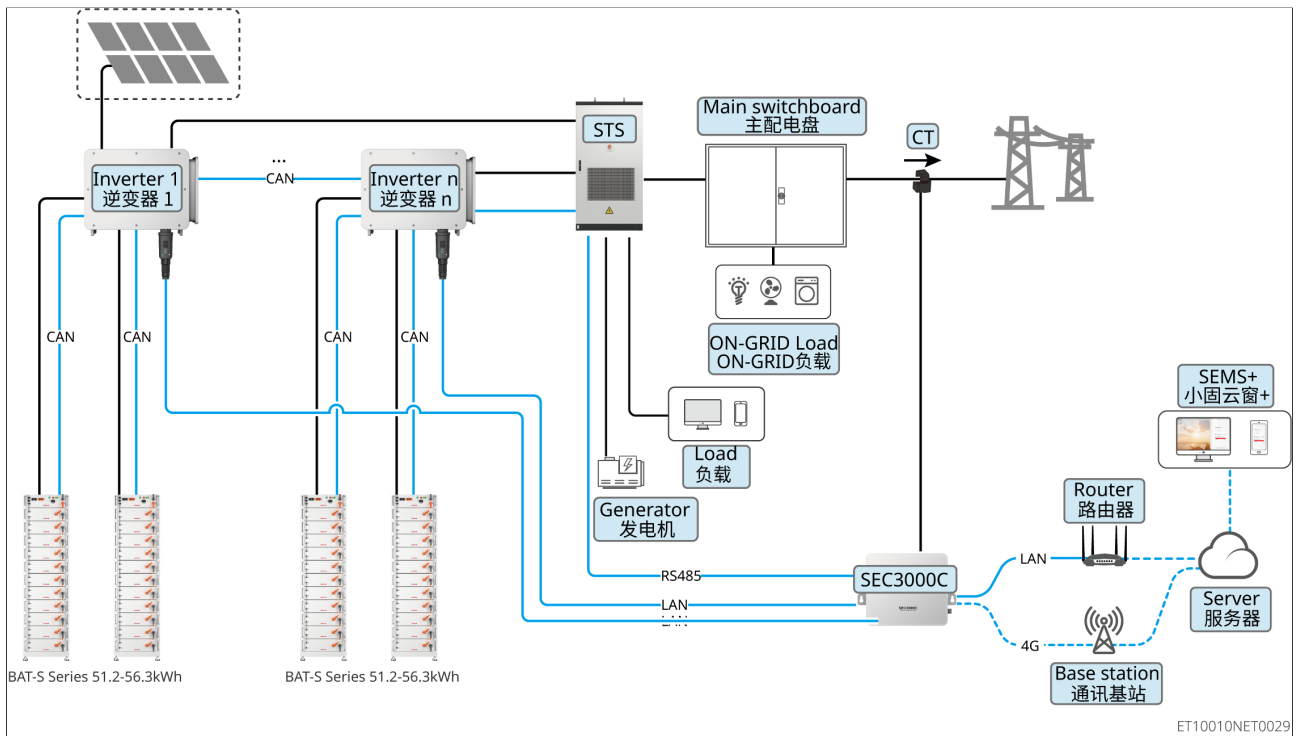
- **Parallel Grid-Tied Scenario Type 2**

The battery type used is BAT 92.1-112.6kWh, BAT-C 208.9kWh, etc.



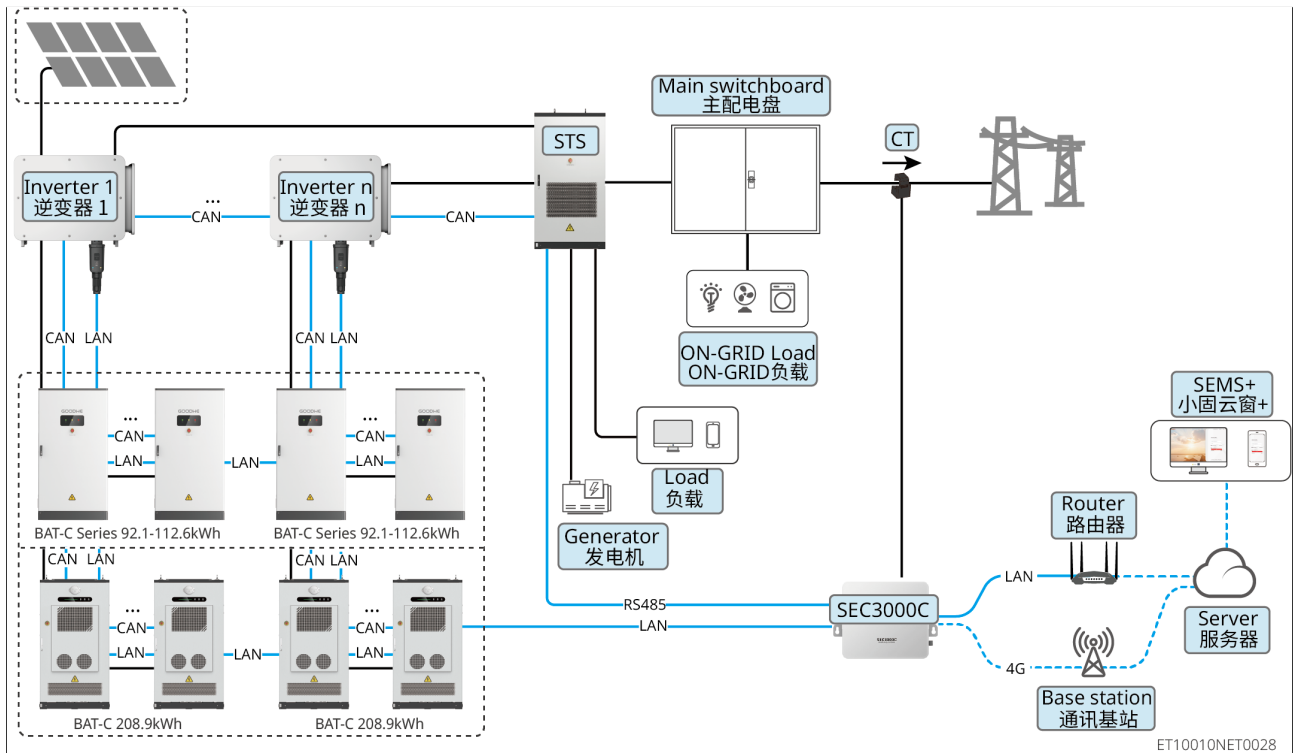
- **Parallel Grid-Tied and Off-Grid Scenario Type 1**

The battery type used is BAT 51.2-56.3kWh, etc.



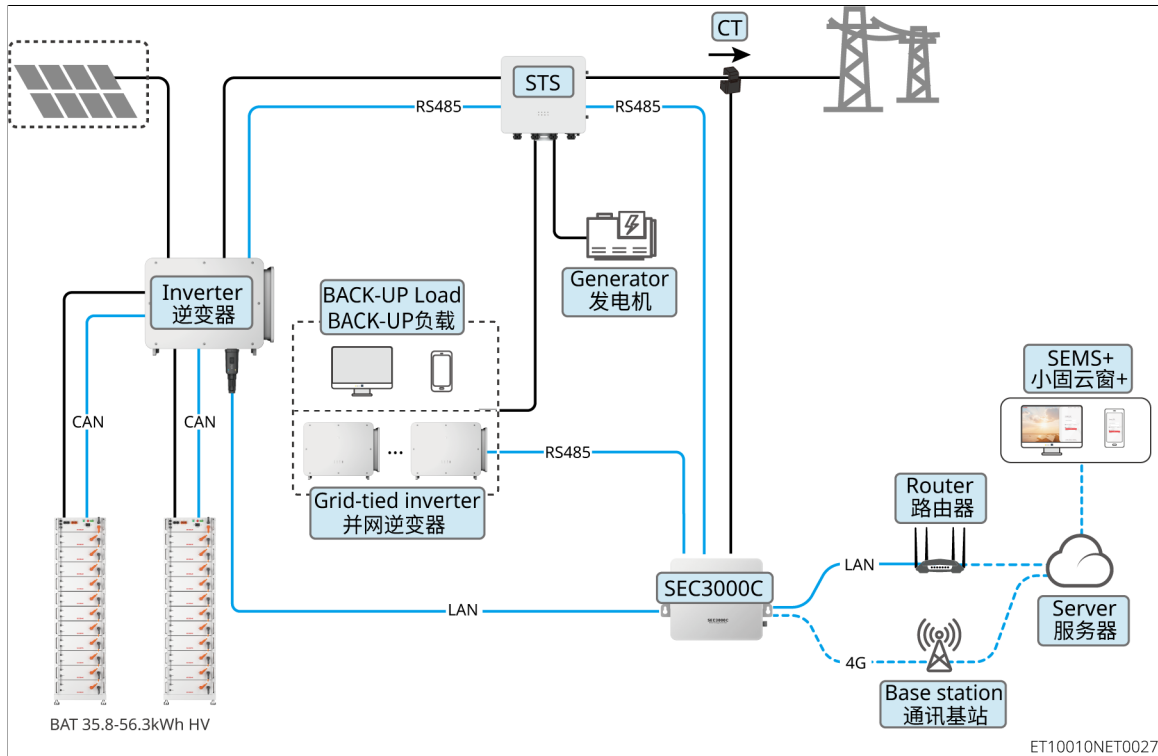
• Parallel Grid-Tied and Off-Grid Scenario Type 2

The battery type used is BAT 92.1-112.6kWh, BAT-C 208.9kWh, etc.



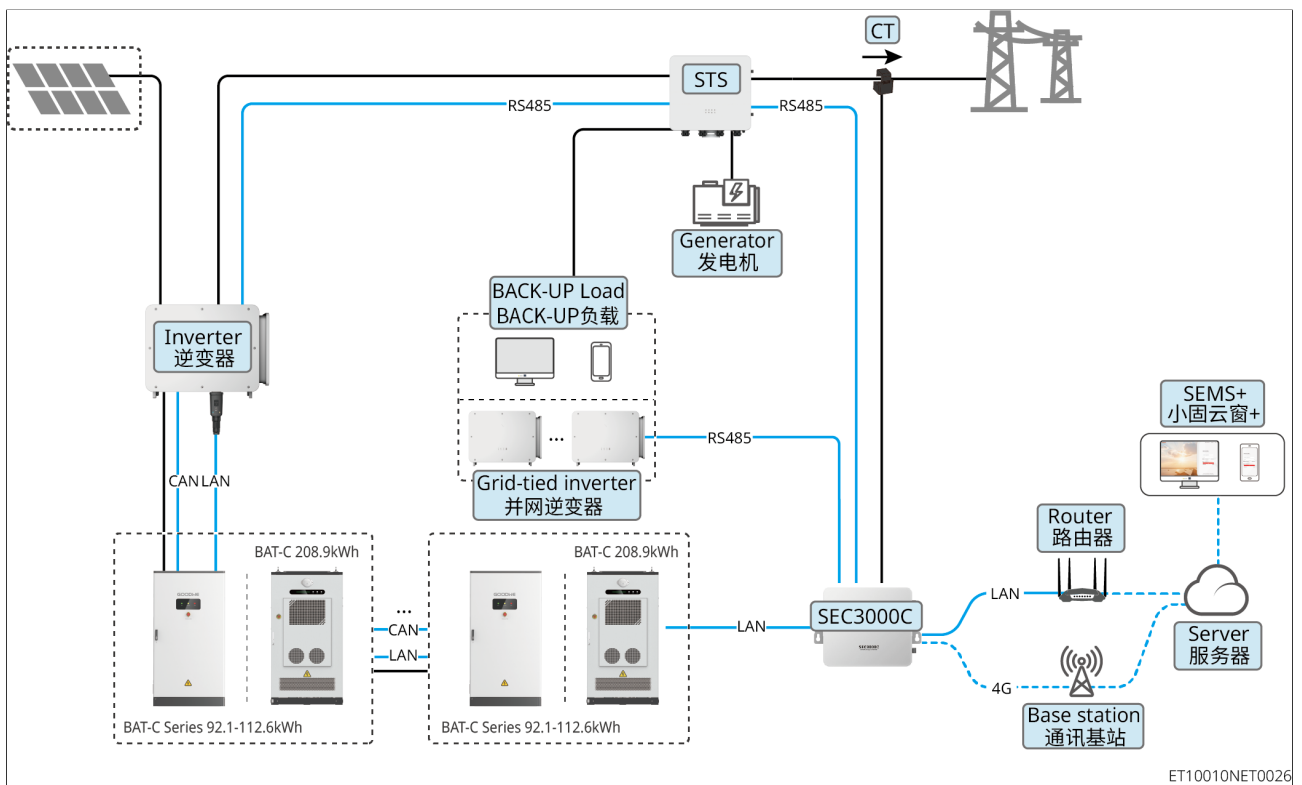
- **Single Microgrid Scenario Type 1**

The battery type used is BAT 51.2-56.3kWh, etc.



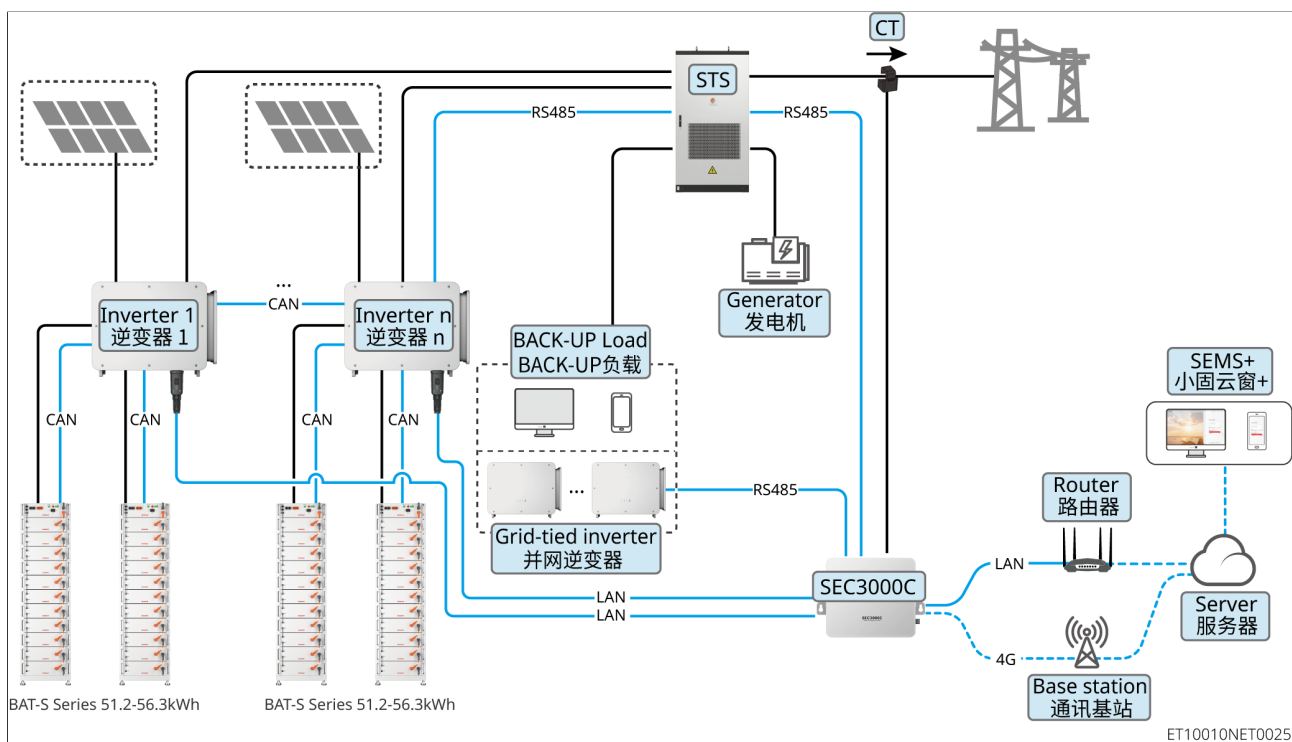
- **Single Microgrid Scenario Type 2**

The battery type used is BAT 92.1-112.6kWh, BAT-C 208.9kWh, etc.



- **Parallel Microgrid Scenario Type 1**

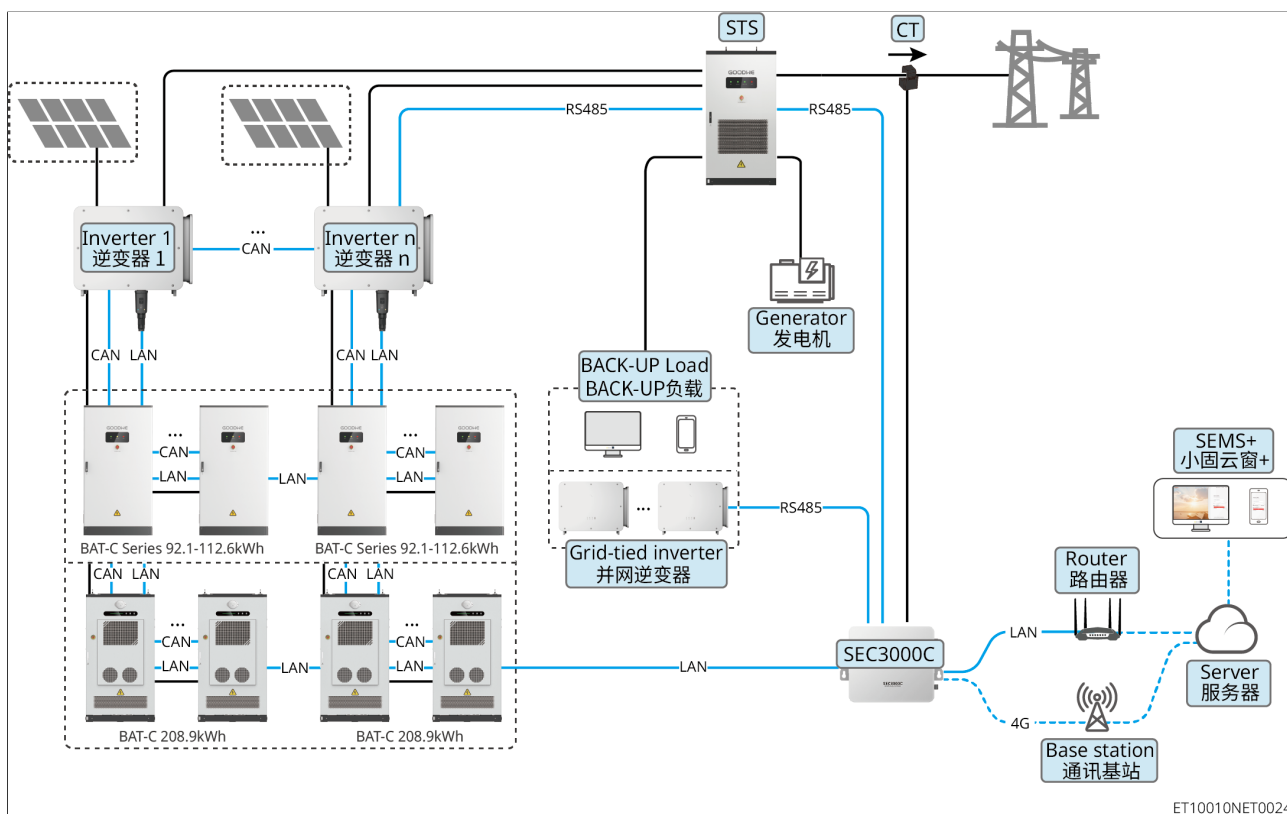
The battery type used is BAT 51.2-56.3kWh, etc.



ET10010NET0025

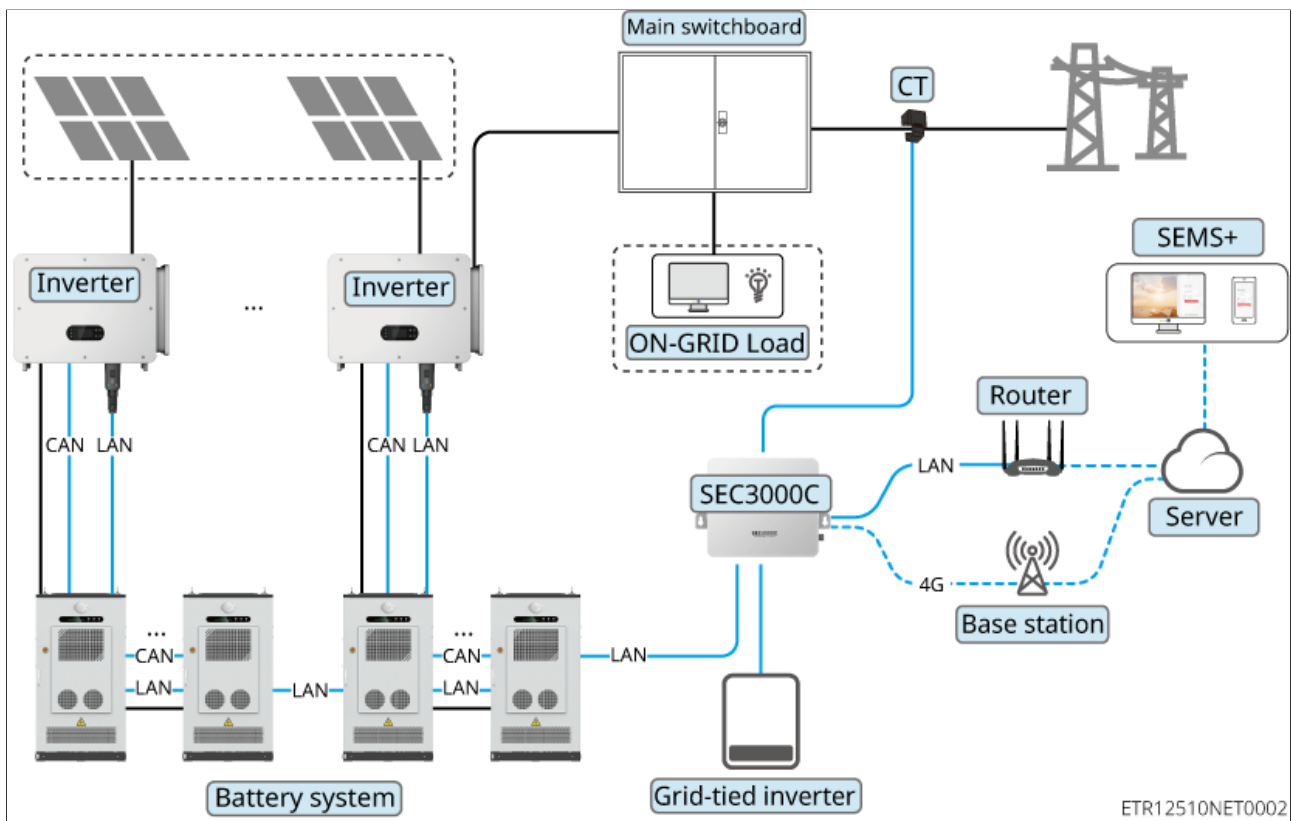
• Parallel Microgrid Scenario Type 2

The battery type used is BAT 92.1-112.6kWh, BAT-C 208.9kWh, etc.



5.1.3 SEC3000C+ETR125kW Series Inverter

For more system information, please refer to the [Inverter Solution User Manual](#).
Parallel Grid-Tied Scenario



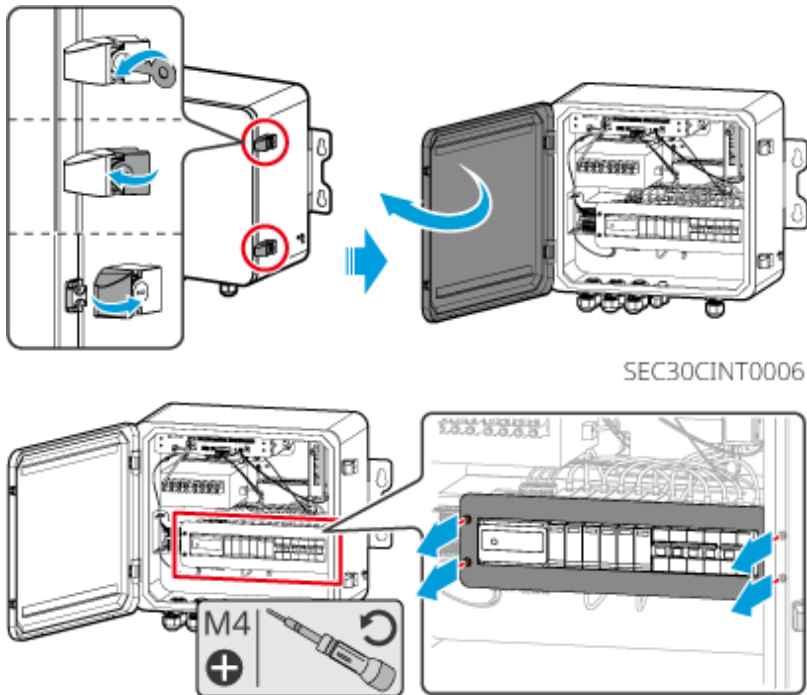
5.2 Pre-wiring Preparation

Prepare Cables

No.	Cable	Recommended Specifications	Acquisition Method
1	PE cable	- Single-core outdoor copper cable - Conductor cross-sectional area: 2.5mm²-10mm² - Cable outer diameter: 2.5-4.5mm	User-supplied

No.	Cable	Recommended Specifications	Acquisition Method
2	Meter CT cable	- Single-core outdoor copper cable - Conductor cross-sectional area: 1.3mm²-2.3mm² - Cable outer diameter: 2.0-3.0mm	User-supplied
3	Single-phase AC line	- Single-core outdoor copper cable - Conductor cross-sectional area: 2.5mm²-6.0mm² - Cable outer diameter: 2.5-4.0mm	User-supplied
4	Three-phase AC line		User-supplied
5	External device RS485 communication cable	- Shielded twisted pair cable meeting local standards - Conductor cross-sectional area: 0.07mm²-1.3mm² - Cable outer diameter: 1.0-2.5mm	User-supplied
6	External device Ethernet cable	- Standard shielded Ethernet cable: CAT 5 or higher standard Ethernet cable and RJ45 connector - Ethernet cable length not exceeding 100m	User-supplied

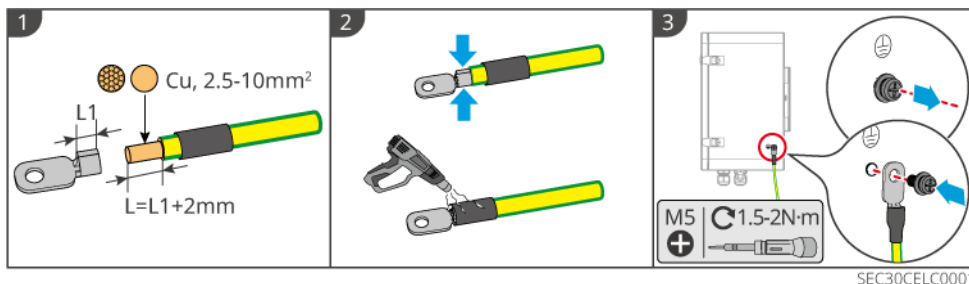
Open the cabinet door and remove the wiring area cover



5.3 Connecting the PE Cable

WARNING

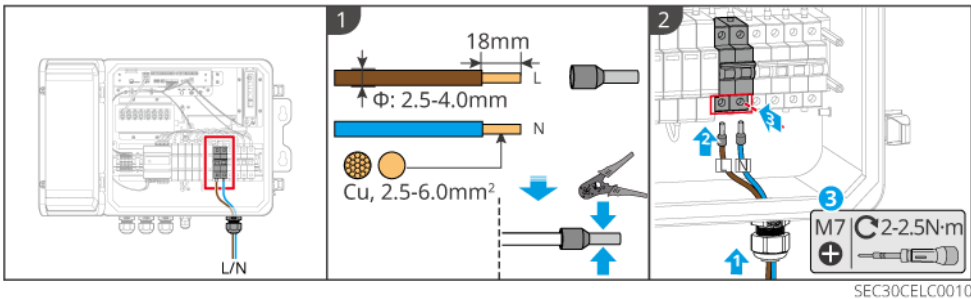
- When installing the device, the protective ground wire must be installed first; when removing the device, the protective ground wire must be removed last.
- To improve the corrosion resistance of the terminal, it is recommended to apply silicone or paint on the outside of the grounding terminal for protection after the protective ground wire connection is installed.



5.4 Connecting Single-Phase AC Cable

NOTICE

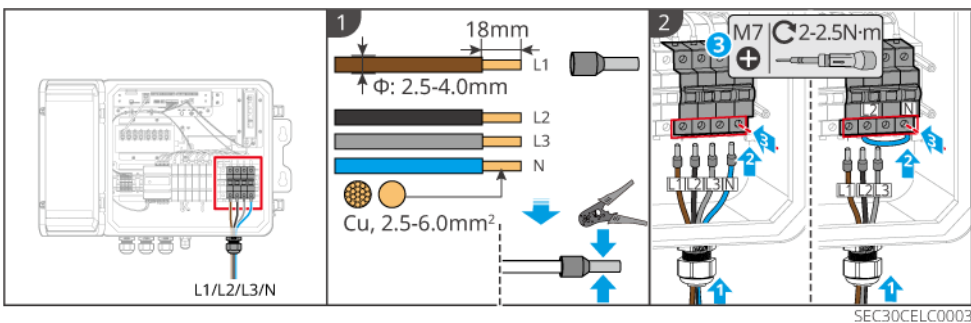
Input voltage range: 100-240Vac.



5.5 Connect Three-Phase AC Cable

NOTICE

- Supports connection of three-phase three-wire or three-phase four-wire. To connect three-phase three-wire, short-circuit the L2 and N ports.
- If not using the built-in GM330 meter of the control box, the three-phase AC wiring is optional.



5.6 Connect CT Lines to Meter

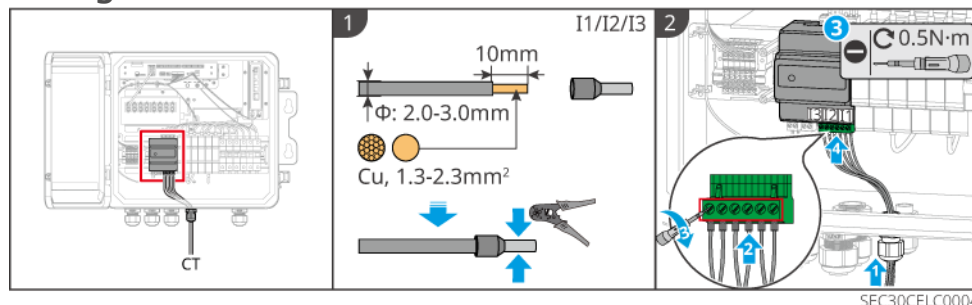
WARNING

Areas with lightning risk, if the meter cable length exceeds 10m and the cable is not laid in grounded metal conduit, it is recommended to install external lightning protection devices.

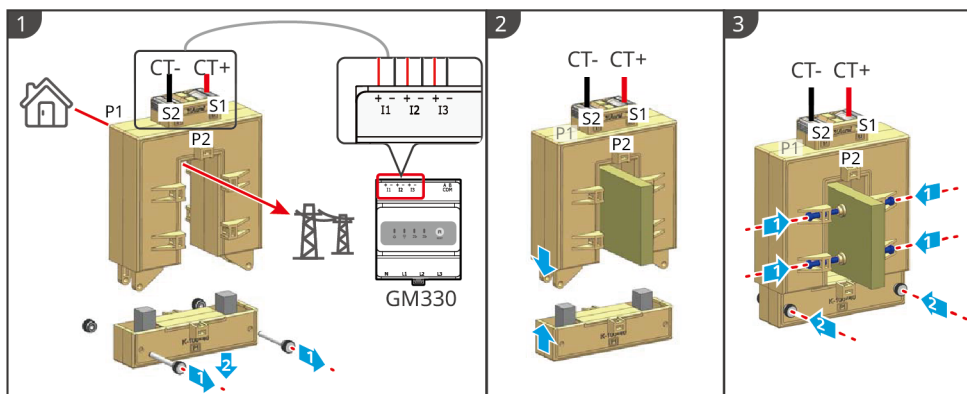
NOTICE

- Only applicable to GM330 electricity meters. For third-party electricity meters, please refer to the corresponding meter manual requirements.
- Please purchase from GoodWe or provide your own CT. CT ratio requirement: nA/5A.
 - nA: CT primary side input current, n ranges from 200-5000
 - 5A: CT secondary side output current
- Ensure the CT connection direction and phase sequence are correct, otherwise monitoring data may be inaccurate.
- 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 detection accuracy of the CT, the CT cable length is recommended not to exceed 30m.
- Do not use Ethernet cables as CT cables, otherwise the cable may be damaged due to excessive current.
- The CT provided by the equipment manufacturer may vary in size and appearance depending on the model, but the installation and wiring method is the same.

Wiring Method

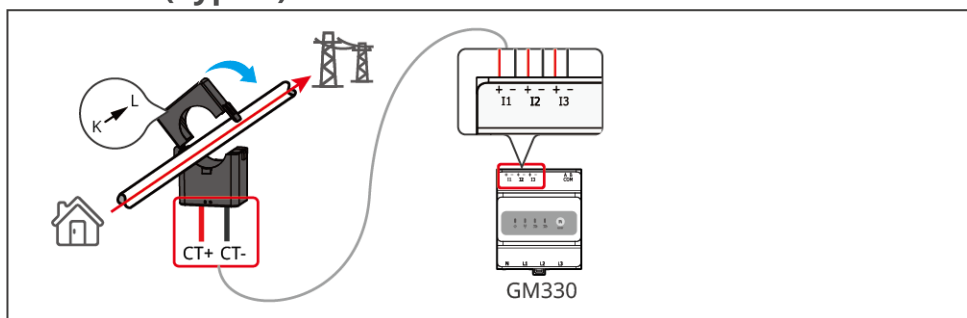


Install CT (Type 1)



GMK10ELC0006

Install CT (Type 2)

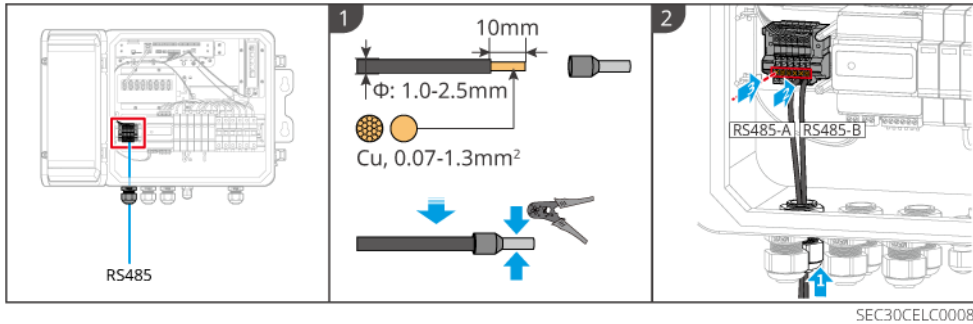


GMK10ELC0007

5.7 Connect RS485 Communication Cable

NOTICE

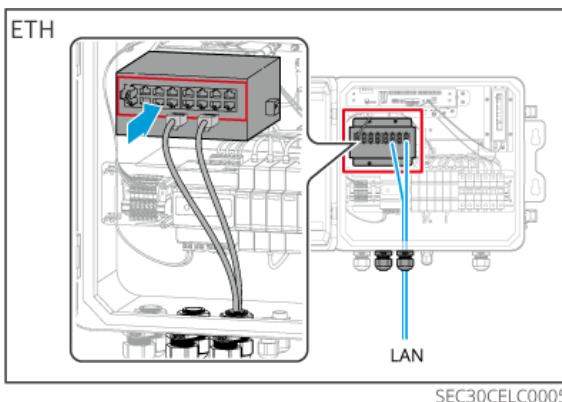
- Supports connection to grid-tied inverters, meters, STS off-grid/on-grid transfer cabinets, and other devices. Connect different devices according to the system networking requirements.
 - Refer to the grid-tied inverter models supported [Product Compatibility List](#).
- Maximum number of grid-tied inverters supported per RS485 bus: 20 units.
- The Smart Energy Control Box provides 3 available RS485 connection terminals. Connect the RS485 communication cable to any 1 set of RS485 terminals.



5.8 Connect Ethernet Cable

NOTICE

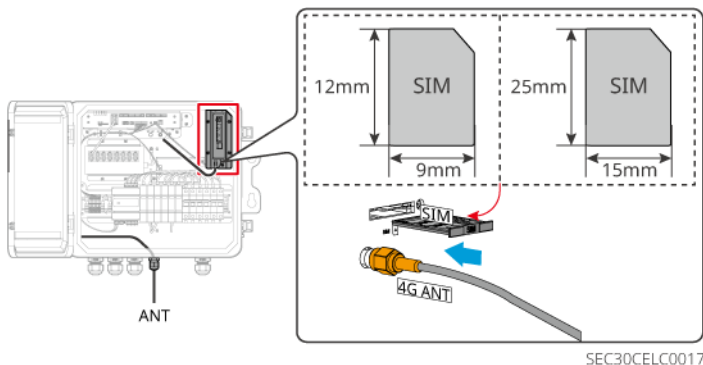
- Supports connection to devices such as energy storage inverters, energy storage systems, batteries, and STS on-grid/off-grid switching cabinets. Connect different devices according to the system networking requirements.
 - To connect an energy storage inverter via the Smart Communication Stick, prepare a WiFi/LAN Kit-20 communication stick and ensure the stick version is no lower than V2.5.49.
- Supports connection to a computer. After connecting the device to the computer via an Ethernet cable, you can log in to the embedded web configuration system to set relevant parameters.
- When connecting the device to a computer via an Ethernet cable, if the computer only provides USB, Type-C or other interfaces, prepare an Ethernet port adapter.
- The Smart Energy Control Box provides 15 available Ethernet ports. Connect the Ethernet cable to any port as needed.



5.9 Install 4G Antenna (Optional)

NOTICE

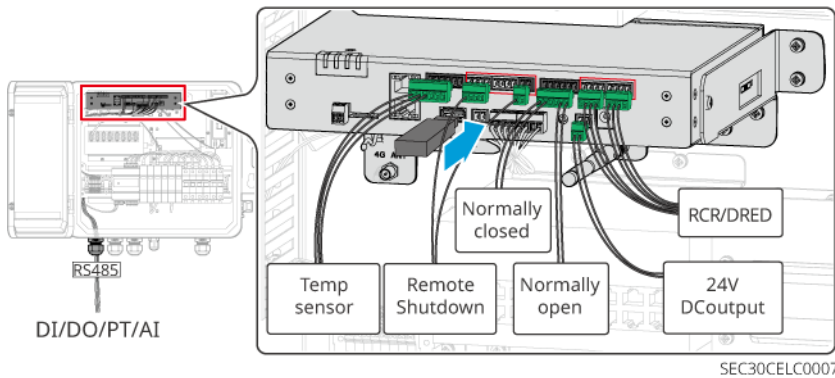
- If the Goodwe 4G router is selected, the 4G router is pre-installed at the factory.
- Support for optional routers from other manufacturers; after selection, please install the 4G router yourself.
- If you need to install a 4G antenna extension cable, do not cross it with other communication cables, otherwise signal may be affected.
- SIM card must be provided by the user. Please use a standard SIM card (size: 25mm*15mm, capacity $\geq 64\text{KB}$) or a NANO card (size: 12mm*9mm, capacity $\geq 64\text{KB}$) according to the actual size of the card slot.
- Recommended data plans are as follows:
 - When there are N grid-tied inverters in the system, the recommended data plan is $200+100*N$ MB/month.
 - When there are N energy storage systems in the system, the recommended data plan is $200+600*N$ MB/month.
 - When there are M grid-tied inverters and N energy storage systems in the system, the recommended data plan is $200+100*M+600*N$ MB/month.



5.10 Connect DO/DI/AI/PT Cables

NOTICE

- The smart energy control box contains a data collector. To implement functions such as RCR, one-key shutdown, or connect external devices such as temperature sensors, please connect the corresponding cables.
- The smart energy control box has reserved DI/DO/AI/PT cable entry holes. To connect corresponding cables, route the cables through the reserved cable entry holes.
- If you need to provide your own 4G Router, connect the 24V DC output port of the data collector to supply power input to the Router.
- Please refer to the corresponding cable requirements and specific wiring steps in the [EzLogger3000C User Manual](#).

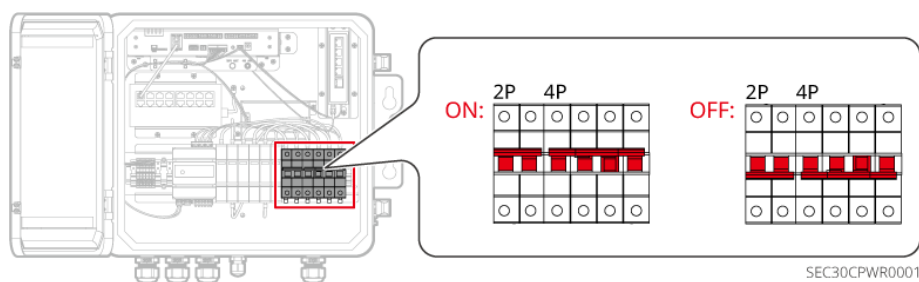


6 System Commissioning

6.1 Check Before Power ON

No.	Inspection Items
1	Equipment is installed securely, installation location is convenient for operation and maintenance, installation space is conducive to ventilation and heat dissipation, and the installation environment is clean and tidy.
2	PE cable, AC input cable, and communication cable are connected correctly and securely.
3	Cable ties meet routing requirements, distribution is reasonable, and there is no damage.
4	Ensure that unused cable entry holes are fitted with waterproof covers.
5	Ensure that used cable entry holes are sealed.

6.2 Power ON



6.3 Indicator Light Description

Please check the LED indicators of the SEC3000C built-in data collector and Smart Meter.

Data Collector

The indicator light description applies only to SEC3000C with software version 06 and above.

Indicator	Indicator Status	Description
PWR		Steady green: Device power supply normal.
		Green off: Device power off or abnormal power supply.
RUN		Steady green/green off: Device operation abnormal.
		
		Slow flashing green: Device operation normal.
NET		Steady green: Device connected to server normally.
		Fast flashing green: Device connected to router, but abnormal connection to server.
		Slow flashing green: Device not connected to router.
ALM		Steady red: Device malfunction.
		Fast flashing red: Device is upgrading.
		Red off: No device malfunction.

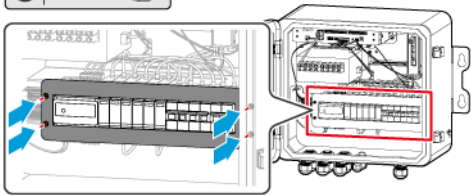
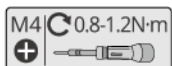
Smart Meter

Type	Status	Description
Power light 	Steady on	Meter powered on, no RS485 communication.
	Flashing	Meter powered on, RS485 communication normal.
	Off	Meter powered off.
Communication light 	Off	Reserved
	Flashing	Press Reset button ≥5s, Power light, Buy/Sell electricity light flash: Meter reset.
	Steady on	buy power from the grid.

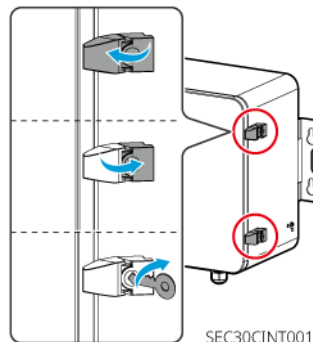
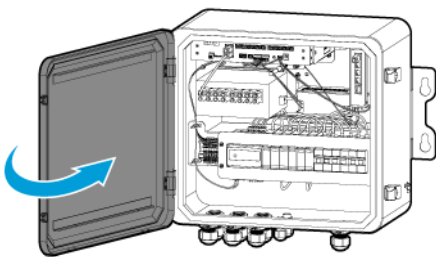
Type	Status	Description
Buy/Sell electricity light 	Flashing	Sell power to the grid.
	Off	No buying, no selling.
	Reserved	

6.4 Close the cabinet door

Install the wiring area cover and close the cabinet door



SEC30CINT0008



SEC30CINT0011

7 System Commissioning

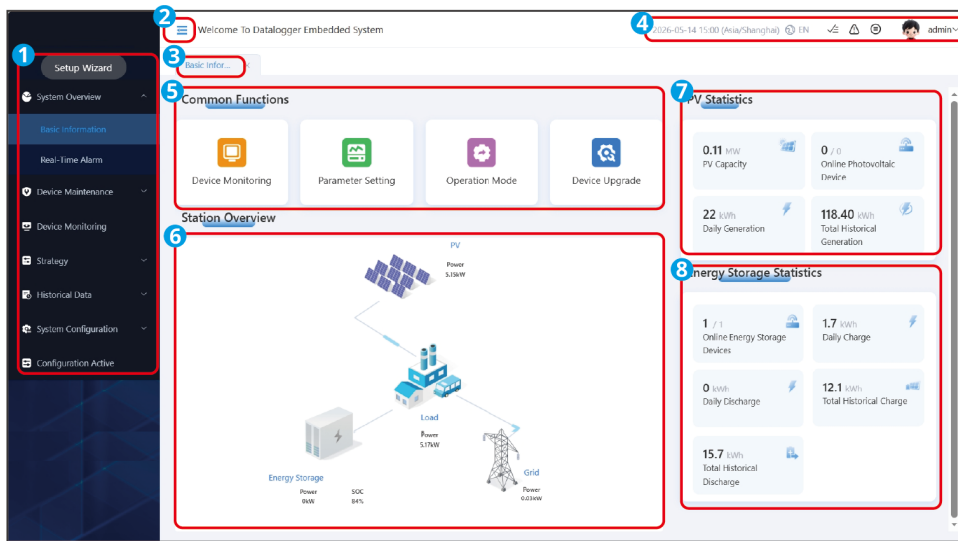
7.1 WEB Interface Introduction

The device supports setting relevant parameters through the local WEB interface, viewing device operation information and error information, and understanding the system status in a timely manner.

WARNING

- The WEB software version corresponding to the interface images in this document is V7.8.25. The images are for reference only; please refer to the actual situation.
- Parameter names, ranges, and default values may be changed or adjusted in the future; please refer to the actual display.
- Different device types connected to the system may result in different web configurable items; please refer to the actual display.
- When sending reset, shutdown, or upgrade commands to the inverter, it may cause the inverter to not connect to the grid, affecting power generation.
- Grid parameters, protection parameters, characteristic parameters, and power regulation parameters of grid-tied inverters, as well as frequency parameters, connection parameters, protection parameters, and other safety parameters of energy storage inverters, must be set by professionals. Incorrect setting of safety parameters may cause the inverter to not connect to the grid or to connect not according to grid requirements, affecting power generation.

7.1.1 Web Interface Layout

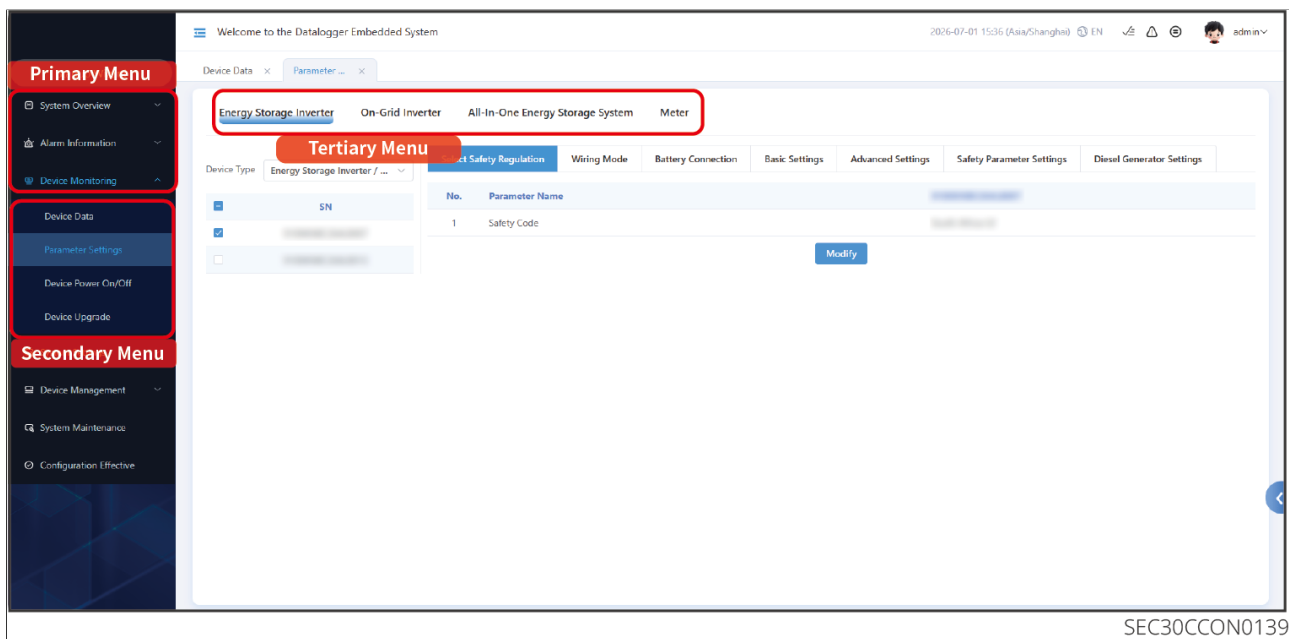


SEC30CCON0025

No.	Functional Area	Description
1	Menu List	- Interface menu area. You can select a primary menu as needed, and the secondary menu will be displayed after selection. Some primary menus have no secondary menus. - When users log in for the first time, the interface will prompt to quickly configure the system through the startup wizard. After closing, if you need to enter the startup wizard interface again, click to enter.
2	Menu List Button	Click the menu list button to expand or collapse the menu list.
3	Tab	Display the tabs of opened menus.
4	System Status	- Display system time. - Switch system language. - Display alarm information. Click to view real-time fault alarms. - Display product version information. - Display account login information. Click to log out of the account.
5	Common Functions	Display commonly used setting functions. Click to jump to the corresponding setting interface.

No.	Functional Area	Description
6	Station Overview	Current station energy flow diagram and power information.
7	PV Information Overview	Display PV power generation information in the current system. • PV Installed Capacity: Sum of the rated capacity of grid-tied inverters and the PV rated capacity of storage inverters in the current system. • Online PV Devices: Number of currently online grid-tied inverters. • Today's Generation: Total generation of the day from the PV side of all inverters. • Historical Generation: Total historical generation from the PV side of all inverters.
8	Energy Storage Information Overview	Display energy storage information in the current system. • Online PV Storage Devices: Number of currently online storage inverters. • Daily Charge: Battery charge of the day. If there is cyclic charging, display cumulative charge. • Daily Discharge: Battery discharge of the day. If there is cyclic discharging, display cumulative discharge. • Total Historical Charge: Cumulative battery charge. • Total Historical Discharge: Cumulative battery discharge.

7.1.2 Web Interface Menu



SEC30CCON0139

Level 1 Menu	Level 2 Menu	Level 3 Menu	Description
Setup Wizard	-	-	Quickly configure the network and set device parameters to complete the basic system operation configuration.
System Overview	Basic Information	-	• Display PV power generation, system installed capacity, etc. • Set common functions, such as: Device Monitoring, Parameter Setting, Grid Connection Control, Device Upgrade. • Display the energy flow diagram of the plant • Display battery daily charge/discharge capacity, historical charge/discharge capacity, etc.
Alarm Information	Real-time Alarms	-	Display fault alarm name, device SN, and generation time. Click the manual refresh button to refresh and display the latest alarm list.
	Historical Alarms	-	Display historical fault alarm information. Supports query by device and time period.

Level 1 Menu	Level 2 Menu	Level 3 Menu	Description
Device Monitoring	Device Data	-	• View the operating status, device SN, version, real-time data, etc. of devices in the system. • Currently supports viewing grid-tied PV inverter, hybrid inverter (including battery), all-in-one energy storage cabinet, meter, and other devices.
	Parameter Setting	hybrid inverter	Set hybrid inverter parameters. • Quick Configuration: Quickly configure the hybrid inverter's safety regulation country and battery connection mode. • Wiring Mode: Set the wiring mode of the inverter. • General Data: Set the hybrid inverter general data. • Advanced Settings: Set the hybrid inverter advanced parameters. • Safety Regulation Parameter Settings: Set the hybrid inverter advanced safety regulation parameters. • Generator Settings: Set the parameters of the generator connected to the inverter.
		grid-tied PV inverter	Set grid parameters, protection parameters, characteristic parameters, and power regulation parameters of the grid-tied PV inverter.

Level 1 Menu	Level 2 Menu	Level 3 Menu	Description
		all-in-one energy storage cabinet	Set all-in-one energy storage cabinet parameters. • Select Safety Regulation: Quickly configure the all-in-one energy storage cabinet's safety regulation country. • General Data: Set the all-in-one energy storage cabinet general data. • Advanced Settings: Set the all-in-one energy storage cabinet advanced parameters. • Safety Regulation Parameter Settings: Set the all-in-one energy storage cabinet advanced safety regulation parameters.
		STS	Set STS parameters. Only applicable to some STS models.
		Meter	Set meter parameters, such as CT ratio, PT ratio, wiring mode.
	Device Power On/Off	-	Manually start or stop all or some devices.
	Device Upgrade	Data Collector	Upgrade the data collector firmware version.
		grid-tied PV inverter	• Upgrade device firmware version. • Supports upgrading DSP version, ARM version, module version, etc.
		hybrid inverter	
		all-in-one energy storage cabinet	

Level 1 Menu	Level 2 Menu	Level 3 Menu	Description
		STS	
		Battery system	
System Settings	Grid Connection Control	Working Mode	Set the system working mode. Currently supports local management mode or third-party dispatch mode.
		SOC Management	Set the system SOC charge/discharge limits.
		Export power limit	Set the system export power limit value.
		Peakshaving	Set the peakshaving mode.
		Capacity Management	Set the system capacity management.
		Communication Anomaly Protection	Set the handling measures when communication anomaly occurs in inverter/ESS/meter.
	Micro-grid Control	-	Applicable to micro-grid systems. Set micro-grid system parameters, such as micro-grid control scenarios, diesel generator control parameters, load control parameters, black start, etc.
	DO Control	RCR	Applicable to Germany and other regions, set RCR parameters.

Level 1 Menu	Level 2 Menu	Level 3 Menu	Description
	Dispatch Control	DRED	Applicable to Australia and other regions, set DRED parameters.
		Reactive Power Control	Set power factor target parameters.
		Three-Phase Unbalance Control	Enable or disable the three-phase unbalance function.
		Remote Shutdown	Set remote shutdown parameters. NS protection shutdown only applies to Germany region.
Device Management	Device Networking	-	Set system networking.
	Device Access	-	Add devices such as grid-tied PV inverter, hybrid inverter, all-in-one energy storage cabinet, meter, etc.
	Port Settings	LAN Configuration	Set LAN communication parameters.
		WiFi Configuration	Set the WiFi password of the control box.
		RS485 Configuration	Set RS485 parameters. Supports connecting third-party devices via RS485.
	Forwarding Configuration	Modbus-TCP	Set Modbus-TCP forwarding parameters.

Level 1 Menu	Level 2 Menu	Level 3 Menu	Description
	Device Logs		View device operation logs, such as login/logout web, password change, etc.
	System Time		Set the system time synchronization clock source. Currently supports GoodWe cloud platform time sync, NTP, Modbus-TCP, and manual time sync.
	Security Settings		Set security parameters, such as account password.
Maintenance	-	-	• Restart Data Collector • Restore Factory Settings • Import Full Configuration File • Export Full Configuration File
Apply Configuration	-	-	Save the setting parameters. After modifying networking or parameters, click Apply Configuration to confirm the settings.

7.1.3 Login WEB Interface

NOTICE

- Ensure that all devices in the photovoltaic system are properly installed and powered on.
- Before logging in to the WEB interface, ensure that the device meets the following requirements:
 - Supports Windows 7 and later operating systems.
 - Browser: It is recommended to use Chrome68, Firefox78 and later versions.
 - Connect the computer's Ethernet port to the device's switch port using a network cable.
- After completing the interface configuration, unplug the network cable from the ETH port.

Log in to the WEB Interface Using the Default IP

Step 1: Connect the computer to any port of the control box switch using an Ethernet cable.

Step 2: In the computer system, select "Network and Internet" > "Change adapter options". In the pop-up Network Connections dialog, right-click and select "Properties", then configure the computer and device IP addresses to be in the same subnet.

No.	IP Parameter	Factory Default	Sample PC Setting
1	IP Address	172.18.0.12	172.18.0.22
2	Subnet Mask	255.255.255.0	255.255.255.0
3	Default Gateway	172.18.0.1	172.18.0.1

Step 3: Enter <https://172.18.0.12:443> in the browser address bar to access the login page.

Step 4: Select the language as needed. Log in to the WEB interface using the default account name and password. Default account name: admin; Default password: 123456.

Log in to the WEB Interface Using a Dynamic IP

Step 1: Connect the control box and the computer to the router using Ethernet cables.

Step 2: Check the IP assigned to the control box by the router on the router

management page.

Step 3: Enter the assigned IP in the browser address bar to access the login page.

Step 4: Select the language as needed. Log in to the WEB interface using the default account name and password. Default account name: admin; Default password: 123456.

Log in to the WEB Interface Using WiFi

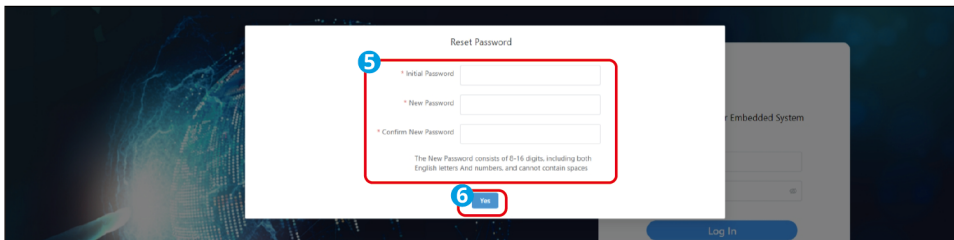
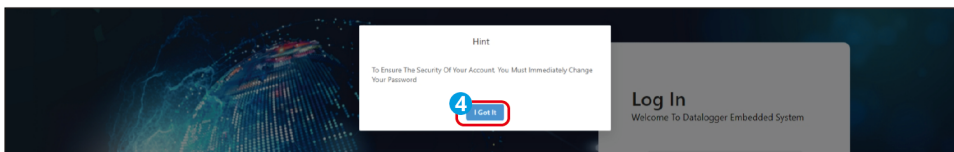
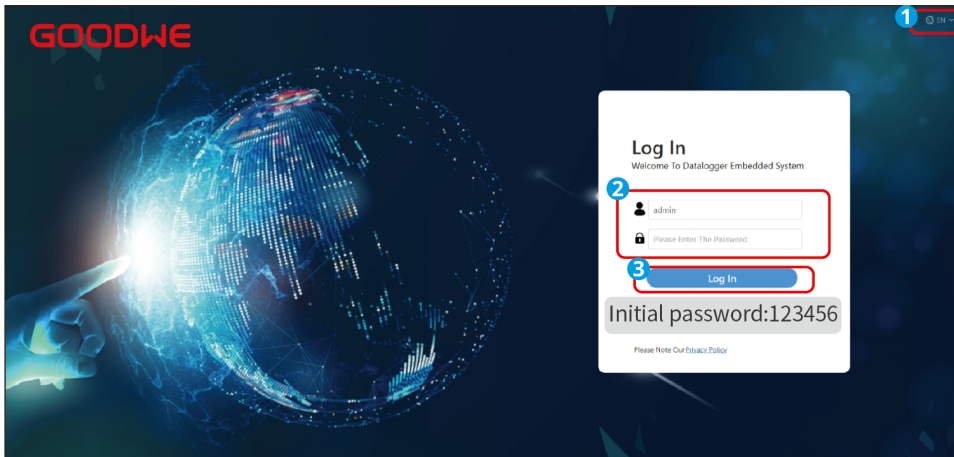
Step 1: Connect the computer to the data collector's default WiFi name: Log-***, where *** is the device serial number. Default WiFi password: 12345678.

Step 2: Enter <https://172.18.0.12:443> in the browser address bar to access the login page.

Step 3: Select the language as needed. Log in to the WEB interface using the default account name and password. Default account name: admin; Default password: 123456.

NOTICE

Please use the initial password for the first login, and change it as soon as possible. Remember the password. To ensure account security, it is recommended to change the password regularly.



EZU30CON0014

7.2 Configuration Setup Wizard

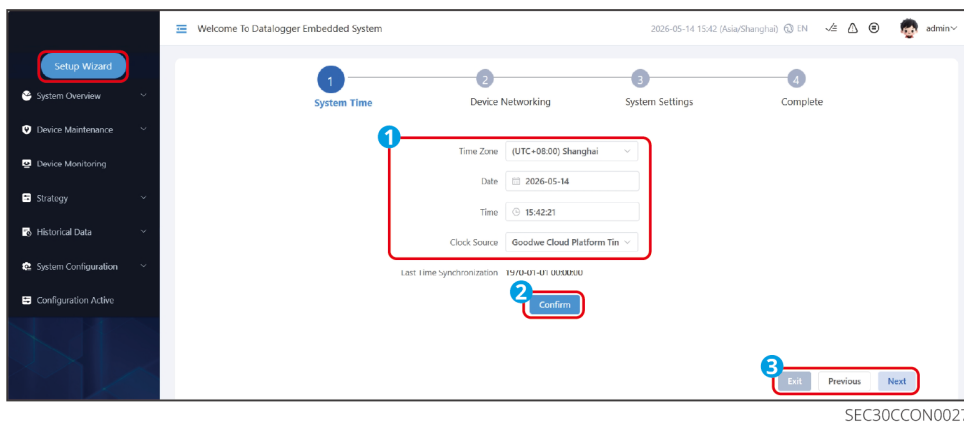
- When logging in for the first time, the interface prompts you to quickly configure the system through the setup wizard. Please follow the on-screen instructions and actual requirements to configure. Supports device networking, setting device parameters, etc.
- If you do not need to configure the system for now, click End Wizard; if you do not need to configure a specific function for now, click Skip.

- For detailed information about setting functions, refer to the corresponding section in the manual.

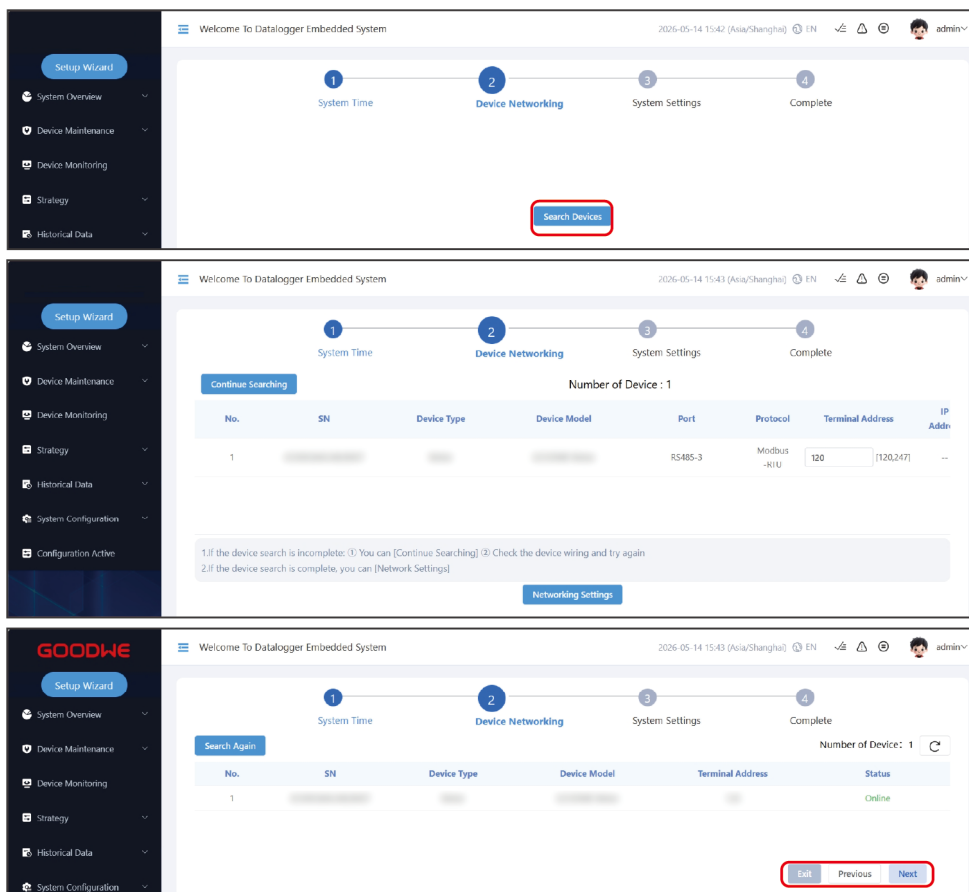
Step 1: When logging in for the first time, you will enter the setup wizard interface after login. If you have exited the wizard interface, click "Setup Wizard" to re-enter.

Step 2: During parameter setting, click Previous or Next as needed to perform the corresponding settings.

- Set the system time according to the actual situation.



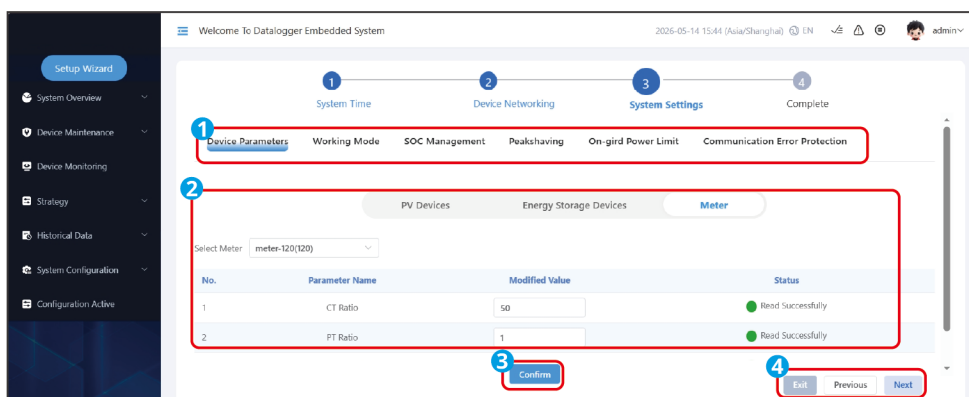
- Click "Search Devices" to automatically search for devices in the system and complete networking.



SEC30CCON0085

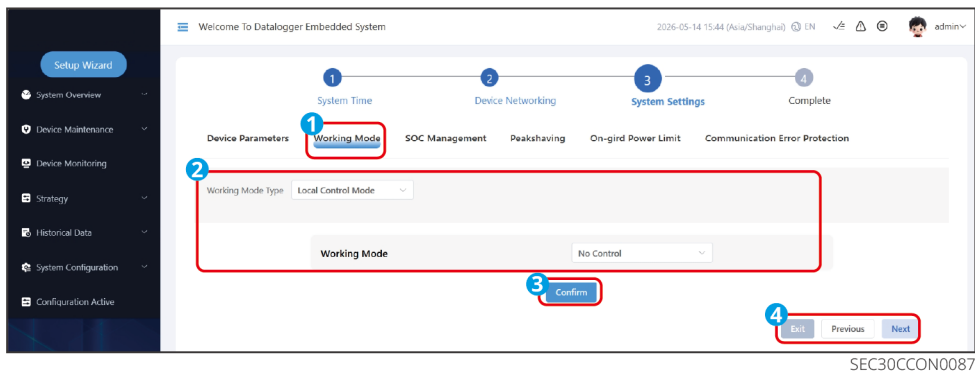
• System Settings

- Device Parameters: Set device operating parameters based on actual conditions, such as safety region, meter CT ratio, etc.



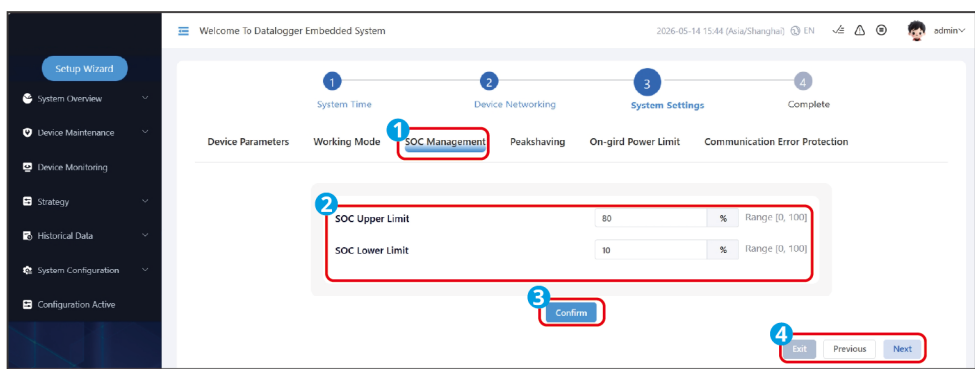
SEC30CCON0084

- Operating Mode: Set the system operating mode according to the actual situation. For more information, refer to the [8.6.1.1.Setting Operating Mode Parameters\(Page 128\)](#) section.



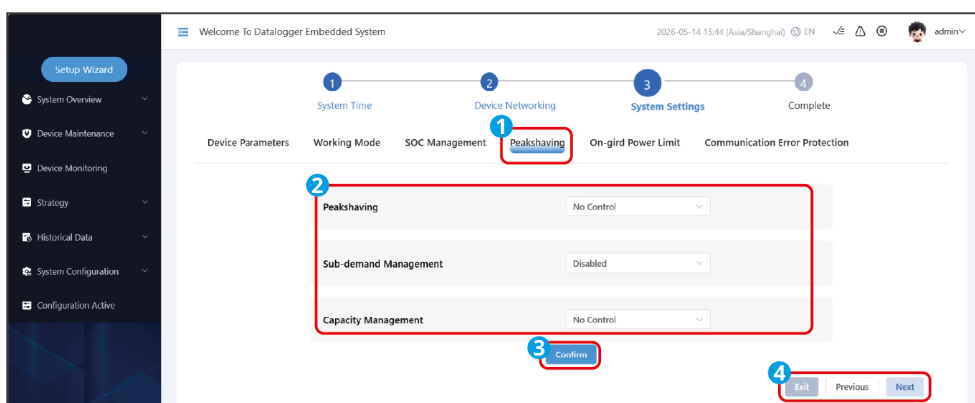
SEC30CCON0087

- SOC Management: Set the upper and lower SOC limits of the energy storage system. For more information, refer to the [8.6.1.2.Setting SOC Management\(Page 131\)](#) section.



SEC30CCON0088

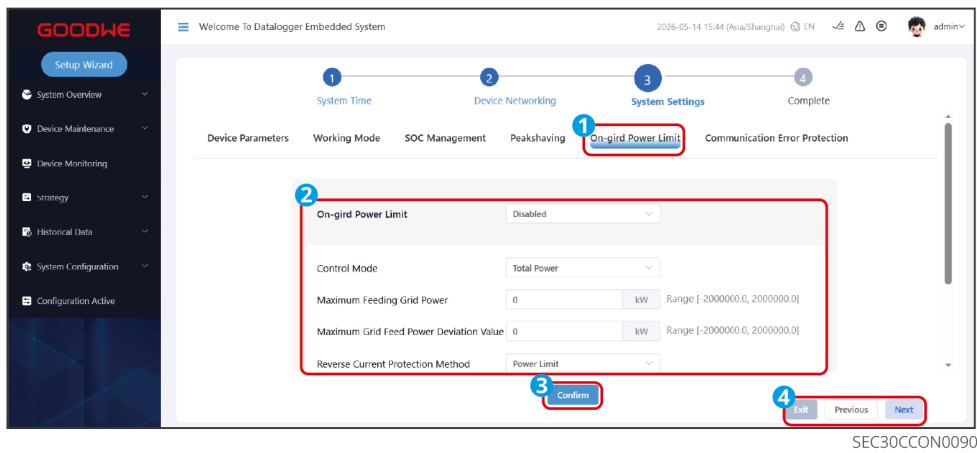
- Peakshaving: Mainly applicable to scenarios with peak purchased power limits. By controlling battery discharge to supply power, it ensures that grid-side purchased power does not exceed the limit. For more information, refer to the [8.6.1.4.Setting Peakshaving Function\(Page 133\)](#) section.



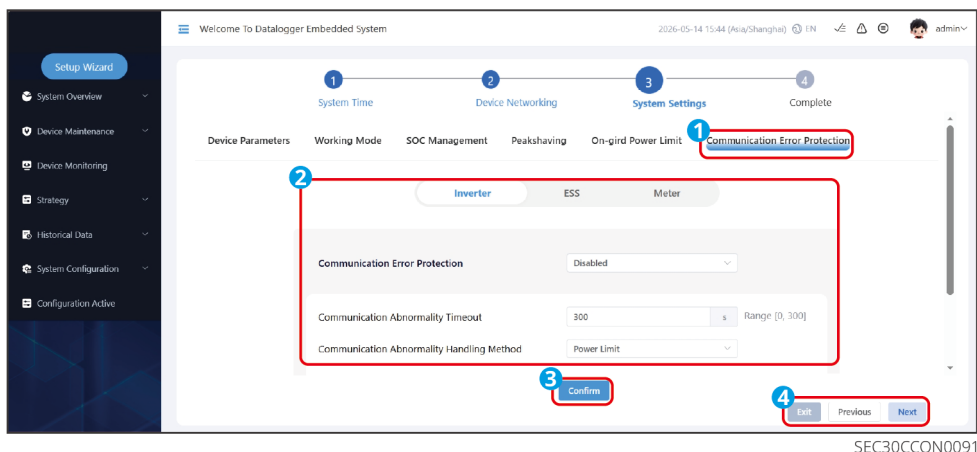
SEC30CCON0089

- Export power limit: By setting the export power limit parameter, you can control the amount of power fed into the grid to avoid exceeding the limit. For more

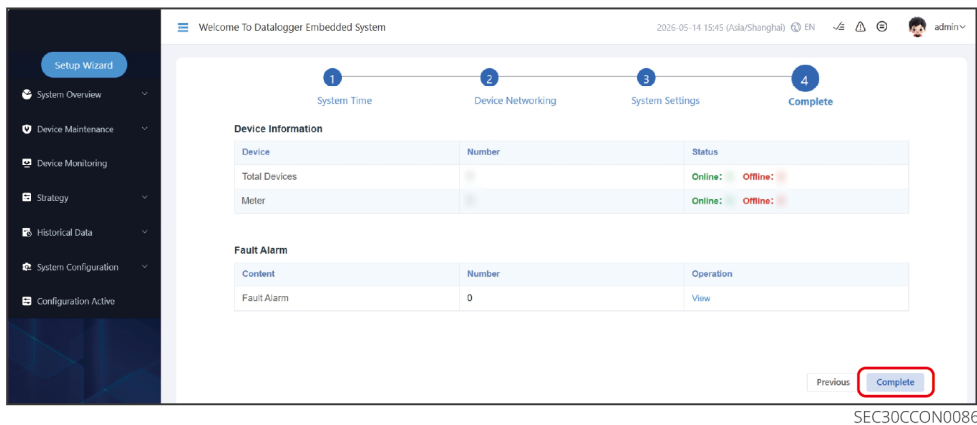
information, refer to the [8.6.1.3.Setting Power Limit Parameters\(Page 132\)](#) section.



- Communication Anomaly Configuration: When device communication is abnormal, the device operates at a limited power or disconnects from the grid based on the settings. For more information, refer to the [8.6.1.6.Setting Communication Anomaly Configuration\(Page 135\)](#) section.



Step 3: After completing the setup wizard, you can view the number of devices in the current network, their online status, and alarms. Click "Finish" to exit the setup wizard.



SEC30CCON0086

7.3 System Scene Parameter Settings

7.3.1 Microgrid Scenario Parameter Settings (ET100)

NOTICE

- When the energy storage integrated cabinet inverter is paired with STS, a grid-tied inverter, and the SEC3000C, it supports on-grid and off-grid switching, enabling microgrid functionality.
- Before using the microgrid mode, ensure that all devices in the system are correctly wired and operating normally.

Operation Steps

1. Refer to the section [8.5.1.4.Setting Basic Parameters of the Energy Storage Inverter\(Page 94\)](#), set "Wiring Mode" to "Data Acquisition Parallel Backup Parallel".
2. If a diesel generator is installed in the system, refer to the section [8.5.1.6.Setting Generator Parameters\(Page 99\)](#), set "Port Type" to "Diesel Generator Connection", and "Diesel Generator Control Mode" to "Parallel Microgrid".
3. Refer to the section [8.6.2.Setting Microgrid Control Parameters\(Page 135\)](#), set the microgrid parameters according to actual requirements.

7.3.2 Microgrid Scenario Parameter Settings (ESA261)

NOTICE

- When the integrated energy storage cabinet is used with STS, grid-tied inverter, and SEC3000C, it supports on-grid/off-grid switching and enables microgrid functionality.
- Before using the microgrid mode, ensure that all devices in the system are correctly wired and functioning normally.

Operation Steps

1. Refer to the [8.5.4.2.Setting Basic Parameters of the Integrated Energy Storage Cabinet\(Page 121\)](#) section, set the "Wiring Mode" of the integrated cabinet to "STS-Backup Parallel".
2. Refer to the [8.5.4.2.Setting Basic Parameters of the Integrated Energy Storage Cabinet\(Page 121\)](#) section, set the "Parallel Unit Quantity" of the integrated cabinet to the actual number of parallel units.
3. Refer to the [8.5.4.2.Setting Basic Parameters of the Integrated Energy Storage Cabinet\(Page 121\)](#) section, enable the "Backup Power" function of the integrated cabinet.
4. Refer to the [8.5.4.3.Setting Advanced Parameters of the Integrated Energy Storage Cabinet\(Page 123\)](#) section, enable the "VSG Mode" of the integrated cabinet.
5. Refer to the [8.5.5.Setting STS Parameters\(Page 126\)](#) section, set STS parameters according to the actual connection situation.
6. Refer to the [8.6.2.Setting Microgrid Control Parameters\(Page 135\)](#) section, set microgrid parameters according to actual requirements.

7.4 Manage Devices

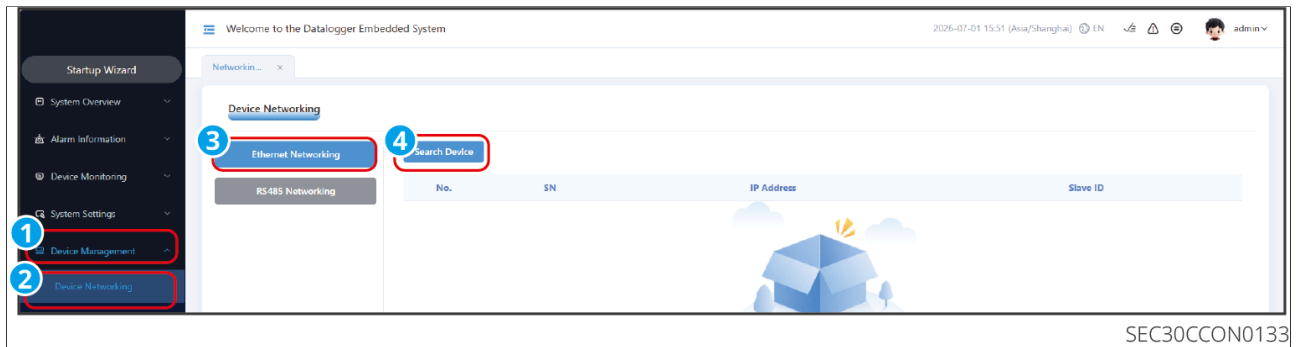
7.4.1 Automatically Search and Add Devices

NOTICE

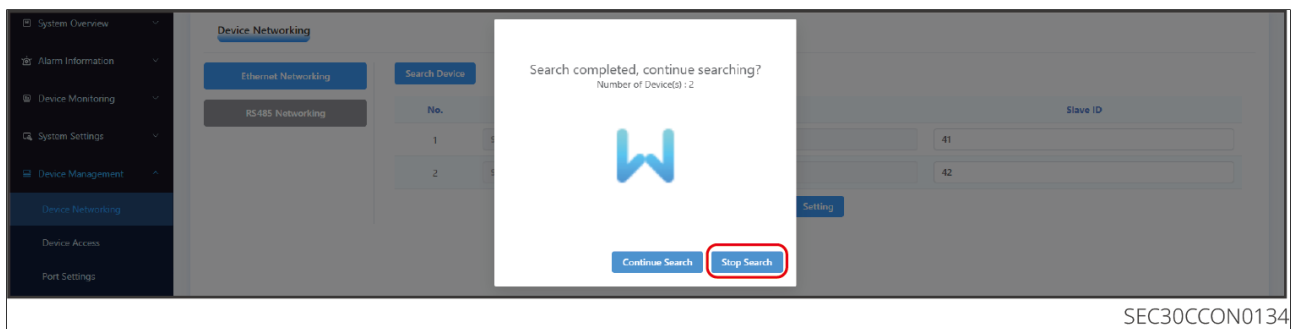
- After successful networking, if you need to add devices that were not found, you can add them via "Device Access".
- If third-party meters are used in the system, they must be added manually and cannot be automatically searched and added.

Operation Steps:

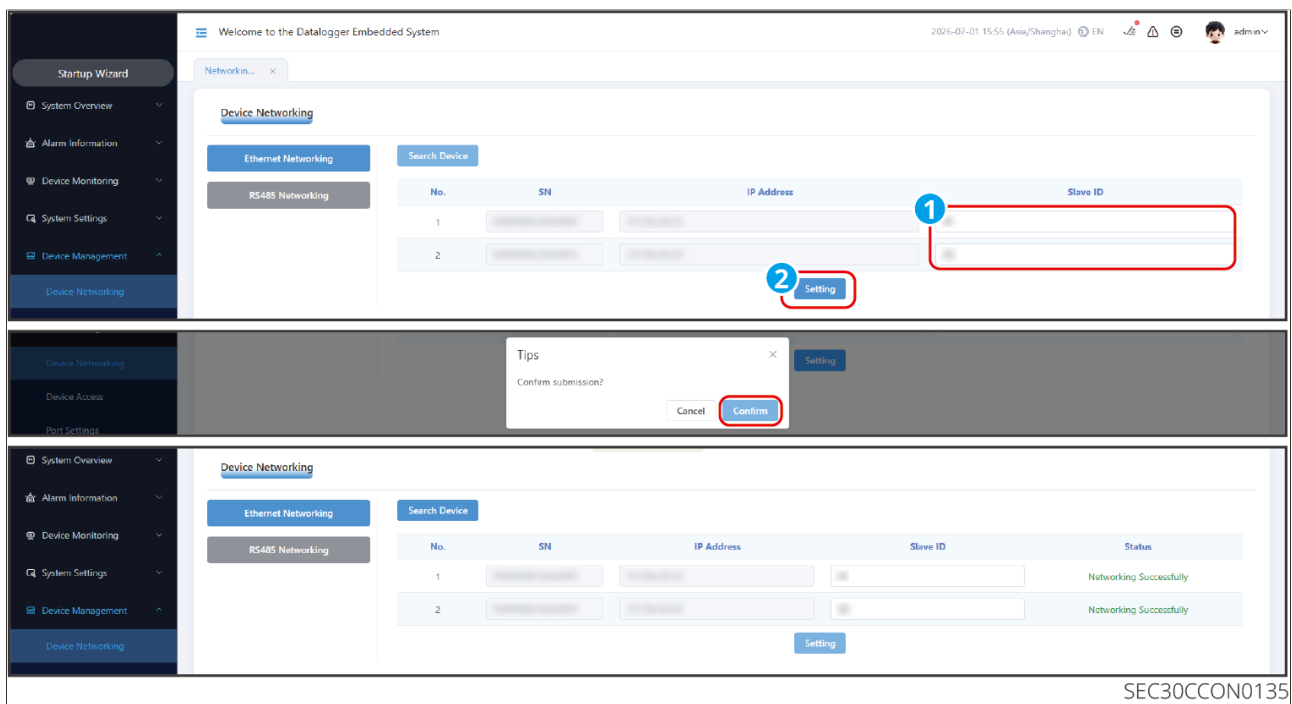
1. Go to the device networking interface via "Device Maintenance">" Networking Settings">"Ethernet Networking". Click "Search Device" to start searching for online storage inverters or all-in-one storage cabinets.



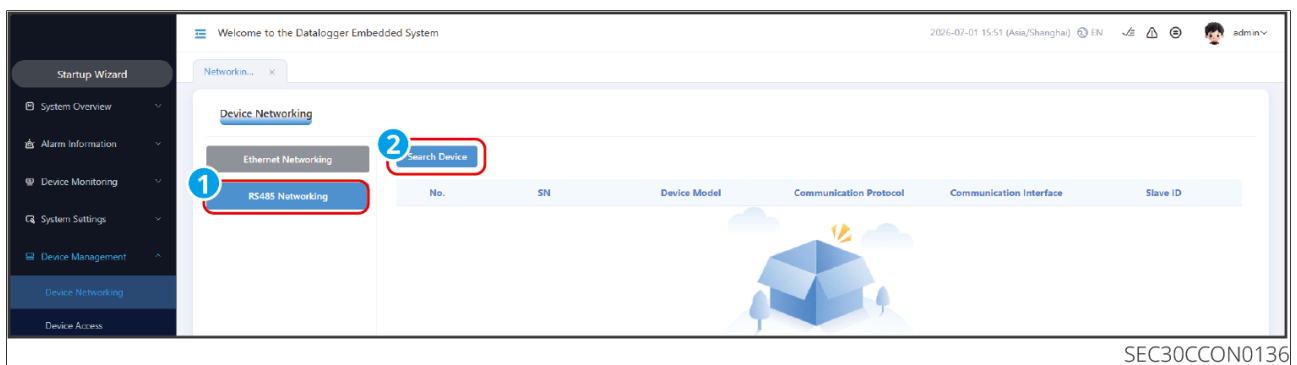
2. View the number of currently searched devices. When the device count matches the actual number, click "Stop Search".



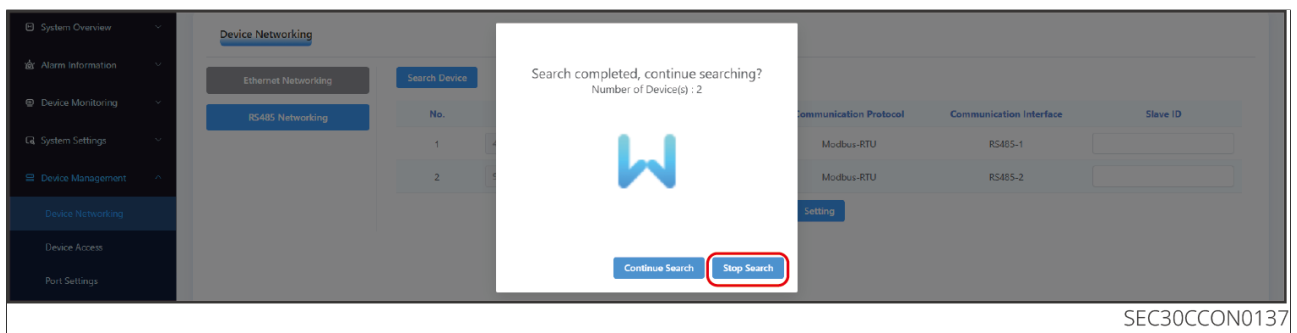
3. After the device search is complete, return to the device networking interface and set the device terminal address according to actual needs. Terminal address range: 1-99. If there are multiple inverters, ensure the terminal addresses are not duplicated. Click "Set" to complete Ethernet networking.



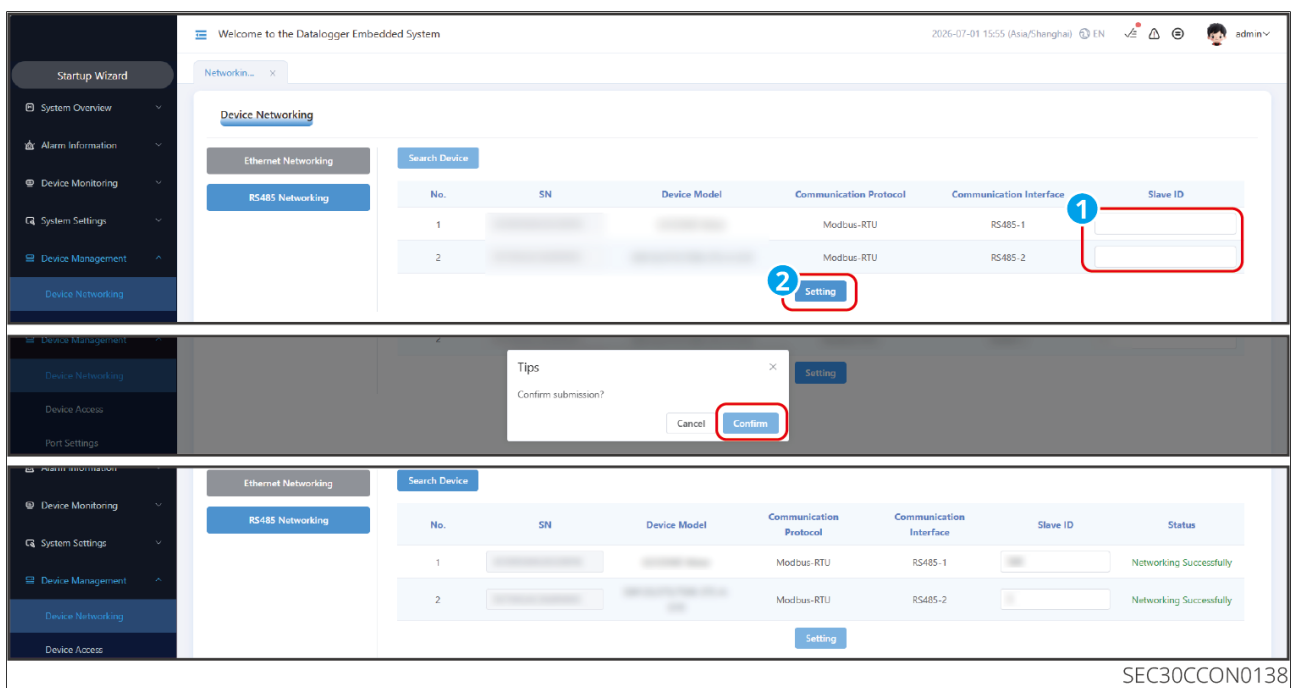
- Go to the device networking interface via "Device Maintenance">"Networking Settings">"RS485 Networking". Click "Search Device" to start searching for online grid-tied inverters and meters.



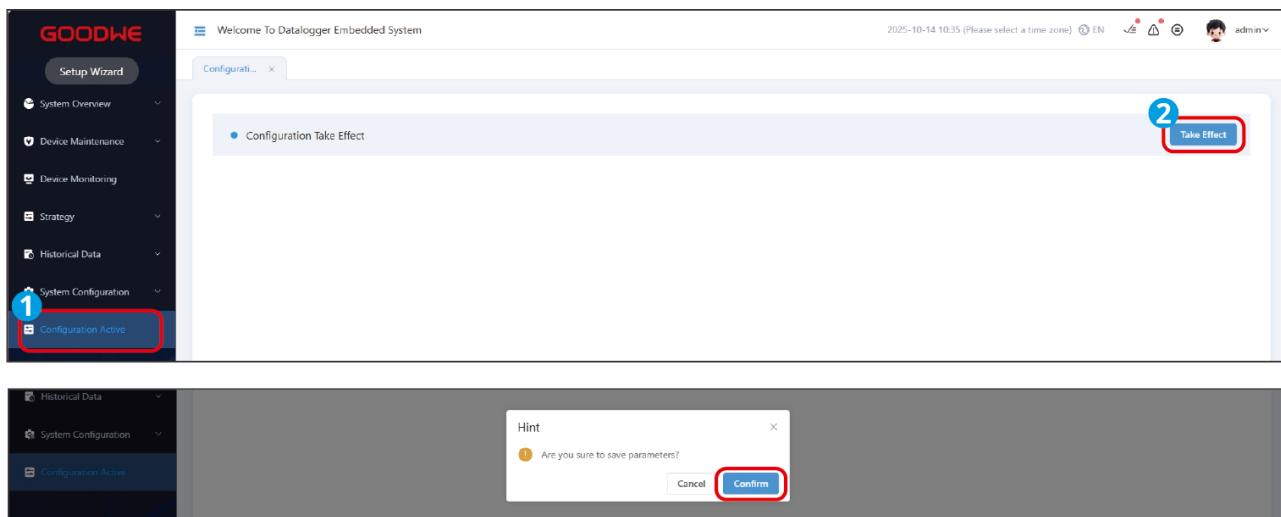
- View the number of currently searched devices. When the sum of inverters and meters matches the actual number, click "Stop Search".



6. After the device search is complete, return to the device networking interface and set the terminal addresses of the inverters and meters according to actual needs. Inverter address range: 1-99, meter address range: 120-200. If there are multiple inverters, ensure the terminal addresses are not duplicated. Click "Set" to complete RS485 networking.



7. Complete the networking configuration by clicking "Configuration Active".



SEC30CCON0034

7.4.2 Manually Add Device

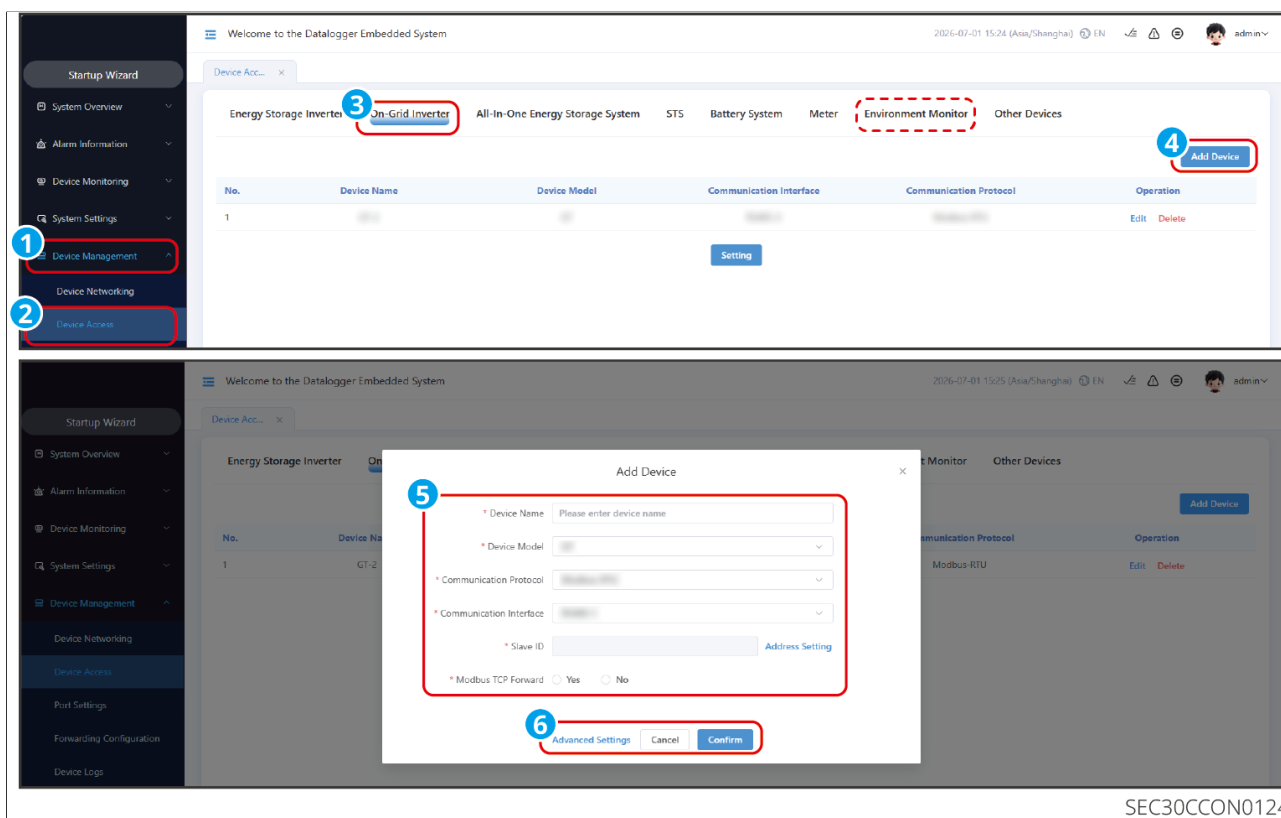
NOTICE

- After successful networking, if you need to add devices that were not found, you can add them via "Device Access".
- Click Edit or Delete to modify or remove the parameters of added devices.

Steps to add grid-tied PV inverter/environmental monitoring device:

1. Go to the Add Device interface via "Device Management">"Device Access">"Grid-tied PV inverter/Environmental monitoring device">"Add Device".
2. Set device parameters according to actual needs. Click "Confirm" to complete device addition.

Supported environmental monitoring device models: IMT Technology Digital Module Temperature Sensors Tm-RS485-MB / Tm-RS485-MB-A HuksefluxSRO5-D1A3 &SR05-D2



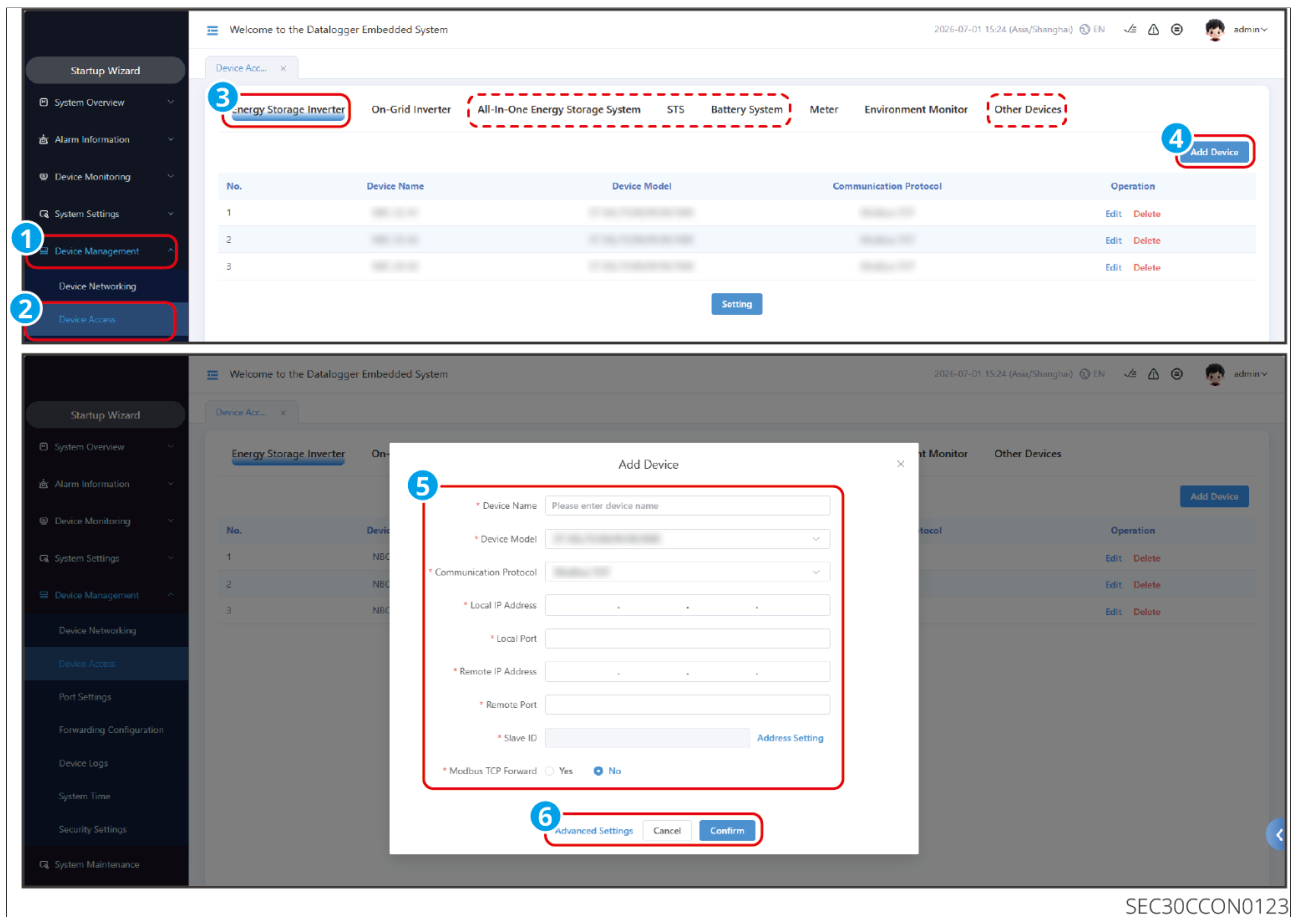
SEC30CCON0124

No.	Parameter Name	Description
1	Device Name	Supports custom device name, name it according to the actual situation.
2	Device Model	Select the actual inverter model connected.
3	Communication Protocol	Set according to the inverter's communication protocol. Currently supports: Modbus-RTU.
4	Communication Interface	Set according to the port where the inverter is actually connected to the control box.
5	Terminal Address	- Set the inverter terminal address according to the actual power station plan. If no actual setting is needed, you can choose auto-generation. - Ensure that the addresses of different devices are not the same.

Steps to add hybrid inverter/integrated storage cabinet/STS/Battery

system/third-party device:

1. Go to the Add Device interface via “Device Management”>“Device Access”>“Hybrid inverter”/“Integrated storage cabinet/STS/Battery system/Third-party device”>“Add Device”.
2. Set device parameters according to actual needs. Click “Confirm” to complete device addition.



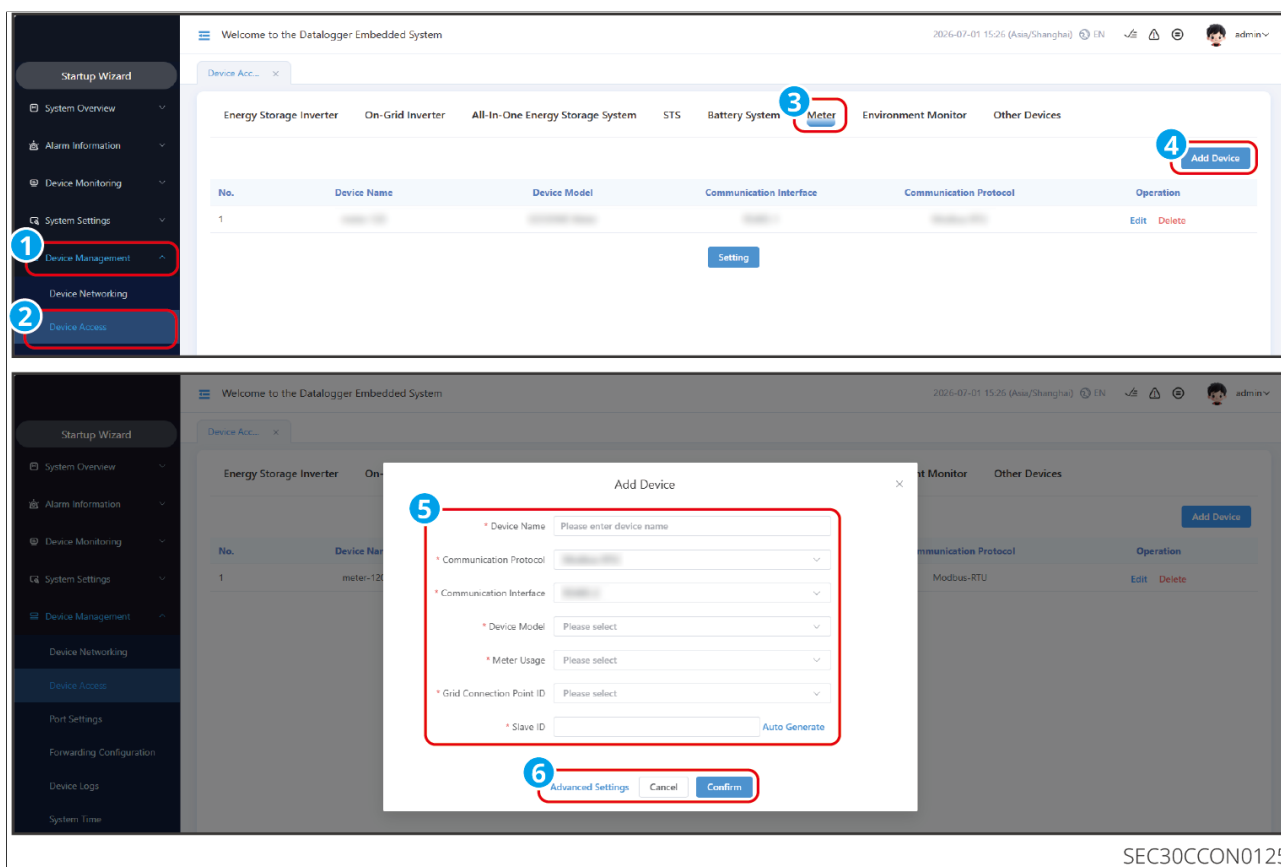
SEC30CCON0123

No.	Parameter Name	Description
1	Device Name	Supports custom device name, name according to the actual situation.
2	Device Model	Select the actual device model connected.
3	Communication Protocol	Set according to the inverter's communication protocol. Currently supported: Modbus-TCP.
4	Local IP Address	Set to the IP address of the network port used to connect to other devices.

No.	Parameter Name	Description
5	Local Port	Set to the port number of the control box, default value is 0.
6	Remote IP Address	Set to the IP address of the WiFi/LAN Kit-20 communication stick, the all-in-one energy storage cabinet, the STS, or the communication stick connected to the BAT100, that is connected to the storage inverter.
7	Remote Port	Set to the port number of the other device added, default value is 502.
8	Terminal Address	Set the inverter terminal address according to the actual power station plan. If no actual setting is required, you can select auto-generation.

Steps to add a power meter:

1. Go to the Add Device interface via "Device Management">"Device Access">"Power meter">"Add Device".
2. Set device parameters according to actual needs. Click "Confirm" to complete device addition.



SEC30CCON0125

No.	Parameter Name	Description
1	Device Name	Supports custom device name, name according to actual situation.
2	Communication Protocol	Set according to the communication protocol of the meter. Currently supports: Modbus-RTU.
3	Communication Interface	Set according to the port of the control box to which the meter is actually connected. Supports: RS485-1, RS485-2, RS485-3, RS485-4.
4	Device Model	Select the actual meter model used. Supports: Goodwe meter, UGM604PRO, Acrel -DTSD1352-CT/C, Schneider -IEM3255, Janitza UMG604PRO, ITR manual, Mikro DPM680, etc.

No.	Parameter Name	Description
5	Meter Purpose	Select based on the actual purpose of the meter. • Grid-side meter: The meter CT is clamped at the grid connection point, monitoring grid connection point data, used for anti-backflow. • Generation-side PV and storage meter: The meter CT is clamped at the upper end of the grid-tied inverter and the storage inverter, monitoring the power usage information of both. • Generation-side PV meter: The meter CT is clamped at the grid-tied inverter side, monitoring the generation data of the grid-tied inverter. • Generation-side storage meter: The meter CT is clamped at the storage inverter side, monitoring the generation data of the storage inverter. • Third-party PV meter: When a third-party grid-tied inverter is used in the system, detect the generation data of the third-party inverter.
6	Grid Connection Point Number	Select based on the transformer number connected to the inverter.
7	Terminal Address	• Set the terminal address of the meter according to the actual power plant plan. If no actual setting is needed, you can choose to auto-generate. • Do not set the meter address and the inverter address to the same address.
8	Access Point Table	Import the access point table based on actual conditions.

7.4.3 Set Port Parameters

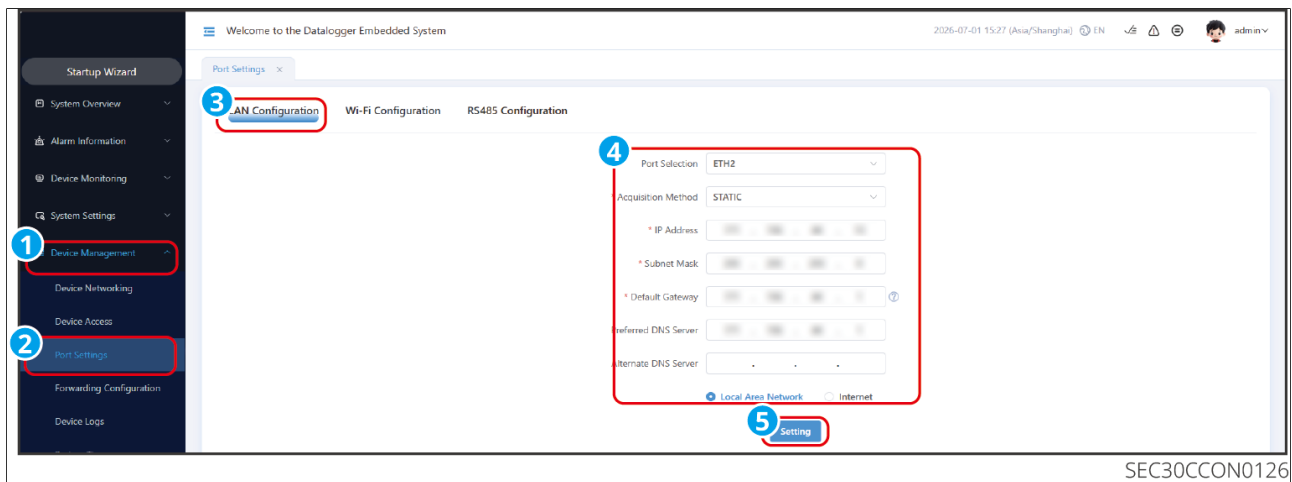
7.4.3.1 Set LAN Communication Parameters

NOTICE

- Before configuring LAN parameters, ensure that the network cable is properly connected to the control box.
- After the system networking configuration is completed, the ETH1 and ETH2 ports automatically complete the LAN configuration without additional configuration. At this point, the ETH1 port defaults to DHCP status, and the ETH2 port defaults to STATIC status.
- The switch is connected to the data collector's ETH2 port by default. Setting the ETH2 port parameters configures the switch network port networking parameters.

Operation steps:

1. Through “Device Management”>“Port Settings”>“LAN Configuration” to enter the parameter setting interface.
2. Set the ETH port parameters according to actual requirements.



No.	Parameter Name	Description
1	Port Selection	Set the network port that actually connects to the data collector. Supported: ETH1, ETH2.

No.	Parameter Name	Description
2	Acquisition Method	- When selecting STATIC mode, the relevant network parameters are fixed and must be set manually based on the actual situation. - When selecting DHCP mode, the IP address can be obtained automatically to complete registration.
3	IP Address	Set the IP address of the control box. According to the power station plan, it can be set to an IP address in the same subnet as the router. If the IP address is modified, you need to log in again using the new IP address.
4	Subnet Mask	Set the subnet mask of the control box. Set according to the actual mask of the router connected to the device.
5	Default Gateway	Set the default gateway of the control box. Set according to the actual gateway of the router connected to the device.
6	Preferred DNS Server	Configured when connecting to the public network (e.g., connecting to GoodWe Cloud, using a domain name for the server address). Set to the IP address of the local area network router.
7	Alternate DNS Server	Under normal circumstances, this parameter setting can be ignored. When the preferred DNS server cannot resolve the domain name, the alternate DNS server will be used.

No.	Parameter Name	Description
8	LAN/Internet	- If you need to connect to the server to transmit data to GoodWe Cloud, select Internet. - If you need to set forwarding parameters to connect to a third-party monitoring platform, etc., select LAN.

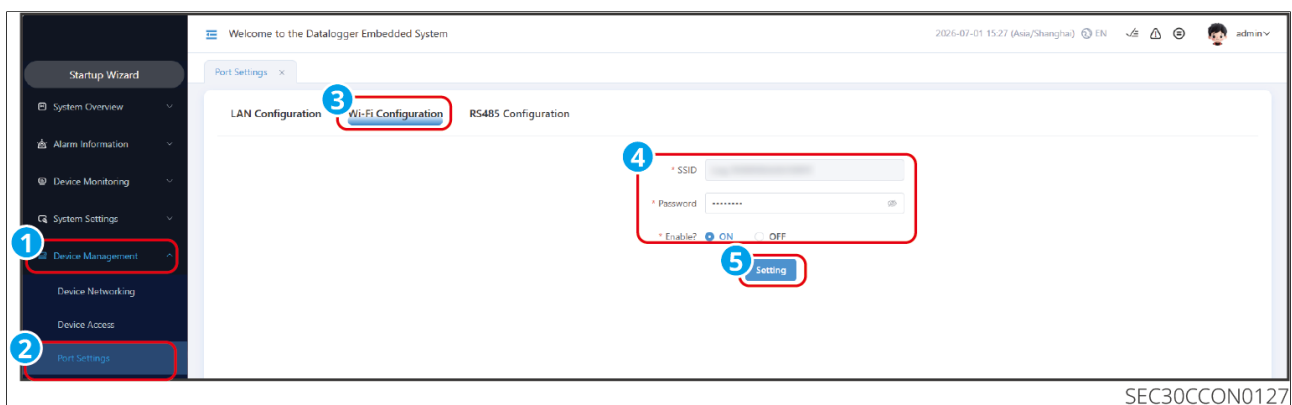
7.4.3.2 Set WiFi Password

NOTICE

- The built-in data collector in the control box provides a WiFi hotspot signal for local configuration. After connecting to the WiFi hotspot signal, you can access the web debugging interface via a web page on your computer.
- The WiFi signal password can be modified. After modification, please log in to the web interface again using the new password.

Steps:

- Go to "Device Management" > "Port Settings" > "Wi-Fi Configuration" to enter the parameter setting interface.
- Set the WiFi hotspot signal password according to actual needs.



7.4.3.3 Set RS485 Communication Parameters

NOTICE

When connecting the control box to a third-party device, RS485 parameters must be set.

Operation steps:

1. Enter the parameter setting interface via "Device Management">"Port Settings">"RS485 Configuration".
2. Configure communication parameters according to actual requirements.

The screenshot illustrates the process of configuring RS485 communication parameters within the Datalogger Embedded System. The interface includes a sidebar with navigation options like 'System Overview', 'Alarm Information', 'Device Monitoring', 'System Settings', 'Device Management', 'Device Networking', 'Device Access', 'Port Settings', and 'Forwarding Configuration'. The 'Port Settings' section is active, showing tabs for 'LAN Configuration', 'Wi-Fi Configuration', and 'RS485 Configuration'. The 'RS485 Configuration' tab displays a table with columns for 'No.', 'RS485 Name', 'Baud Rate', 'Data Bits', 'Stop Bits', 'Parity Type', and 'Operation'. The 'Operation' column contains a link 'Communication Parameter Settings'. A dialog box titled 'RS485 Configuration' is shown, allowing users to set parameters for a specific RS485 port (e.g., RS485-1). The dialog box includes fields for 'Name', 'Baud Rate' (set to 9600), 'Data Bits' (set to 8 Bits), 'Parity Type' (set to No Parity), and 'Stop Bits' (set to 1). A 'Confirm' button is visible at the bottom of the dialog box.

SEC30CCON0128

No.	Parameter Name	Description
1	Name	Select based on the actual RS485 port connected to the device.
2	Baud Rate	Set according to the baud rate of the connected device. Currently supported: 300, 1200, 2400, 4800, 9600, 19200, 115200.

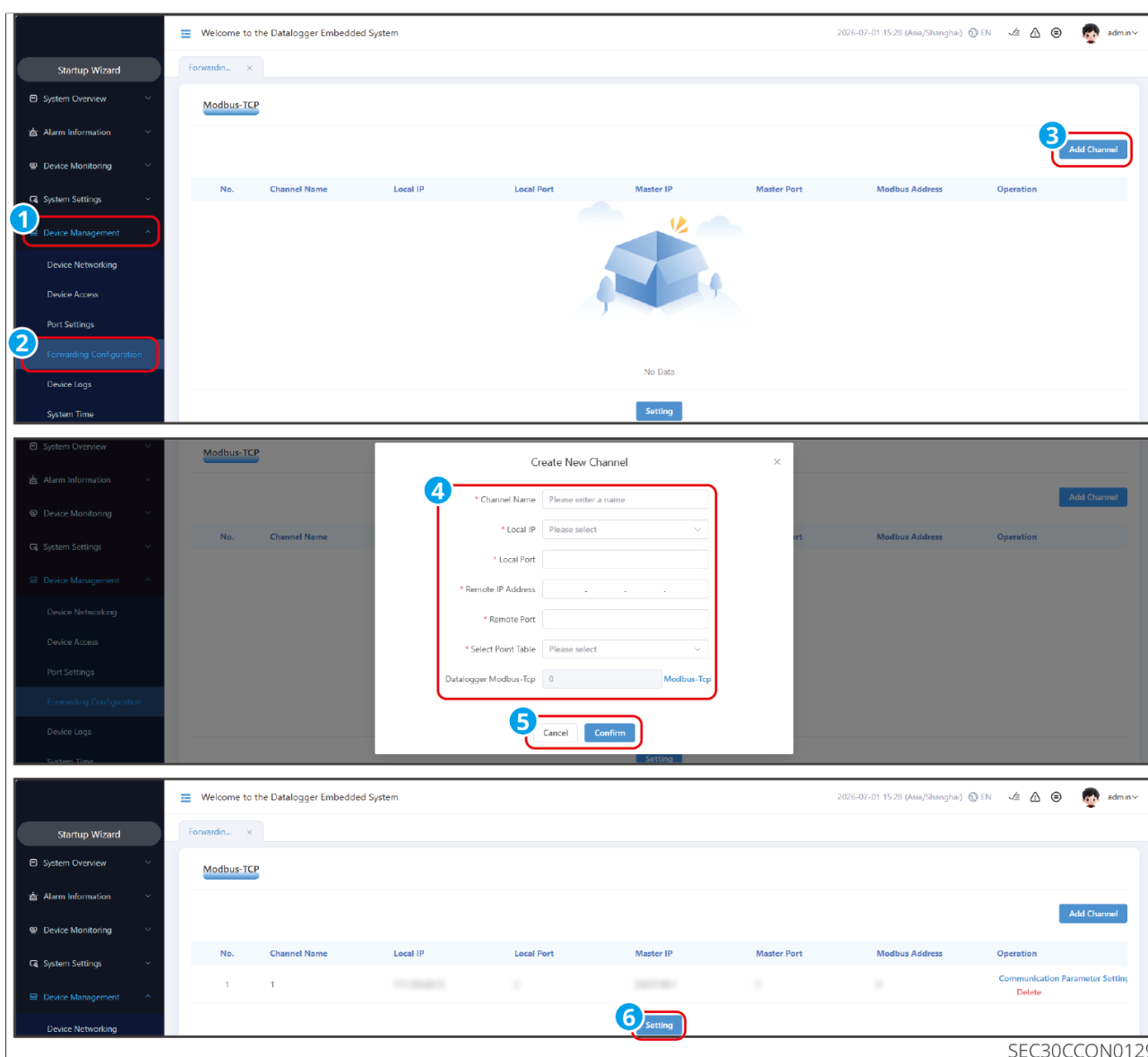
No.	Parameter Name	Description
3	Data Bits	Currently supported: 7 bits, 8 bits.
4	Parity	Set according to the parity of the connected device. Currently supported: None, Odd, Even, Mark, and Space.
5	Stop Bits	Set according to the stop bits of the connected device. Currently supported: 1, 1.5, and 2.

7.4.4 Set Modbus-TCP Parameters

Configure forwarding parameters to forward data collected by the control box to a third-party monitoring platform via the Modbus-TCP protocol.

Procedure

1. Go to "Device Management" > "Forwarding Settings" > "Modbus-TCP" to enter the parameter setting interface.
2. Add a Modbus-TCP channel according to actual needs and set the communication parameters.



SEC30CCON0129

No.	Parameter Name	Description
1	Channel Name	Supports custom device names. Customize the device name as needed.
2	Local IP	Set to the IP address of the control box.
3	Local Port	Set to the port number of the control box. Default value is 502.
4	Master IP	Set to the IP address of the Modbus-TCP management system.

No.	Parameter Name	Description
5	Master Port	Set to the port number of the Modbus-TCP management system.
6	Point Table Selection	Import the point table as needed.
7	Data Acquisition TCP Address	Set the Modbus-TCP management system address. To modify the address, click "Modbus-Tcp".

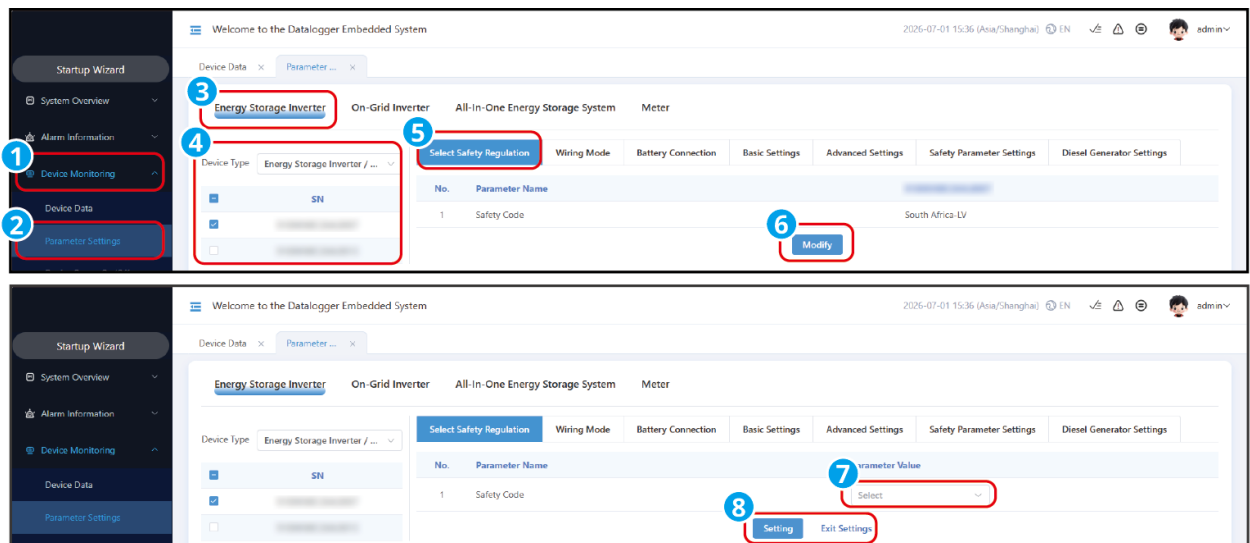
7.5 Set Device Parameters

7.5.1 Configure Energy Storage Inverter Parameters

7.5.1.1 Set Safety Code

Procedure:

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "Hybrid Inverter".
2. Select the device type, and check the inverter SN to be viewed or set.
3. Click "Select Safety Code" > "Modify", and select the corresponding safety code according to the country or region where the device is located. Click "Set" to complete the configuration.

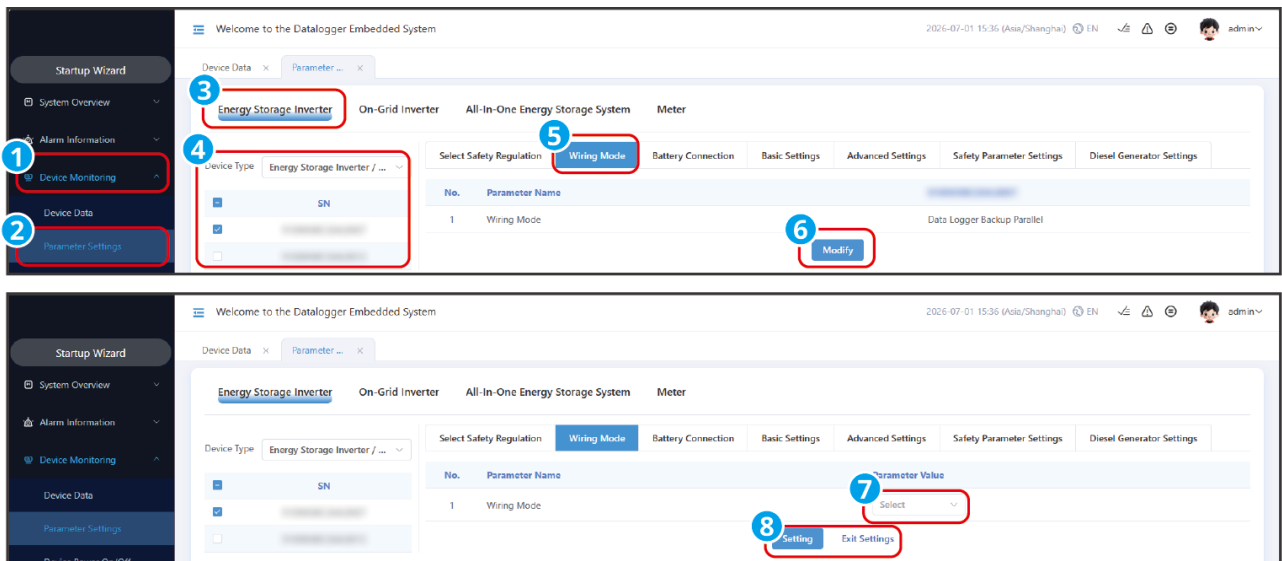


SEC30CCON0092

7.5.1.2 Set Wiring Mode

Operation Steps:

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "hybrid inverter".
 2. Select the device type, and check the inverter SN that needs to be viewed or set.
 3. Click "Wiring Mode" > "Modify", select the wiring mode according to actual needs, and click "Settings" to complete the configuration.
- Single unit: Select this mode for grid-connected systems
 - Data Acquisition Parallel Backup mode: Select this mode for wiring systems in on-grid/off-grid scenarios and microgrid scenarios

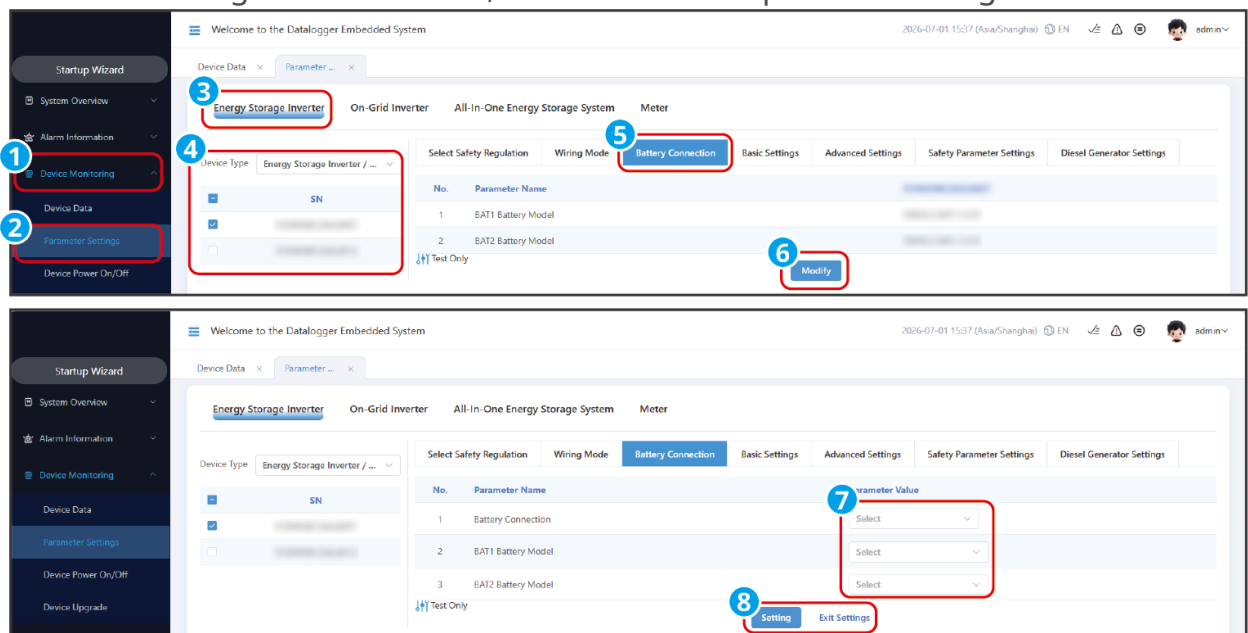


SEC30CCON0093

7.5.1.3 Set Battery Access Parameters

Operation Steps:

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "Hybrid Inverter".
2. Select the device type, check the inverter SN to view or set.
3. Click "Battery Access" > "Modify", select the battery access method and battery model according to actual needs, click "Set" to complete the configuration.

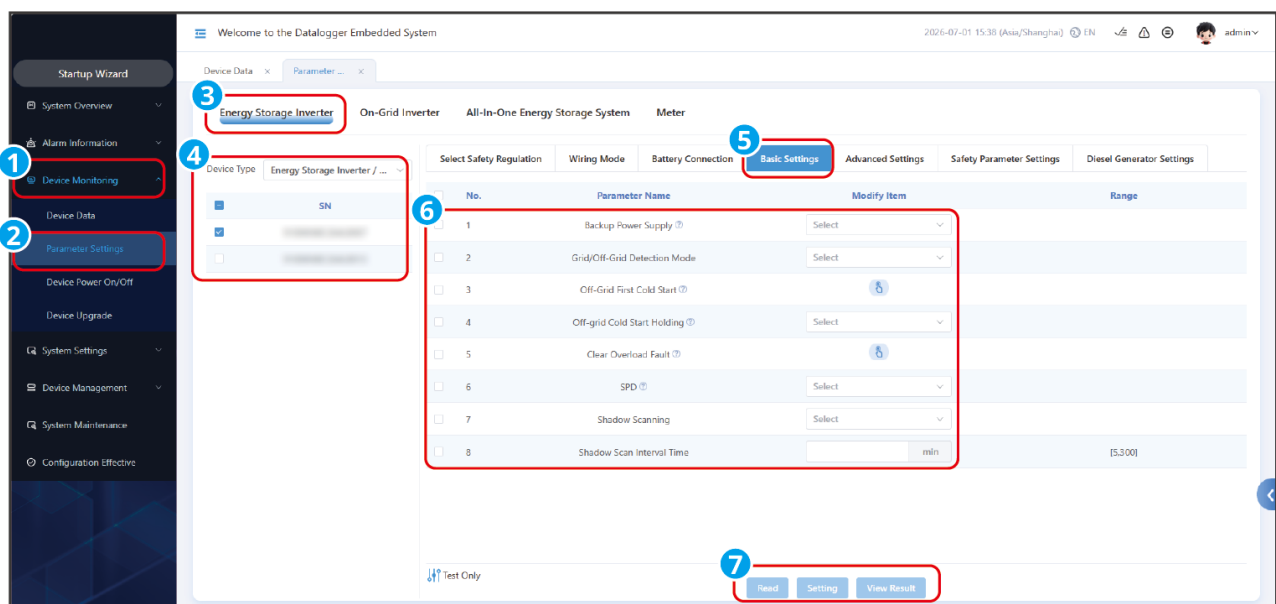


SEC30CCON0094

7.5.1.4 Set Basic Parameters of Hybrid Inverter

Operation steps:

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "Hybrid Inverter" .
2. Select the device type, and check the inverter SN you want to view or set.
3. Check the parameters you want to view or set, click "Read" to query the current values of the selected parameters. To modify, enter the modification item and click "Set", then click "View Result" to check whether the modification is successful.



SEC30CCON0095

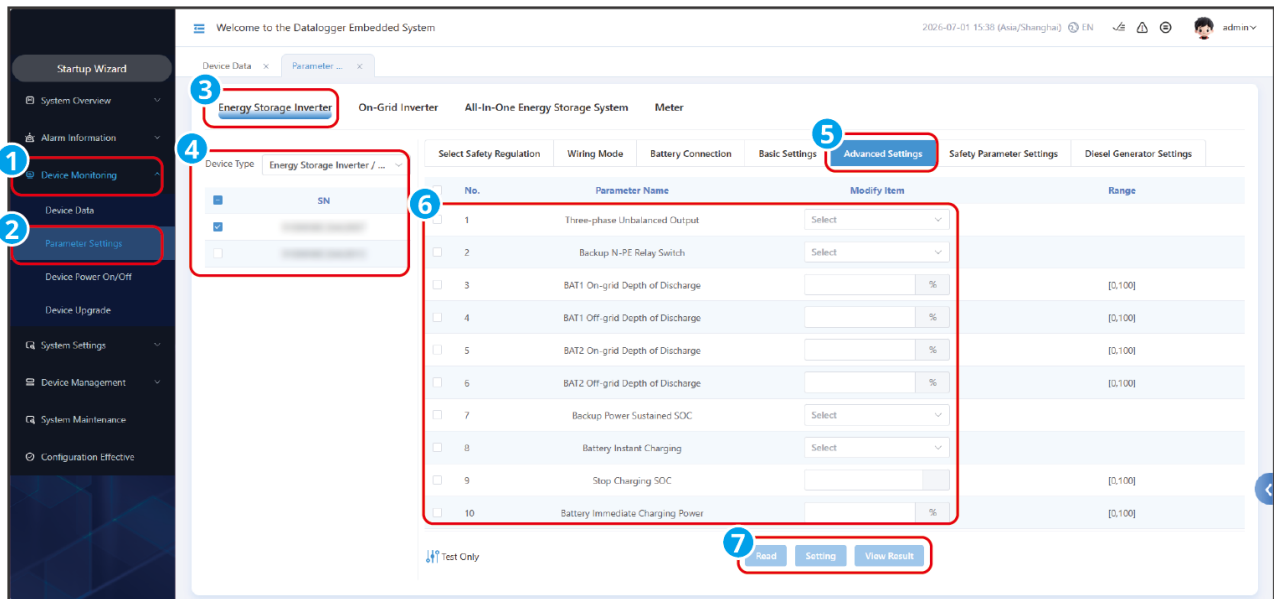
No.	Parameter Name	Description
1	Backup Power	After setting the backup power function, when the grid is disconnected, the load connected to the BACKUP port of the inverter can be powered by the battery, ensuring uninterrupted power supply to the load.

No.	Parameter Name	Description
2	UPS Detection Mode	• UPS mode - full wave detection: detects whether the grid voltage is too high or too low. • UPS mode - half wave detection: detects whether the grid voltage is too low. • EPS mode - supports low voltage ride-through: disables the grid voltage detection function.
3	Off-grid First Cold Start	Only takes effect once. After enabling this function, the battery or photovoltaic can be used to output backup power in off-grid mode.
4	Off-grid Cold Start Holding	Takes effect multiple times. After enabling this function, the battery or photovoltaic can be used to output backup power in off-grid mode.
5	Clear Overload Barrier	When the load power connected to the BACK-UP port of the inverter exceeds the rated load power, the inverter will restart and check the load power again. If not handled in time, the inverter will restart multiple times and perform load detection, with the interval between restarts gradually increasing. After the load power on the BACK-UP port is reduced to within the rated power range, click this switch to clear the inverter restart interval, and the inverter will restart immediately.
6	Lightning Protection Alarm	After enabling the SPD secondary lightning protection alarm function, an alarm will indicate an abnormality when the lightning protection module is abnormal.
7	shadow scan	When the photovoltaic panels are heavily shaded, enabling the shadow scan function can optimize the inverter's power generation efficiency. After enabling, you can set the shadow scan interval according to actual needs.

7.5.1.5 Set Hybrid Inverter Advanced Parameters

Operation steps:

1. Through "Device Monitoring" > "Parameter Settings" > "hybrid inverter" enter the parameter settings interface.
2. Select the device type, check the inverter SN to view or set.
3. Check the parameters to view or set, click Read to query the current values of the selected parameters. To modify, enter the "Modification Item" then click "Set", and click "View Result" to check if the modification is successful.



SEC30CCON0096

No.	Parameter Name	Description
1	Three-Phase Unbalanced Output	When the grid uses split-phase billing, enable the three-phase unbalanced function.
2	Backup Power N and PE Relay Switch	According to the grid standards of some 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 wires.
4	BAT1/2 Off-Grid Discharge Depth	The maximum percentage of the battery's allowed discharge capacity relative to its total capacity when the inverter is grid-connected or off-grid.

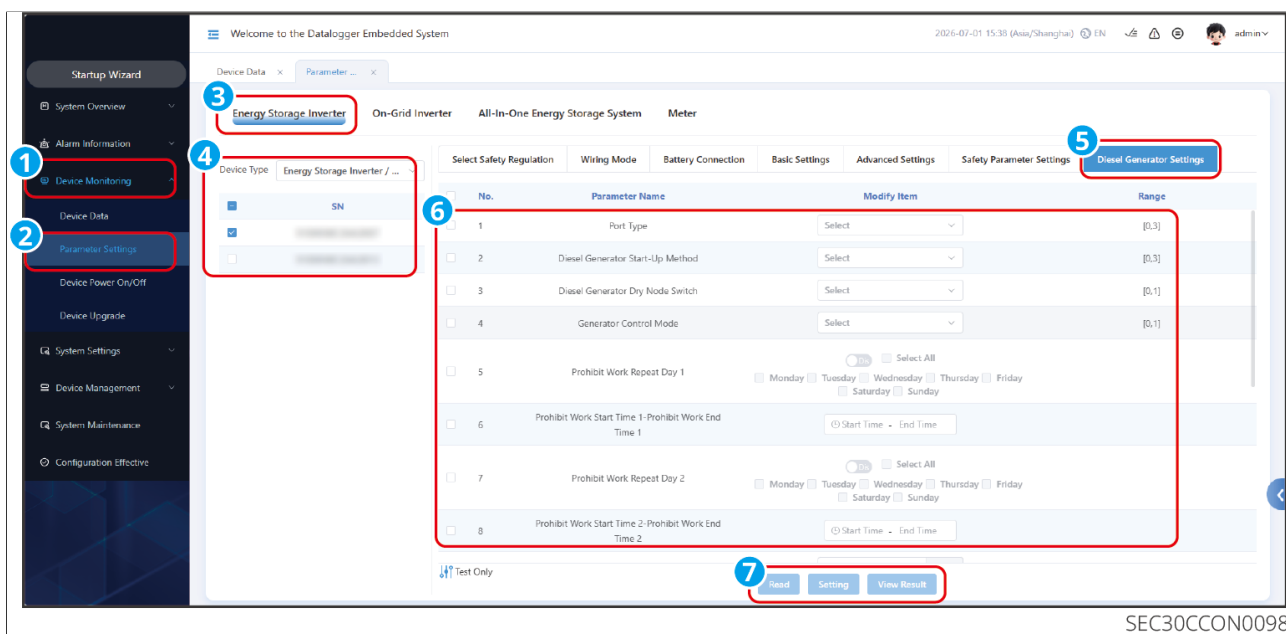
No.	Parameter Name	Description
5	Backup Power Sustained SOC	To ensure the battery SOC is sufficient to maintain normal system operation during off-grid mode, the battery will be charged via the grid or PV to the set SOC protection value when the system is grid-connected.
6	Battery Immediate Charge Enable	When enabled, the battery will be charged immediately from the grid. This is a one-time action. Select to enable or stop based on actual needs.
7	Stop Charging SOC	When Battery Immediate Charge is enabled, charging will stop when the battery SOC reaches the charge cutoff SOC.
8	Battery Immediate Charge Power	When Battery Immediate Charge is enabled, the charging power as a percentage of the inverter rated power. For example, for a 10kW rated inverter, setting it to 60 results in a charging power of 6kW.
9	Arc Failure Detection Switch	• After enabling the Arc Failure detection function, the system can monitor whether there is an arc hazard in the equipment. • Click "Arc Failure Self-Test" to start a self-test of the arc detection module and confirm whether the status is normal. View the result via "Arc Failure Status". • If the inverter triggers an Arc Failure alarm less than 5 times within 24 hours, the alarm can be cleared automatically. After the 5th Arc Failure alarm, the inverter will shut down for protection. You need to click "Clear Arc Alarm" to clear the fault before the inverter can resume normal operation.

No.	Parameter Name	Description
10	PV Connection Mode	• Independent connection: Each PV string is connected one-to-one to the inverter's MPPT port. • Partial parallel connection: One PV string is connected to multiple inverter MPPT ports, while other PV strings are connected to other inverter MPPT ports. • Parallel connection: When an external PV string is connected to the inverter's PV input ports, one PV string is connected to multiple PV input ports.
11	PX Curve	When this function is enabled, the inverter will adjust the three-phase power based on the grid voltage value to maximize power utilization and prevent voltage rise as much as possible. If the default values do not meet requirements, modify the PX curve voltage thresholds according to actual needs.

7.5.1.6 Set Generator Parameters

Operation Steps:

1. Enter the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "Hybrid Inverter".
2. Select the device type and check the inverter SN to be viewed or set.
3. Check the parameters to be viewed or set, click Read to query the current values of the selected parameters. To modify, enter the "Modification Item" and click "Set", then click "View Result" to see if the modification is successful.



No.	Parameter Name	Description
1	Port Type	Only applicable for standalone scenarios. Select the type of device connected to the inverter SMART port. • Diesel generator connection: SMART port connected to diesel generator • Load connection: SMART port connected to load • Basic mode: SMART port not connected to any device • Microgrid mode: Not supported by the current system
2	Diesel Generator Start Mode	• Auto control generator (supports dry contact connection): Automatically controls generator start/stop based on settings. • Manual control generator (does not support dry contact connection): Requires manual start/stop of the generator; inverter cannot control generator start/stop. • No generator installed: When no generator is connected to the system, select "No generator connected."

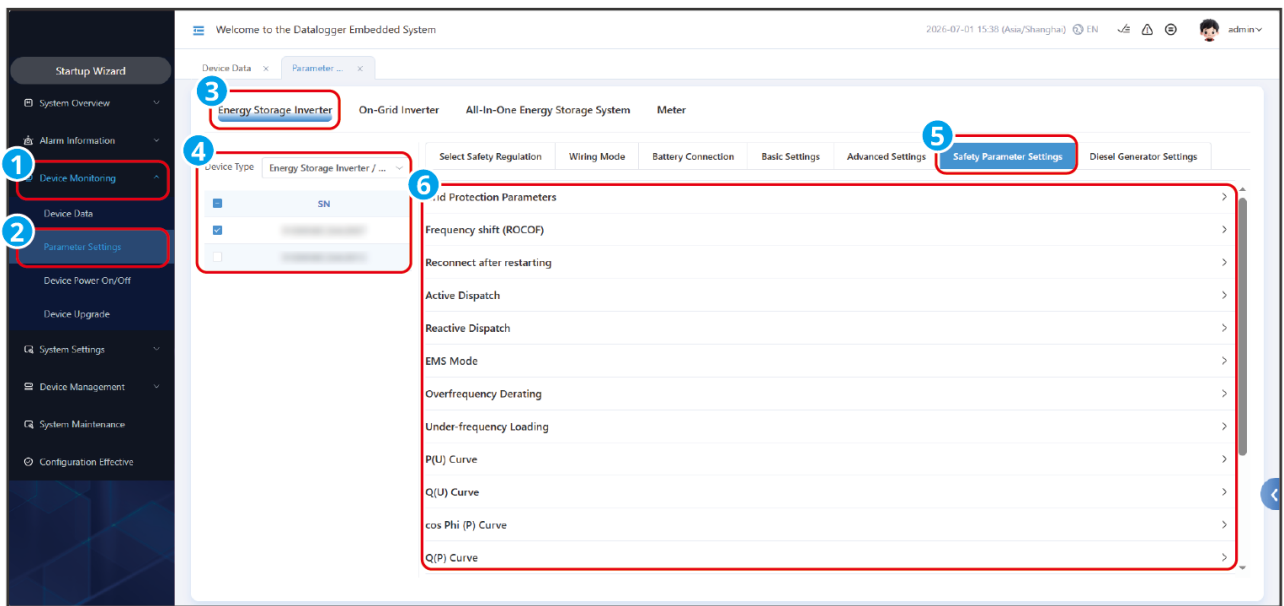
No.	Parameter Name	Description
3	Diesel Generator Dry Contact Switch	When the switch is on, the generator operates; it can automatically stop after reaching the set runtime.
4	Diesel Generator Control Mode	Diesel generator control mode: Standalone microgrid and parallel microgrid networking equipment differ; set according to the solution type. - Parallel microgrid: When the STS type used in the system is 375K or 750K, set to parallel microgrid. - Standalone microgrid: When the STS type used in the system is 125K, set to standalone microgrid.
5	Prohibit Working Day Repetition	Set the dates on which generator operation is prohibited.
6	Prohibit Work Start Time - Prohibit Work End Time	Set the time period during which generator operation is prohibited.
7	Rated Power	Set the rated power for generator operation.
8	Runtime	The continuous runtime after the generator starts. After the time is reached, the generator stops. If the generator's runtime includes a prohibited work period, the generator stops during that period; after the prohibited work period, the generator restarts and the timer resets.
9	Voltage Upper Limit	Set the voltage range for generator operation.
10	Voltage Lower Limit	

No.	Parameter Name	Description
11	Frequency Upper Limit	Set the frequency range for generator operation.
12	Frequency Lower Limit	
13	Preheating Time	Set the generator no-load preheating time.
14	Max. Charging Power	The charging power when the generator generates electricity to charge the battery.

7.5.1.7 Set Custom Safety Parameters for Energy Storage Inverter

NOTICE

- Safety regulations parameters must be set according to the requirements of the power grid company. If changes are needed, consent from the power grid company must be obtained.
- For more information on safety regulations parameters, please refer to the [11.1.Custom Safety Regulations Parameters\(Page 156\)](#) section.



SEC30CCON0097

7.5.2 Set Meter Parameters

Operation steps:

1. Through “Device Monitoring” > “Parameter Settings” > “Meter” enter the parameter settings interface.
2. To modify, enter the “Modification value” and click “Set”.



SEC30CCON0099

No.	Parameter Name	Description
1	CT ratio	Set the ratio of CT primary side current to secondary side current.

No.	Parameter Name	Description
2	PT ratio	Set the ratio of PT primary voltage to secondary voltage.
3	Wiring method	Set the meter's connection method according to the actual situation.

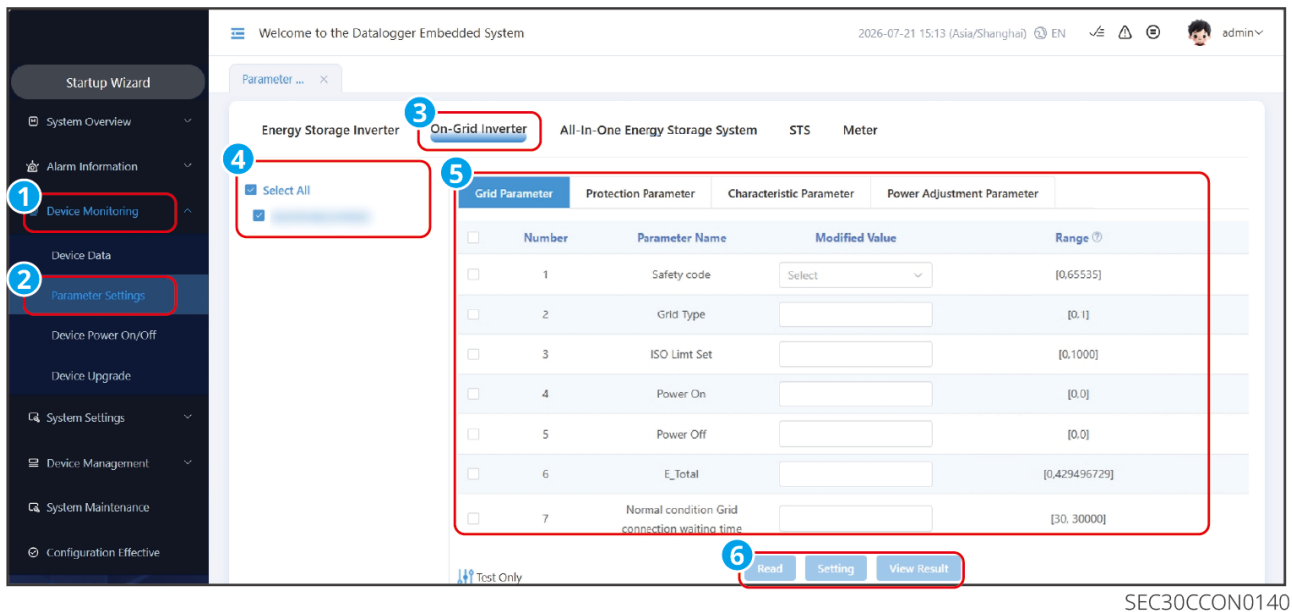
7.5.3 Set On-grid PV Inverter Parameters

NOTICE

- Different inverter models require different parameter settings. Refer to the actual interface for details.
- When you need to enable or disable a function, enter 0 or 1. 0 means disable the function, 1 means enable the function.

Operation steps

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "grid-tied PV inverter".
2. Select the device type and check the inverter SN to be viewed or set.
3. Check the parameters to be viewed or set, click "Query" to query the current values of the selected parameters. To modify, enter the "Modified value" and click "Modify", then click "View result" to check whether the modification is successful.



SEC30CCON0140

Grid parameters

No.	Parameter Name	Description
1	safety code	Set according to the grid standard of the country/region where the inverter is located and the application scenario of the inverter.
2	Lightning Protection Module Detection Switch	Enable or disable the lightning protection module detection function.
3	Start	Send a start command.
4	Shutdown	Send a shutdown command.
5	AC Wiring Mode	- Set whether the inverter output includes N wire according to the application scenario. 0 represents three-phase four-wire system (3W/PE), 1 represents three-phase five-wire system (3W/N/PE).

No.	Parameter Name	Description
6	Shadow MPPT Function Switch	When the inverter is used in scenarios where PV strings are significantly shaded, enabling this function will cause the inverter to perform a global MPPT scan at regular intervals to find the maximum power point.
7	Active Power Fixed Value Derating	Adjust the active power output of the inverter according to a fixed value.
8	Active Power Percentage Derating	Adjust the active power output of the inverter according to a percentage of rated power.
9	Reactive Power Compensation (PF)	Set the power factor of the inverter.
10	Reactive Power Compensation (Q/S)	Set the reactive power output of the inverter.
11	Reactive Power Compensation Fixed Value	Adjust the reactive power output of the inverter according to a fixed value.
12	Night Reactive Power Enable	Enable or disable the night reactive power function. In certain specific application scenarios, the grid company may require the inverter to perform reactive power compensation at night to ensure the power factor of the local grid meets requirements.

No.	Parameter Name	Description
13	Night Reactive Power Parameter Activation	When this setting is enabled, the inverter outputs reactive power according to the Night Reactive Power Scheduling Compensation Fixed Value setting; otherwise, the inverter executes according to remote dispatch commands.
14	Night Reactive Power Scheduling Percentage	When performing reactive power compensation at night, schedule reactive power in percentage form.
15	Night Reactive Power Scheduling	When performing reactive power compensation at night, schedule reactive power in fixed value form.

Characteristic parameters

No.	Parameter Name	Description
1	European One-Key Shutdown Enable	Enable or disable the European one-key shutdown function.
2	PID Prevention Function Enable	Enable or disable the PID prevention function.
3	PID Repair Function Switch	Enable or disable the PID repair function.

No.	Parameter Name	Description
4	Anti-Reverse Flow Switch	Enable or disable the anti-reverse flow function.
5	Single Machine Anti-Reverse Flow Upstream Power Percentage	Set the reverse flow upstream power as a percentage.
6	Three-Phase Anti-Reverse Flow Mode Selection	Set the anti-reverse flow mode. 0 means the total three-phase power cannot reverse flow; 1 means any single phase cannot reverse flow.
7	External Meter CT Ratio	Set the meter CT ratio.
8	ISO Threshold	To protect device safety, the inverter will detect the insulation resistance of the input side to ground during self-test. If the detected value is lower than the "ISO threshold", the inverter will not connect to the grid.
9	NPE Voltage Overvoltage Fault Detection Switch	Enable or disable N-PE voltage overvoltage fault detection.

No.	Parameter Name	Description
10	N-PE Error Threshold	N-PE voltage overvoltage fault threshold.
11	Active Power Dispatch Response Mode	- Set the active power dispatch response mode. Supported: ramp mode or first-order low-pass filter mode. 0: Not enabled; 1 represents ramp mode; 2 represents first-order low-pass time constant; 3 represents first-order low-pass response time.
12	Active Power Change Gradient	Set the inverter active power change rate.
13	Active Power Dispatch Low-Pass Filter Time Parameter	Set the active power dispatch low-pass filter time parameter.
14	Reactive Power Dispatch Response Mode	- Set the reactive power dispatch response mode. Supported: ramp mode or first-order low-pass filter mode. 0: Not enabled; 1 represents ramp mode; 2 represents first-order low-pass time constant; 3 represents first-order low-pass response time.
15	Reactive Power Change Gradient	Set the inverter reactive power change rate.

No.	Parameter Name	Description
16	Reactive Power Dispatch Low-Pass Filter Time Parameter	Set the reactive power dispatch low-pass filter time parameter.

Protection parameters

No.	Parameter Name	Description
1	Over-voltage Trigger n-stage Value	Set the grid n-level over-voltage protection point. n=1,2.
2	Over-voltage Trigger n-stage Trip Time	Set the grid n-level over-voltage protection time. n=1,2.
3	Under-voltage Trigger n-stage Value	Set the grid n-level under-voltage protection point. n=1,2.
4	Under-voltage Trigger n-stage Trip Time	Set the grid n-level under-voltage protection time. n=1,2.

No.	Parameter Name	Description
5	Phase Voltage n-level Over-voltage Protection Value	Set the grid n-level over-voltage protection point. n=3,4.
6	Phase Voltage n-level Over-voltage Protection Time	Set the grid n-level over-voltage protection time. n=3,4.
7	10min Over-voltage Trigger Value	Set the 10-minute over-voltage protection point.
8	10min Over-voltage Trip Time	Set the 10-minute over-voltage protection time.
9	Over-frequency Trigger n-stage Value	Set the grid n-level over-frequency protection point. n=1,2.
10	Over-frequency Trigger n-stage Trip Time	Set the grid n-level over-frequency protection time. n=1,2.

No.	Parameter Name	Description
11	Under-frequency Trigger n-stage Value	Set the grid n-level under-frequency protection point. n=1,2.
12	Under-frequency Trigger n-stage Trip Time	Set the grid n-level under-frequency protection time. n=1,2.
13	n-level Over-frequency Protection Value	Set the grid n-level over-frequency protection point. n=3,4.
14	n-level Over-frequency Protection Time	Set the grid n-level over-frequency protection time. n=3,4.
15	n-level Under-frequency Protection Value	Set the grid n-level under-frequency protection point. n=3,4.
16	n-level Under-frequency Protection Time	Set the grid n-level under-frequency protection time. n=3,4.

No.	Parameter Name	Description
17	Startup Grid-connection Voltage Upper Limit	Standards in some countries/regions require that when the equipment is started for the first time and connected to the grid, if the grid voltage is higher than the set value of the startup grid-connection voltage upper limit, the equipment is not allowed to connect to the grid.
18	Startup Grid-connection Voltage Lower Limit	Standards in some countries/regions require that when the equipment is started for the first time and connected to the grid, if the grid voltage is lower than the set value of the startup grid-connection voltage lower limit, the equipment is not allowed to connect to the grid.
19	Startup Grid-connection Frequency Upper Limit	Standards in some countries/regions require that when the equipment is started for the first time and connected to the grid, if the grid frequency is higher than the set value of the startup grid-connection frequency upper limit, the equipment is not allowed to connect to the grid.
20	Startup Grid-connection Frequency Lower Limit	Standards in some countries/regions require that when the equipment is started for the first time and connected to the grid, if the grid frequency is lower than the set value of the startup grid-connection frequency lower limit, the equipment is not allowed to connect to the grid.
21	Startup Grid-connection Waiting Time	Set the waiting time for the equipment to start when connecting to the grid for the first time.

No.	Parameter Name	Description
22	Startup Grid-connection Power Loading Rate	Set the loading rate at which the power gradually increases when the equipment starts for the first time and connects to the grid.
23	Reconnection Grid-connection Voltage Upper Limit	Standards in some countries/regions require that after the inverter shuts down due to fault protection, if the grid voltage is higher than the set value of the reconnection grid-connection voltage upper limit, the inverter is not allowed to reconnect to the grid.
24	Reconnection Grid-connection Voltage Lower Limit	Standards in some countries/regions require that after the inverter shuts down due to fault protection, if the grid voltage is lower than the set value of the reconnection grid-connection voltage lower limit, the inverter is not allowed to reconnect to the grid.
25	Reconnection Grid-connection Frequency Upper Limit	Standards in some countries/regions require that after the inverter shuts down due to fault protection, if the grid frequency is higher than the set value of the reconnection grid-connection frequency upper limit, the inverter is not allowed to reconnect to the grid.
26	Reconnection Grid-connection Frequency Lower Limit	Standards in some countries/regions require that after the inverter shuts down due to fault protection, if the grid frequency is lower than the set value of the reconnection grid-connection frequency lower limit, the inverter is not allowed to reconnect to the grid.

No.	Parameter Name	Description
27	Reconnection Grid-connection Waiting Time	The time interval for the inverter to reconnect to the grid after the grid voltage and frequency return to normal.
28	Reconnection Grid-connection Power Loading Rate	According to standards in some countries/regions, when the inverter is not connecting for the first time, the percentage of power increment per minute that can be output. For example: when set to 10, it means the reconnection loading slope is: 10%P/Srated%%.
29	LVRT Enable	Low Voltage Ride Through (LVRT) means that when the grid is abnormal with a short-term low voltage, the inverter cannot immediately disconnect from the grid and needs to support for a period of time. Enable this function to turn on the inverter's low voltage ride through function.
30	LVRT Depth n	Set the voltage percentage of the characteristic points of the LVRT curve. n=1,2,3,4,5,6,7.
31	LVRT Duration n	Set the duration of the characteristic points of the LVRT curve. n=1,2,3,4,5,6,7.
32	Enter LVRT Judgment Threshold	Set the threshold for triggering low voltage ride through. The threshold setting must comply with local grid standard requirements.
33	Exit LVRT Judgment Threshold	Set the threshold for exiting low voltage ride through. The threshold setting must comply with local grid standard requirements.
34	LVRT Positive Sequence Reactive K Value	During low voltage ride through, the inverter needs to output positive sequence reactive power to support the grid. This parameter is used to set the amount of positive sequence reactive power output by the inverter.

No.	Parameter Name	Description
35	LVRT Zero Current Mode Enable	Standards in some countries/regions have requirements for output current during low voltage ride through. This parameter needs to be enabled. After setting, the output current during low voltage ride through will be less than 10% of the rated current.
36	LVRT Zero Current Mode Entry Voltage Threshold	After enabling the LVRT zero current mode, during LVRT, if the grid voltage is less than the LVRT zero current mode entry voltage threshold, it will be executed in zero current mode.
37	HVRT Enable	High Voltage Ride Through (HVRT) means that when the grid is abnormal with a short-term high voltage, the equipment cannot immediately disconnect from the grid and needs to support for a period of time. Enable this function to turn on the inverter's high voltage ride through function.
38	HVRT Depth n	Set the voltage percentage of the characteristic points of the HVRT curve. n=1,2,3,4,5,6,7.
39	HVRT Duration n	Set the duration of the characteristic points of the HVRT curve. n=1,2,3,4,5,6,7.
40	Enter HVRT Judgment Threshold	Set the threshold for triggering high voltage ride through. The threshold setting must comply with local grid standard requirements.
41	Exit HVRT Judgment Threshold	Set the threshold for exiting high voltage ride through. The threshold setting must comply with local grid standard requirements.
42	HVRT Positive Sequence Reactive K Value	During high voltage ride through, the equipment needs to output positive sequence reactive power to support the grid. This parameter is used to set the amount of positive sequence reactive power output by the equipment.

No.	Parameter Name	Description
43	HVRT Zero Current Mode Enable	Standards in some countries/regions have requirements for output current during high voltage ride through. This parameter needs to be enabled. After setting, the output current during high voltage ride through will be less than 10% of the rated current.
44	HVRT Zero Current Mode Entry Voltage Threshold	After enabling the HVRT zero current mode, during HVRT, if the grid voltage is higher than the HVRT zero current mode entry voltage threshold, it will be executed in zero current mode.
45	Current Distribution Mode	• Set the distribution mode of reactive current and active current. • 0 represents reactive priority; 1 represents active priority; 2 represents constant current mode.
46	Ride-through End Active Power Recovery Mode	• During fault ride-through recovery, the active current recovery mode supports slope recovery, first-order low-pass filter recovery, no requirement, etc. • 0 means off; 1 means slope response; 2 means time constant; 3 means response time
47	Ride-through End Active Power Recovery Rate	During fault ride-through recovery, the speed at which the active current recovers to the active current before the fault ride-through.

No.	Parameter Name	Description
48	Ride-through End Active Power Recovery First-order Low-pass Filter	After fault ride-through ends, the active current recovers with the characteristic of a first-order low-pass filter.
49	Ride-through End Reactive Power Recovery Mode	• After fault ride-through ends, the reactive current recovery mode supports slope recovery, first-order low-pass filter recovery, no requirement, etc. • 0 means off; 1 means slope response; 2 means time constant; 3 means response time
50	Ride-through End Reactive Power Recovery Rate	After fault ride-through ends, the reactive current recovers according to the slope value.
51	Ride-through End Reactive Power Recovery First-order Low-pass Filter	After fault ride-through ends, the reactive current recovers with the characteristic of a first-order low-pass filter.

No.	Parameter Name	Description
52	Frequency Ride-through Enable Bit	After enabling frequency ride-through, when the grid frequency is abnormal, the inverter can continue to generate power within the required time.
53	n-stage Under-frequency Ride-through Frequency Point_UFn	Frequency point that triggers under-frequency ride-through.
54	n-stage Under-frequency Ride-through Time_UTn	Under-frequency ride-through duration.
55	n-stage Over-frequency Ride-through Frequency Point_OFn	Frequency point that triggers over-frequency ride-through.
56	n-stage Over-frequency Ride-through Time_OTn	Over-frequency ride-through duration.

Power regulation parameters

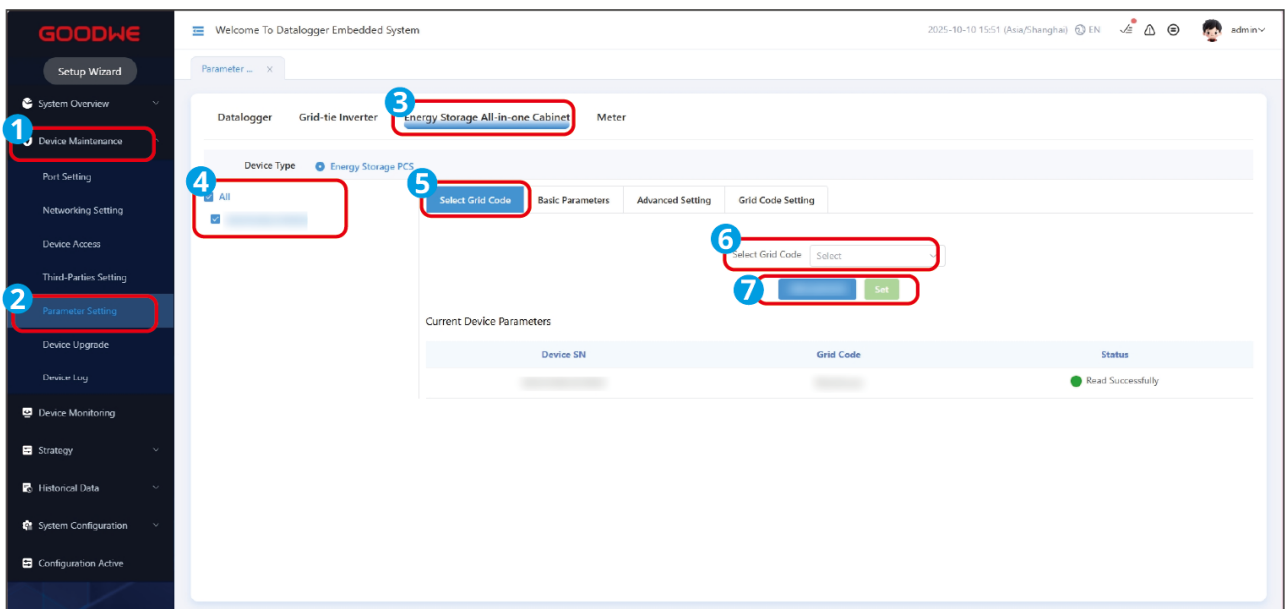
No.	Parameter Name	Description
1	Overfrequency Start Point (slope mode)	According to standards in some countries/regions, when the grid frequency exceeds the overfrequency point, the active power output of the inverter must be reduced.
2	Overfrequency Power Derating Slope (slope mode)	In slope mode, the slope of the active power derating change when the grid frequency exceeds the overfrequency point.
3	P-F Curve (Overfrequency)	Enable or disable overfrequency derating.
4	Underfrequency Start Point (slope mode)	According to standards in some countries/regions, when the grid frequency falls below the underfrequency point, the active power output of the inverter must be increased.
5	Recovery Power Slope	Set the power recovery slope for exiting overfrequency derating.
6	Frequency Hysteresis Point	Corresponding frequency point for underfrequency hysteresis function.
7	Intentional Delay T_a	Underfrequency hysteresis function silent waiting time.
8	Overfrequency End Point	Set the exit frequency for overfrequency derating.

7.5.4 Set Parameters of All-in-One Energy Storage Cabinet

7.5.4.1 Set Safety Standard Country for Energy Storage Cabinet

Operation Steps

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "Energy Storage Integrated Cabinet".
2. Select the device SN to view or set.
3. Click "Select Safety Standard", choose the safety standard country according to actual needs, and click "Parameter Delivery" to complete the configuration.



SEC30CCON0052

7.5.4.2 Set General Data for Energy Storage Cabinet

Procedure

1. Go to the parameter setting interface via "Device Monitoring" > "Parameter Settings" > "Energy Storage Integrated Cabinet".
2. Select the device SN(s) you want to view or set.
3. Click "General Data", select the parameters you want to view or set, then click "Read" to query the current values of the selected parameters. To modify, enter the

"Modification Item" and click "Set", then click "View Result" to check whether the modification was successful.

The screenshot shows the 'Parameter Setting' interface for an ESS device. The sidebar menu on the left has 'Parameter Setting' highlighted. The main content area shows the 'ESS' tab selected, with 'Basic Parameters' sub-tab active. A table lists 10 parameters for modification, including Wiring mode, Parallel Device Quantity, Supplementary Charge SOC, Backup Power, SPD, UPS Detection Mode, Cold Start Holding, Power On, Power Off, and Weak Grid Mode. The 'View Results' button is highlighted at the bottom right.

SEC30CCON0053

No.	Parameter Name	Description
1	Wiring Mode	Set the current system to single or parallel based on actual conditions. If parallel, select the parallel networking mode.
2	Number of Parallel Units	Set the number of energy storage integrated cabinets in the parallel system.
3	Top-up SOC	- When the battery SOC in the system is lower than the top-up SOC, the system will charge at a default power of 10kW. - Ensure that the top-up SOC is lower than the SOC lower limit.

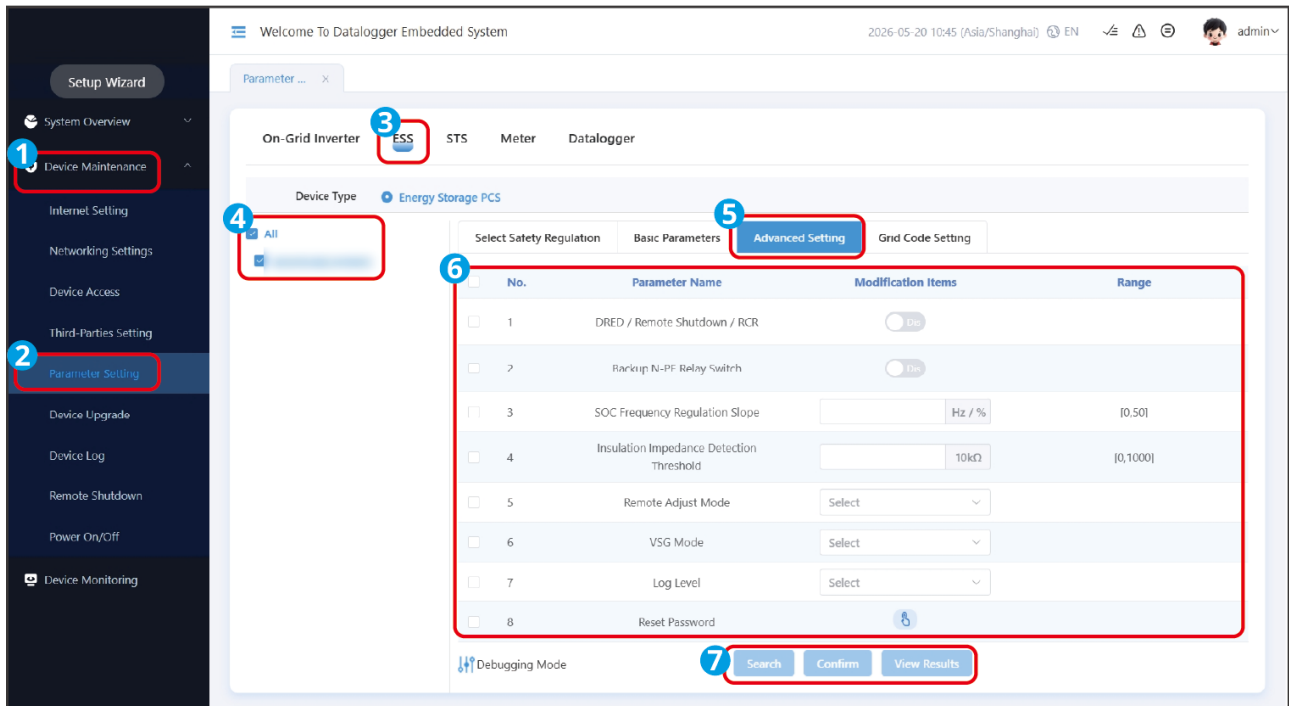
No.	Parameter Name	Description
4	Backup Power	After enabling the backup power function, when the grid is disconnected, the load connected to the BACKUP port of the inverter can be powered by the battery, ensuring uninterrupted power supply to the load.
5	Lightning Protection Alarm	After enabling the SPD secondary lightning protection alarm function, if the lightning protection module is abnormal, an alarm will be triggered to indicate the abnormality.
6	UPS Detection Mode	• UPS Mode - Full Wave Detection: Detects if the grid voltage is too high or too low. • UPS Mode - Half Wave Detection: Detects if the grid voltage is too low. • EPS Mode - Low Voltage Ride Through Supported: Disables grid voltage detection.
7	Off-grid Cold Start Holding	Takes effect multiple times. After enabling this function, the battery or PV can be used to output backup power in off-grid mode.
8	Power On	Command to control the energy storage system to power on or power off.
9	Power Off	
10	Weak Grid Mode	For weak grid areas, enable the weak grid mode function to ensure normal equipment operation. • Disabled: The weak grid support function is not enabled. • High Impedance Mode: Resolves high impedance issues caused by weak grid mode, supporting normal equipment operation.

7.5.4.3 Set Advanced Parameters for Energy Storage Cabinet

Steps

1. Go to the parameter settings interface via "Device Monitoring" > "Parameter Settings" > "Integrated Energy Storage Cabinet".
2. Select the device SN(s) you want to view or set.

- Click "Advanced Parameters", check the parameters you want to view or set, then click "Read" to query the current values of the selected parameters. If you need to modify, enter the "Modification Item" and click "Set", then click "View Result" to check if the modification was successful.



SEC30CCON0054

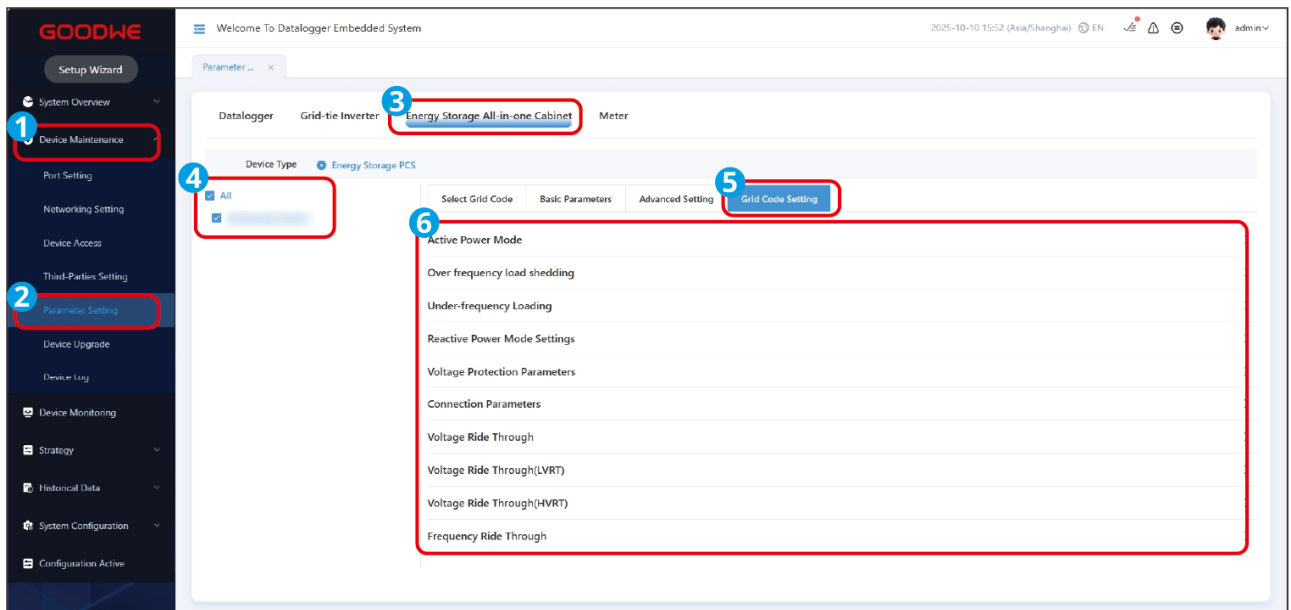
No.	Parameter Name	Description
1	DRED/Remote Shutdown/RCR	According to grid standard requirements of certain countries or regions, a third-party DRED/Remote Shutdown/RCR device needs to be connected for signal control.
2	Backup Power N and PE Relay Switch	According to grid standard requirements of certain countries or regions, during off-grid operation, it is necessary to ensure that the internal relay of the back-up port remains closed, thereby connecting the N and PE wires.
3	SOC Frequency Regulation Slope	When the system is off-grid, if the off-grid SOC is too high or too low, it is necessary to achieve over-frequency load shedding or under-frequency loading of the inverter by adjusting the off-grid AC frequency. The SOC frequency regulation slope is the AC frequency adjustment value.

No.	Parameter Name	Description
4	Insulation Resistance Detection Threshold	Set the insulation detection threshold. Default value: 50K.
5	Remote Adjustment Mode	After enabling, the SEC3000C will automatically issue commands to the integrated energy storage cabinet, by
6	VSG Mode	Disabled by default. After enabling, it switches from the default PQ mode to VSG mode.
7	Log Level	For internal debugging and testing use only.
8	Reset Password	Reset the connection password of the smart communication dongle Ezlink3000.

7.5.4.4 Set Custom Safety Parameters for Energy Storage Cabinet

NOTICE

- Safety parameters must be set according to the grid company's requirements. Any changes must be approved by the grid company.
- For more information on safety parameter explanations, please refer to the [11.1.Custom Safety Parameters\(Page 156\)](#) section.



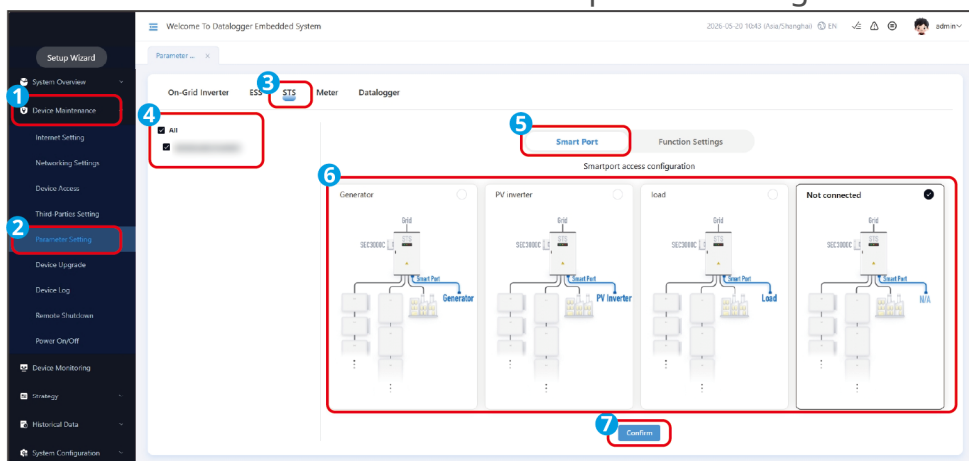
SEC30CCON0055

7.5.5 Set STS Parameters

Applicable to ESA261 with STS scenario.

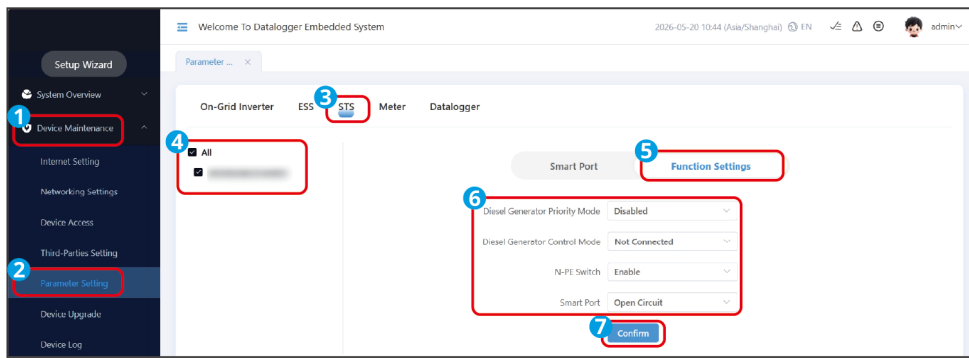
Set STS Port Configuration

Select the device connected to the STS port according to the actual situation.



SEC30CCON0070

Set STS Function Parameters



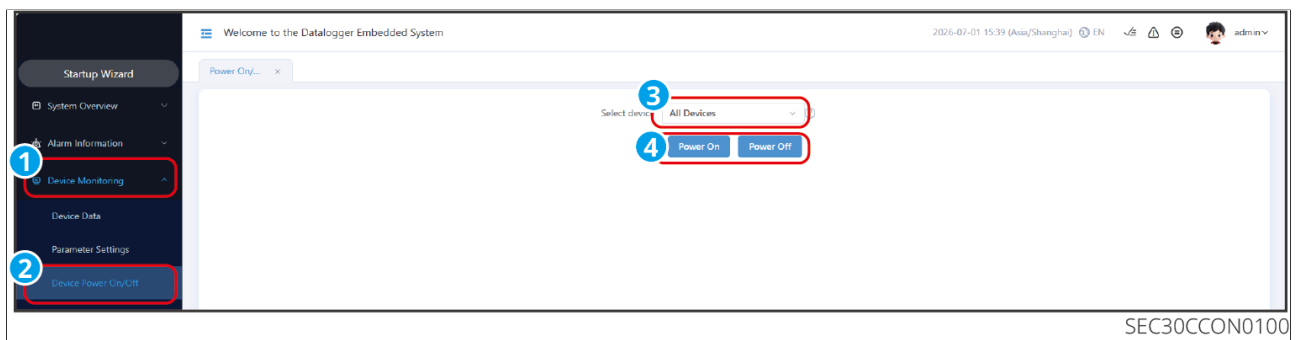
SEC30CCON0071

No.	Parameter Name	Description
1	Switch Cabinet Diesel Generator Priority Mode	When the smart-port of the STS is connected to the diesel generator and the switch cabinet diesel generator priority mode is enabled, if the battery SOC is lower than the diesel generator start SOC, the diesel generator will be automatically triggered to charge until the SOC upper limit is reached.
2	Diesel Generator Control Mode	Set the control method between the diesel generator and the STS based on actual conditions. Supports DO control or RS485 control.
3	N-PE Switch	Disabled by default. Set according to local regulations. When enabled, the N-PE switch will automatically close when the system switches to off-grid mode.
4	Smart Port	To power off or power on the device connected to the smart port, select Open or Close.

7.5.6 Device Power On/Off

Operation Steps:

1. Via "Device Monitoring" > "Device Power On/Off" to enter the power on/off interface.
2. Select the device to power on/off, and click Power On or Power Off.



7.6 Set System Parameters

7.6.1 Set Grid Connection Control Parameters

7.6.1.1 Set System Working Mode

NOTICE

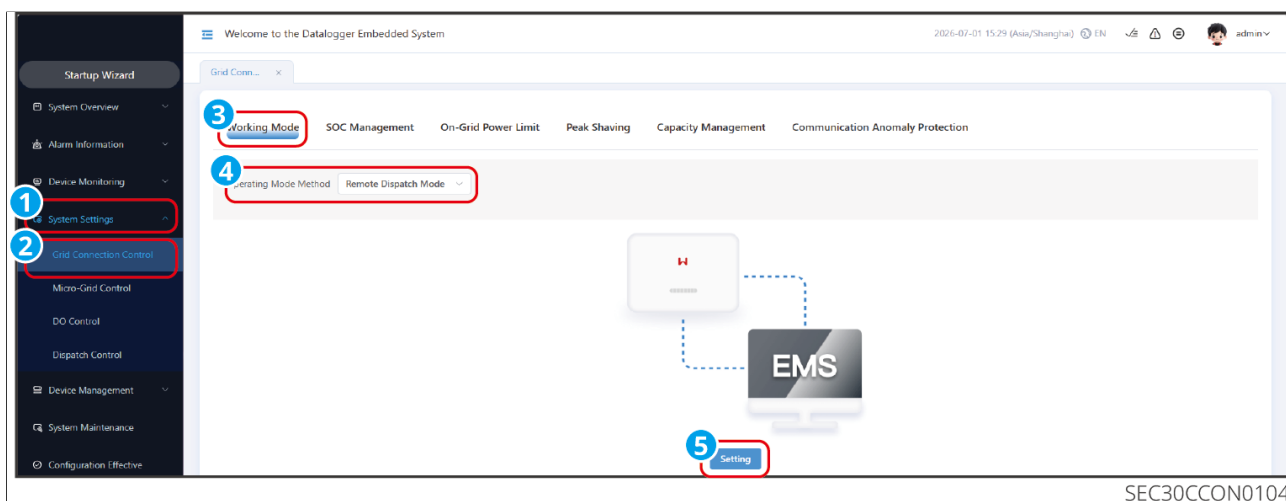
Set the working mode of SEC3000C. After setting, the energy storage integrated cabinet/inverter will be dispatched according to SEC3000C, without the need to set the working mode separately.

Operation Steps:

1. Go to the parameter setting interface via "System Settings" > "Grid-Connected Control" > "Working Mode" .
2. Set the working mode to Remote Dispatch Mode or Local Control Mode according to actual needs. When set to "Local Control Mode", the system's control strategy is not subject to third-party dispatch management; when set to Remote Dispatch Mode, the system is controlled by a third-party platform.
3. Set the specific working mode according to actual needs.

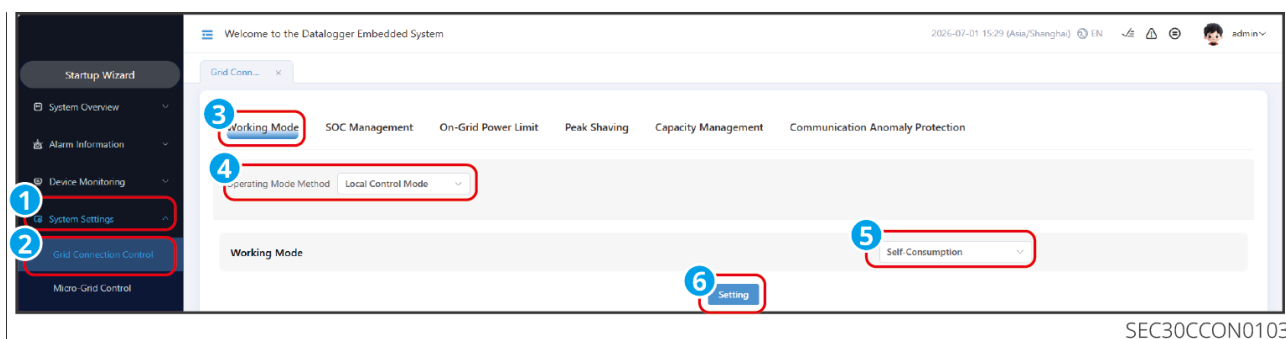
Remote Dispatch Mode

Send dispatch commands and control the system through a third-party remote monitoring platform or controller.



Self-consumption Mode

Applicable to areas with high electricity prices, low or no feed-in tariff subsidies. Photovoltaic power generation gives priority to powering loads, excess electricity charges the energy storage system. If the battery is fully charged or charging at full power, the remaining electricity is output to the grid. When photovoltaic power generation cannot meet the load demand, the energy storage system discharges to supply the load.



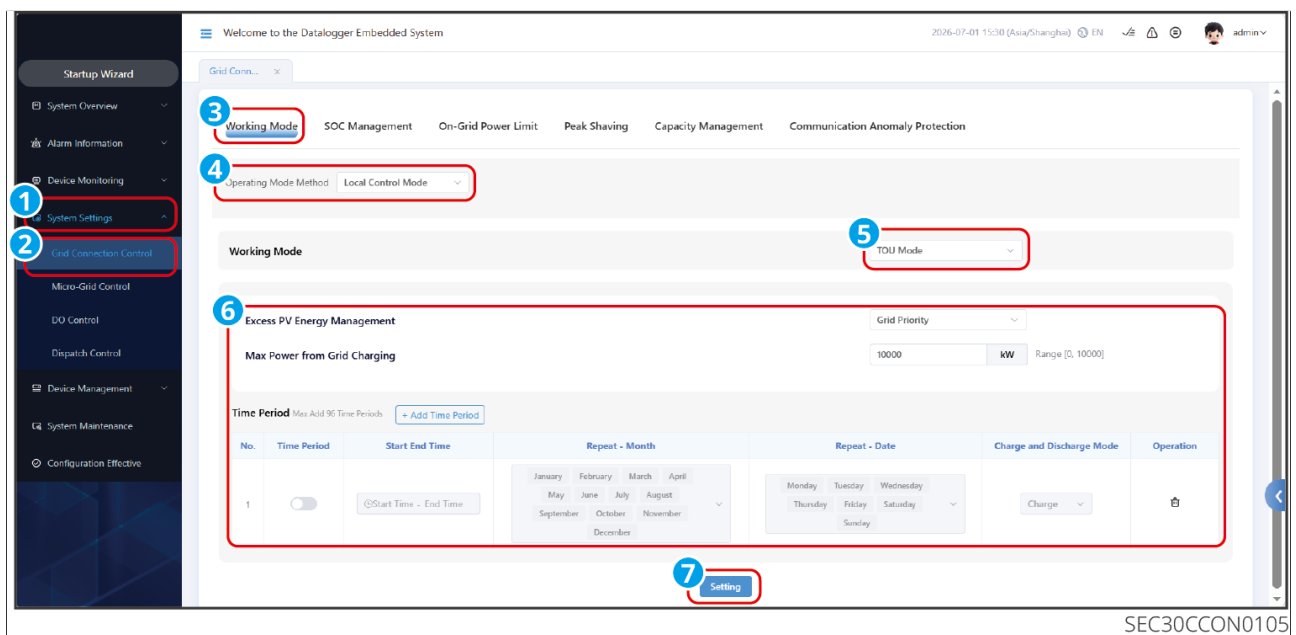
TOU Mode

Under compliance with local laws and regulations, set buying and selling electricity at different time periods based on grid peak-valley electricity price differences. For example, during the valley period, set the energy storage system to charging mode to buy electricity from the grid for charging; during the peak period, set the energy storage system to discharging mode to supply power to the load via the battery.

- Excess PV Energy Management: When PV generation is sufficient, support feeding excess PV energy into the grid or charging the battery. When set to "Grid Priority",

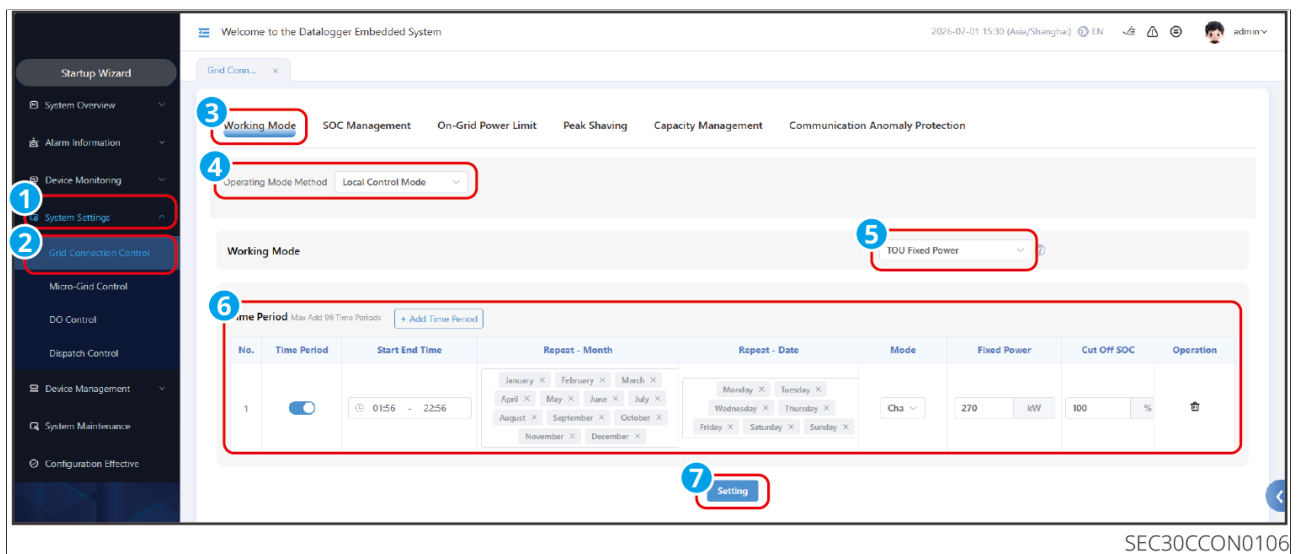
under compliance with local laws and regulations, when PV generation is sufficient, excess electricity can be fed into the grid. When set to "Charging Priority", after PV generation supplies the load, excess electricity will be used to charge the energy storage system. When the charging power reaches maximum or the storage is fully charged, the remaining energy will be fed into the grid.

- **Maximum Grid Charging Power:** The maximum charging power when using the grid to charge the energy storage device.



TOU Fixed Power Mode

Applicable to pure energy storage systems. Set charging and discharging times based on grid peak-valley electricity price differences. Within the set fixed time periods, the energy storage system charges and discharges according to actual needs. If a time period is not set for charging/discharging, any excess PV generation during that period can be used to charge the battery.



SEC30CCON0106

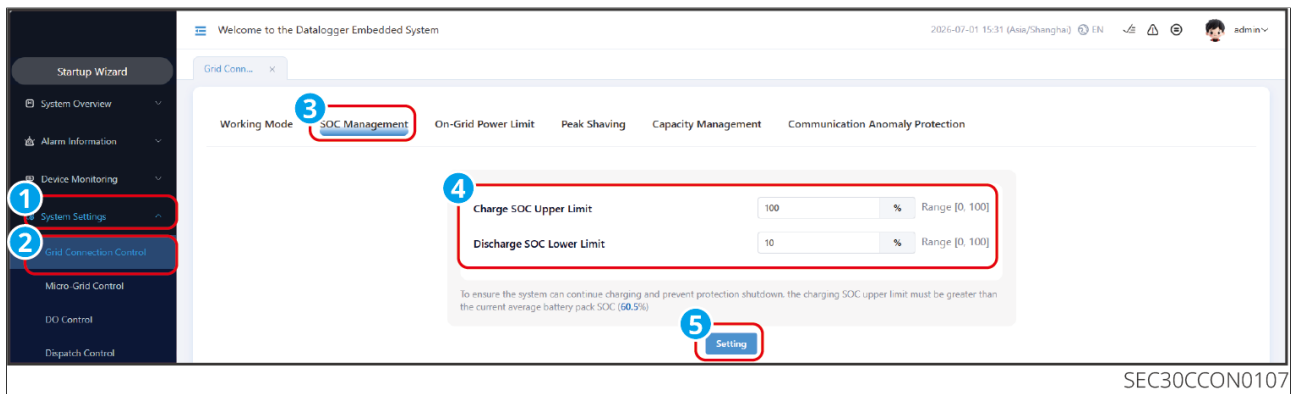
7.6.1.2 Set System SOC Management Function

NOTICE

- SOC management function is enabled by default.
- In microgrid scenarios, set the SOC range of the integrated energy storage cabinet to 10%-90%.

Operation Steps

1. Go to the parameter setting interface via "System Settings" > "Grid Connection Control" > "SOC Management".
2. Set the SOC upper and lower limits according to actual needs.
 - SOC upper limit: Battery charging stops when the battery SOC reaches the set value. Default: 95%.
 - SOC lower limit: Battery discharging stops when the battery SOC reaches the set value. Default: 5%.
3. After setting, click "Set" to complete the configuration.

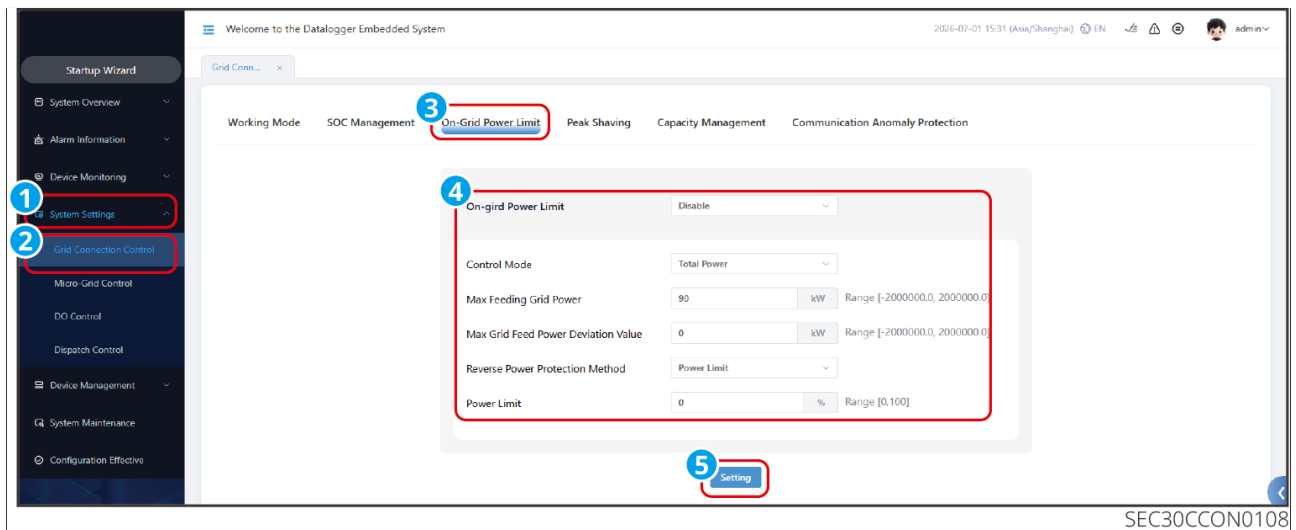


7.6.1.3 Set System On-grid Power Limit

When all loads in the photovoltaic system cannot consume the electricity generated by the system, the surplus electricity is fed into the grid. By setting the export power limit parameter, you can control the amount of electricity fed into the grid.

Operation steps

1. Go to the parameter setting interface via "System Settings" > "Grid Connection Control" > "Export Power Limit" .
2. Set the export power limit parameter according to actual needs.



No.	Parameter Name	Description
1	Control Mode	Select the method for controlling the output power of the device based on the actual situation. • Total power: Control the total power at the grid connection point to not exceed the output power limit. • Single-phase power: Control each phase power at the grid connection point to not exceed the output power limit.
2	Maximum Feed-in Grid Power	Set the maximum power that the device can actually feed into the grid according to the requirements of certain countries or regions.
3	Maximum Feed-in Grid Power Offset	• Set the adjustable range for the maximum power that the device can actually feed into the grid. • Maximum power delivered to the grid = Maximum Feed-in Grid Power + Maximum Feed-in Grid Power Offset.
4	Reverse Power Protection Mode	When the system experiences reverse power flow exceeding the maximum protection time (default 5s), the following protection measures can be taken: • Power limit: The device continues to operate at a percentage of the rated power. • Device disconnects from the grid.

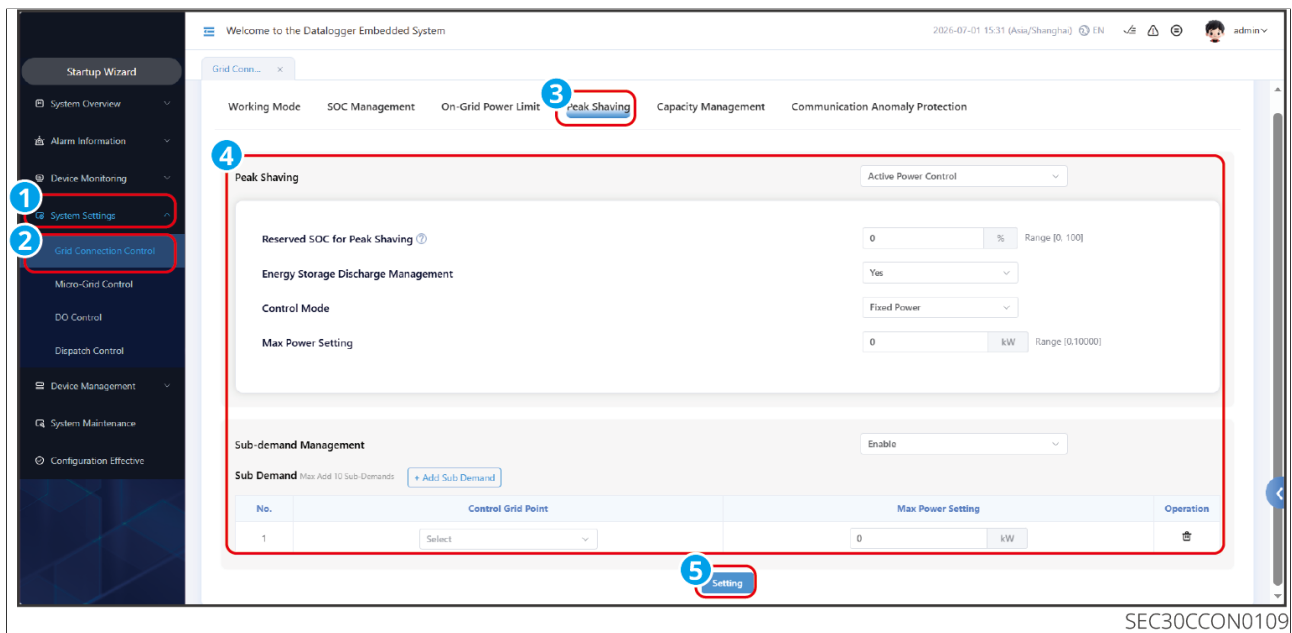
7.6.1.4 Set system Peakshaving function

Procedure

1. Go to "System Settings" > "Grid Connection Control" > "Peakshaving" to enter the parameter setting interface.
 2. Set Peakshaving and Sub-peakshaving mode according to actual requirements.
- Peakshaving: Mainly used for scenarios where purchased power peak is limited. In grid-connected scenarios, it restricts the user from purchasing electricity and uses

battery discharge to supply power, ensuring that the purchased power does not exceed the grid peak limit.

- Sub-peakshaving: When multiple transformers are used in the system, to ensure that each transformer's purchased power does not exceed its capacity, set the maximum power value.

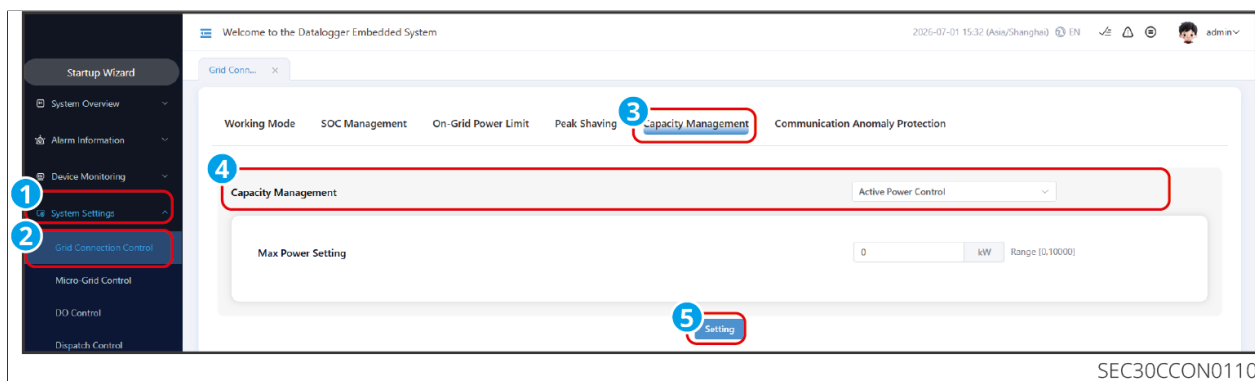


SEC30CCON0109

7.6.1.5 Set System Capacity Management

Operation Steps

1. Enter the parameter setting interface via 'System Settings' > 'Grid-Connected Control' > 'Capacity Management'.
 2. Set the capacity management mode according to actual needs.
- Capacity Management: Set the maximum power value of the transformer to ensure it does not exceed the transformer's charging and discharging capacity.

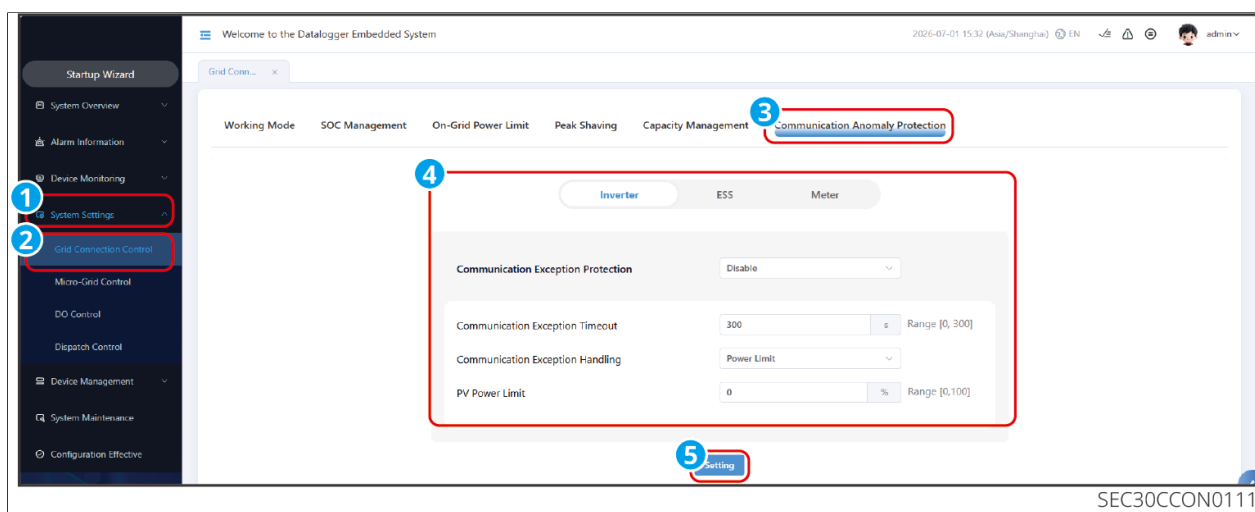


7.6.1.6 Set Communication Abnormal Protection Parameters

When the communication between the SEC3000C and the grid-tied Inverter, ESS, or meter is abnormal, and the abnormal time reaches the "Communication Abnormal Timeout Time", the Inverter, ESS, and meter will execute the corresponding abnormal handling strategy according to the settings, such as limiting power or disconnecting from the grid.

Operation Steps

1. Enter the parameter setting interface via "System Settings" > "Grid-Tied Control" > "Communication Abnormal Configuration".
2. Set the handling method for communication abnormalities according to actual needs.

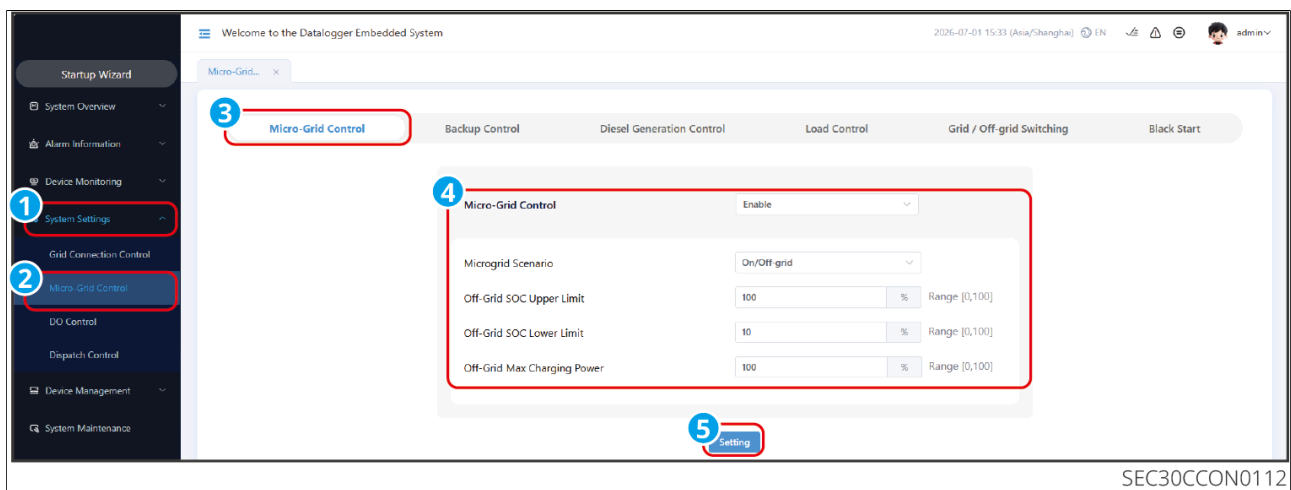


7.6.2 Set Microgrid Control Parameters

Set Microgrid Scenario

Select the microgrid scenario based on the actual system conditions. Supported: On/Off-Grid scenario, Off-Grid scenario.

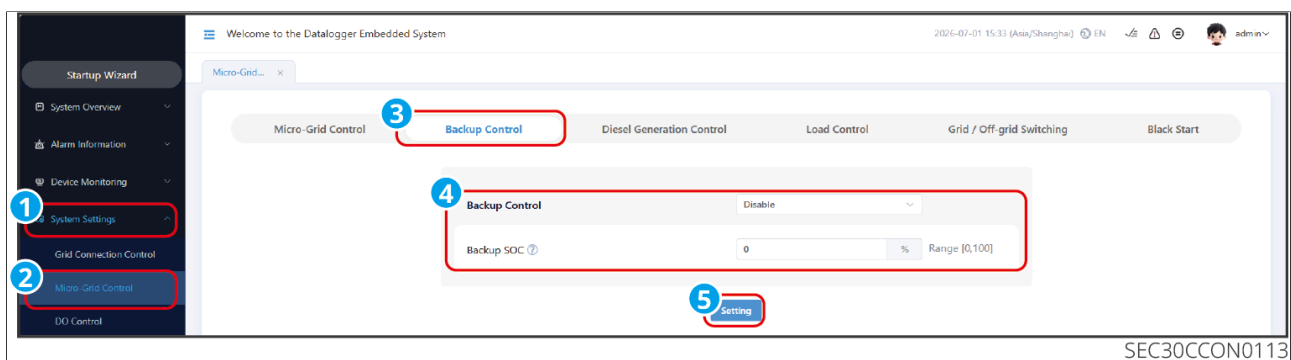
- On/Off-Grid scenario: The system automatically switches between on-grid and off-grid scenarios.
- Off-Grid scenario: The system is not connected to the grid, and operates using PV, diesel generator, battery, etc.



Set Backup Power Parameters

To ensure that the battery has enough power to discharge for loads when the system switches to off-grid operation, a "Backup SOC" must be reserved during on-grid operation.

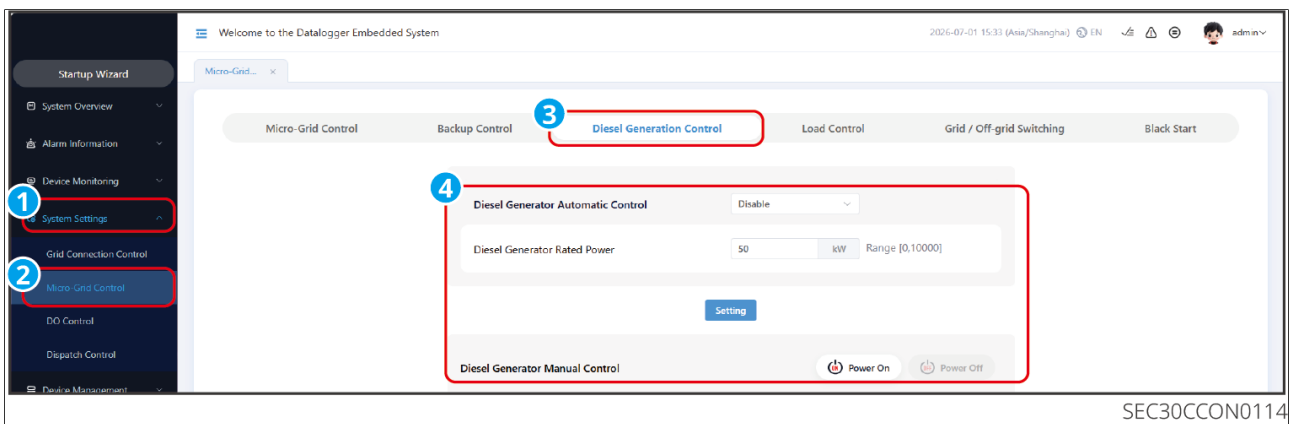
If the battery SOC is lower than the "Backup SOC", the battery will be charged to the backup SOC value using PV or the grid. The default backup SOC value is 30%.



Set Diesel Generator Control Parameters

If a diesel generator is connected to the system, set the diesel generator to automatic or manual start/stop based on actual needs. When STS125K is used in the system, this interface is not available. Please refer to the [8.5.1.6.Set Generator Parameters\(Page 99\)](#) chapter to set the diesel generator parameters.

- Enable automatic diesel generator control: When the system's solar and storage energy is insufficient, the diesel generator will automatically start to supply power.
- Disable automatic control: Manually control the diesel generator start/stop.

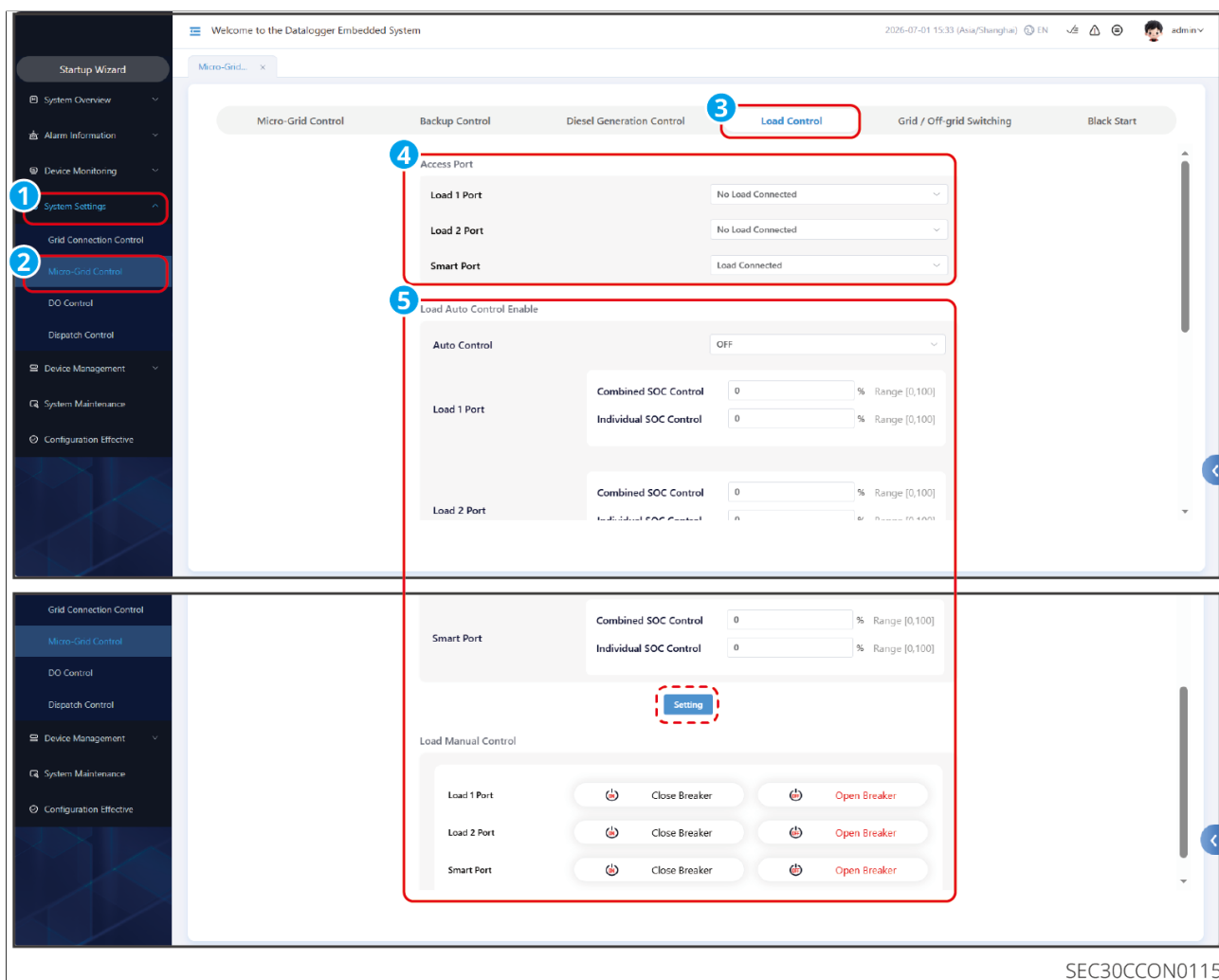


SEC30CCON0114

Set Load Control Parameters

If different loads are connected to the system, select the load type for each port based on actual conditions, and set the load to automatic or manual start/stop.

- If automatic load control is selected, when the battery SOC $\geq$ control close SOC, the port switch closes and starts the corresponding port device; when SOC $<$ control open SOC, the port switch opens and stops the corresponding port device.
- If manual load control is selected, manually turn on or off the device connected to the corresponding port.

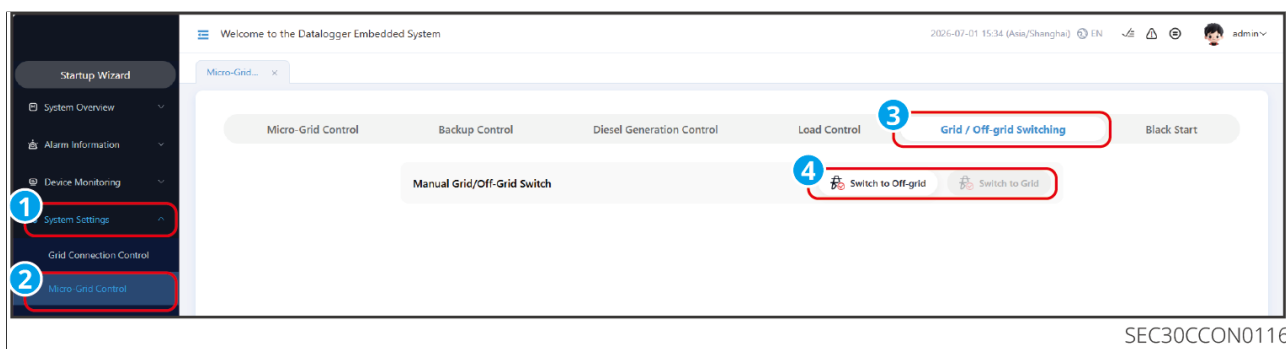


SEC30CCON0115

Set On/Off-Grid Switching Parameters

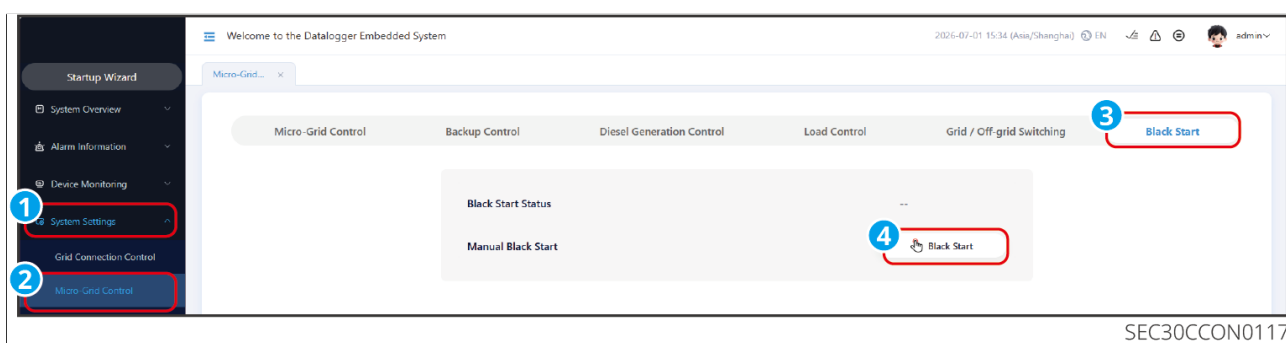
In the microgrid system, the on/off-grid status can be automatically switched. If manual control is required, set the "Manual On/Off-Grid Switching" parameter.

- Switch On-Grid to Off-Grid: Manually switch the system from on-grid operation to off-grid operation, and maintain the off-grid state.
- Switch Off-Grid to On-Grid: Manually switch the system to on-grid operation. If the grid status is normal, maintain on-grid operation; if the grid status is abnormal, automatically switch to on-grid after the grid is restored.



Control Black Start

If the system is in off-grid shutdown state, the manual black start function can be used to start the system and run it off-grid.



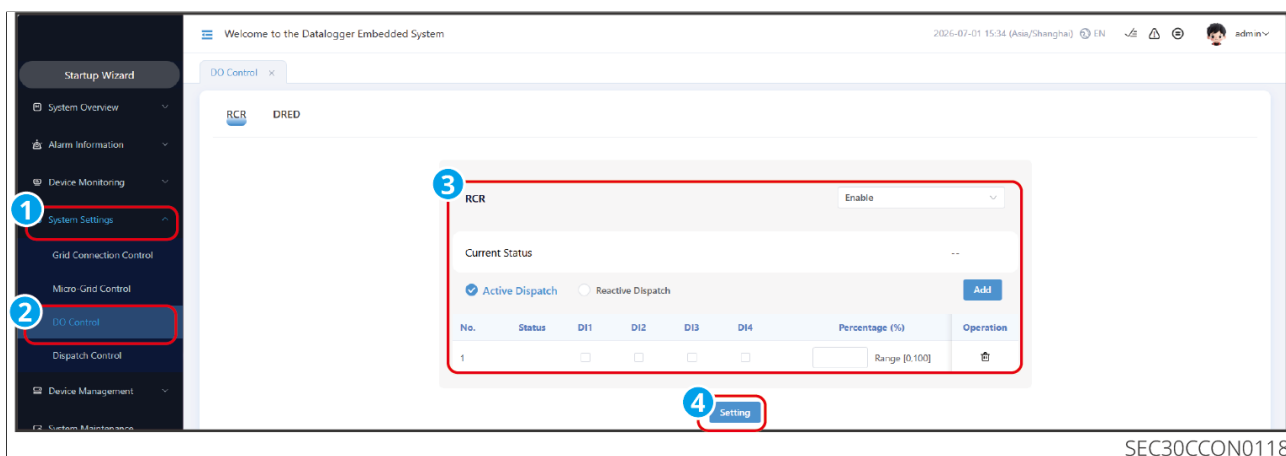
7.6.3 Set DO Control Parameters

7.6.3.1 Set RCR Parameters

- According to standards in Germany and other regions, the control box must provide an RCR (Ripple Control Receiver) signal control port to meet grid dispatching requirements.
- To implement the RCR function, connect the RCR device to the DI1/DI2/DI3/DI4/REF1 ports of the built-in data collector in the control box to achieve active power derating, or connect to the DI1/DI2/DI3/DI4/REF2 ports to achieve reactive power dispatch.

Procedure

1. Navigate to the parameter setting interface via "System Settings">"DO Control">"RCR".
2. Set the RCR parameters according to actual requirements.



SEC30CCON0118

No.	Parameter Name	Description
1	Start Control	Enable or disable the RCR function.
2	Current Status	- Displays the current running status of the RCR function. For example: RCR1(100) indicates the running status is RCR1, and the feed-in power is 100% of the rated power. - nRCR indicates the running status is not active.
3	Active Dispatch	- Select one or more DI ports according to the requirements of the grid company and the RCR fixture type, and set the corresponding percentage. The percentage refers to the ratio of the system output power to the rated power. - Supports configuration of 16 percentage values. Set them according to the actual requirements of the grid company. - Do not set duplicate state combinations of DI1-DI4, otherwise the function will not work properly. - If the actual wiring of the DI port does not match the web configuration, the running status will not take effect.

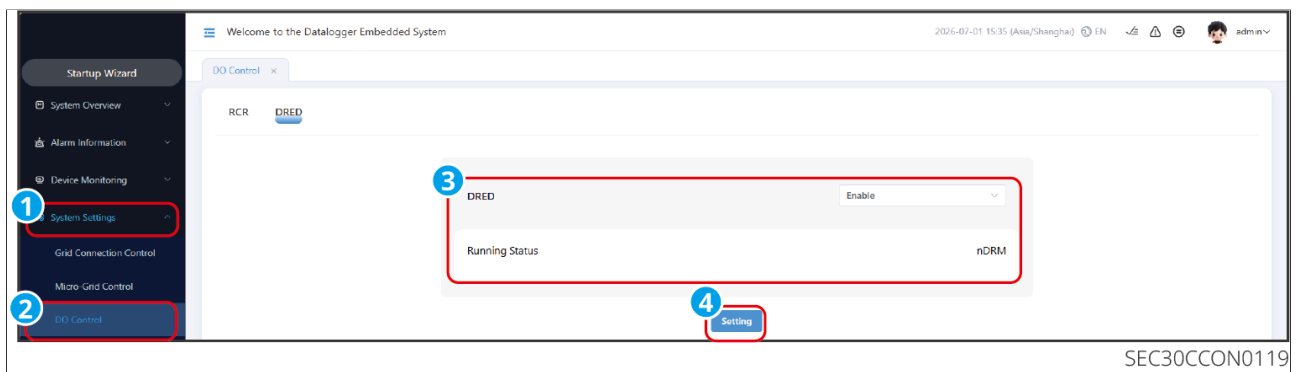
No.	Parameter Name	Description
4	Reactive Dispatch	• Select one or more DI ports according to the requirements of the grid company and the RCR fixture type, and set the corresponding PF value. • Supports configuration of 16 power factor values. Set them according to the actual requirements of the grid company. • PF value range requirements: [-100, -80] or [80,100]; [-100, -80] corresponds to a lagging power factor of [-0.99, -0.8], and [80,100] corresponds to a leading power factor of [0.8,1]. • Do not set duplicate state combinations of DI1-DI4, otherwise the function will not work properly. • If the actual wiring of the DI port does not match the web configuration, the running status will not take effect.

7.6.3.2 Set DRED Parameters

- According to standards in Australia and other regions, the inverter must comply with DRM (DEMAND RESPONSE MODES) Certification.
- To implement the DRM function, connect the DRED (Demand Response Enabling Device) to the DI1/DI2/DI3/DI4/REF1/REF2 ports of the built-in data collector.

Operation Steps

1. Go to "System Settings" > "DO Control" > "DRED " to enter the parameter setting interface.
2. Set the DRED parameters according to actual requirements.



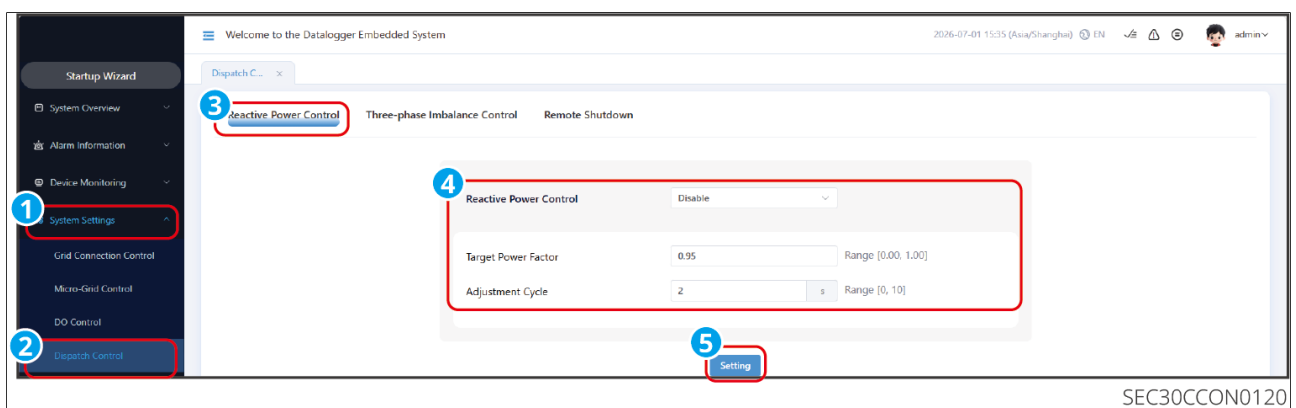
7.6.4 Set Scheduling Control Parameters

7.6.4.1 Set Reactive Power Control Parameters

- When the distribution station area needs to maximize benefits by adjusting the power factor, the power data at the point of common coupling collected by the meter can be gathered, and according to the set value, the reactive power output of the energy storage system can be adjusted to optimize the gateway power factor.
- Only applicable to scenarios where a single meter is used in the system.

Operation Steps

- Enter the parameter setting interface via “System Settings” > “Dispatch Control” > “Reactive Power Control”.
- Set the reactive power control parameters according to actual needs.



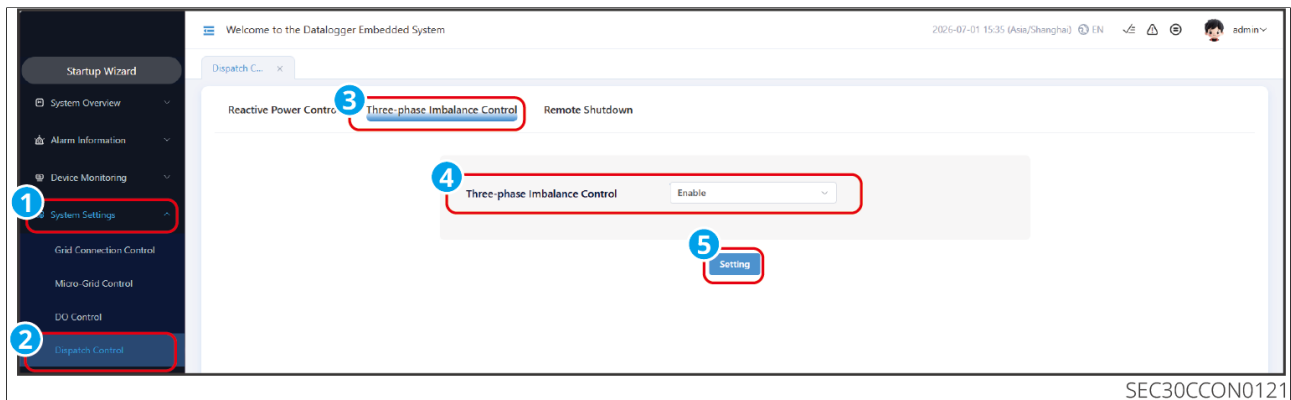
No.	Parameter Name	Description
1	Target Power Factor	Set the target power factor value according to actual needs.
2	Adjustment Cycle	Set the cycle for detecting power factor value. Generally set to 5 seconds.

7.6.4.2 Setting Three-Phase Unbalanced Control

In the case of three-phase load imbalance, enabling the three-phase unbalanced function can dynamically adjust the three-phase power to balance the three-phase power.

Operation Steps

1. Refer to [8.5.1.5.Setting Advanced Parameters of Energy Storage Inverter\(Page 96\)](#) and enable "Three-Phase Unbalanced Output".
2. Enter the parameter setting interface via "System Settings" > "Scheduling Control" > "Three-Phase Unbalanced Control".
3. Enable or disable the function according to actual needs.

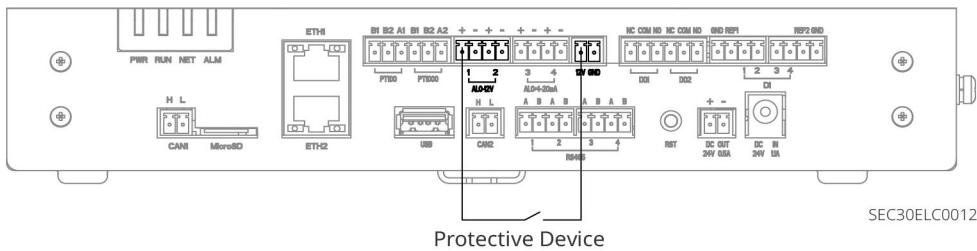


7.6.4.3 Set Remote Shutdown

According to the requirements of certain countries or regions, to enable remote shutdown, connect the protection device to the AI1+ or AI2+ port of the control box and the 12V power output port.

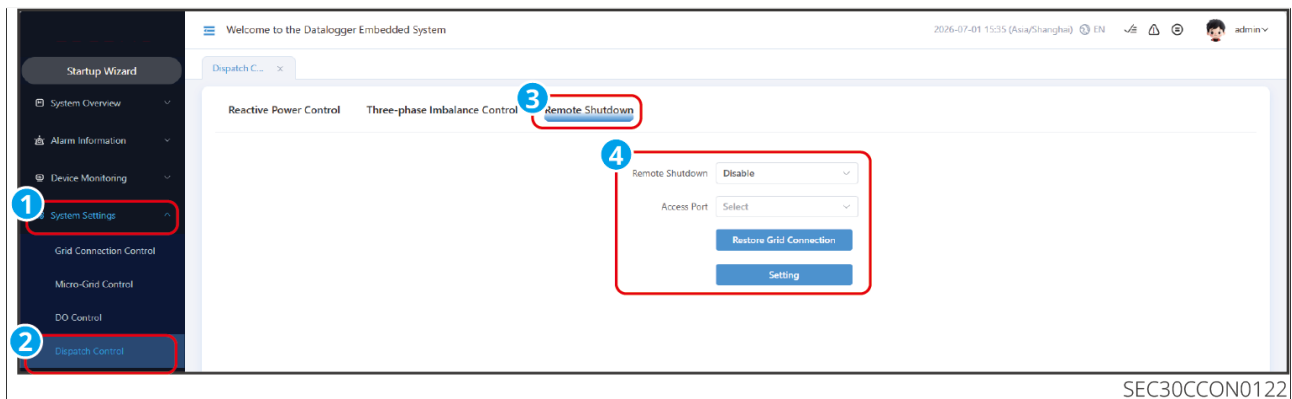
When applying the NS protection function for the German region, short-circuit the NS

protection function port on the inverter side; otherwise, this function will not take effect.



Operation Steps

1. Go to the parameter setting interface via 'System Settings' > 'Dispatch Control' > 'Remote Shutdown'.
2. Set the remote shutdown access port and port status according to actual needs.



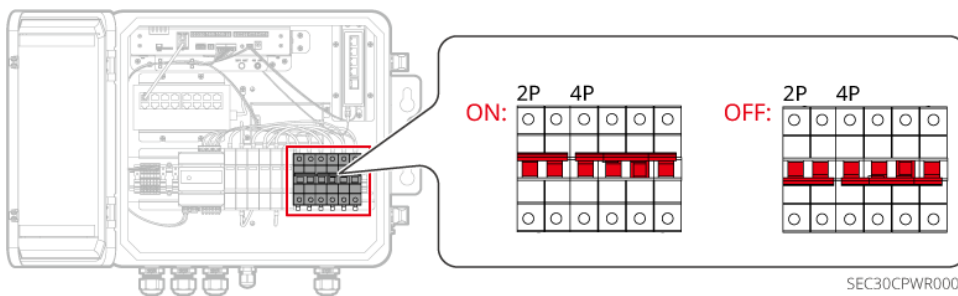
No.	Parameter Name	Description
1	Function Switch	Enable or disable the remote shutdown function.
2	Access Port	Set according to the actual port of the control box. Supports: AI1 or AI2.
3	Restore Grid Connection	If you need to power on and restore the grid connection state after the inverter is shut down, please click the Restore Grid Connection button.

8 Maintenance

8.1 Power OFF the System

DANGER

- When performing operation and maintenance on equipment in the system, power off the system. Operating equipment while powered on may cause equipment damage or electric shock DANGER.
- After the equipment is powered off, it takes time for internal components to discharge. Wait until the equipment is fully discharged according to the time specified on the label.



8.2 Removing the Equipment

DANGER

- Ensure the device is powered off.
- When operating the device, wear personal protective equipment.

Step1: Disconnect all electrical connections of the equipment, including power and communication cables.

Step2: Remove the equipment.

Step3: Properly store the equipment. If it is to be used later, ensure that storage conditions meet requirements.

8.3 Disposing of the Equipment

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

8.4 Routine Maintenance

WARNING

- If you find any issues that may affect the battery or energy storage inverter system, please contact after-sales personnel. Do not disassemble without authorization.
- If you find exposed copper wires inside the conductive cable, do not touch them. High voltage hazard. Please contact after-sales personnel. Do not disassemble without authorization.
- If any other emergency occurs, please contact after-sales personnel immediately, follow their instructions, or wait for on-site operation by after-sales personnel.

Maintenance Content	Maintenance Method	Maintenance Cycle	Maintenance Purpose
System Cleaning	1. Check if there are foreign objects or dust at the air inlet/outlet. 2. Check if the installation space meets requirements, and check if there is debris accumulation around the equipment.	1 time/six months	Prevent heat dissipation failure.

Maintenance Content	Maintenance Method	Maintenance Cycle	Maintenance Purpose
System Installation	1. Check if the equipment is installed securely and if the tightening screws are loose. 2. Check if the equipment appearance has damage or deformation.	1 time/six months~1 time/one year	Confirm the stability of equipment installation.
Electrical Connection	Check if electrical connections are loose, if the cable appearance is damaged, or if there is exposed copper.	1 time/six months~1 time/one year	Confirm reliability of electrical connections.
Sealing	Check if the sealing of the equipment's cable entry hole meets requirements. If the gap is too large or not sealed, reseal it.	1 time/one year	Confirm that the machine's sealing and waterproof performance are intact.

8.5 Maintenance (WEB)

8.5.1 Upgrade Device

Supports upgrading firmware versions of data collectors, Inverters, integrated energy storage cabinets, STS, and other devices via the web.

NOTICE

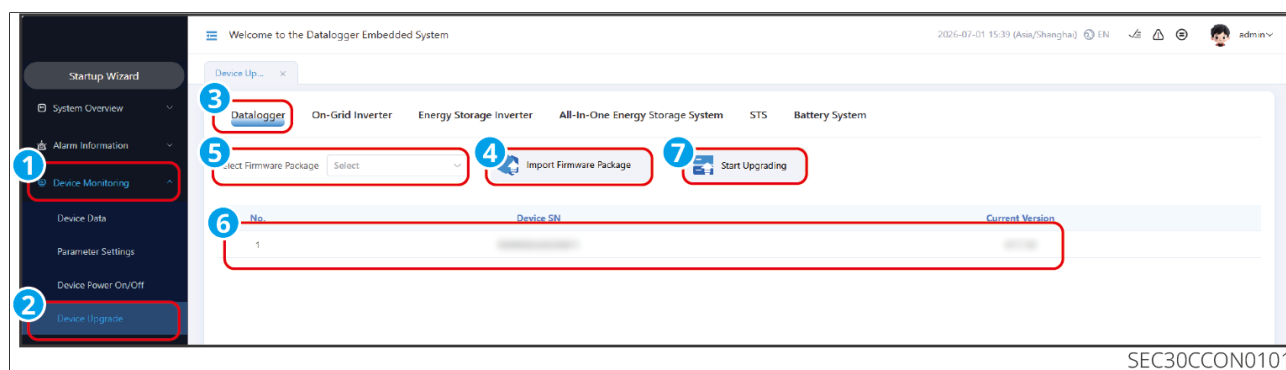
During the upgrade process, ensure that the device remains powered on. Powering off the device may cause the upgrade to fail.

Steps for upgrading via USB drive (applicable only to data collector upgrade)

NOTICE

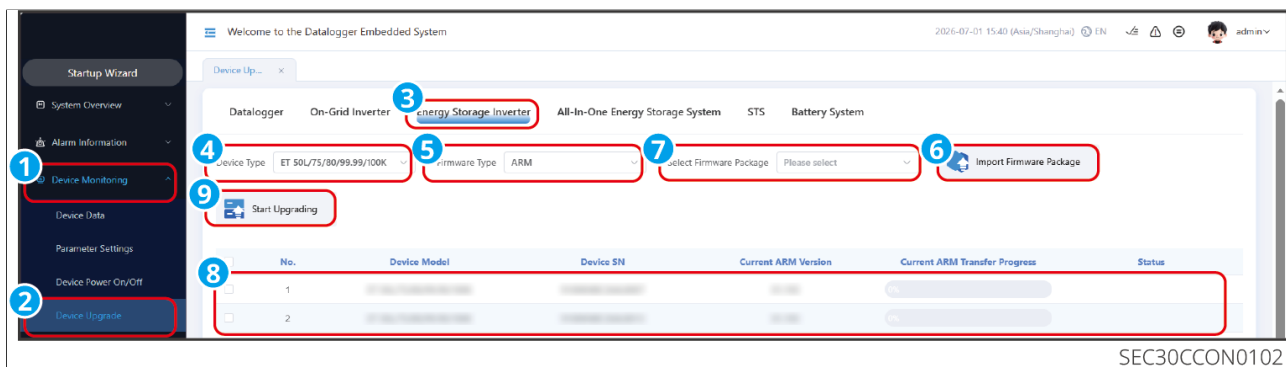
- Before upgrading, ensure that only the required upgrade package is stored on the USB drive. If there are multiple upgrade packages, the system will read the first one by default, which may cause the upgrade to fail.
- Do not insert or remove the USB drive during the upgrade process, otherwise the device may malfunction.

1. Contact after-sales service to obtain the device upgrade package, and prepare a FAT32 format USB drive, USB drive capacity not exceeding 32G.
2. In the root directory of the USB drive, create a new folder named collector, and place the device upgrade package in the collector folder.
3. Insert the USB drive into the USB port of the data collector. After the data collector detects the device upgrade package and starts upgrading, the fault indicator light will flash rapidly. If the fault indicator light does not flash rapidly, the upgrade has not started; please check the upgrade package and the status of the USB drive.
4. After the upgrade is complete, the data collector will automatically restart. Please remove the USB drive, otherwise it may cause repeated upgrades.

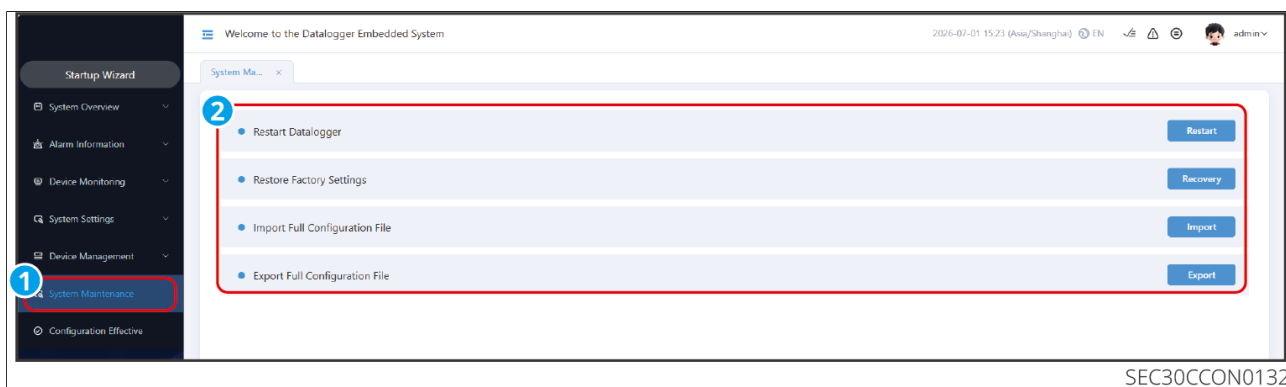


Via web upgrade steps

1. Contact after-sales service to obtain the device upgrade package.
2. Save the device upgrade package locally on your computer and upgrade the device according to the following instructions. Inverters, integrated energy storage cabinets, and STS have the same upgrade steps; here, only the Inverter diagram is used as an example.



8.5.2 Maintenance System



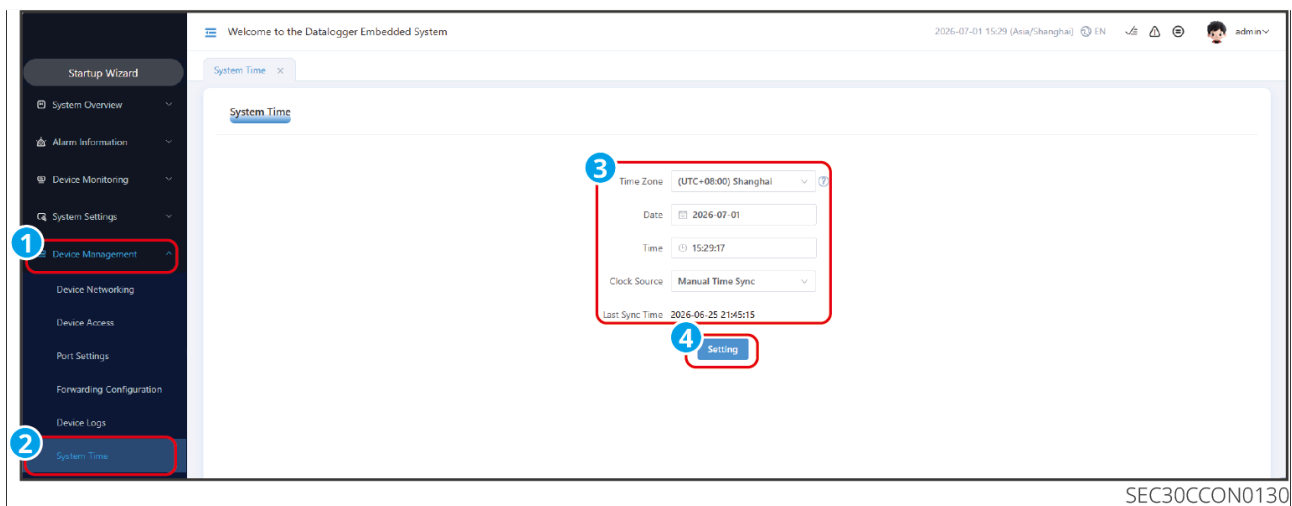
No.	Parameter Name	Description
1	Restart Data Acquisition	Perform system reset. The built-in data collector in the control box will automatically shut down and restart.
2	Restore Factory Settings	- Restore factory settings: Clear device access information, forwarding configuration, login password, etc. - Restore communication configuration (optional): Restore network card configuration. - Restore data acquisition data (optional): Clear logs, historical alarms, historical data, etc.
3	Import Full Configuration File	Before replacing the control box or the built-in data collector, export the data collector's configuration file to a local location.

No.	Parameter Name	Description
4	Export Full Configuration File	After replacing the control box or the built-in data collector, import the locally exported configuration file into the new control box or built-in data collector. Upon successful import, the data collector restarts and the configuration file takes effect. Confirm that the device parameters are correctly configured.

8.5.3 Set System Time

NOTICE

Modifying the date and time will affect the integrity of the system's power generation and performance data records. Do not change the time zone or system time arbitrarily.



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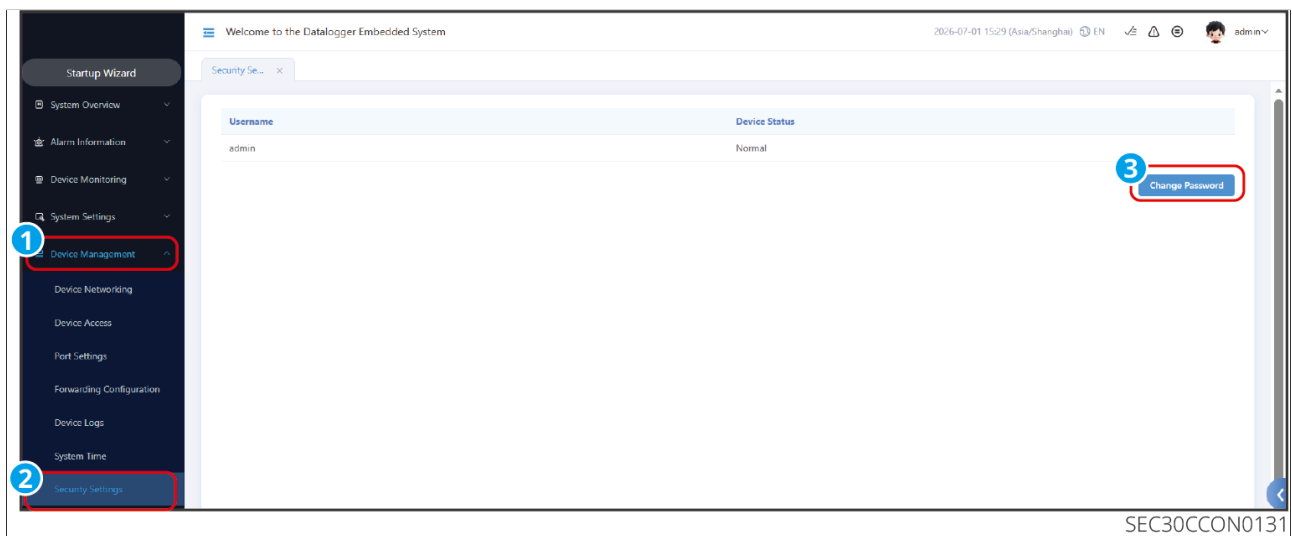
No.	Parameter Name	Description
1	Time Zone	Can only be manually modified when the clock source is set to manual time synchronization.
2	Date	
3	Time	

No.	Parameter Name	Description
4	Clock Source	- Set the clock source. Supported: NTP, Modbus-TCP, Manual time synchronization, GoodWe cloud platform time synchronization. - When SEC3000C+GW125/261-ESA-LCN-G10 is applied in China, please set it to NTP clock source.

8.5.4 Change Login Password

Steps:

1. Go to “Data Collection Configuration” > “Security Settings” to enter the password change interface.
2. Click “Change Password”, enter the old and new passwords as needed, and click “Save”.



8.6 Troubleshooting

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

When contacting the after-sales service center, please collect the following

information to facilitate quick problem resolution.

1. Product information, such as: serial number, software version, device installation time, fault occurrence time, fault occurrence frequency, etc.
2. Device installation environment, such as: weather conditions, whether components are shaded, have shadows, etc. It is recommended to provide photos, videos and other files to assist in analyzing the problem.
3. Grid conditions.

No.	fault	Solution
1	After power-on, the data acquisition indicator does not light up	1. Check if the built-in single-phase circuit breaker of SEC3000C has voltage, Voltage Range: 100Vac-240Vac. 2. Check whether the single-phase circuit breaker is turned on.
2	After power-on, the meter indicator does not light up	1. Three-phase four-wire system: Check if the built-in three-phase circuit breaker of SEC3000C has voltage, line voltage range: 156Vac-480Vac. 2. Three-phase three-wire system: Check the built-in three-phase circuit breaker of SEC3000C, confirm whether L2 and N wires are shorted, line voltage range: 156Vac-480Vac. 3. Check whether the three-phase circuit breaker is turned on.
3	WEB page cannot be opened	1. Confirm whether you access the web page one minute after device power-on. 2. Confirm whether the device and PC are correctly connected using an Ethernet cable. 3. Confirm whether the PC's IP address segment is set to 172.18.0.XXX or set to obtain automatically. 4. Clear browser page cache.

No.	fault	Solution
4	WEB page shows device offline	1. Confirm whether the energy storage machine is connected to the internal switch port of SEC3000C via the WiFi/LAN Kit-20 smart communication stick. 2. Confirm whether the inverter is correctly connected to the RS485 communication terminal of SEC3000C.
5	Meter displays abnormal data	1. Confirm whether the CT ratio setting of the meter in the web is consistent with the actual CT ratio used; 2. Confirm whether the CT wiring is correct; 3. Three-phase four-wire system: Confirm whether the connection sequence (N/L1/L2/L3) of the built-in three-phase circuit breaker of SEC3000C is correct; 4. Three-phase three-wire system: Check the built-in three-phase circuit breaker of SEC3000C, confirm whether L2 and N wires are shorted, and confirm whether the wiring sequence (/L1/L2/L3) is correct.

9 Technical Parameter

Technical parameter	SEC3000C
Communication	
Maximum number of supported inverters	RS485: 60, LAN*1: 10
RS-485 Interface	4
Ethernet Port	2*RJ45, 10/100Mbps
4G	Optional
Digital/Analog Input/Output	DI×4, DO×2, AI×4
Configuration	
Data Acquisition	EzLogger3000C*1
Switch	15 Ports
Smart Meter	GM330*1
Meter Voltage Measurement Range (Vac)	3L/N/PE: 172~817 (Line Voltage) 3L/PE: 100~472 (Line Voltage)
Meter Frequency Measurement Range (Hz)	50/60
Meter Current Measurement Range (A)	nA:5A (200≤n≤5000)
Auxiliary Power Supply	100~240V, 50/60Hz
Power Consumption (W)	≤25
Mechanical Parameters	
Dimensions (W×H×D mm)	450*400*242
Weight (kg)	≤16.9
Mounting Method	Wall mounting, Bracket mounting, Pole mounting
Environmental Parameters	
Operating Temperature Range(°C)	-30~+60
Storage Temperature Range (°C)	-40~+70
Relative Humidity	0~100%
Max. Operating Altitude (m)	3000
IP Rating	IP66
Anti-corrosion Class	C5L
Standards Compliance	

technical parameter	SEC3000C
Certification	CE-RED (EN18031) 、RCM

*1. Other certification documents can be provided upon customer request.

10 Appendix

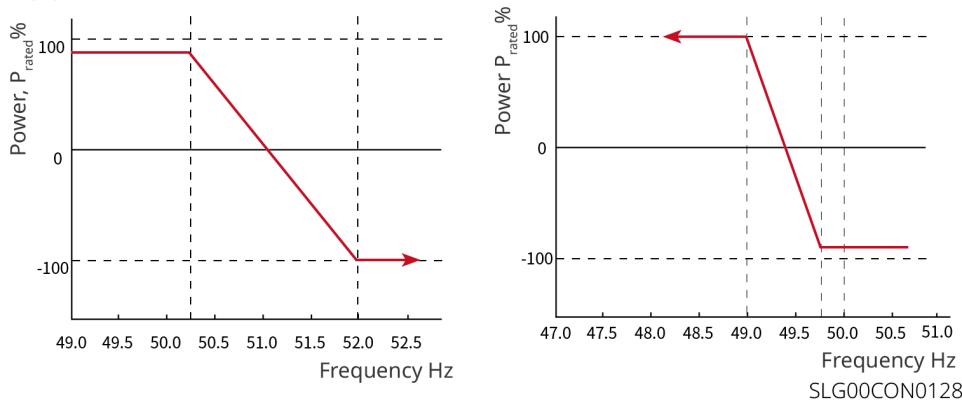
10.1 Custom Safety Parameters

NOTICE

Safety parameters must be set according to the requirements of the power grid company. Any changes require the consent of the power grid company.

Active Power Mode

P(F) Curve



P(U) Curve

Parameter Name	Description
Active Power Output Setting	Set the inverter output power limit value.
Power Change Gradient	Set the ramp rate when active output power increases or decreases.
Overfrequency Load Reduction	
P(F) Curve	Enable this function when a P(F) curve is required according to grid standards of certain countries or regions.

Parameter Name	Description
Overfrequency Load Reduction Mode	Set the overfrequency load reduction mode according to actual requirements. • Slope mode: Adjust power based on overfrequency point and load reduction slope. • Stop mode: Adjust power based on overfrequency start and end points.
Overfrequency Start Point	When the grid frequency is too high, the inverter output active power decreases. When the grid frequency exceeds this value, the inverter output power starts to decrease.
Buy/Sell Transition Frequency	When the set frequency value is reached, the system switches from selling to buying electricity.
Overfrequency End Point	When the grid frequency is too high, the inverter output active power decreases. When the grid frequency exceeds this value, the inverter output power does not continue to decrease.
Overfrequency Power Slope Reference Power	Adjust the inverter output active power based on rated power, current power, apparent power, or maximum active power.
Overfrequency Power Slope	When the grid frequency is above the overfrequency point, the inverter output power decreases according to the slope.
Tentional Delay Ta	When the grid frequency is above the overfrequency point, the inverter output power change delay response time.
Hysteresis Function Enable	Enable the hysteresis function.
Frequency Hysteresis Point	During overfrequency load reduction, if the frequency decreases, the power is output at the minimum point of load reduction power until the frequency is below the hysteresis point, then power recovers.

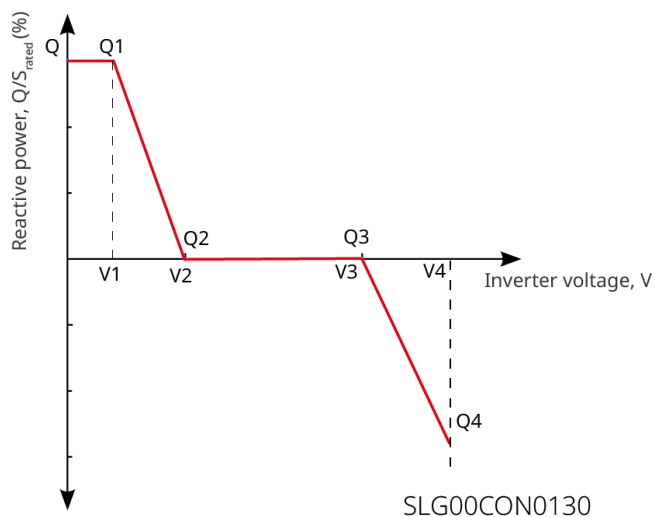
Parameter Name	Description
Hysteresis Waiting Time	For overfrequency load reduction, when the frequency decreases and is below the hysteresis point, the waiting time for power recovery, i.e., a certain time must elapse before power recovery.
Hysteresis Power Recovery Slope Reference Power	For overfrequency load reduction, when the frequency decreases and is below the hysteresis point, the reference for power recovery, i.e., power recovery is performed according to the recovery slope * reference power change rate. Supports: P _n rated power, P _s apparent power, P _m current power, P _{max} maximum power, power difference (ΔP).
Hysteresis Power Recovery Slope	For overfrequency load reduction, when the frequency decreases and is below the hysteresis point, the power change slope during power recovery.
Underfrequency Load Increase	
P(F) Curve	Enable this function when a P(F) curve is required according to grid standards of certain countries or regions.
Underfrequency Load Increase Mode	Set the underfrequency load increase mode according to actual requirements. • Slope mode: Adjust power based on underfrequency point and load increase slope. • Stop mode: Adjust power based on underfrequency start and end points.
Underfrequency Start Point	When the grid frequency is too low, the inverter output active power increases. When the grid frequency is below this value, the inverter output power starts to increase.
Buy/Sell Transition Frequency	When the set frequency value is reached, the system switches from selling to buying electricity.

Parameter Name	Description
Underfrequency End Point	When the grid frequency is too low, the inverter output active power increases. When the grid frequency is below this value, the inverter output power does not continue to increase.
Overfrequency Power Slope Reference Power	Adjust the inverter output active power based on rated power, current power, apparent power, or maximum active power.
Underfrequency Power Slope	When the grid frequency is too low, the inverter output active power increases. The slope when the inverter output power rises.
Tentional Delay Ta	When the grid frequency is below the underfrequency point, the inverter output power change delay response time.
Hysteresis Function Enable	Enable the hysteresis function.
Frequency Hysteresis Point	During underfrequency load increase, if the frequency increases, the power is output at the minimum point of load increase power until the frequency is above the hysteresis point, then power recovers.
Hysteresis Waiting Time	For underfrequency load increase, when the frequency increases and is above the hysteresis point, the waiting time for power recovery, i.e., a certain time must elapse before power recovery.
Hysteresis Power Recovery Slope Reference Power	For underfrequency load increase, when the frequency increases and is above the hysteresis point, the reference for power recovery, i.e., power recovery is performed according to the recovery slope * reference power change rate. Supports: Pn rated power, Ps apparent power, Pm current power, Pmax maximum power, power difference (ΔP).
Hysteresis Power Recovery Slope	For underfrequency load increase, when the frequency increases and is above the hysteresis point, the power change slope during power recovery.

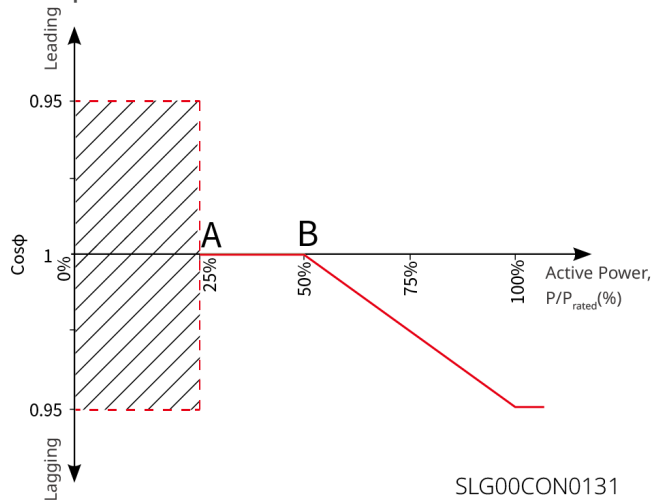
Parameter Name	Description
P(U) Curve Enable	Enable this function when a P(U) curve is required according to grid standards of certain countries or regions.
Vn Voltage	The ratio of the actual voltage at point Vn to the rated voltage, n=1,2,3,4. For example, when set to 90, it means: $V/V_{rated}\%=90\%$.
Vn Active Power	The ratio of the active power output of the inverter at point Vn to the apparent power, n=1,2,3,4. For example, when set to 48.5, it means: $P/P_{rated}\%=48.5\%$.
Output Response Mode	Set the active output response mode. Supports: • PT-1 low-pass filter, where output adjustment is achieved according to the PT-1 curve within the response time constant. • Slope scheduling, where output adjustment is achieved according to the set power change slope.
Power Change Gradient	When the output response mode is set to slope scheduling, active power dispatch is achieved according to the power change gradient.
PT-1 Behavior Tau	When the output response mode is set to PT-1 low-pass filter, the time constant for the active power change according to the PT-1 low-pass filter curve.
Overload Function Switch	When enabled, the maximum active power output is 1.1 times the rated power; otherwise, the maximum active power output is the same as the rated power.

Reactive Power Mode

Q(U) Curve



Cosφ Curve



Parameter Name	Description
Fixed PF	
Fixed PF	Enable this function when a fixed PF value is required according to the grid standard requirements of certain countries or regions. After the parameter is set successfully, the power factor remains constant during inverter operation.
Under-excited	Set the power factor to a positive or negative value based on the grid standard requirements of the country or region and actual usage needs.
Over-excited	
Power Factor	Set the power factor as needed, ranging from -1 to -0.8 and +0.8 to +1.

Parameter Name	Description
Fixed Q	
Fixed Q	Enable this function when a fixed reactive power is required according to the grid standard requirements of certain countries or regions.
Over-excited/Under-excited	Set the reactive power as inductive or capacitive based on the grid standard requirements of the country or region and actual usage needs.
Reactive Power	Set the ratio of reactive power to apparent power.
Q(U) Curve	
Q(U) Curve	Enable this function when a Q(U) curve needs to be set according to the grid standard requirements of certain countries or regions.
Mode Selection	Set the Q(U) curve mode, supporting Basic mode and Slope mode.
Vn Voltage	The ratio of the actual voltage at point Vn to the rated voltage, n=1, 2, 3, 4.
	For example: when set to 90, it means: $V/V_{rated}\%=90\%$.
Vn Reactive Power	The ratio of the reactive power output by the inverter at point Vn to the apparent power, n=1, 2, 3, 4.
	For example: when set to 48.5, it means: $Q/S_{rated}\%=48.5\%$.
Voltage Dead Band Width	Set the voltage dead band when the Q(U) curve mode is set to Slope mode. Within the dead band, no reactive power output is required.
Over-excited Slope	When the Q(U) curve mode is set to Slope mode, set the power change slope to a positive or negative number.
Under-excited Slope	

Parameter Name	Description
Vn Reactive Power	The ratio of the reactive power output by the inverter at point Vn to the apparent power, n=1, 2, 3, 4. For example: when set to 48.5, it means: Q/Srated%=48.5%.
Q(U) Curve Response Time Constant	The power must reach 95% within 3 response time constants following a first-order low-pass curve.
Extended Function Enable	Enable the extended function and set the corresponding parameters.
Curve Entry Power	When the ratio of the inverter's output reactive power to rated power is between the curve entry power and curve exit power, the Q(U) curve requirements are met.
Curve Exit Power	
cosφ(P) Curve	
cosφ(P) Curve	Select this function when a Cosφ curve needs to be set according to the grid standard requirements of certain countries or regions.
Mode Selection	Set the cosφ(P) curve mode, supporting Basic mode and Slope mode.
N Point Power	Percentage of inverter output active power to rated power at point N. N=A, B, C, D, E.
N Point cosφ Value	Power factor at point N. N=A, B, C, D, E.
Over-excited Slope	When the cosφ(P) curve mode is set to Slope mode, set the power change slope to a positive or negative number.
Under-excited Slope	
n Point Power	Percentage of inverter output active power to rated power at point N. N=A, B, C.
n Point cosφ Value	Power factor at point N. N=A, B, C.

Parameter Name	Description
cosφ(P) Curve Response Time Constant	The power must reach 95% within 3 response time constants following a first-order low-pass curve.
Extended Function Enable	Enable the extended function and set the corresponding parameters.
Curve Entry Voltage	When the grid voltage is between the curve entry voltage and curve exit voltage, the voltage meets the Cosφ curve requirements.
Curve Exit Voltage	
Q(P) Curve	
Q(P) Curve Enable	Enable this function when a Q(P) curve needs to be set according to the grid standard requirements of certain countries or regions.
Mode Selection	Set the Q(P) curve mode, supporting Basic mode and Slope mode.
Pn Point Power	The ratio of reactive power at point Pn to rated power, n=1, 2, 3, 4, 5, 6. For example: when set to 90, it means: Q/Prated%=90%.
Pn Point Reactive Power	The ratio of active power at point Pn to rated power, n=1, 2, 3, 4, 5, 6. For example: when set to 90, it means: P/Prated%=90%.
Over-excited Slope	When the Q(P) curve mode is set to Slope mode, set the power change slope to a positive or negative number.
Under-excited Slope	
Pn Point Power	The ratio of reactive power at point Pn to rated power, n=1, 2, 3. For example: when set to 90, it means: Q/Prated%=90%.

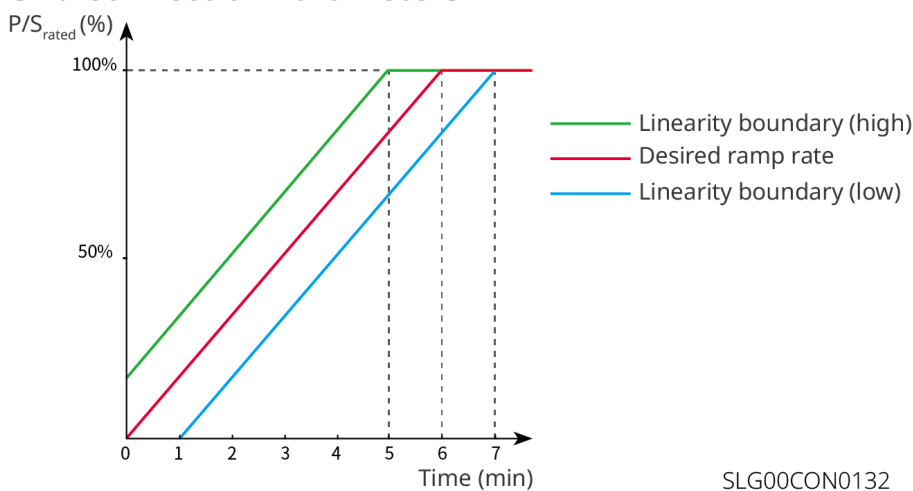
Parameter Name	Description
Pn Point Reactive Power	The ratio of active power at point Pn to rated power, n=1, 2, 3. For example: when set to 90, it means: $P/P_{rated}\%=90\%$.
Response Time Constant	The power must reach 95% within 3 response time constants following a first-order low-pass curve.

Grid Protection Parameters

Parameter Name	Description
Over-voltage Trigger n-level Value	Set the grid over-voltage trigger n-level protection point, n=1, 2, 3, 4.
Over-voltage Trigger n-level Trip Time	Set the grid over-voltage trigger n-level trip time, n=1, 2, 3, 4.
Under-voltage Trigger n-level Value	Set the grid under-voltage trigger n-level protection point, n=1, 2, 3, 4.
Under-voltage Trigger n-level Trip Time	Set the grid under-voltage trigger n-level trip time, n=1, 2, 3, 4.
10min Over-voltage Trigger Value	Set the 10-minute over-voltage trigger value.
10min Over-voltage Trip Time	Set the 10-minute over-voltage trigger trip time.
Over-frequency Trigger n-level Value	Set the grid over-frequency trigger n-level protection point, n=1, 2, 3, 4.
Over-frequency Trigger n-level Trip Time	Set the grid over-frequency trigger n-level trip time, n=1, 2, 3, 4.

Parameter Name	Description
Under-frequency Trigger n-level Value	Set the grid under-frequency trigger n-level protection point, n=1, 2, 3, 4.
Under-frequency Trigger n-level Trip Time	Set the grid under-frequency trigger n-level trip time, n=1, 2, 3, 4.

Grid Connection Parameters



Parameter Name	Description
Startup On-Grid	
Connection Voltage Upper Limit	When the inverter first connects to the grid, if the grid voltage is higher than this value, the inverter will not be able to connect to the grid.
Connection Voltage Lower Limit	When the inverter first connects to the grid, if the grid voltage is lower than this value, the inverter will not be able to connect to the grid.
Connection Frequency Upper Limit	When the inverter first connects to the grid, if the grid frequency is higher than this value, the inverter will not be able to connect to the grid.

Parameter Name	Description
Connection Frequency Lower Limit	When the inverter first connects to the grid, if the grid frequency is lower than this value, the inverter will not be able to connect to the grid.
Grid Connection Waiting Time	When the inverter first connects to the grid, the waiting time after the grid voltage and frequency meet the grid connection requirements before connecting to the grid.
Soft Ramp Up Slope Enable	Enable the soft ramp up slope function.
Soft Ramp Up Slope	According to the standard requirements of certain countries or regions, the percentage of power increment that the inverter can output per minute when it is first started.
Fault Reconnection	
Connection Voltage Upper Limit	When the inverter reconnects to the grid after a fault, if the grid voltage is higher than this value, the inverter will not be able to connect to the grid.
Connection Voltage Lower Limit	When the inverter reconnects to the grid after a fault, if the grid voltage is lower than this value, the inverter will not be able to connect to the grid.
Connection Frequency Upper Limit	When the inverter reconnects to the grid after a fault, if the grid frequency is higher than this value, the inverter will not be able to connect to the grid.
Connection Frequency Lower Limit	When the inverter reconnects to the grid after a fault, if the grid frequency is lower than this value, the inverter will not be able to connect to the grid.
Grid Connection Waiting Time	When the inverter reconnects to the grid after a fault, the waiting time after the grid voltage and frequency meet the grid connection requirements before connecting to the grid.
Reconnection Ramp Up Slope Enable	Enable the startup ramp up slope function.

Parameter Name	Description
Reconnection Ramp Up Slope	According to the standard requirements of certain countries or regions, the percentage of power increment that the inverter can output per minute when it is not the first grid connection. For example: when set to 10, it means the reconnection ramp up slope is: $10\%P/S_{rated}/\text{min}$.

Voltage Fault Ride-Through Parameters

Parameter Name	Description
Low Voltage Ride-Through	
UVn Point Voltage	During low voltage ride-through, the ratio of the ride-through voltage at the characteristic point to the rated voltage. $n=1, 2, 3, 4, 5, 6, 7$.
UVn Point Time	During low voltage ride-through, the ride-through time at the characteristic point. $n=1, 2, 3, 4, 5, 6, 7$.
Enter LVRT Threshold	When the grid voltage is between the enter LVRT threshold and the exit LVRT threshold, the inverter does not immediately disconnect from the grid.
Exit LVRT Threshold	
Slope K1	During low voltage ride-through, the K value coefficient for reactive power support.
Zero Current Mode Enable	When enabled, the system outputs zero current during low voltage ride-through.
Entry Threshold	Threshold for entering zero current mode.
High Voltage Ride-Through	
OVn Point Voltage	During high voltage ride-through, the ratio of the ride-through voltage at the characteristic point to the rated voltage. $n=1, 2, 3, 4, 5, 6, 7$.
OVn Point Time	During high voltage ride-through, the ride-through time at the characteristic point. $n=1, 2, 3, 4, 5, 6, 7$.

Parameter Name	Description
Enter HVRT Threshold	When the grid voltage is between the enter HVRT threshold and the exit HVRT threshold, the inverter does not immediately disconnect from the grid.
Exit HVRT Threshold	
Slope K2	During high voltage ride-through, the K value coefficient for reactive power support.
Zero Current Mode Enable	During high voltage ride-through, the system outputs zero current.
Entry Threshold	Threshold for entering zero current mode.

Frequency Fault Ride-Through Parameters

Parameter Name	Description
Frequency Ride-Through Enable	Enable the frequency ride-through function.
UF Point n Frequency	Set the frequency for underfrequency point n. n=1, 2, 3.
UF Point n Time	Set the underfrequency time for underfrequency point n. n=1, 2, 3.
OF Point n Frequency	Set the frequency for overfrequency point n. n=1, 2, 3.
OF Point n Time	Set the overfrequency time for overfrequency point n. n=1, 2, 3.

10.2 Explanation of Terms

Explanation of Overvoltage Categories

Overvoltage Category I: Equipment connected to circuits with measures that limit transient overvoltages to a relatively low level.

Overvoltage Category II: Energy-consuming equipment supplied by fixed power distribution installations. Such equipment includes appliances, portable tools, and other household and similar loads. If special requirements for reliability and

suitability of such equipment are specified, Overvoltage Category III shall be adopted.

Overvoltage Category III: Equipment in fixed power distribution installations, where the reliability and suitability of the equipment must meet special requirements. Includes switchgear in fixed power distribution installations and industrial equipment permanently connected to fixed power distribution installations.

Overvoltage Category IV: Equipment used at the source of the power distribution installation, including measuring instruments and upstream overcurrent protection devices, etc.

Explanation of Wet Location Categories

Environmental Parameter	Level		
	3K3	4K2	4K4H
Humidity Range	0~+40°C	-33~+40°C	-33~+40°C
Temperature Range	5% to 85%	15% to 100%	4% to 100%

Explanation of Environmental Categories

Outdoor inverter: ambient air temperature range -25~+60°C, suitable for environment with pollution degree 3;

Indoor Type II inverter: ambient air temperature range -25~+40°C, suitable for environment with pollution degree 3;

Indoor Type I inverter: ambient air temperature range 0~+40°C, suitable for environment with pollution degree 2;

Explanation of Pollution Degree Categories

Pollution degree 1: No pollution or only dry, non-conductive pollution;

Pollution degree 2: Only non-conductive pollution normally, but temporary conductivity caused by occasional condensation must be considered;

Pollution degree 3: Conductive pollution, or dry non-conductive pollution that becomes conductive due to condensation;

Pollution degree 4: Persistent conductive pollution, such as pollution caused by conductive dust, rain, or snow.

10.3 Product Documentation Map

Product	Link
ET40-50kW Series	ET40-50kW Series Inverter Quick Installation Guide
	ET40-50kW Series Inverter User Manual
	ET40-50kW Series Solution User Manual
ESA261kWh Series	ESA261kWh Series All-in-one Energy Storage Cabinet Quick Installation Guide
	ESA261kWh Series All-in-one Energy Storage Cabinet User Manual
	ESA261kWh Series Solution User Manual (On-grid)
	ESA261kWh Series Solution User Manual (Microgrid)
ETR125kW Series	ETR125kW Series Inverter Quick Installation Guide
	ETR125kW Series Inverter User Manual
	ETR125kW Series Solution User Manual
ET100kW Series	ET100kW Series Quick Installation Guide
	ET100 Series Solution User Manual

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