SolarGo

SolarGo+ SEC3000C

User Manual

Copyright Statement

Trademarks

NOTICE

The information in this document is subject to change due to product updates or other reasons. This document cannot replace the product labels or the safety precautions unless otherwise specified. All descriptions in the manual are for guidance only.

1 About This Manual

1.1 Overview

- This manual introduces commonly used operations in SolarGo App.
- Before setting any parameters, read through this document and the equipment user manual to learn the product functions and features. When the parameters are set improperly, the equipment may fail to work properly.
- This manual is subject to update without notice. For more product details and latest documents, visit www.goodwe.com.

1.2 Target Audience

This manual applies to trained and knowledgeable technical professionals. The technical personnel has to be familiar with the product, local standards, and electric systems.

1.3 Symbol Definition

DANGER
Indicates a high-level hazard that, if not avoided, will result in death or serious injury.
WARNING
Indicates a medium-level hazard that, if not avoided, could result in death or serious injury.
CAUTION
Indicates a low-level hazard that, if not avoided, could result in minor or moderate injury.
NOTICE
Highlights key information and supplements the texts. Or some skills and methods to solve product-related problems to save time.

2 Product Introduction

2.1 Applicable Product

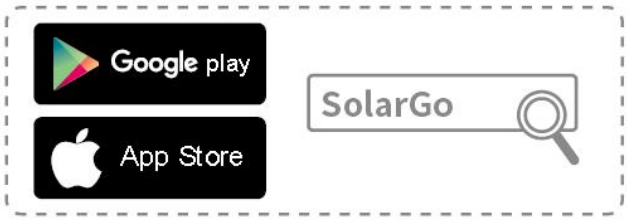
SolarGo app applies to products of GoodWe Smart Energy Controller series.

2.2 Download and Install the App

Make sure that the mobile phone meets the following requirements:

- Mobile phone operating system: Android 4.3 or later, iOS 9.0 or later.
- The mobile phone can access the Internet.
- The mobile phone supports WLAN or Bluetooth.

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



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

2.3 APP Connection

NOTICE

• Before connection, make sure:
  ◦ Mobile phone WiFi is switched on.
  ◦ All devices connected in the system are powered on, and have normal

communication with the SEC.

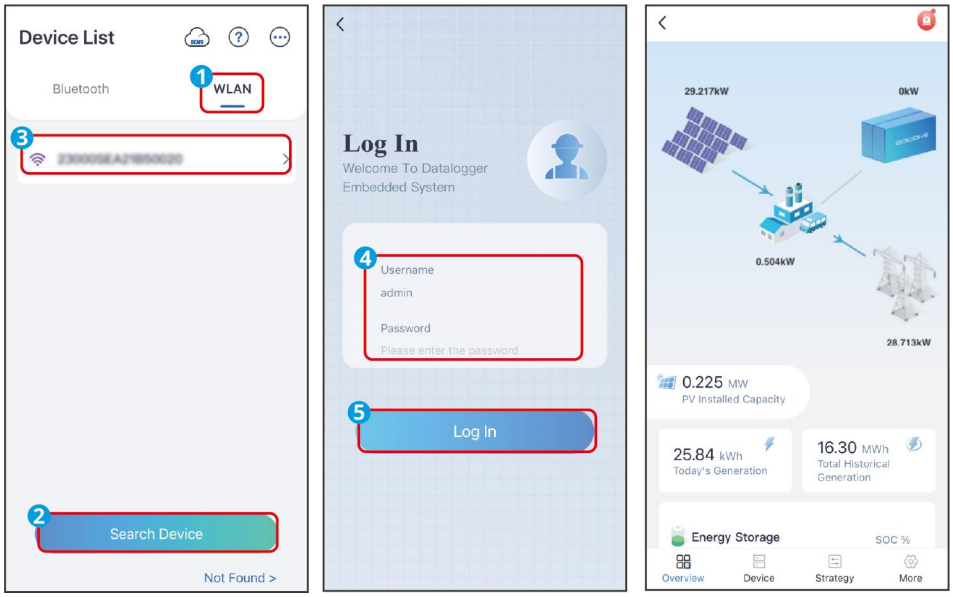
- The antenna connection of the SEC is normal, and the WiFi hotspot is stable.
- SolarGo App version: V5.9.0 or later.

- For account safety, one account cannot log in the embedded Web and SolarGo App to commission the device at the same time.

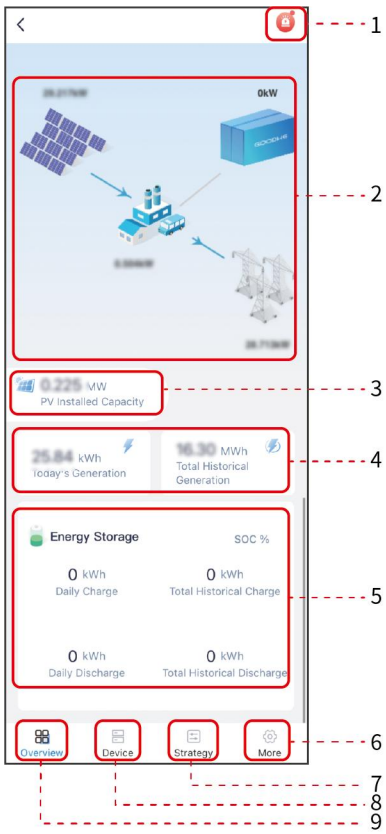
Step 1 Open WiFi setting on the mobile phone, and connect the WiFi hotspot signal of the Ezlogger. Default WiFi hotspot name: Log-***,*** means serial number of the EzLogger. WiFi default password: 12345678.

Step 2: open the SolarGo App. Search the device in the WLAN page, check searched device serial No., and check the device that needs to be connected.

Step 3: Input the user name and the password to log in the App. Initial username: admin. Initial password: 123456.



2.4 App UI Introduction



No.	Description
1	Device fault information. Supported: real-time and historical faults.
2	System energy flow chart.
3	The total rated capacity of all inverters in the system currently.
4	PV power generation.
5	Charging and discharging information of the battery.
6	More. Set network configuration, log in password, system time, etc.
7	Control strategy. Set the working mode of hybrid inverters and remote power adjustment, etc.

8	Device. Set the system networking, add device, delete device, configure the device, check device information, etc.
9	Overview Display system overview information, such as power generation and charging/discharging.

3 Manage the Device

3.1 Add Devices via Automatic Search

NOTICE
• After RS485 networking succeeds, if you need to recognize newly added inverters, tap **Re-networking** to start searching, then the Ezlogger will restart. Restart inverters immediately or wait 15 minutes until tap **Start Searching** once again to start researching devices in the network. • After networking setting succeeds, if you need to add a device that is not found, tap **Device Access** to add the device.

Step 1: Go to **Device Manage >Networking Settings >Ethernet Networking** to access the device networking interface.

Step 2: The hybrid inverter is connected to ETH2 or ETH1 port of the data collector via a switch. Set the **Port Selection** based on the actually linked port. Tap **Start Searching** to start searching for online hybrid inverters.

Step 3: In the device search interface, check the number of devices found. When the number of inverters matches the actual number, tap **Stop Searching** to end the search. If device number does not match the actual number, check if ETH wiring of the device is normal.

Step 4: Set the terminal address of the inverter according to real needs, and make sure the terminal addresses are not duplicated. Tap **Setting > Confirm > Take Effect Immediately > Confirm** to finish configuration.

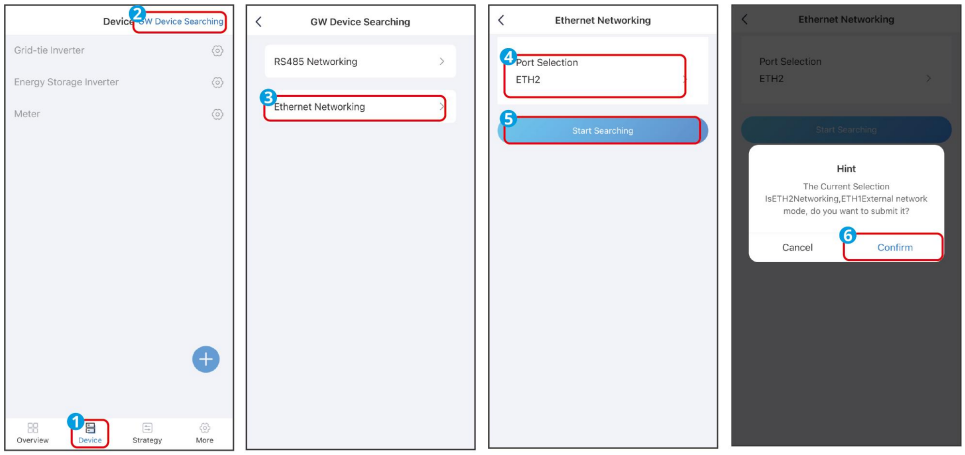
Step 5: Go to **Device Manage >Networking Settings > RS485 Ethernet Networking** to access the device networking interface.

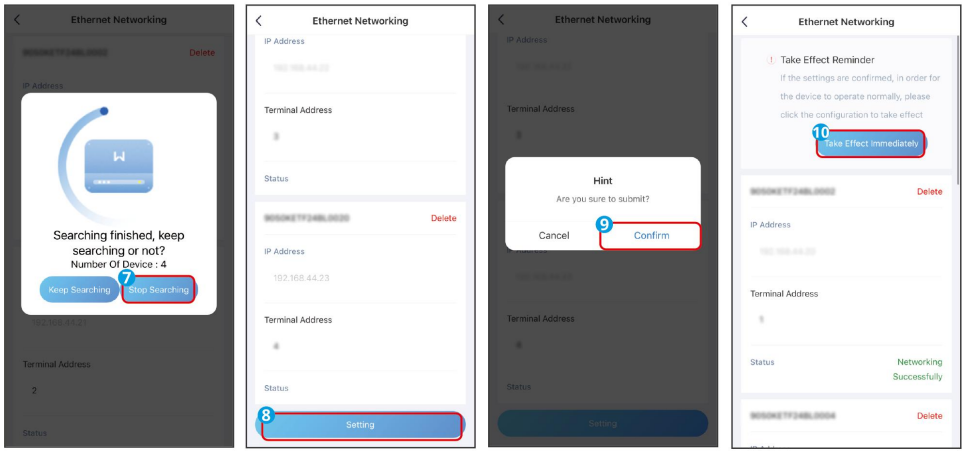
Step 6 Tap **Start Searching** to begin searching for online grid-connected inverters and meters.

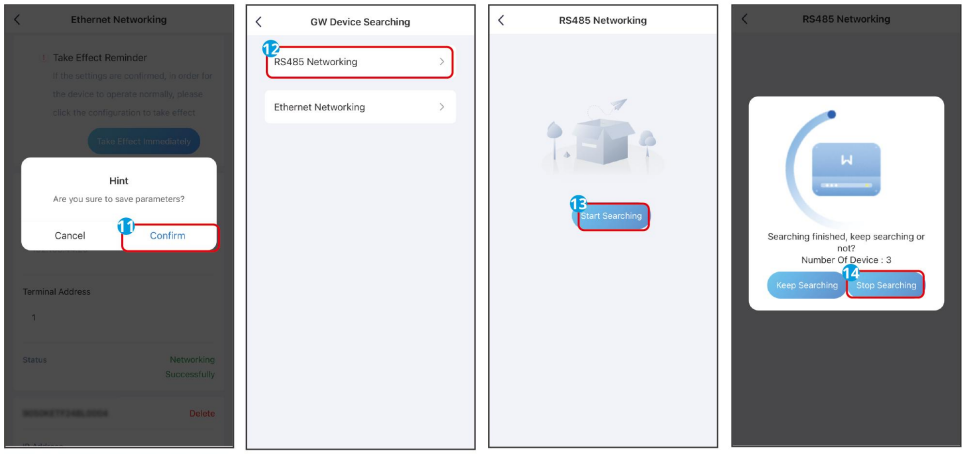
Step 7: When the sum of inverters and meters matches the actual number, tap **Stop**

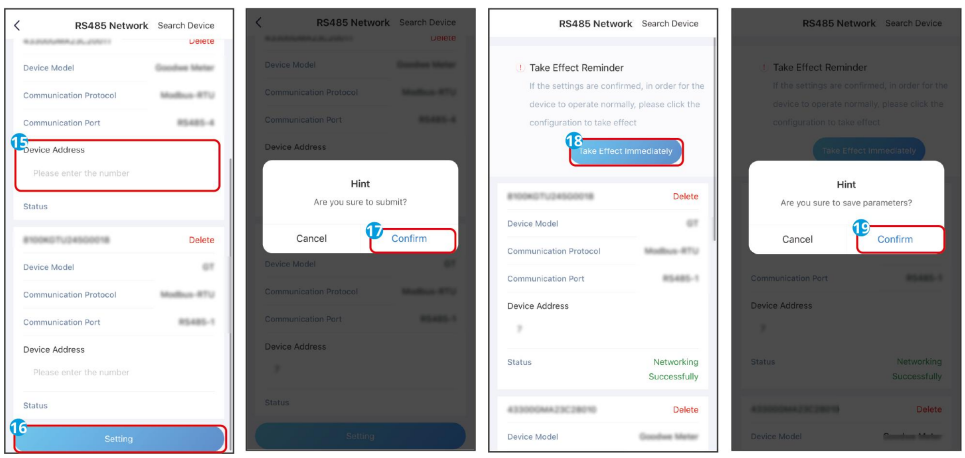
Searching to end the search. If device number does not match the actual number, check if RS485 wiring of the device is normal.

Step 8: Set the terminal address of the inverter according to real needs, and make sure the terminal addresses are not duplicated. Tap **Setting > Confirm > Take Effect Immediately > Confirm** to finish configuration.


Device
GW Device Searching
Grid-tie Inverter
Energy Storage Inverter
Meter
Overview
Device
Strategy
More
GW Device Searching
RS485 Networking
Ethernet Networking
Ethernet Networking
Port Selection
ETH2
Start Searching
Ethernet Networking
Port Selection
ETH2
Start Searching
Hint
The Current Selection IsETH2Networking,ETH1External network mode, do you want to submit it?
Cancel
Confirm


Ethernet Networking
Delete
IP Address
Searching finished, keep searching or not?
Number Of Device : 4
Keep Searching
Stop Searching
Terminal Address
Status
Ethernet Networking
IP Address
Terminal Address
Status
Delete
IP Address
Terminal Address
Status
Setting
Ethernet Networking
IP Address
Terminal Address
Hint
Are you sure to submit?
Cancel
Confirm
Status
Setting
Ethernet Networking
Take Effect Reminder
If the settings are confirmed, in order for the device to operate normally, please click the configuration to take effect
Take Effect Immediately
Delete
IP Address
Terminal Address
Status
Networking Successfully
Delete


Ethernet Networking
Take Effect Reminder
Hint
Are you sure to save parameters?
Cancel
Confirm
Terminal Address
Status
Networking Successfully
Delete
GW Device Searching
RS485 Networking
Ethernet Networking
RS485 Networking
Start Searching
RS485 Networking
Searching finished, keep searching or not?
Number Of Device : 3
Keep Searching
Stop Searching


RS485 Network
Search Device
Device Model
Communication Protocol
Communication Port
Device Address
Please enter the number
Status
Delete
Setting
RS485 Network
Search Device
Hint
Are you sure to submit?
Cancel
Confirm
RS485 Network
Search Device
Take Effect Reminder
If the settings are confirmed, in order for the device to operate normally, please click the configuration to take effect
Take Effect Immediately
Delete
Device Model
Communication Protocol
Communication Port
Device Address
Status
Networking Successfully
Delete
RS485 Network
Search Device
Take Effect Reminder
Hint
Are you sure to save parameters?
Cancel
Confirm
Status
Networking Successfully
Delete

3.2 Add Devices Manually

NOTICE
• After networking setting succeeds, if you need to add a device that is not found, tap **Device Access** to add the device. • Tap **Edit** or **Delete** to edit or delete device parameters of added devices.

Method 1:

Step 1: Go to **Device** >  > **Device Access** >  to add the device.

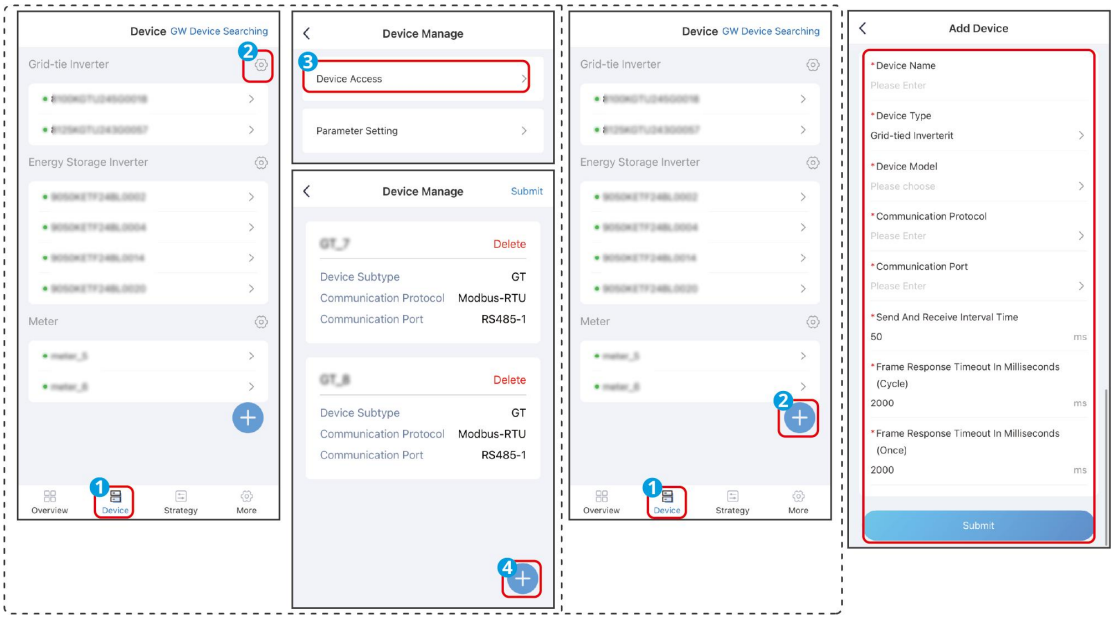
Step 2: Set the device parameters based on actual needs. Tap **Confirm** to add the device.

Method 2:

Step 1: Go to **Device** >  > **Device Access** > to add the device.

Step 2: Set the device parameters based on actual needs. Tap **Submit** to add the device.

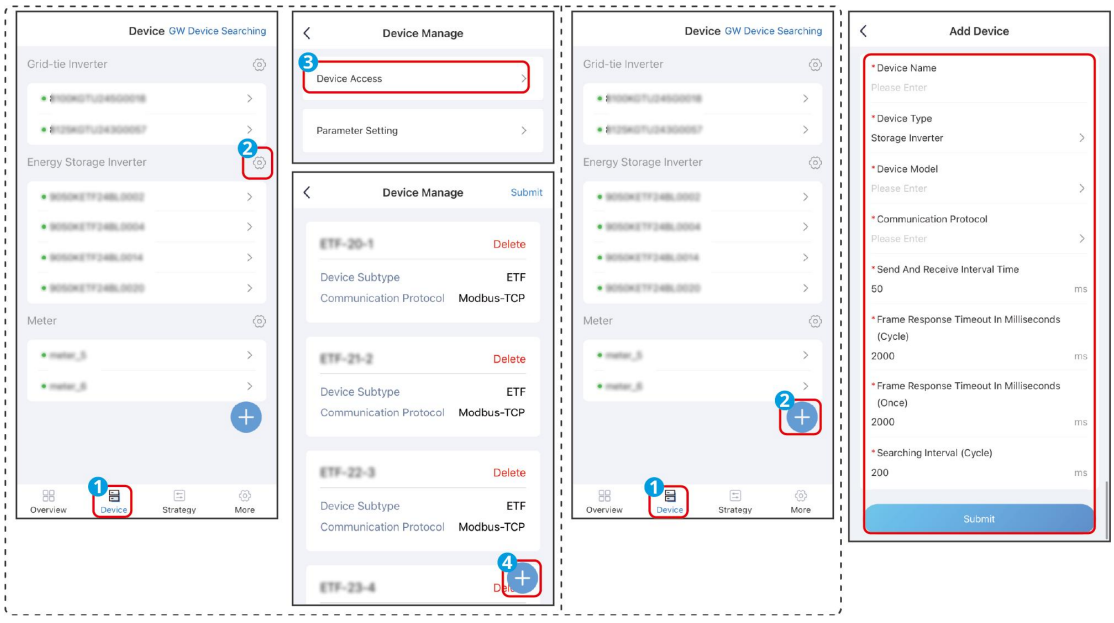
Add a grid-tied inverter



No.	Parameters	Description
1	Device Name	Define the device name based on actual needs.

2	Device Model	Select the model of the inverter that is connected to.
3	Communication Protocol	Select based on the communication protocol of the device. Currently support: Modbus-RTU.
4	Communication Port	Select the actual connected port on the EzLogger.
5	Terminal Address	• Set the terminal address of inverters based on the actual power plant planning. Select **Auto-Generate** when there is no need to set the parameters based on the actual settings. • Make sure addresses of different devices are different.

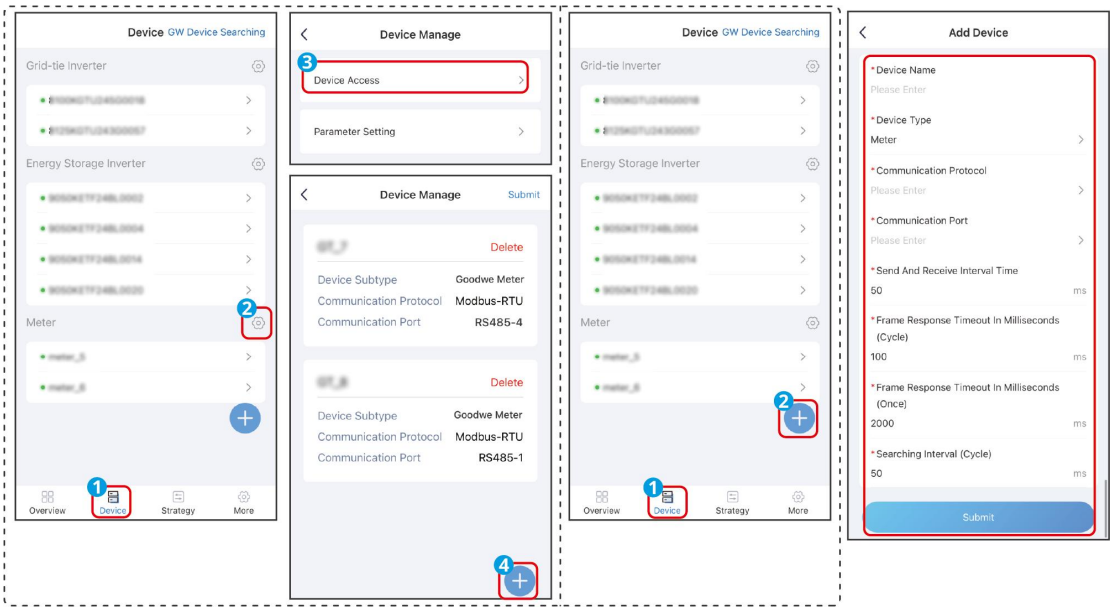
Add a hybrid inverter



No.	Parameters	Description
1	Device Name	Define the device name based on actual needs.
2	Device Type	Select the type of the inverter that is connected to.

3	Communication Protocol	Select based on the communication protocol of the device. Currently support: Modbus-TCP.
4	Local IP	Set as corresponding IP address of the Ethernet port linked to other devices.
5	Local Port	Set the port number of the controller. Default port number: 0.
6	Remote IP Address	Set the IP address of the WiFi / LAN Kit-20 communication stick connected to the hybrid inverter.
7	Remote Port	Set the port number of other added devices. Default port number: 502.
8	Terminal Address	Set the terminal address of inverters based on the actual power plant planning. Select **Auto-Generate** when there is no need to set the parameters based on the actual settings.

Add a meter



No.	Parameters	Description
1	Device Name	Define the device name based on actual needs.

2	Communication Protocol	Select based on the communication protocol of the smart meter. Currently supported: DLT654-1997, DLT645-2007, Modbus-RTU.
When the Communication Protocol is Modbus-RTU, set the following parameters based on actual situation:		
3	Communication Port	Set according to the actual connected port of the smart meter on the controller. Supported: RS485-1, RS485-2, RS485-3, RS485-4.
4	Device Type	Set this parameter based on the actual meter type. Supported: Goodwe Meter(GM330), UMG604PRO, Acrel-DTSD1352, Schneider-IEM3255, and Others.
5	Meter Usage	Select based on the actual usage ● Grid Side Meter: the meter's CT is installed on the grid-connection point for power limiting. ● Power generation side PV energy storage meter: the meter's CT is installed on the upper end of the grid-connected inverter and hybrid inverter, monitoring the electricity consumption data for both. ● PV meter on the power generation side: the meter's CT is installed on the grid-connected inverter side, monitoring the generation data of the grid-connected inverter. ● Power generation side energy storage meter: the meter's CT is installed on the hybrid inverter side, monitoring the generation data of the hybrid inverter.
6	Grid Connection Point Attribute	Choose based on the transformer number to which the inverter is connected.
7	Terminal Address	● Set the terminal address of smart meters based on the actual power plant planning. Select **Auto-Generate** when there is no need to set the parameters based on the actual settings.

		• Do not set the address of smart meters same as that of inverters.
8	Access Point Table	Import the access point table of the connected device.
9	IEC104 Forwarding	Default: no. If yes, import the forwarding table based on actual situation.
When the Communication Protocol is DLT654-1997/ DLT645-2007, set the following parameters:		
10	Communication Port	Set according to the actual connected port of the smart meter on the controller. Supported: RS485-1, RS485-2, RS485-3, RS485-4.
11	Terminal Address	• Set the terminal address of smart meters based on the actual power plant planning. Select **Auto-Generate** when there is no need to set the parameters based on the actual settings. • Do not set the address of smart meters same as that of inverters.
12	IEC104 Forwarding	Default: no. If yes, import the forwarding table based on actual situation.

3.3 Set Device Parameters

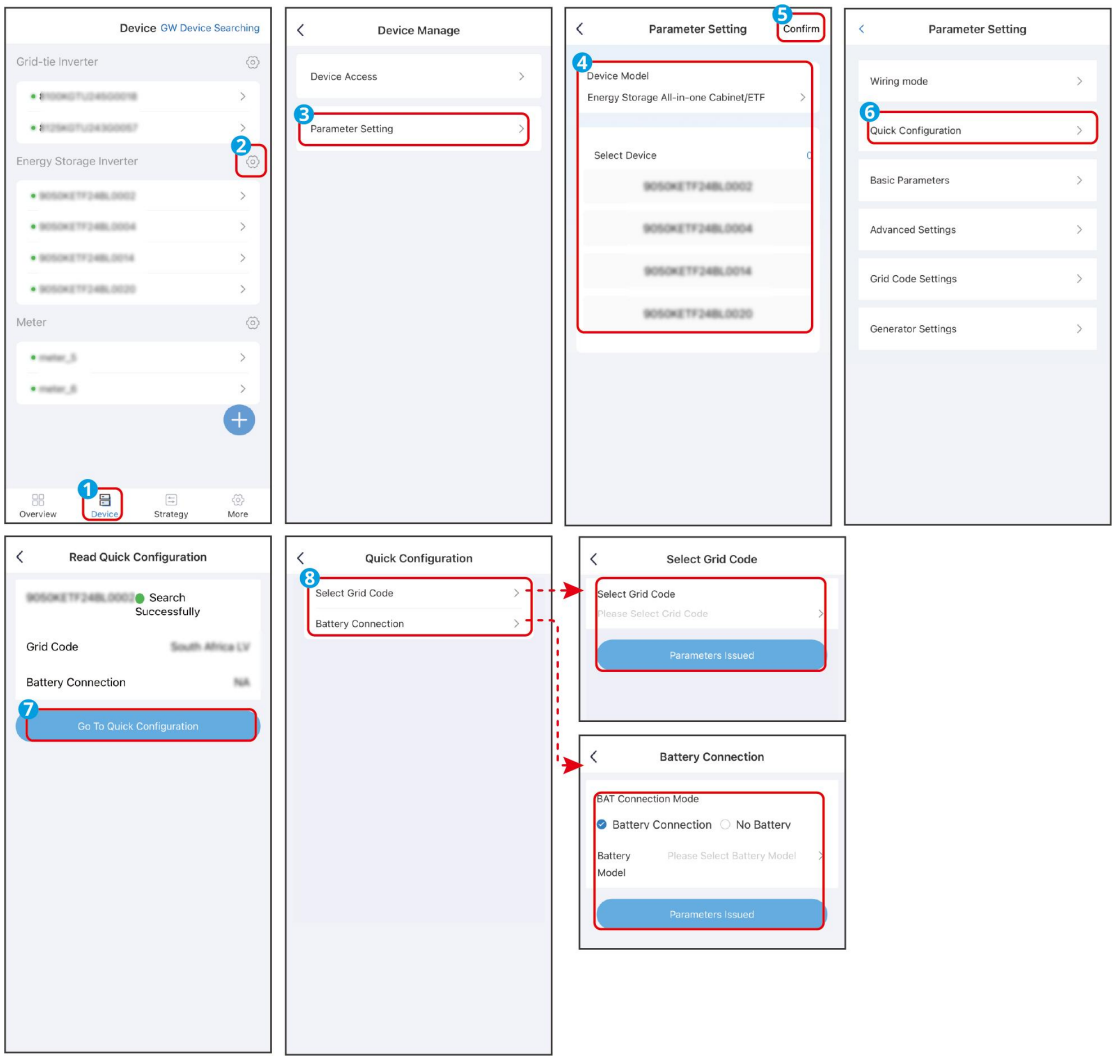
3.3. 1 Set Parameters of Hybrid Inverters

3.3.1.1 Hybrid Inverter Configuration

Step 1: Go to **Device Manage > Parameter Setting > Energy storage inverter** to set the parameters.

Step 2: Select the device type, and tap the inverter SN that you want to view or configure.

Step 3: Tap **Create Quick Configuration** in **Quick Configuration**. Choose the safety regulation and set the battery Type based on actual needs. Tap **Parameters Issued** to finish configuration.



No.	Parameters	Description
1	Grid Code Settings	Choose corresponding grid code according to countries or regions.
2	Battery Connection	Choose the actual mode in which the battery is connected to the inverter. If there are no batteries connected in the system, there is no need to set the battery mode and its working mode. The device operates in self-use mode by default.

3.3.1.2 Set the Wiring Mode of Hybrid Inverters

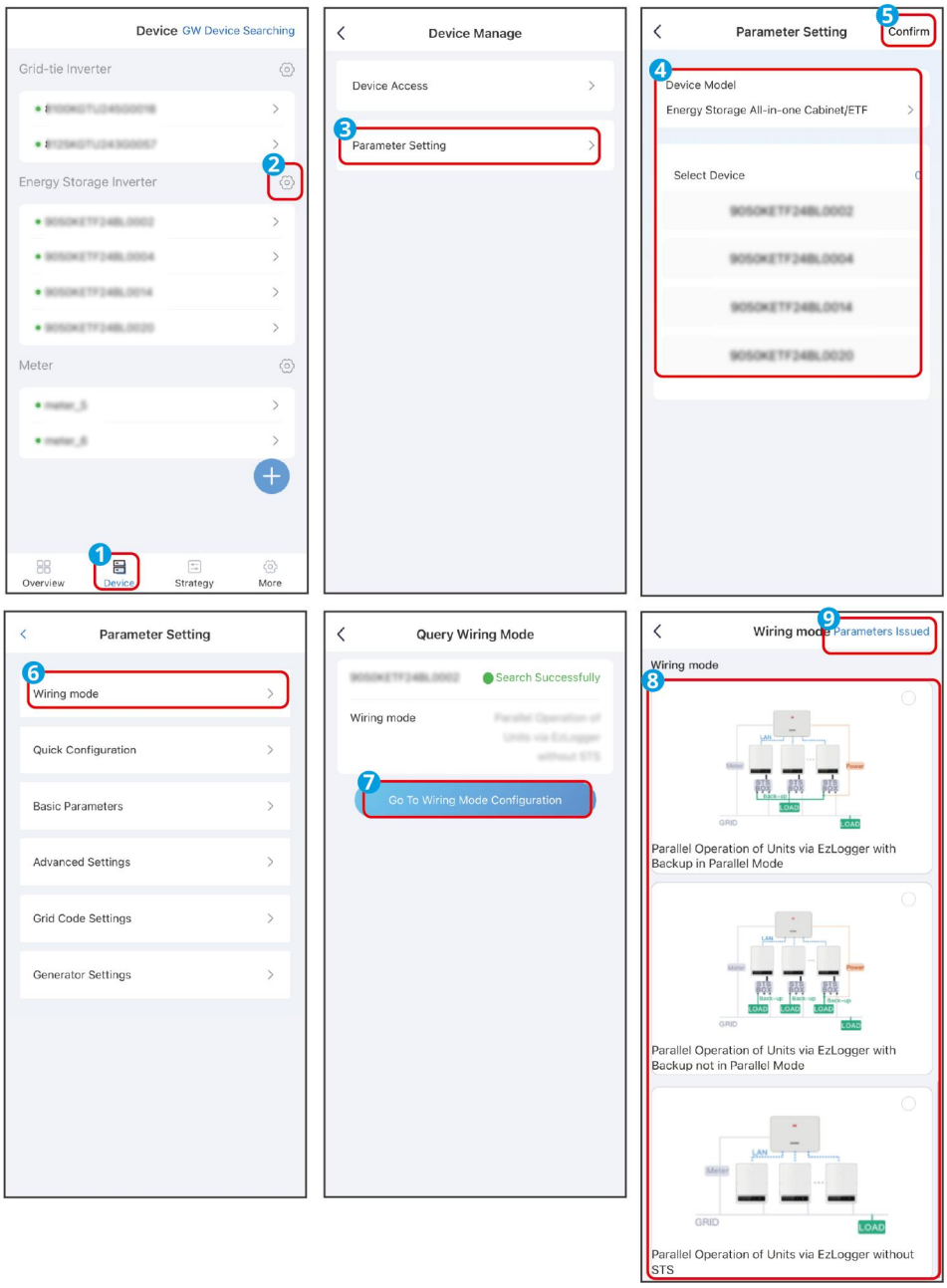
Step 1: Go to **Device Manage > Parameter Setting > Energy storage inverter** to set the

parameters.

Step 2: Select the device type, and tap the inverter SN that you want to view or configure.

Step 3: Select **Wiring Mode**, choose the mode based on actual needs, tap **Parameters Issued** to finish configuration.

NOTICE
Only applicable to inverters of ET40-50kW series. When multiple inverters are connected in parallel, this parameter needs to be set.



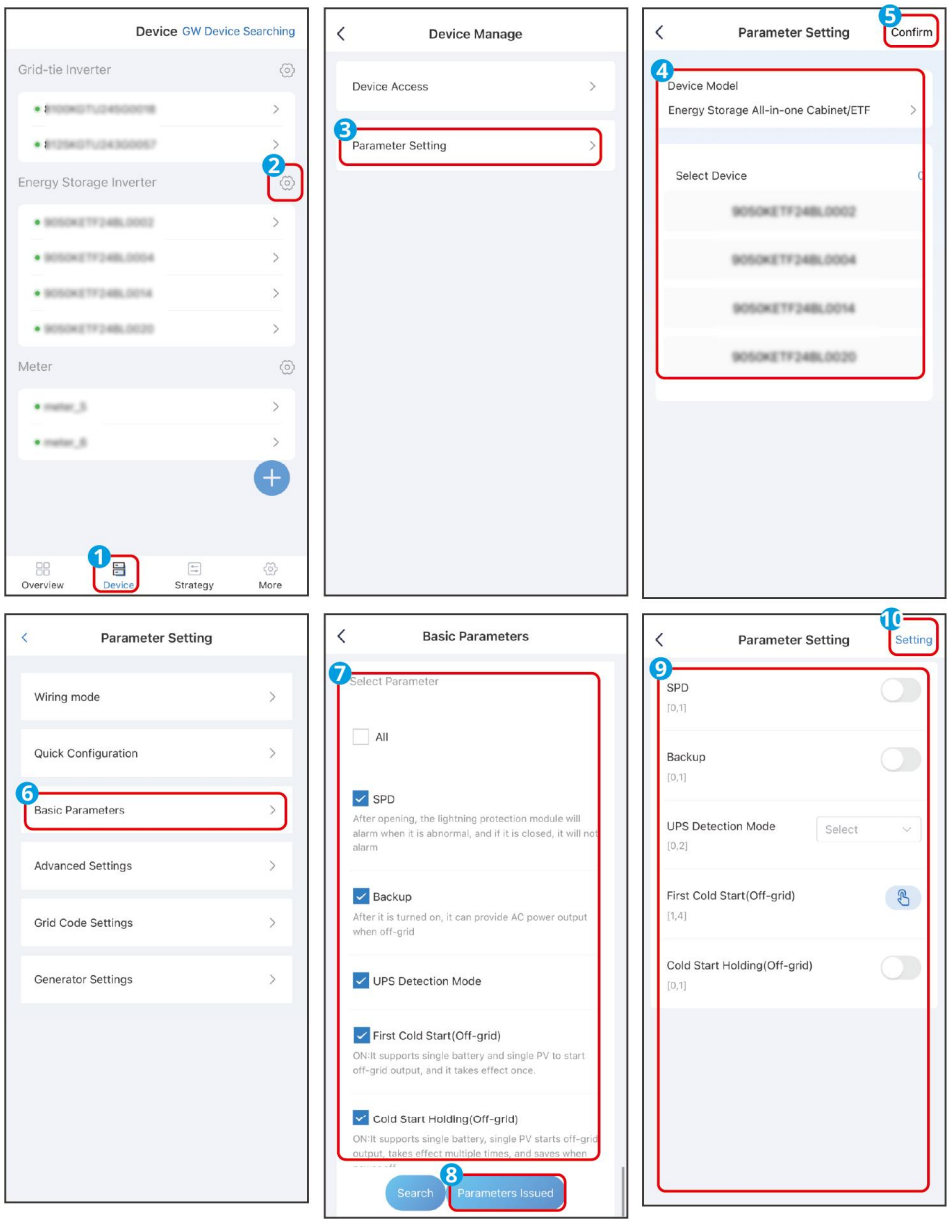
No.	Parameters	Description
1	Parallel Operation of Units via EzLogger with Backup in Parallel Mode	When the hybrid inverters are configured in a system that is both grid-connected and off-grid in parallel, select Parallel Operation of Units via EzLogger with Backup in Parallel Mode.
2	Parallel Operation of Units via EzLogger with Backup not in Parallel Mode	When the hybrid inverters are configured in a grid-connected parallel system and a non-parallel off-grid system, select Parallel Operation of Units via EzLogger with Backup not in Parallel Mode.
3	Parallel Operation of Units via EzLogger without STS	When the hybrid inverters are not connected to an STS, select Parallel Operation of Units via EzLogger without STS.

3.3.1.3 Set Basic Parameters of Hybrid Inverters

Step 1: Go to **Device Manage > Parameter Setting > Energy storage inverter** to set the parameters.

Step 2: Select the device type, and tap the inverter SN that you want to view or configure.

Step 3: Check the parameters that you want to view or set, and tap **Search** to check the current values of the selected parameters. If you need to modify, input the **Modification Items,** and tap **Modify**, **tap** View Results to check whether the modification is successful.



No.	Parameters	Description
1	SPD	After enabling **SPD**, when the SPD module is abnormal, there will be SPD module abnormal alarm prompt.
2	Backup	After enabling **Backup**, the battery will power the load connected to the backup port of the inverter to ensure Uninterrupted Power Supply when the power grid fails.
3	UPS Detection Mode	● UPS Mode - Full Wave Detection: check whether the utility grid voltage is too high or too low.

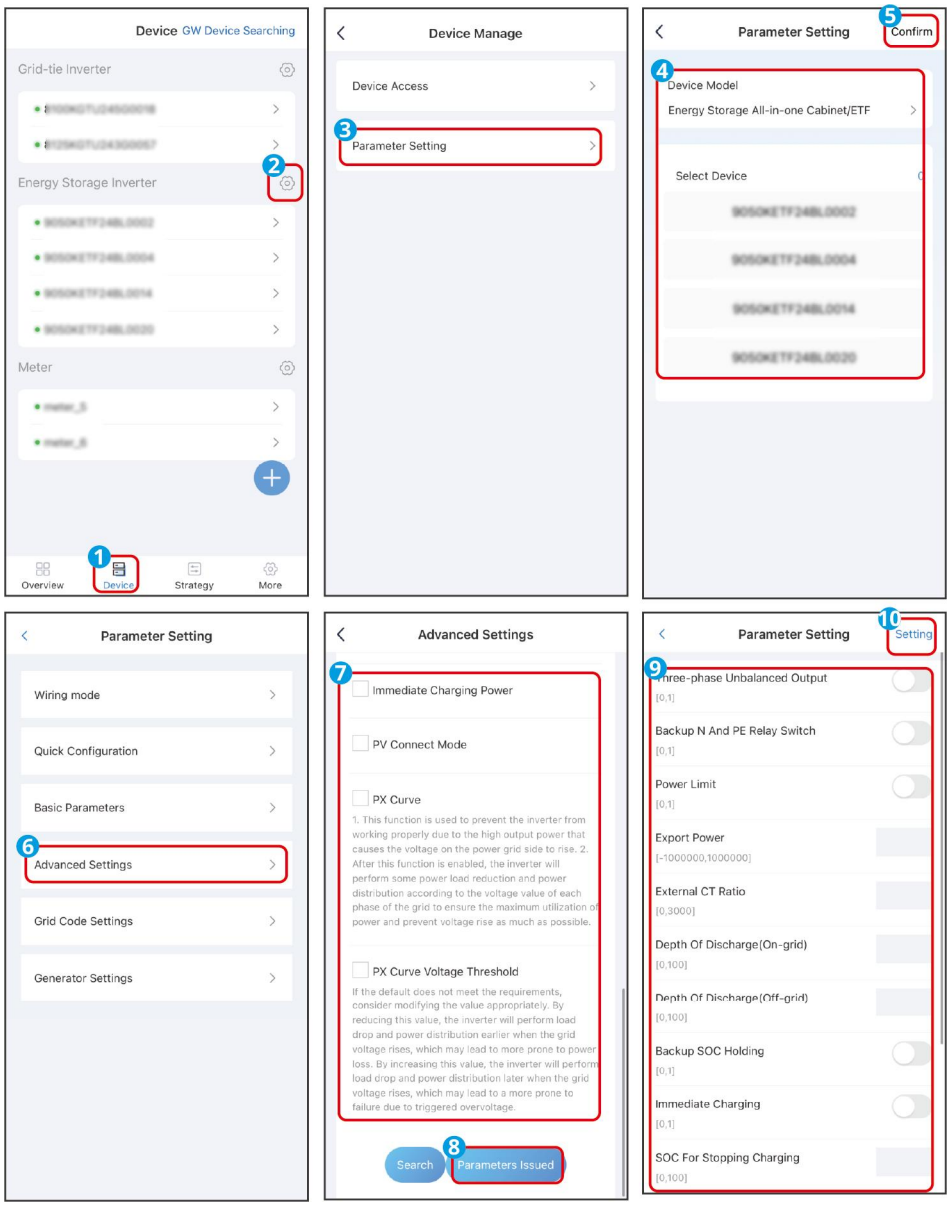
		• UPS Mode - Half Wave Detection: check whether the utility grid voltage is too low. • EPS Mode - Support LVRT: shut down grid voltage detection.
4	First Cold Start (Off - grid)	It will only take effect once. In off-grid mode, enable First Cold Start (Off-grid) to output backup supply with battery or PV.
5	Cold Start Holding (Off-grid)	Take effect multiple times. In off-grid mode, enable First Cold Start (Off-grid) to output backup supply with battery or PV.
6	Clear Overloading Obstacle	Once the power of loads connected to the inverter BACK-UP ports exceeds the rated load power, the inverter will restart and detect the power again. The inverter will perform restart and detection several times until the overloading problem is solved. Tap Clear Overload History to clear the restart time interval after the power of the loads connected to the BACK-UP ports meets the requirements.
7	Shadow Scan	When PV panels are severely shadowed, enable this function to optimize power generation efficiency of the inverter. After enabling, set the Shadow Scan interval based on real needs.

3.3.1.4 Set Advanced Parameters of Hybrid Inverters

Step 1: Go to **Device Manage > Parameter Setting > Energy storage inverter** to set the parameters.

Step 2: Select the device type, and tap the inverter SN that you want to view or configure.

Step 3: Check the parameters that you want to view or set, and tap **Search** to check the current values of the selected parameters. If you need to modify, input the **Modification Items,** and tap **Modify**, tap **View Results** to check whether the modification is successful.



No.	Parameters	Description
1	Three-phase Unbalanced Output	When the grid adopts phase-based metering, the three-phase imbalance function needs to be enabled.
2	Backup Power N and PE Relay Switch	According to the grid standards of certain countries or regions, when operating off-grid, the backup port’ s internal relay must remain closed to connect the N (Neutral) and PE wires.
3	Depth Of Discharge	Indicates the depth of discharge of the battery when the

	(On-Grid)	inverter is on-grid or off-grid.
4	Depth Of Discharge (Off-grid)	
5	Backup SOC Holding	The battery will be charged to preset SOC protection value by utility grid or PV when the system is running on-grid, so that the battery SOC is sufficient to maintain normal working when the system is off-grid.
6	Immediate Charging	Enable to charge the battery by the grid immediately. It will only take effect once. Start or stop based on actual needs.
7	SOC For Stopping Charging	Stop charging the battery once the battery SOC reaches **SOC (Discontinue)**.
8	Immediate Charging Power	Indicates the percentage of the charging power to the inverter rated power when enabling **Immediate Charging**. For example, setting the Immediate Charging Power of a 10kW inverter to 60 means the charging power of the inverter is 10kW*60%=6kW.
9	PV Connection Mode	• Independent connection: The PV string is connected to the inverter’ s MPPT port in a one-to-one correspondence. • Partial Parallel Connection: One PV string connects to multiple MPPT ports of the inverter, while other PV modules connect to other MPPT ports of the inverter. • Parallel Connection: External PV strings are connected to the inverter’ s PV input ports, with one PV string connected to multiple PV input ports.

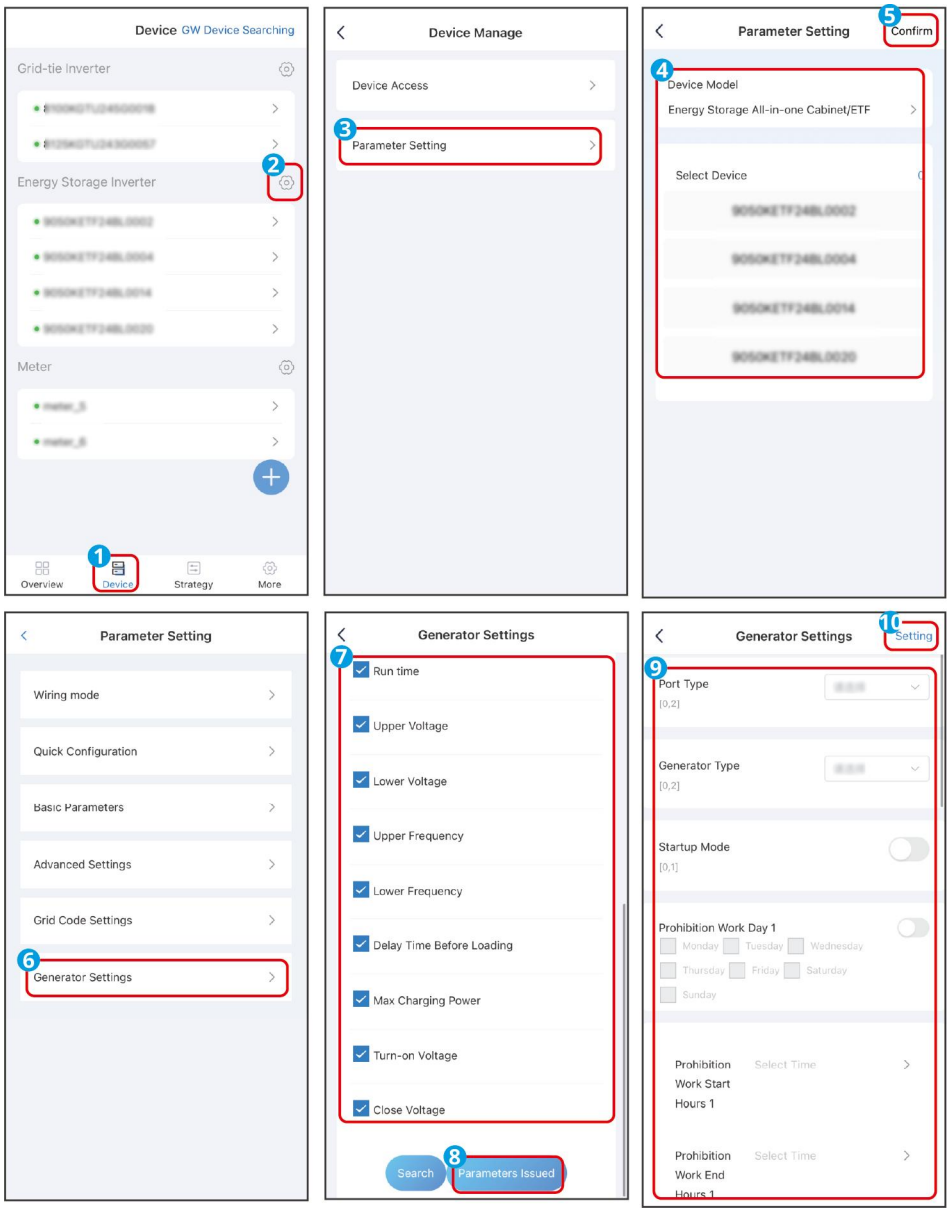
10	PX Curve	After enabling, the inverter will adjust the three-phase power based on the grid voltage to maximize power utilization and minimize voltage rise. If the default value does not meet the requirements, the PX curve voltage threshold can be adjusted according to actual needs.

3.3.1.5 Set Parameters of Generator

Step 1: Go to **Device Manage > Parameter Setting > Energy storage inverter** to set the parameters.

Step 2: Select the device type, and tap the inverter SN that you want to view or configure.

Step 3: Check the parameters that you want to view or set, and tap **Search** to check the current values of the selected parameters. If you need to modify, input the **Modification Items,** and tap **Modify**, tap **View Results** to check whether the modification is successful.



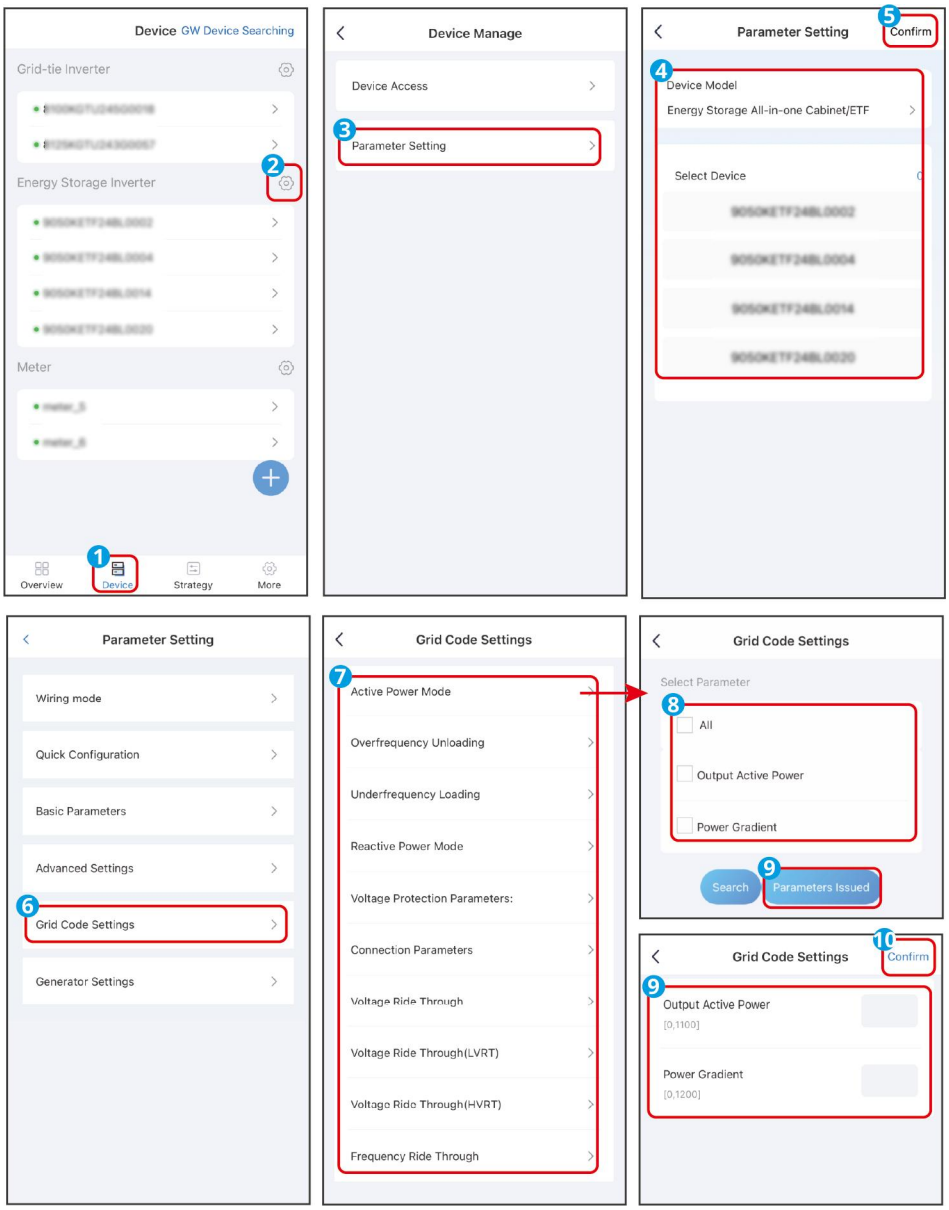
No.	Parameters	Description
1	Port Type	● Generator Connection: The inverter is connected to the generator, controlling the generator’ s start and stop. ● Load Connection: The inverter is connected to a regular load, controlling the load’ s start and stop.
2	Generator Start Method	● Automatic Control of Generator (Supports Dry Node Connection): The generator is automatically controlled to start and stop according to the set parameters. ● Manual Control of Generator (Does Not Support Dry Node

		Connection): The generator must be manually controlled to start and stop; the inverter cannot control the generator’ s operation. ● No Generator Installed: Select this option when no generator is connected to the system.
3	Generator Dry Node Switch	When the switch is turned on, the generator operates. After the set runtime, the generator can automatically stop.
4	Work Prohibited-Repeated	Set the dates on which the generator is prohibited from operating.
5	Work Prohibited Start Time-End Time	Set the time period during which the generator is prohibited from operating.
6	Rated Power	Set the rated power of the generator.
7	Run Time	The generator’ s continuous operation time after it starts running. After the set time, the generator will stop. If the operation time includes a prohibited working time, the generator will stop during that period. After the prohibited time ends, the generator will restart and continue timing.
8	Upper Voltage	Set the operation voltage range of the generator.
9	Lower Voltage	
10	Frequency Upper Limit	Set the operation frequency range of the generator.
11	Lower	

	Frequency	
12	Preheating Time	Set the idle preheating time for the generator.
13	Maximum Charging Power	The charging power when the generator is charging the battery.

3.3.1.6 Set Grid Code Settings of Hybrid Inverters

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



Active Power Mode

Step 1: Tap **Device Manage >Parameter Setting > Energy Storage Inverter > Grid Code Setting > Active Power Mode** to set the parameters.

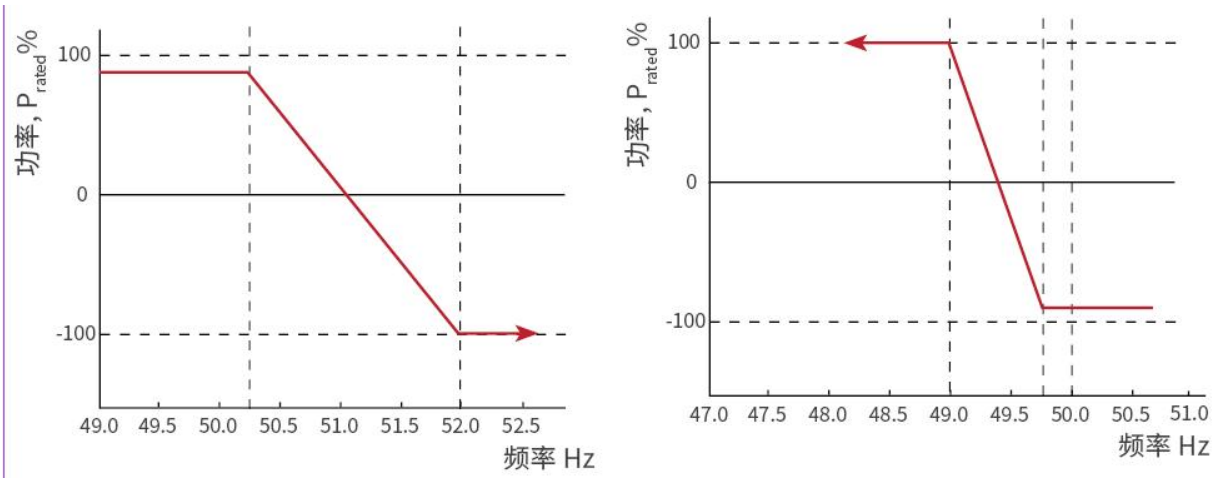
Step 2 Set the parameters based on actual needs.

No.	Parameters	Description
1	Output Active Power	Set the output power limit of the inverter.
2	Power Gradient	Set the gradient when the active output power increases or decreases.

Set Overfrequency Unloading Parameters

Step 1 Tap **Device Manage** > **Parameter Setting** > **Energy Storage Inverter** >**Grid Code Settings** > **Overfrequency Unloading** to set the parameters.

Step 2 Set the parameters based on actual needs.



No.	Parameters	Description
1	P(F) Curve	Enable P(F) Curve when it is required by local grid standards and requirements.
2	Overfrequency Unloading Mode	Set this mode based on actual needs. Slope mode: Adjust the power based on overfrequency point and deloading slope. Stop mode: adjust the power based on overfrequency threshold and endpoint.
3	Overfrequency Threshold	The inverter output active power will decrease when the utility grid frequency is too high. The inverter output power will decrease when the utility grid frequency is higher than **Overfrequency Threshold**.

4	Buying and Selling Electricity Conversion Frequency	When the set frequency value is reached, the system switches from selling power to purchasing power. Supported: Pn rated power, Ps apparent power, Pm current power, Pmax the maximum power.
5	Overfrequency Endpoint	The inverter output active power will decrease when the utility grid frequency is too high. The inverter output power will stop decreasing when the utility grid frequency is higher than **Overfrequency Endpoint**.
6	Overfrequency power slope base power	Adjust the inverter output power based on Apparent Active Power, Rated Active Power, Momentary Active Power, Or Max. Active Power.
7	Power Response to Overfrequency Gradient	The inverter output active power will increase when the utility grid frequency is too high. Indicates the slope when the inverter output power decreases.
8	Tentional Delay Ta	Indicates the delayed response time when the inverter output power is higher than the **Overfrequency Threshold**.
9	Hysteresis Function Enable	Enable the hysteresis function.
10	Frequency Hysteresis Point	During the over-frequency derating process, if the frequency decreases, the power will output at the lowest derating point until the frequency drops

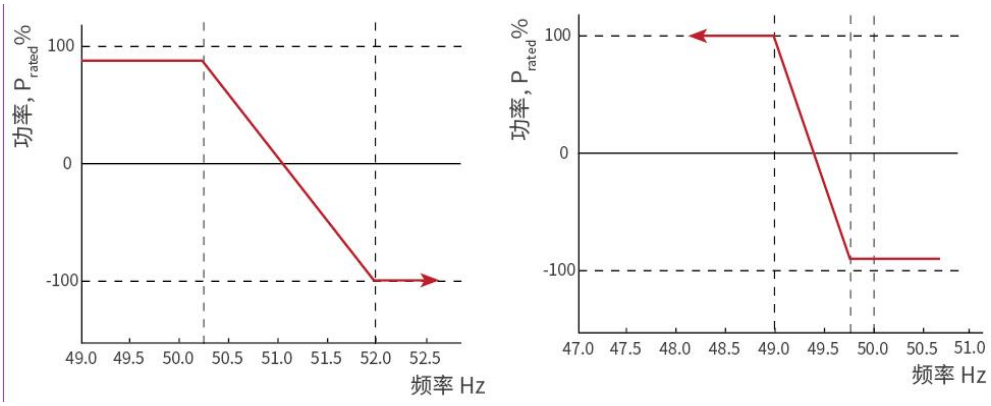
		below the hysteresis point, at which point the power will recover.
11	Delay Waiting Time	Namely, for over-frequency derating and frequency decrease and when the frequency is below the hysteresis point, the time to wait before power recovery starts.
12	Hysteresis Power Recovery Slope Benchmark	For over-frequency derating and frequency decrease, when the frequency drops below the hysteresis point, the recovery reference is calculated as recovery slope * reference power for power recovery. Supported: Pn rated power, Ps apparent power, Pm current power, Pmax maximum power, Power difference (△P).
13	Hysteretic Power Recovery Slope	For under-frequency loading and frequency increase, when the frequency exceeds the hysteresis point, the slope at which the power is recovered.

Underfrequency Loading

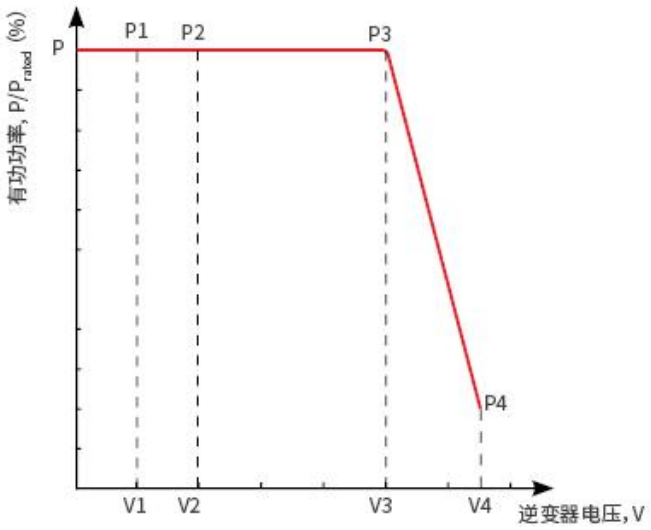
Step 1: Tap **Device Manage** > **Parameter Setting** > **Energy Storage Inverter** > **Grid Code Settings** > **Underfrequency Unloading** to set the parameters.

Step 2 Set the parameters based on actual needs.

P(F) Curve



P(U) Curve



No.	Parameters	Description
1	P(F) Curve	Enable P(F) Curve when it is required by local grid standards and requirements.
2	Underfrequency Loading Mode	Set this mode based on actual needs. Slope mode: adjust power based on underfrequency and loading slope. Stop mode: adjust power based on underfrequency threshold and underfrequency endpoint.
3	Underfrequency Threshold	The inverter output active power will increase when the utility grid frequency is too low. The inverter output power will increase when the utility grid

		frequency is lower than **Underfrequency Threshold**.
4	Buying and Selling Electricity Conversion Frequency	When the set frequency value is reached, the system switches from selling power to purchasing power. Supported: Pn rated power, Ps apparent power, Pm current power, Pmax maximum power, power difference (△P).
5	Underfrequency Endpoint	The inverter output active power will increase when the utility grid frequency is too low. The inverter output power will stop increasing when the utility grid frequency is lower than **Underfrequency Endpoint**.
6	Overfrequency power slope base power	Adjust the inverter output power based on Apparent Active Power, Rated Active Power, Momentary Active Power, Or Max. Active Power.
7	Power Response to Underfrequency Gradient	The inverter output active power will increase when the utility grid frequency is too low. The slope at which the inverter output power increases
8	Tentional Delay Ta	The inverter outputs the delayed response time when the grid frequency is lower than the Underfrequency Point.
9	Hysteresis Function Enable	Enable the hysteresis function.
10	Frequency Hysteresis Point	During the under-frequency derating process, if the frequency increases, the power will output at the lowest derating point until the frequency is higher than the hysteresis point, at which point the power will recover.

11	Delay Waiting Time	Namely, for under-frequency derating and frequency increase and when the frequency is higher than the hysteresis point, the time to wait before power recovery starts.
12	Hysteresis Power Recovery Slope Benchmark	For under-frequency derating and frequency decrease, when the frequency is higher than the hysteresis point, the recovery reference is calculated as recovery slope * reference power for power recovery. Supported: Pn rated power, Ps apparent power, Pm current power, Pmax the maximum power, Power difference （△P）.
13	Hysteretic Power Recovery Slope	For under-frequency loading and frequency increase, when the frequency exceeds the hysteresis point, the slope at which the power is recovered.
14	Enable P(U) Curve	Enable P(U) Curve when it is required by local grid standards and requirements.
15	Vn Voltage	The percentage of actual voltage to the rated voltage at Vn point, n=1, 2, 3, 4. For example, setting Vn Voltage to 90 means V/Vrated%=90%.
16	Vn Active Power	The percentage of the output active power to the apparent power at Vn point, (n=1, 2, 3, 4). For example, setting **Vn Reactive Power** to 48.5 means means P/Prated% =48.5%
17	Output Response	Set the active power output response mode.

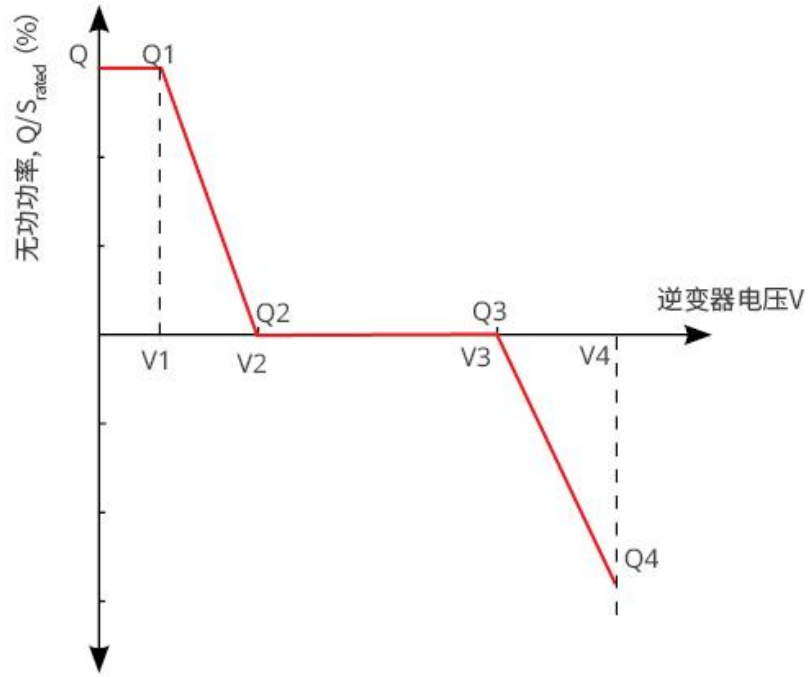
	Mode	Supports: PT-1 Behavior, realize active scheduling based on the first-order LPF curve within the response time constant. Gradient Control, realize active scheduling based on the power change slope
18	Power Gradient	The active scheduling will be implemented based on the power gradient when the output response mode is set to slope scheduling.
19	PT-1 Behavior Tau	Set the time constant within which the active power changes based on the first order LPF curve when the Output Response Mode is set to be PT-1 Behavior.

Reactive Power Mode

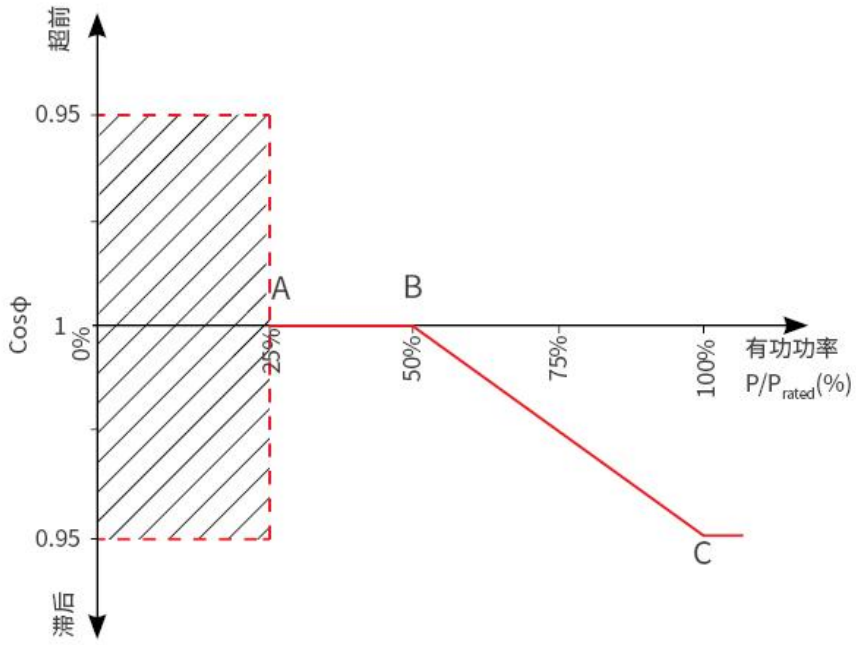
Step 1: Tap **Device Manage > Parameter Setting > Energy Storage Inverter > Grid Code Settings > Reactive Power Mode** to set the parameters.

Step 2 Input the parameters based on actual needs.

Q(U) Curve



Cos （ϕ） Curve



No.	Parameters	Description
1	Fix PF	Enable Fix PF when it is required by local grid

		standards and requirements.
2	Over-excited /Under-excited	Set the power factor as lagging or leading based on actual needs and local grid standards and requirements.
3	Power Factor	Set the power factor based on actual needs. Range: 0-~-0.8, or +0.8~+1.
4	Fix Q	Enable Fix Q when it is required by local grid standards and requirements.
5	Over-excited /Under-excited	Set the reactive power as inductive or capacitive reactive power based on actual needs and local grid standards and requirements.
6	Reactive Power	The percentage of reactive power to the apparent power.
7	Enable Q(U) Curve	Enable Q(U) Curve when it is required by local grid standards and requirements.
8	Mode Option	Set Q (U) Curve mode. Supported: basic mode, slope mode.
9	Vn Voltage	The percentage of actual voltage to the rated voltage at Vn point, n=1, 2, 3, 4. For example, setting Vn Voltage to 90 means V/Vrated%=90%.
10	Vn Reactive Power	The percentage of the reactive output power to the apparent power at Vn point, n=1, 2, 3, 4. For example, setting **Vn Reactive Power** to 48.5 means Q/Srated%=48.5%

11	Voltage Dead Zone Width	When the Q(U) curve mode is set to slope mode, set the voltage dead zone. Within this dead zone, there is no requirement for reactive power output.
12	Overexcited Slope	In Q(U) curve mode set to slope mode, the power change slope is set to a positive or negative value.
13	Underexcited Slope	
14	Vn Reactive Power	The percentage of the reactive output power to the apparent power at Vn point, n=1, 2, 3, 4. For example, setting **Vn Reactive Power** to 48.5 means Q/Srated%=48.5%
15	Q(U) Curve Time Constant	The power is required to reach 95% in the first order LPF curve within three time constant.
16	Enable Extension Function	After enabling, set corresponding parameters.
17	Lock-In Power	When the inverter output reactive power to the rated power ratio is between the Lock-in power and Lock-out power, the ratio meets Q(U) curve requirements.
18	Lock-out Power	
19	Enable Cos ϕ (P) Curve	Enable Cosϕ Curve when it is required by local grid standards and requirements.
20	Mode Option	Set cosϕ（P） Curve mode. Supported: basic mode, slope mode.
21	Pn Power	The percentage of the output active power to the rated power at Pn point. N=A, B, C, D, E.
22	Pn Cos ϕ	Pn Power Factor N=A, B, C, D, E.

23	Overexcited Slope	In cosϕ（P） curve mode set to slope mode, the power change slope is set to a positive or negative value.
24	Underexcited Slope	
25	Pn Power	The percentage of the output active power to the rated power at Pn point. N=A, B, C.
26	Pn Cos ϕ	Pn Power Factor N=A, B, C.
27	Cos ϕ（P）Curve Time Constant	The power is required to reach 95% in the first order LPF curve within three time constant.
28	Enable Extension Function	After enabling, set corresponding parameters.
29	Lock-in Voltage	When the grid voltage is between Lock-in Voltage and Lock-out Voltage, the voltage meets Cosϕ curve requirements.
30	Lock-out Voltage	
31	Enable Q(P) Curve	Enable Q(P) Curve when it is required by local grid standards and requirements.
32	Mode Option	Set Q (P) Curve mode. Supported: basic mode, slope mode.
33	Pn Power	The percentage of the output reactive power to the apparent power at Pn point, n= 1, 2, 3, 4, 5, 6. For example, setting **Pn Power** to 90 means Q / Prated%=90%.
34	Pn Reactive Power	The percentage of the output active power to the rated power at Pn point, n=1, 2, 3, 4, 5, 6. For example, setting **Pn Reactive Power** to 90 means P / Prated%=90%.

35	Overexcited Slope	In Q(P) curve mode set to slope mode, the power change slope is set to a positive or negative value.
36	Underexcited Slope	
37	Pn Power	The percentage of the output reactive power to the apparent power at Pn point, n= 1, 2, 3. For example, setting **Pn Power** to 90 means Q / Prated%=90%.
38	Pn Reactive Power	The percentage of the output active power to the rated power at Pn point, (n= 1, 2, 3). For example, setting **Pn Reactive Power** to 90 means P / Prated%=90%.
39	Time Constant	The power is required to reach 95% in the first order LPF curve within three time constant.

Voltage Protection Parameters

Step 1 Tap **Device Manage > Parameter Setting > Energy Storage Inverter > Grid Code Settings > Voltage Protection Parameters** to set the parameters.

Step 2 Set the parameters based on actual needs.

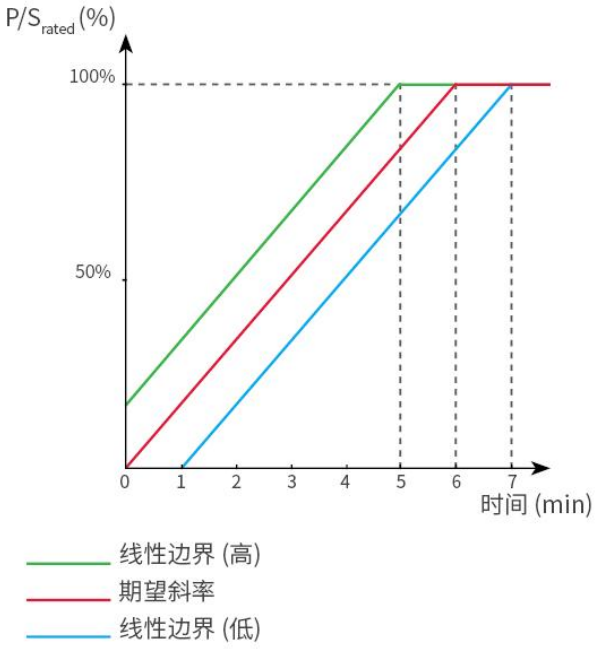
No.	Parameters	Description
1	OV Stage n Trip Value	Set the OV n-order protection trigger threshold, n=1, 2, 3, 4.
2	OV Stage n Trip Time	Set the OV trigger n-order trip time, n=1, 2, 3, 4.
3	UV Stage n Trip Value	Set the level n UV protection threshold, n=1, 2, 3, 4.
4	UV Stage n Trip Time	Set UV trigger n-order trip time, n=1, 2, 3, 4.

5	10-min Overvoltage Trigger Value	Set 10min OV trigger value.
6	10-min Overvoltage Trip Time	Set the 10min OV protection tripping time.
7	OF Stage n Trip Value	Set the grid OF protection threshold value, n=1, 2, 3, 4.
8	OF Stage n Trip Time	Set the OF trigger n-order trip time, n=1, 2, 3, 4.
9	UF Stage n Trip Value	Set the grid UF n-order protection threshold value, n=1, 2, 3, 4.
10	UF Stage n Trip Time	Set the UF trigger n-order trip time, n=1, 2, 3, 4.

Connection Parameters

Step 1 Tap **Device Manage > Parameter Setting > Energy Storage Inverter > Grid Code Settings > Connection** to set the parameters.

Step 2 Input the parameters based on actual needs.



No.	Parameters	Description
1	Upper Voltage	The inverter cannot connect to the grid if it is powered on for the first connection and the grid voltage is higher than the **Upper Voltage**.
2	Lower Voltage	The inverter cannot connect to the grid if it is powered on for the first connection and the grid voltage is lower than the **Lower Voltage**.
3	Upper Frequency	The inverter cannot connect to the grid if it is powered on for the first connection and the grid frequency is higher than the **Upper Frequency**.
4	Lower Frequency	The inverter cannot connect to the grid if it is powered on for the first connection and the grid frequency is lower than the **Lower Frequency**.
5	Observation Time	The waiting time for connecting the inverter to the grid when meeting the following requirements: 1. The inverter is powered on for the first connection. 2. The utility grid voltage and frequency meet certain requirements.
6	Soft Ramp Up Gradient	Enable the start up power slope.
7	Soft Ramp Up Gradient	Indicates the percentage of incremental output power per minute based on the local requirements when the inverter is powered on for the first time.

		For example, setting **Soft Ramp Up Gradient** to 10 means the start-up slope is 10%P_{rated}/min.
8	Upper Voltage	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid voltage is higher than the **Upper Voltage**.
9	Lower Voltage	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid voltage is lower than the **Lower Voltage**.
10	Upper Frequency	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid frequency is higher than the **Upper Frequency**.
11	Lower Frequency	The inverter cannot connect to the grid if it is reconnecting due to a fault and the grid frequency is lower than the **Lower Frequency**.
12	Observation Time	The waiting time for connecting the inverter to the grid when meeting the following requirements. 1. The inverter is reconnecting to the grid due to a fault. 2. The utility grid voltage and frequency meet certain requirements.
13	Reconnection Load Slope Enable	Enable the start up power slope.

14	Reconnection Gradient	In some countries/regions, set the percentage of incremental output power per minute when the inverter is not powered on for the first connection. For example, setting Reconnection Power Loading Slope to 10 means the reconnection slope is 10% Prated/min.

Voltage Ride Through

Step 1: Tap **Device Manage** > **Parameter Setting** > **Energy Storage Inverter** > **Grid Code Settings** > Voltage **Ride through** to set the parameters.

Step 2 Input the parameters based on actual needs.

No.	Parameters	Description
1	Current Distribution Mode	Set the current distribution mode. Supports: Constant Current Mode, Reactive Current Priority Mode, and Active Current Priority Mode.
2	Active Power Recovery Mode After Crossing Mode	Set the active power recover mode after LVRT or HVRT. Supports: Disable, Gradient Control, or PT-1 Behavior.
3	Power Gradient	Realize active power recovery based on the power change slope.
4	PT-1 Behavior Tau	Set the time constant within which the active power changes based on the first order LPF curve.
5	Traversing The End Of Reactive	Set the reactive power recover mode after LVRT or HVRT. Supports: Disable, Gradient Control, or PT-1 Behavior.

	Power Recovery Mode	
6	Power Gradient	Realize reactive power recovery based on the power change slope
7	PT-1 Behavior Tau	Set the time constant within which the reactive power changes based on the first order LPF curve.

Voltage Ride Through (LVRT)

LVRT: Low Voltage Ride Through, which means when a temporary low voltage occurs due to grid abnormalities, the inverter cannot immediately disconnect from the grid and must support the grid for a certain period of time.

Step 1 Tap **Device Manage** > **Parameter Setting** > **Energy Storage Inverter** > **Grid Code Settings** > **Voltage Ride Through (LVRT)** to set the parameters.

Step 2 Set the parameters based on actual needs.

No.	Parameters	Description
1	LVRT	Enable LVRT Enabling.
2	UVn Voltage	The ratio of the ride through voltage to the rated voltage at UVn point during LVRT. n=1,2,3,4,5,6,7.
3	UVn Time	The ride through time at UVn point during LVRT. n=1,2,3,4,5,6,7
4	Enter Into LVRT Threshold	The inverter will not be disconnected from the utility grid immediately when the grid voltage is between **Enter Low Crossing Threshold** and **Exit Low Crossing Threshold**.
5	Exit LVRT Endpoint	

6	Slope K1	K-factor for reactive power during LVRT.
7	Enable Zero Current Mode	The system outputs zero current during LVRT.
8	Enter Threshold	Set the entry threshold of zero current mode

Voltage Ride Through (HVRT)

HVRT: High Voltage Ride Through, which means when a temporary high voltage occurs due to grid abnormalities, the inverter cannot immediately disconnect from the grid and must support the grid for a certain period of time.

Step 1 Tap **Device Manage** > **Parameter Setting** > **Energy Storage Inverter** > **Grid Code Settings** > **Voltage Ride Through Mode (HVRT)** to set the parameters.

Step 2 Input the parameters based on actual needs.

No.	Parameters	Description
1	HVRT Enable	Enable LVRT Enabling.
2	OVn Voltage	The ratio of the ride through voltage to the rated voltage at OVn point during HVRT. n=1,2,3,4,5,6,7.
3	OVn Time	The ride through time at OVn point during HVRT. n=1,2,3,4,5,6,7
4	Enter High Crossing Threshold	The inverter will not be disconnected from the utility grid immediately when the grid voltage is between **Enter High Crossing Threshold** and **Exit High Crossing Threshold**.
5	Exit High	

	Crossing Threshold	
6	Slope K2	K-factor for reactive power during HVRT.
7	Enable Zero Current Mode	The system outputs zero current during HVRT.
8	Enter Threshold	Set the entry threshold of zero current mode

Frequency Ride Through

Step 1 Tap **Device Manage > Parameter Setting > Energy Storage Inverter > Grid Code Settings > Frequency Ride Through** to set the parameters.

Step 2 Set the parameters based on actual needs.

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

3.3.1.7 Set the Operation Mode of Hybrid Inverters

NOTICE

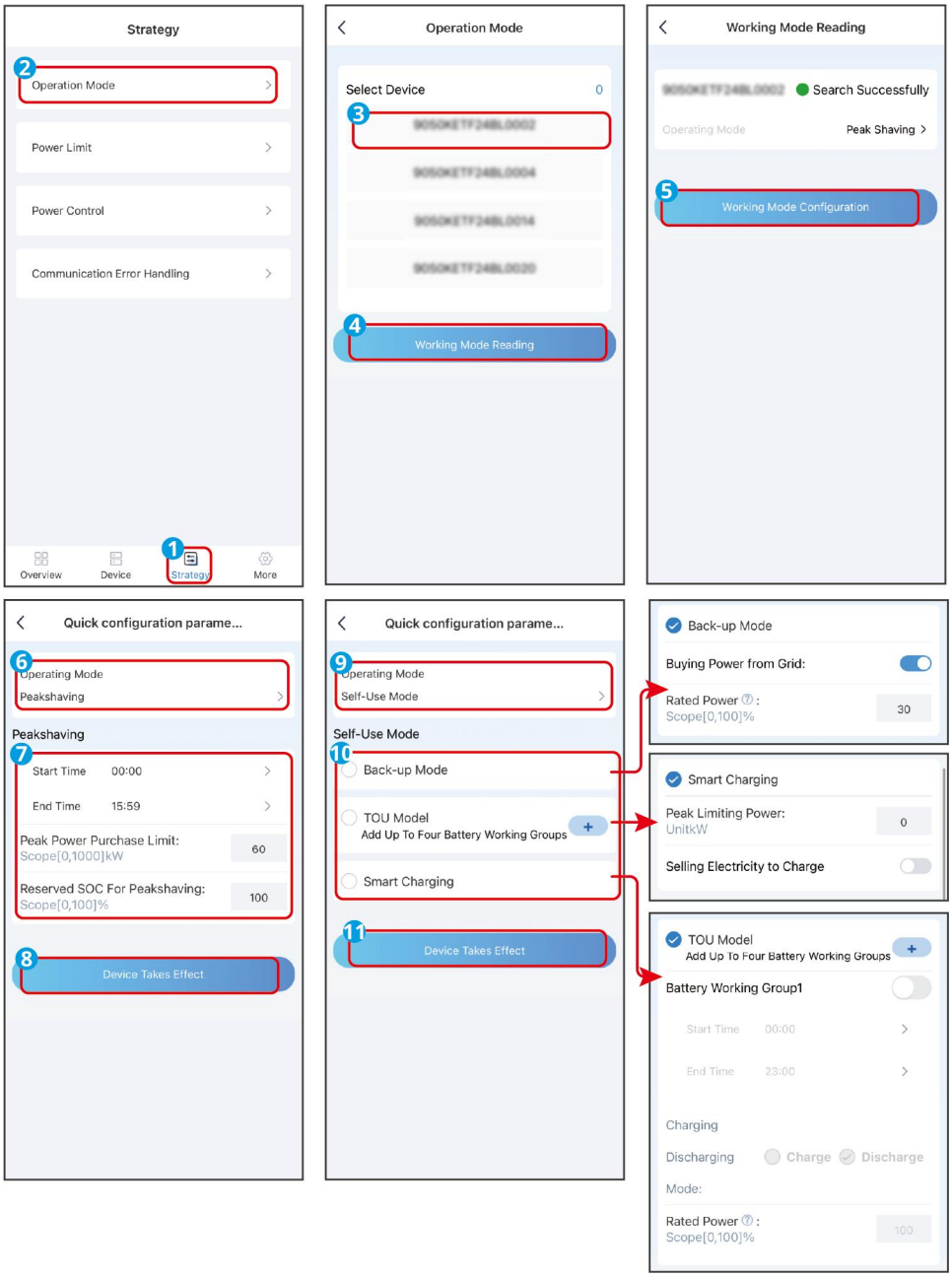
Hybrid Inverters Default working mode: Self use mode.

Step 1: Go to **Strategy > Operation Mode** to set the parameters.

Step 2: Tap the inverter SN that you want to view or configure, tap **Working Mode Reading** for the current working mode of hybrid inverters.

Step 3: Tap **Working Mode Configuration**, and set the working mode of hybrid inverters based on actual needs.

Step 4: After setting completes, tap **Device Takes Effect** to finish configuration.



Parameters	Description
Self-use mode: When setting this working mode, on the basis of self-use mode, back-up mode, economic mode, and smart charging mode can be enabled at the same time. Priority: Back-up mode > Economic mode > Smart charging mode > Self-use mode.	
Back-up mode: The back-up mode is mainly applied to the scenario where the grid is unstable. When the grid is disconnected, the inverter turns to off-grid mode and the battery will supply power to the load; when the grid is restored, the inverter switches to grid-tied mode.	
Buying power from grid	Enable this function to allow the system to import electricity from the grid.
Rated Power	The percentage of the purchasing power to the rated power of the inverter.
Smart charging: In some countries/regions, the PV power feed into the utility grid is limited. Select **Smart Charging** to charge the battery using the surplus power to minimize PV power waste.	
Peak Limiting Power	Set the Peak Limiting Power in compliance with local laws and regulations. The Peak Limiting Power shall be lower than the output power limit specified by local requirements.
Selling Electricity to Charge	During Charging time, the PV power will charge the battery.
PV power generation peak time	Set the power generation peak period according to PV power generation.
Smart Charging Month	Set the smart charging months. More than one month can be set.

<table>
<tr><td colspan="2">TOU mode: it is recommended to use economic mode in scenarios when the peak-valley electricity price varies a lot. Select Economic mode only when it meets the local laws and regulations. Based on actual needs, set the battery to charge mode during Vally period to charge battery with grid power;set the battery to discharge mode during Peak period to power the load with the battery.</td></tr>
<tr><td>Start Time</td><td rowspan="2">Within the Start Time and End Time, the battery is charged or discharged according to the set Battery Mode as well as the Rated Power.</td></tr>
<tr><td>End Time</td></tr>
<tr><td>Choose Month</td><td>Set the smart charging months. More than one month can be set.</td></tr>
<tr><td>Choose Date</td><td>Set the smart charging dates. More than one date can be set.</td></tr>
<tr><td>Charging Discharging Mode</td><td>Set as charge/discharge based on actual needs.</td></tr>
<tr><td>Rated Power</td><td>The percentage of the charging/discharging power to the rated power of the inverter.</td></tr>
<tr><td colspan="2">Peak shaving mode: Peak shaving mode is mainly applicable to peak power limited scenarios. When the total power consumption of the load exceeds the power consumption quota in a short period of time, battery discharge can be used to reduce the power exceeding the quota.</td></tr>
<tr><td>Start Time</td><td rowspan="2">The utility grid will charge the battery between Start Time and End Time if the load power consumption do not exceed the power quota. Otherwise, only PV power can be used to charge the battery.</td></tr>
<tr><td>End Time</td></tr>
<tr><td>Peak Power Purchase Limit</td><td>Set the maximum power limit allowed to purchase from the grid. When the loads consume power exceed the sum of the power generated in the PV system and Import Power Limit, the</td></tr>
</table>

	excess power will be made up by the battery.
Reserved SOC For Peakshaving	In Peak Shaving mode, the battery SOC should be lower than Reserved SOC For Peakshaving. Once the battery SOC is higher than Reserved SOC For Peakshaving, the peak shaving mode fails.

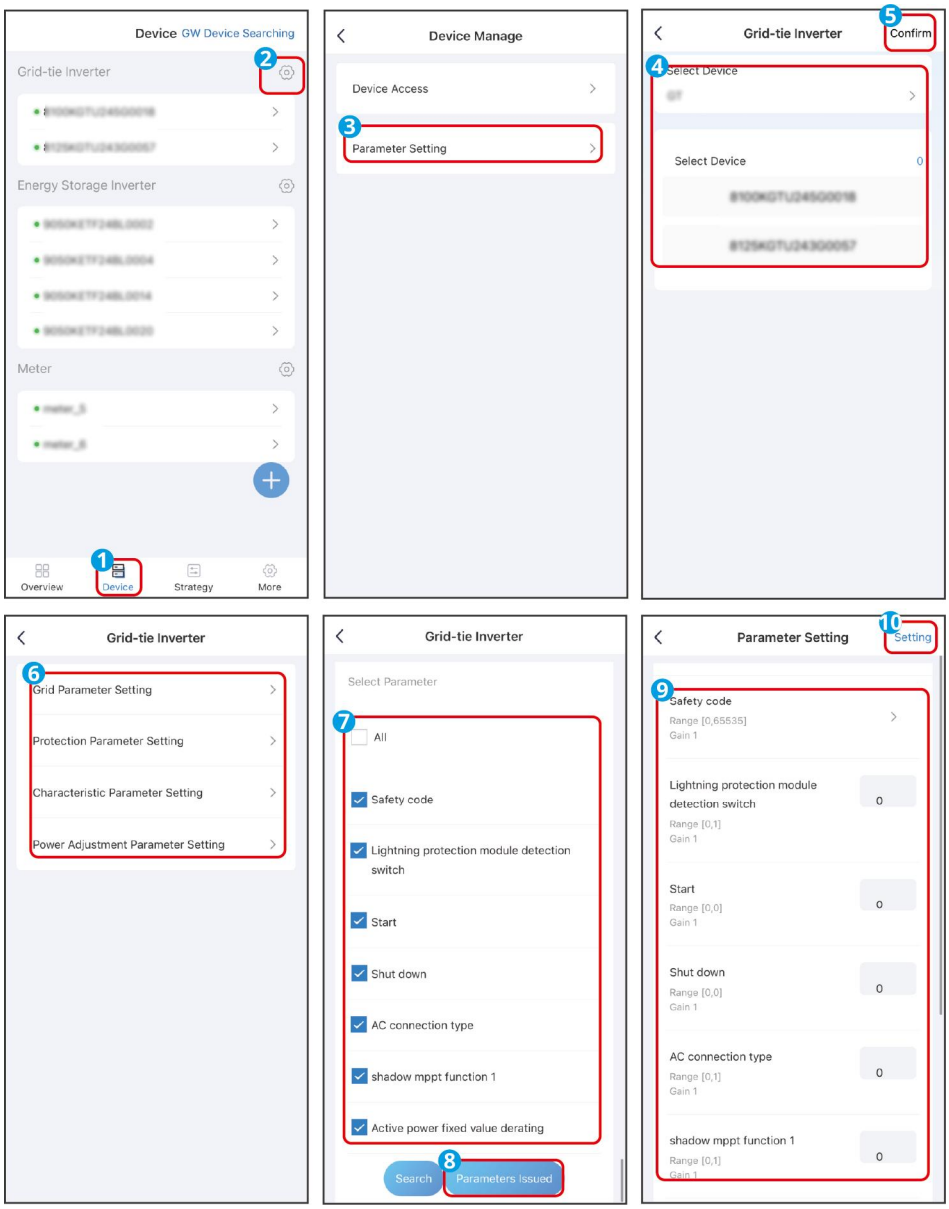
3.3. 2 Set Parameters of Grid-tied Inverters

NOTICE
• Parameters needed to be set vary among different inverter types. The actual setting interface prevails. • Enter 0 or 1 to enable or disable a function. 0 indicates disabling the function, and 1 indicates enabling the function.

Step 1: Go to **Device Manage > Parameter Setting > Grid-tie inverter** to set the parameters.

Step 2: Select the device type, and tap the inverter SN that you want to view or configure.

Step 3: Check the parameters that you want to view or set, and tap **Search** to check the current values of the selected parameters. If you need to modify, input the **Modified Value,** and tap **Modify**, **tap View Results** to check whether the modification is successful.



Grid Parameter Setting

No.	Parameters	Description
1	Safety Code	Select based on the grid standards of the country/region where the inverter is located and its application scenario.
2	Lightning Protection Module Detection Switch	Enable or disable SPD detection function.
3	Start	Issue power on instructions.

4	Shut down	Issue power off instructions.
5	AC Connection Type	• Set whether the inverter's output includes the neutral (N) cable based on its application scenario. • 0: three-phase four wire (3W/PE); 1: three phase five wire (3W/N/PE).
6	MPPT Shadow Scan Function Switch	PV strings may exist significant shading in PV systems where the inverter is applied. Enabling this feature allows 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 by percentage of rated power.
8	Active Power Percentage Derating	Adjust the active power output of the inverter by 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 from the inverter.
11	Reactive Power Compensation Fixed Value	Adjust the reactive power output of the inverter according to the fixed value.
12	Night Reactive Power Function	Enable or disable Night Reactive Power Function. In some specific application scenarios, the power grid company

	Enabling	requires that the inverter can perform reactive power compensation at night to ensure that the power factor of the local power grid meets requirements.
13	Night Reactive Power Parameters Taking Effect	When enabling this function, the inverter outputs reactive power based on fixed value of night reactive power scheduling compensation. Otherwise, the inverter executes the remote scheduling command.
14	Percentage of Night Reactive Power Scheduling	Schedule the reactive power by percentage during night reactive scheduling period.
15	Night Reactive Power Scheduling	Schedule the reactive power by fixed value during night reactive scheduling period.

Characteristics Parameter Setting

No.	Parameters	Description
1	European shutdown switch	Enable or disable remote shutdown function.
2	Anti-PID Function Switch	Enable or disable anti-PID.
3	PID Repair Function Switch	Enable or disable PID recovery
4	Power Limit Switch	Enable or disable power limit.
5	Back Flow Power Percentage Setting	Set the back flow power by percentage.

6	Three-phase Power Limit Method Selection	Set the power limit mode. 0: the total power of the three phases cannot exceed the power limit. 1: power of any phase cannot exceed the power limit.
7	External Meter CT Ratio	Set the CT ratio of the smart meter.
8	ISO Threshold Setting	To protect the equipment, the inverter performs an insulation impedance check on the input side during self-check at startup. If the measured value is lower than the set value, the inverter will not connect to the grid.
9	NPE Overvoltage Detection Switch	Enable or disable N-PE overvoltage detection.
10	N-PE Fault Limit	Set the N-PE overvoltage alarm threshold.
11	Active Power Scheduling Response Method	• Set the active power scheduling response method. Supported method: gradient control or PT-1 behavior. • 0: disable; 1: gradient control; 2: PT-1 behavior tau; 3: PT-1 behavior respond time.
12	Active Power Gradient	Set the active power change slope.
13	Active Power Scheduling LPF Time	Set the low pass filtering time for active power scheduling.
14	Reactive Scheduling	• Set the reactive power scheduling response method. Supported method: gradient control or PT-1 behavior.

	Response Method	● 0: disable; 1: gradient control; 2: PT-1 behavior tau; 3: PT-1 behavior respond time.
15	Gradient of Reactive Power Gradient	Set the reactive power change slope.
16	Set the low pass filtering time parameter for reactive power scheduling	Set the low pass filtering time parameter for reactive power scheduling.

Protection Parameter Setting

No.	Parameters	Description
1	OV Stage n Trip Value	Set the Level n overvoltage protection threshold. n=1,2.
2	OV Stage n Trip Time	Set the Level n overvoltage protection duration. n=1,2.
3	UV Stage n Trip Value	Set the Level n undervoltage protection threshold. n=1,2.
4	UV Stage n Trip Time	Set the Level n undervoltage protection duration. n=1,2.
5	Set the Level n phase-to-neutral voltage overvoltage protection threshold	Set the Level n overvoltage protection threshold. n=3,4.

6	Set the Level n phase-to-neutral voltage overvoltage protection duration	Set the Level n overvoltage protection duration. n=3,4.
7	10min Overvoltage Trigger Value	Set the 10-min overvoltage protection threshold.
8	10Min Overvoltage Trip Time	Set the 10-min overvoltage protection duration.
9	OF Stage n Trip Value	Set the Level n overfrequency protection threshold. n=1,2.
10	OF Stage n Trip Time	Set the Level n overfrequency protection duration. n=1,2.
11	UF Stage n Trip Value	Set the Level n underfrequency protection threshold. n=1,2.
12	UF Stage n Trip Time	Set the Level n underfrequency protection duration. n=1,2.
13	Level n overfrequency protection threshold	Set the Level n overfrequency protection threshold. n=3,4.
14	Level n overfrequency protection	Set the Level n overfrequency protection duration. n=3,4.

	duration	
15	Level n underfrequency protection threshold.	Set the Level n underfrequency protection threshold. n=3,4.
16	Level n underfrequency protection duration.	Set the Level n underfrequency protection duration. n=3,4.
17	Start-up Grid Connection Voltage Upper Limit	The inverter cannot be connected to the grid if it is powered on for the first connection and the grid voltage is higher than the **Start-up Grid Connection Voltage Upper Limit**.
18	Start-up Grid Connection Voltage Lower Limit	The inverter cannot be connected to the grid if it is powered on for the first connection and the grid voltage is lower than the **Start-up Grid Connection Voltage Lower Limit**.
19	Start-up Grid Connection Frequency Upper Limit	The inverter cannot be connected to the grid if it is powered on for the first connection and the grid frequency is higher than the **Start-up Grid Connection Frequency Upper Limit**.
20	Start-up Grid Connection Frequency Lower Limit	The inverter cannot be connected to the grid if it is powered on for the first connection and the grid voltage is lower than the **Start-up Grid Connection Frequency Lower Limit**.
21	Start-up Grid Connection	Set the waiting time for connecting the inverter to the grid when the inverter is powered on for the first connection.

	Observation Time	
22	Start-up Grid Connection Power Loading Rate	Set the percentage of incremental output power per minute when the inverter is powered on for the first connection.
23	Reconnection Voltage Upper Limit	In some countries/regions, when the inverter is shut down due to a fault protection, it is not allowed to reconnect to the grid if the grid voltage is higher than the set value of the **Reconnection Voltage Upper Limit**.
24	Reconnection Voltage Lower Limit	In some countries/regions, when the inverter is shut down due to a fault protection, it is not allowed to reconnect to the grid if the grid voltage is lower than the set value of the **Reconnection Voltage Lower Limit**.
25	Reconnection Frequency Upper Limit	In some countries/regions, when the inverter is shut down due to a fault protection, it is not allowed to reconnect to the grid if the grid voltage is higher than the set value of the **Reconnection Frequency Upper Limit**.
26	Reconnection Frequency Lower Limit	In some countries/regions, when the inverter is shut down due to a fault protection, it is not allowed to reconnect to the grid if the grid voltage is lower than the set value of the **Reconnection Frequency Lower Limit**.
27	Reconnection	Set the waiting time for the inverter to restart after a grid

	Observation Time	failure is restored.
28	Reconnection Power Loading Rate	In some countries/regions, set the percentage of incremental output power per minute when the inverter is not powered on for the first connection. For example, setting Reconnection Power Loading Rate to 10 means the reconnection slope is 10% Prated/min.
29	LVRT Enable	LVRT: Low Voltage Ride Through, which means when a temporary low voltage occurs due to grid abnormalities, the inverter cannot immediately disconnect from the grid and must support the grid for a certain period of time. Enable this function, the inverter's LVRT is being activated.
30	LVRT Depth n	The ratio of the ride through voltage to the rated voltage at a feature point during LVRT. n=1,2,3,4,5,6,7.
31	Maintenance Time n	The ride through time at a feature point during LVRT. n=1,2,3,4,5,6,7.
32	Judgment Threshold of Entering LVRT	Set the threshold for triggering LVRT. The threshold settings should meet the local grid standard.
33	Judgment Threshold of Quitting LVRT	Set the threshold for exiting LVRT. The threshold settings should meet the local grid standard.

34	Positive sequence K value of LVRT	During LVRT, the inverter needs to generate positive sequence reactive power to support the grid. This parameter is used to set the positive-sequence reactive power generated by the inverter.
35	0-current mode of LVRT	The standards of some countries/regions require that the output current during LVRT should be limited. After enabling, the output current is less than 10% of the rated current during LVRT.
36	Set the Voltage Entry Threshold of LVRT Zero Current Mode	After enabling **LVRT Zero Current Mode**, the zero current mode starts if the power grid voltage is less than **LVRT Zero Current Mode Enable**, the zero current mode starts if the power grid voltage is less than the **Threshold of Entering Voltage** during LVRT.
37	HVRT Enable	HVRT: High Voltage Ride Through, which means when a temporary high voltage occurs due to grid abnormalities, the inverter cannot immediately disconnect from the grid and must support the grid for a certain period of time. Enable this function, the inverter's HVRT is being activated.
38	HVRT Depth n	The ratio of the ride through voltage to the rated voltage at a feature point during HVRT, n=1,2,3,4,5,6,7.
39	HVRT Maintenance Time n	The ride through time at a feature point during HVRT. n=1,2,3,4,5,6,7.
40	Judgment Threshold of	Set the threshold for triggering HVRT. The threshold settings should meet the local grid standard.

	Entering HVRT	
41	Judgment Threshold of Quitting HVRT	Set the threshold for exiting HVRT. The threshold settings should meet the local grid standard.
42	Positive sequence K value of HVRT	During HVRT, the device needs to generate positive sequence reactive power to support the grid. This parameter is used to set the positive-sequence reactive power generated by the device.
43	Positive sequence K value of HVRT	The standards of some countries/regions require that the output current during HVRT should be limited. Enable this function to set the output current less than 10% of the rated current during HVRT.
44	Set the Voltage Entry Threshold of HVRT Zero Current Mode	After enabling **HVRT Zero Current Mode**, the zero current mode starts if the power grid voltage is higher than **Threshold of Entering Voltage** during HVRT.
45	Current Distribution Mode	• Set the sharing mode of reactive current and active current. • 0: reactive power priority; 1: active power priority; 2: constant current mode.
46	Active Power Recovery Mode After Crossing	• Active current recovery mode during ride-through recovery, supported mode: slope recovery, first-order LPF recovery, and no requirement. • 0: disable; 1: slope response; 2: time constant; 3:

		respond time
47	Active Power Recovery Rate After Riding Through	The rate at which the active current recovers during the ride through recovery process.
48	Active Power Recovery First-order LPF After Riding Through	The active current recovers at the characteristic of first order LPF after the ride through recovery.
49	Traversing The End Of Reactive Power Recovery Mode	• Reactive current recovery mode during ride-through recovery, supported mode: slope recovery, first-order LPF recovery, and no requirement. • 0: disable; 1: slope response; 2: time constant; 3: respond time
50	Reactive Power Recovery Rate After Riding Through	The reactive current recovers at the slope after the ride through recovery.
51	Reactive Power Recovery	The reactive current recovers at the characteristic of first order LPF after the ride through recovery.

	First-order LPF After Riding Through	
52	Frequency Riding Through Enable	After enabling Frequency Riding Through Enable, the inverter continues to generate power during required time even the grid frequency is abnormal.
53	N-order Under Frequency Riding Through Point_UFn	Set the level n underfrequency protection threshold value.
54	Norder Under Frequency Riding Through Time_UTn	Set the underfrequency protection tripping time.
55	N-order Over Frequency Riding Through Point_OFn	Set the overfrequency riding through threshold value.
56	N-order Over Frequency Riding Through	Set the overfrequency protection tripping time.

	Time_OTn	

Power Adjustment Parameter Setting

No.	Parameters	Description
1	Overfrequency Threshold (slope mode)	In some countries/regions, the active power of the device will be derated when the grid frequency exceeds overfrequency derating limit.
2	Overfrequency Power Deloading Slope (slope mode)	In slope mode, the active power of the device will be derated according to a certain slope when the grid frequency is higher than overfrequency derating limit.
3	P- F Curve (overfrequency)	Enable or disable overfrequency deloading.
4	Underfrequenc y Threshold (slope mode)	In some countries/regions, the active power of the device will be uprated when the grid frequency exceeds underfrequency limit.
5	Power Recovery Slope	Set Power Recovery Slope of Overfrequency Deloading.
6	Frequency Hysteresis Point	Corresponding Point of Overfrequency hysteresis Function.
7	Tentional Delay Ta	The tentional observation time for the overfrequency hysteresis function.

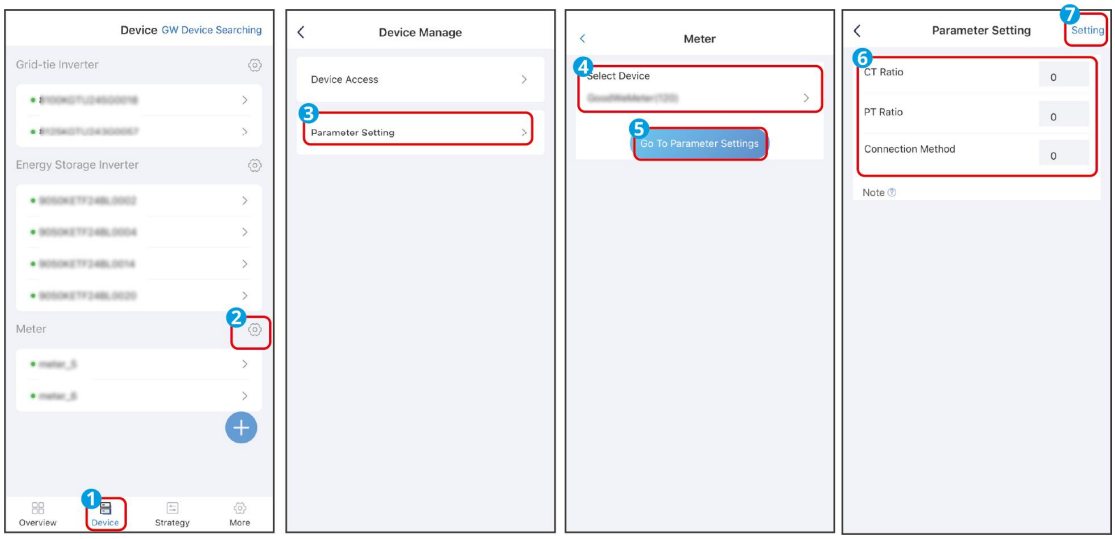
8	Overfrequency Endpoint	Set the exit frequency for over-frequency derating.

3.3. 3 Set Meter Parameters

Step 1: Go to **Device Manage > Parameter Setting > Meter** to set the parameters.

Step 2: Select the meter that you want to view or configure.

Step 3: Check the parameters that you want to view or set, and tap **Search** to check the current values of the selected parameters. To modify, input the **Modification Value** and tap **Setting** to apply the changes.



No.	Parameters	Description
1	CT Ratio	Set the ratio of the primary current to the secondary current of the CT.
2	PT Ratio	Set the ratio of the primary voltage to the secondary voltage of the PT.
3	Connection Method	Set the connection method of the meter according to the real situation.

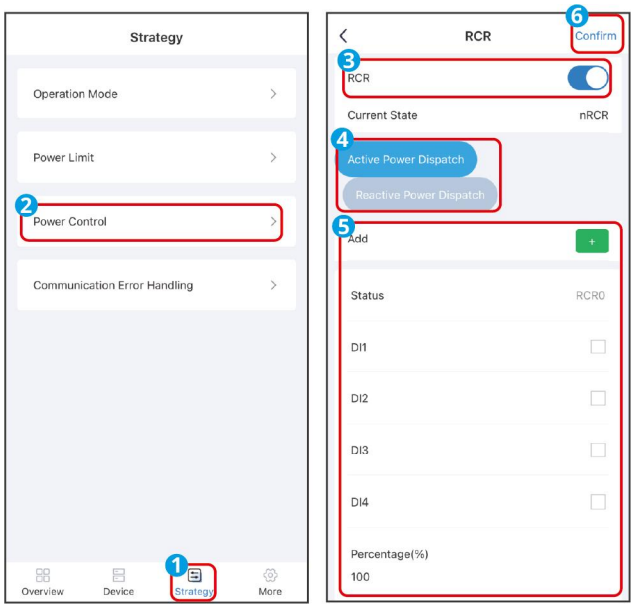
4 Set Strategy

4.1 Set Power Control

- The standards of German and other regions require that the inverter must provide signal controlling port for RCR (Ripple Control Receiver), which can be used for grid scheduling.
- 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 it to the DI1/DI2/DI3/DI4/REF2 ports to achieve reactive power dispatching.

Step 1: Go to **Strategy > Power Control** to set the parameters.

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



No.	Parameters	Description
1	Start Control	Enable or disable RCR function.
2	Current Status	● Indicates current RCR running status. For instance, RCR1

		(100) represents the operating state as RCR1, with the feeder power at 100% of the rated power. ● nRCR means the operating state is not effective.
3	Active Power Dispatch	● Select one or more DI ports based on the requirements of the grid company and the type of RCR fixture, and set the corresponding percentage. The percentage refers to the system output power as a percentage of the rated power. ● Support for configuring 16 percentage levels. Set according to the actual needs of the grid company. ● Do not repeat the state combinations of DI1-DI4. Otherwise the function will not execute properly. ● If the actual wiring of the connected DI port does not match the App configuration, the operating state will not be effective.
4	Reactive Power Dispatch	● Select one or more DI ports based on the requirements of the grid company and the type of RCR fixture, and set the corresponding PF value. ● Support for configuring 16 power factor levels. Sset according to the actual needs of the grid company. ● The PF value range is required to be: [-100, -80] or [80, 100]. [-100, -80] , and corresponds to a lagging power

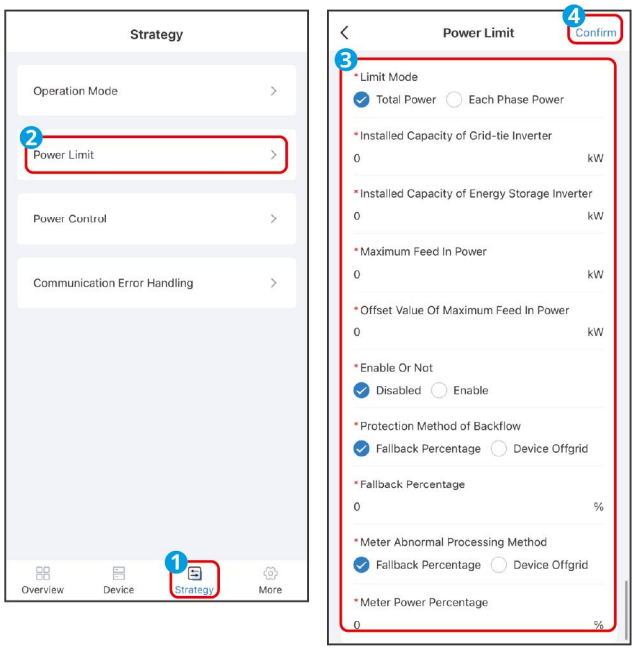
		factor between [-0.99, -0.8], and [80, 100], and corresponds to a leading power factor between [0.8, 1]. • Do not repeat the state combinations of DI1-DI4. Otherwise the function will not execute properly. • If the actual wiring of the connected DI port does not match the App configuration, the operating state will not be effective.

4.2 Set Power Limit

If the power generated by the PV system cannot be consumed by loads, the remaining power will be fed into the utility grid. Control the power fed into the grid by setting the Power Limit parameters.

Step 1: Go to **Strategy > Power Limit** to set the parameters.

Step 2: Set the Power Limit parameters based on actual needs.



No.	Parameters	Description
1	Limit Mode	Select the output power control mode based on actual situation. ● Total Power: controls the total power at the grid-connection point to limit the power fed to the power grid. ● Split-Phase Power: controls the power of each phase at the grid-connection point to limit the power fed to the power grid.
2	Installed Capacity of Grid-tied Inverter	Set the total capacity of all grid-tied inverters in the system.
3	Installed Capacity of Hybrid Inverter	Set the total capacity of hybrid inverters in the system.
4	Maximum Feed In Power	Set the maximum power that is allowed to be fed into the utility grid based on local grid standards and

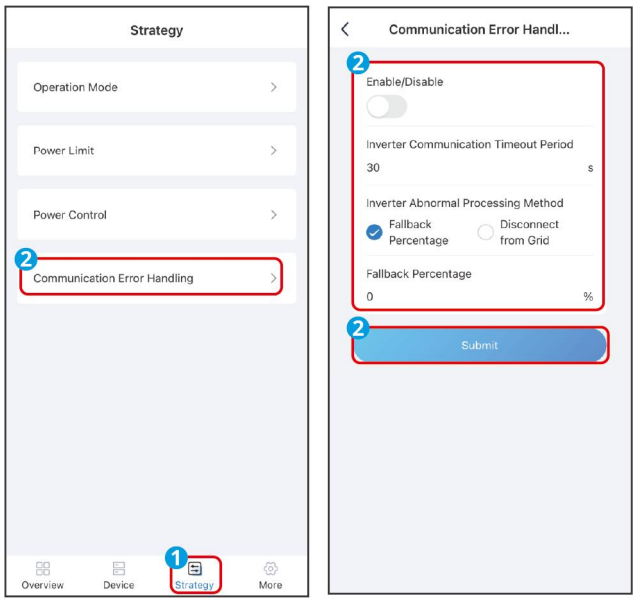
		requirements.
5	Offset Value Of Maximum Feed In Power	• Set the adjustable range of the maximum power to be exported to the utility grid. • Maximum power exported to the utility grid = maximum feed in power + offset value of maximum feed in power.
6	Start Control	Enable or disable Power-Limited Grid-Connected function.
7	Protection Method of Backflow	The power feed into the utility grid is allowed to exceed the limit value within a specified duration (5s by default): • Power Limit: the equipment continues to work at the percentage of the rated power. • Device Offline: stop the equipment.
8	Power Limit	The equipment continues to work at the percentage of the rated power.
9	Meter Abnormal Processing Method	The protective measures will be taken when exception occurs in smart meter’ s communication with the controller: • Power Limit: the equipment continues to work at the percentage of the rated power. • Device Offline: stop the equipment.

10	Percentage of Meter Power	The equipment continues to work at the percentage of the rated power.

4 Set Communication Error Handling

Step 1: Go to **Strategy > Communication Error Handling** to set the parameters.

Step 2: Set the method of coping with communication error based on actual needs.



No.	Parameters	Description
1	Enable/Disable	After enabling, protection methods will be taken when exception occurs in communication between the inverter and the controller.
2	Inverter Communication Timeout Period	The protective measures will be taken when communication exception time exceeds the set time.
3	Inverter abnormal processing method	After enabling, protection methods will be taken when exceptions occur in communication between the inverter

		and the controller: • Power Limit: the equipment continues to work at the percentage of the rated power. • Device Offline: stop the equipment.

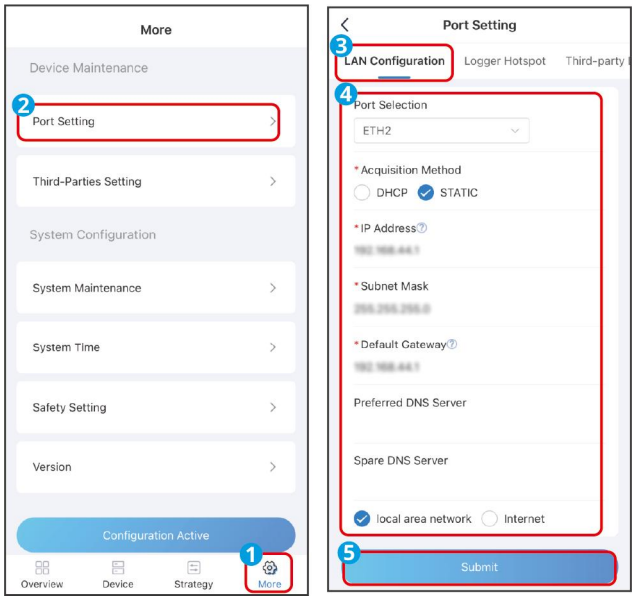
5 Set Communication

5.1 Set LAN Communication Parameters

NOTICE
• Before setting the LAN parameters, ensure that the network cable is correctly connected to the controller. • After the system network configuration completes, the ETH1 and ETH2 ports will automatically complete the LAN configuration, no additional configuration is required. At this point, the ETH1 port defaults to STATIC status, and the ETH2 port defaults to DHCP status. • The switch is by default connected to the data collector’ s ETH2 port, and setting the ETH2 port parameters will configure the switch’ s network port settings.

Step 1: Go to **More > Port Setting > LAN Configuration** to set the parameters.

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



No.	Parameters	Description
1	Port Selection	Select the actual port on the EzLogger to which the device is

		connected. Supported: ETH1 or ETH2.
2	Acquisition method	● Manually set the fixed network parameters based on actual situation when selecting STATIC mode. ● The IP address can be obtained automatically when selecting DHCP mode.
3	IP Address	Set the IP address of the controller. Set the IP address on the same network segment as the router IP address, and based on the power plant planning. If the IP address is modified, log in with the new IP address.
4	Subnet Mask	Set the subnet mask of the controller. Set the parameter based on the actual subnet mask of the router connected to the EzLogger.
5	Default Gateway of the Controller	Set the default gateway of the controller. Set the parameter based on the actual gateway of the router connected to the EzLogger.
6	Preferred DNS Server	Set the parameter as the IP address of the LAN’ s router when connecting to a public network, for example, connecting to GoodWe server, using a domain name for the server address.
7	Spare DNS Server	Ignore this parameter in common situations. When the preferred DNS server fails to resolve a domain name, use the alternate DNS server.
8	Local area network/Intern	● Select Internet to connect to the server and transfer data

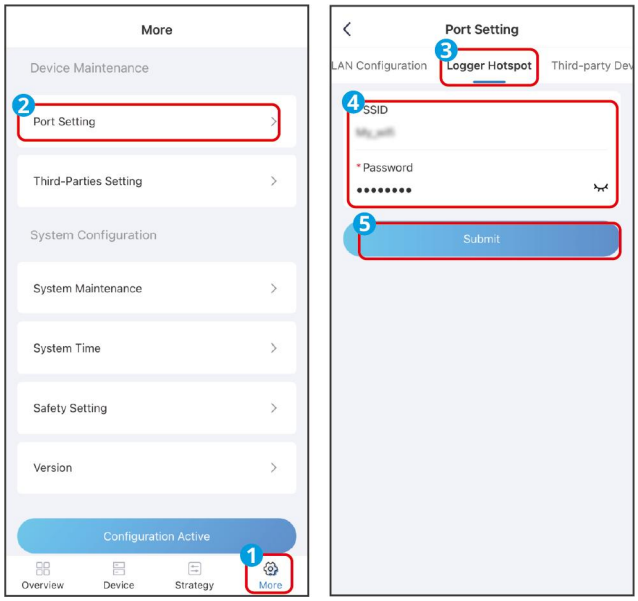
	et	to the cloud. ● Select local area network to configure forwarding parameters and connect to the third-party monitoring device.

5.2 Set WiFi Password and SSID

NOTICE
● The in-built EzLogger of the controller provides a WiFi hotspot signal for local configuration. After connecting to the WiFi hotspot signal, you can commission the device through the web page or SolarGo App. ● The SSID and password of the hotspot can be changed. After the change, log in to the web or App again using the new SSID and password.

Step 1: Go to **Device Manage > Port Setting >Logger Hotspot** to set the parameters.

Step 2: Set the WiFi hotspot name and password based on actual needs.



No.	Parameters	Description
1	SSID	Set WiFi name of the controller. Initial name: Log-***.

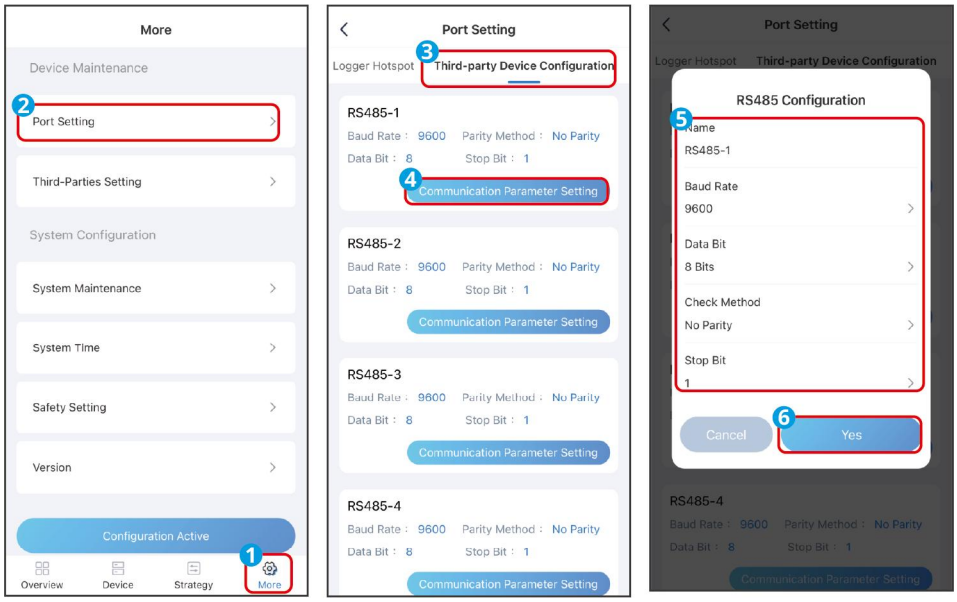
2	Password	Set WiFi name of the controller. Initial password: 12345678.
3	Whether to turn on	Choose whether to turn on the WiFi hotspot.

5.3 Set RS485 Communication

NOTICE
RS485 parameter needs to be set when the controller is connected to the third party device.

Step 1: Go to **More > Port Setting > Third-party Device Configuration** to set the parameters.

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



No.	Parameters	Description
1	Name	Select the actual port on the EzLogger to which the device is connected.

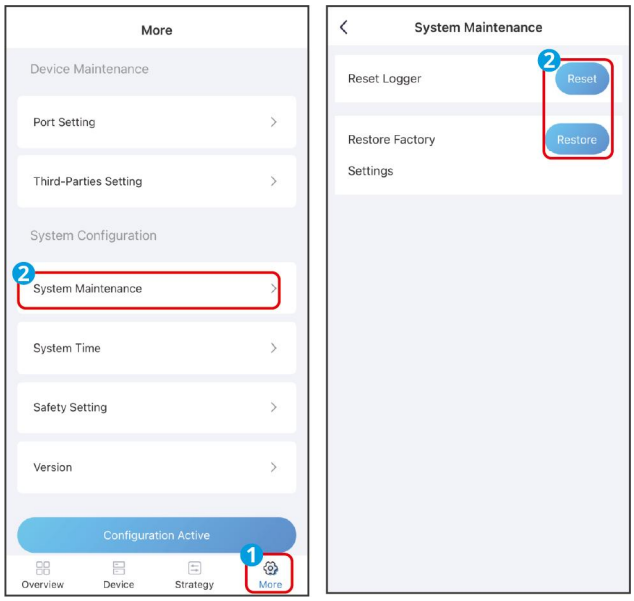
2	Baud Rate	Set the baud rate based on connected devices. Currently supported: 300, 1200, 2400, 4800, 9600, 19200.
3	Data Bit	Supported value: 7 bits or 8 bits
4	Check Method	Set according to the parity check method of the connected equipment. Supported values: No Parity, Odd Parity, Even Parity, 1 Parity, or 0 Parity.
5	Stop Bit	Set according to the stop bit of the connected equipment. Supported value: 1,1.5, and 2.

6 System Maintenance

6.1 Maintain the System

Step 1: Tap **More** > **System Maintenance** to enter into the system maintenance.

Step 2: Reset the Ezlogger or restore Factory Settings based on actual needs.



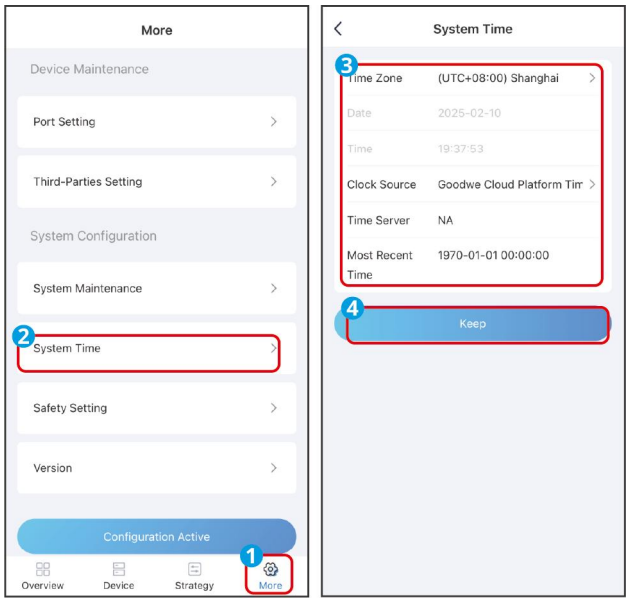
No.	Parameters	Description
1	Reset Logger	Perform a system reset, and the EzLogger will automatically shut down and restart.
2	Restore Factory Settings	After restoring the factory settings, all previously set parameter values (except for the current date, time, and communication parameters) will return to their default factory settings. Operating information, alarm records, and system logs will remain unchanged. Please proceed with caution.

6.2 Set System Time

NOTICE
Modifying the date and time will affect the integrity of the system's power generation and performance data records. Please refrain from changing the time zone and system time arbitrarily.

Step 1 Go to system time setting via **More > System Time**.

Step 2 Choose **Clock Source** based on actual needs. Set system time and tap **Save.**



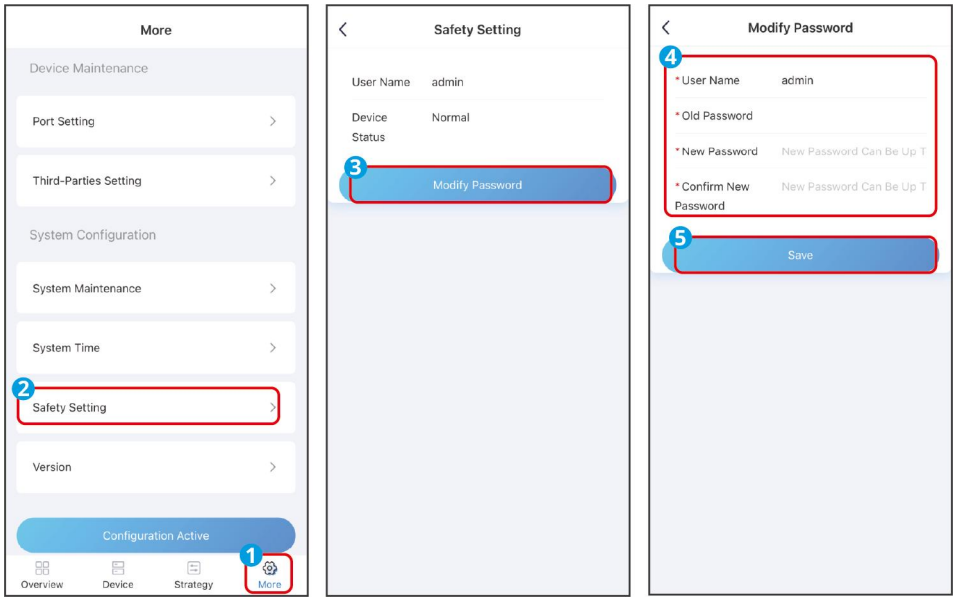
No.	Parameters	Description
1	Time Zone	The parameters can be manually modified only when **Management System** is selected as **Clock Source**.
2	Date	
3	Time	
4	Clock Source	Set Clock Source Supported: NTP, IEC104, Modbus-TCP, Management Source, GoodWe Cloud Platform Time

		Synchronization.

6.3 Change Login Password

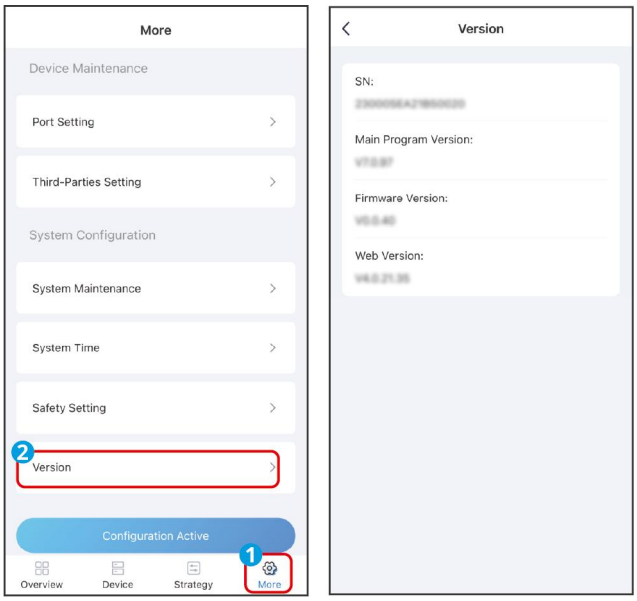
Step 1: Go to **More > Safety Setting** to modify password.

Step 2 Tap **Modify Password**, and input old and new passwords and save.



6.4 Check Version Information

Step 1: Tap **More > Version** to check the current version of the Ezlogger.



7 Troubleshooting

7.1 App Troubleshooting

No.	Fault	Cause	Solutions
1	Cannot install the app	The smart phone operating system version is too low. The smart phone prevents installing the app.	1. Upgrade the phone operating system. 2. Select Setting > Security > Install apps from external sources on your smart phone.
2	Communication failure	The communication distance between the smart phone and the inverter is out of range.	Place the smart phone near the inverter and reconnect the WiFi module.
3	Fail to obtain the data during operation or the connection between the device and WiFi is interrupted.	The communication between the device and Solar-WiFi or bluetooth is interrupted.	
4	The WiFi signal is not included in the app device list.	The app is not connected to the WiFi signal.	1. Make sure that the WiFi module works normally. 2. Refresh the device list. If the signal is still missing, restart the app.

7.2 Inverter Alarms

No.	Alarm	Causes	Solutions
1	SPI Fail	1. The exception is caused by an external fault. 2. Control board of the inverter cannot work properly.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
2	EEPROM R/W Fail	1. The exception is caused by an external fault. 2. Control board of the inverter cannot work properly.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
3	Fac Fail	1. Wrong safety code. 2. Unstable grid frequency.	1. Check the safety code. 2. Check whether the AC frequency (Fac) is within the normal range. 3. If the problem occurs occasionally, the utility grid may be abnormal temporarily.
4	AFCI Fault	1. The PV string cables are in poor contact. 2. The insulation between the PV string and	1. Check whether the PV cables are connected poorly. 2. If the problem persists, contact the after-sales service.

		ground is abnormal.	
5	Night SPS Fault	The equipment cannot work properly.	1. Restart the equipment. 2. Upgrade the software version to solve the problem.
6	L-PE Fail	The live wire of the inverter output terminal is connected improperly.	1. Check the wiring of the grid. 2. If the problem persists, contact the after-sales service.
7	Relay Chk Fail	1. The relay is abnormal or short-circuited. 2. The control circuit is abnormal. 3. The AC cable is connected improperly, like a virtual connection or short circuit.	1. Measure the voltage between N and PE cable on AC side. If the voltage is higher than 10V, it means the cables are connected improperly. 2. Restart the equipment.
8	N-PE Fail	1. The N and PE cables are connected improperly. 2. The N wire of the inverter output terminal is connected	1. Make sure that the N and PE cables are connected correctly. 2. Make sure that the output cable is connected correctly. 3. If the problem persists, contact the after-sales service.

		improperly.	
9	ARC Fail-HW	The power limit function is abnormal. (For Australia)	1. Make sure that the grid and smart meter are connected correctly. 2. If the problem persists, contact the after-sales service.
10	PV Reverse Fault	The PV strings are connected reversely.	1. Make sure that the PV strings are connected correctly. 2. If the problem persists, contact the after-sales service.
11	String OverCurr	The current of one PV string is too high.	Check the PV string connection.
12	LCD Comm Fail	The LCD connection is not firm.	Contact the after-sales service.
13	DCI High	DC component exceeds the allowed range.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
14	Isolation Fail	1. The PV panels are connected improperly. 2. The DC cable is broken. 3. The N and PE cables are connected improperly.	1. Disconnect and connect the PV strings in turn to find the one caused error. 2. Check whether the DC cable is broken. 3. Measure the voltage between N and PE cable on AC side. If the voltage is higher than 10V, it means the cables are connected

		4. The system is in a moist environment like rainy days, early morning or sunset.	improperly. 4. Make sure that the PV modules are grounded properly.
15	Vac Fail	1. Wrong safety code. 2. Unstable grid frequency. 3. Improper AC cable specifications, like too long or too thin. 4. The AC cable is connected improperly.	1. Check the safety code. 2. Make sure that the voltage of each phase (Between L1&N, L2&N, L3&N) is within a normal range. 3. Make sure the grid voltage is stable.
16	EFan Fail	1. The external fan is blocked. 2. or connected improperly.	Clear the external fan to remove the blocks.
17	PV Over Voltage	Excess PV modules are connected, and the open circuit voltage is higher than the max DC input voltage of the inverter.	1. Measure whether the open circuit voltage of the PV string is higher than the max DC input voltage of the inverter. 2. If the voltage is high, remove some panels connected to make sure that the open circuit voltage

			meets the requirement.
18	Overtemp.	1. The ambient temperature is too high. 2. The inverter is installed in a place with poor ventilation (such as an enclosed environment).	1. Cool down the ambient temperature. 2. Make sure that the installation meets the environment requirements listed in the inverter user manual. 3. Power off the inverter and restart 15 minutes later.
19	IFan Fail	1. The internal fan is blocked. 2. or connected improperly.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
20	DC Bus High	1. Measure whether the open circuit voltage of the PV string is higher than the max DC input voltage of the inverter. 2. Control board of the inverter cannot work properly.	1. Measure whether the open circuit voltage of the PV string is higher than the max DC input voltage of the inverter. 2. Reduce the number of PV panels per string if the DC voltage is too high.
21	Ground I Fail	1. The AC PE cable	Detect the voltage between the

		is not connected well. 2. The system is in a moist environment like rainy days, early morning or sunset.	enclosure and the ground. The PE cable is connected improperly if any voltage detected.
22	Utility Loss	1. Utility grid power fails. 2. The AC cable is disconnected. 3. or the AC breaker is off. 4. AC breaker fails.	1. Ensure that the utility grid is available. 2. Measure the AC voltage using a multimeter. 3. Check whether the breaker is broken. 4. Check whether the AC cable is connected properly. 5. Ensure that the grid is connected and AC breaker turned ON. 6. Disconnect the AC output switch and DC input switch, then connect them 5 minutes later.
23	AC HCT Fail	1. The exception is caused by an external fault. 2. Control board of the inverter cannot work properly.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
24	Relay Dev Fail	1. The exception is	1. Restart the inverter. If the inverter

		caused by an external fault. 2. Control board of the inverter cannot work properly.	recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
25	GFCI Fail	1. The exception is caused by an external fault. 2. Control board of the inverter cannot work properly.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
26	DC SPD Fail	Lighting strike	1. Improve the lightning protection facilities around the inverter to reduce the risk of lighting strike. 2. Replace the inverter with a new one if it cannot work anymore.
27	DC Switch Fail	The use of DC trip switch exceeds the service life time.	Contact the after-sales service.
28	Ref 1.5V Fail	1. The exception is caused by an external fault. 2. Control board of the inverter cannot work properly.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
29	AC HCT Chk	The sampling of the	1. Restart the inverter. If the inverter

	Fail	AC HCT is abnormal.	recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.
30	GFCI Chk Fail	The sampling of the GFCI HCT is abnormal.	1. Restart the inverter. If the inverter recovers, the problem is accidental and does not affect system working. 2. If the problem persists, contact the after-sales service.

7.3 Battery Alarms

No.	Alarm	Troubleshooting
1	High battery temperature	The ambient temperature is too low to run the battery.
2	Low battery temperature	
3	Battery cell voltage differences	If the problem persists, contact the after-sales service.
4	Battery over total voltage	
5	Battery discharge overcurrent	
6	Battery charge overcurrent	
7	Battery under SOC	If the PV works properly but the problem persists, contact the after-sales service.
8	Battery under total voltage	
9	Battery communication failure	Check the electrical connections by professionals.
10	Battery output shortage	
11	Battery SOC too high	If the problem persists, contact the after-sales service.
12	BMS module fault	

13	BMS module fault	
14	BMS internal fault	
15	High battery charge temperature	
16	High battery discharge temperature	The battery is overloaded. You are recommended to reduce loads. If the problem persists, contact the after-sales service.
17	Low battery charge temperature	The ambient temperature is too low to run the battery.
18	Low battery discharge temperature	
19	Battery over total voltage	