GROWATT



MIN 3000-11400TL-XH2 US
Commissioning Guide

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Change history

Version 00

First release

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1 System Overview

1.1 Overview

There are two types of configurations of MIN 3000-11400TL-XH2 US, PHB (Partial Home Backup) and WHB (Whole Home Backup Version).

1.2 System Configuration Contains

Energy Storage System / Off- Grid System:
MIN 3000-11400TL-XH2 US inverter.
APX/ARO battery.
SYN 200U-2.
Electric meter SM-US-200(Integrated in SYN 200U-2).

PV-only System:
MIN 3000-11400TL-XH2 US inverter.
Electric meter SM-US-200 (Optional).

Product	Model	Function	Note
Inverter	MIN 3000-11400TL-XH2 US	Energy conversion	
ARO Battery	ARO 6.6-19.8H-C1-US	Energy storage	Up to 4 battery banks
APX Battery	APX 5.0-30. 0P-S0-US	Energy storage	Up to 1 battery banks
SYN	SYN 200U-2	EPS switching	
Smart meter	SM-US- 200	Energy management	
Button	RSD Button	Rapid shutdown	Accessory (included in the package)

Note:
You can scan the QR code on the right to obtain the Quick Guide of the Rapid Shutdown Device. Please comply with NEC 690.12 (1) through (4) for rapid shutdown initiation methods.

1.3 WHB Energy Management System Introduction

MIN 3000-11400TL-XH2 US WHB energy storage system diagram is shown in the figure below:

Note: When installing the emergency stop switch, please refer to its Quick Guide.

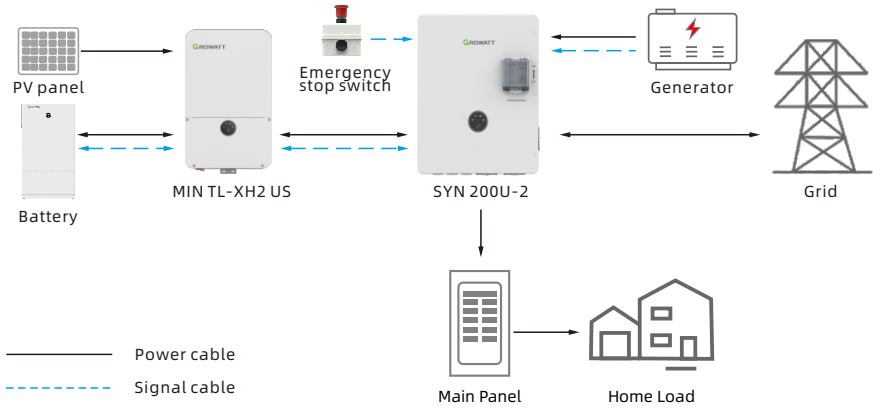


Figure 1-1 Residential Whole Home Backup System(DC Coupled)

The system wiring diagram is as follows:

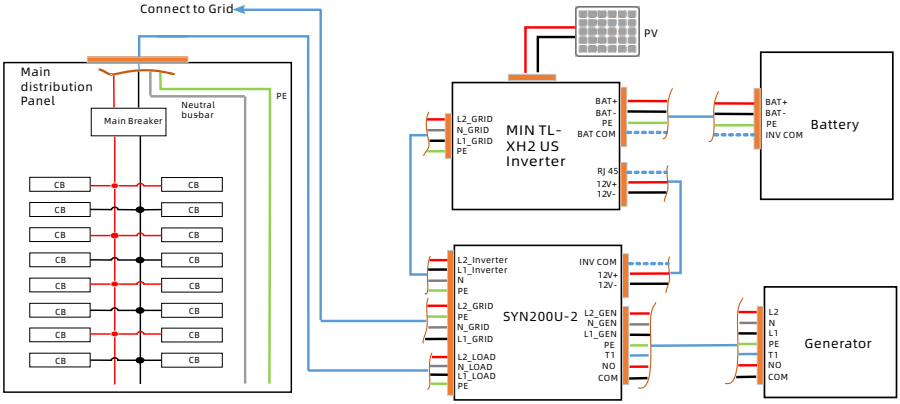


Figure 1-2 Residential Whole Home Backup System Wiring Diagram(DC Coupled)

MIN 3000-11400TL-XH2 US AC Couple system diagram is shown in the figure below:

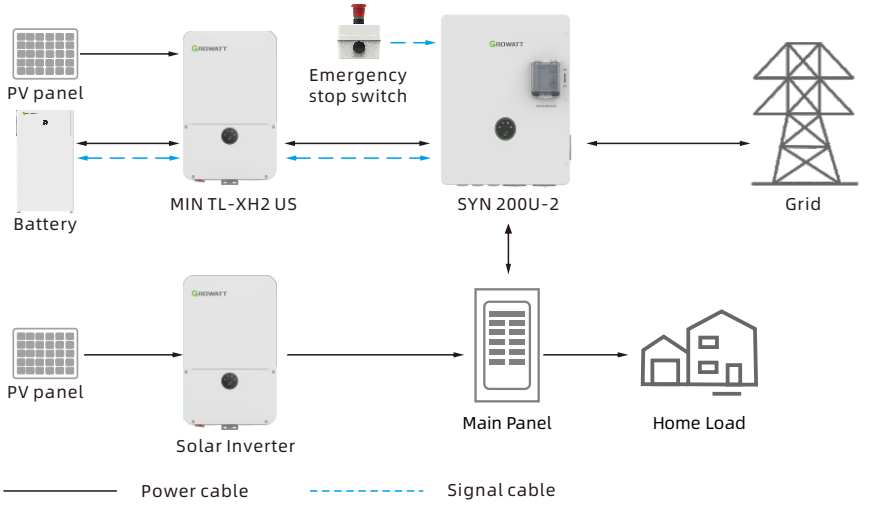


Figure 1-3 Residential Whole Home Backup System (AC Coupled)

The AC Couple system wiring diagram is as follows:

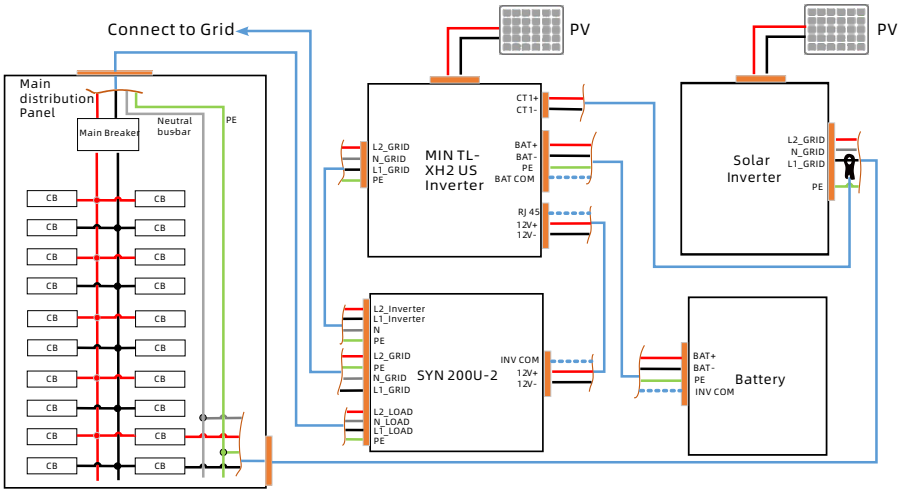


Figure 1-4 Residential Whole Home Backup System Wiring Diagram(AC Coupled)

1.4 PHB Energy Management System Introduction

MIN 3000-11400TL-XH2 US PHB energy storage system diagram is shown in the figure below:

Note: When installing the emergency stop switch, please refer to its Quick Guide.

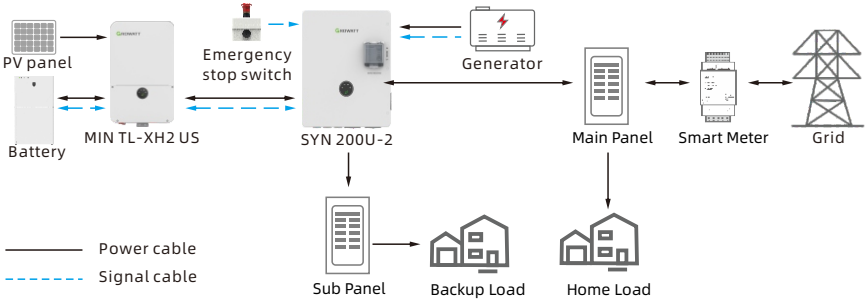


Figure 1-5 Residential Critical Load Backup System(DC Coupled)

The system wiring diagram is as follows:

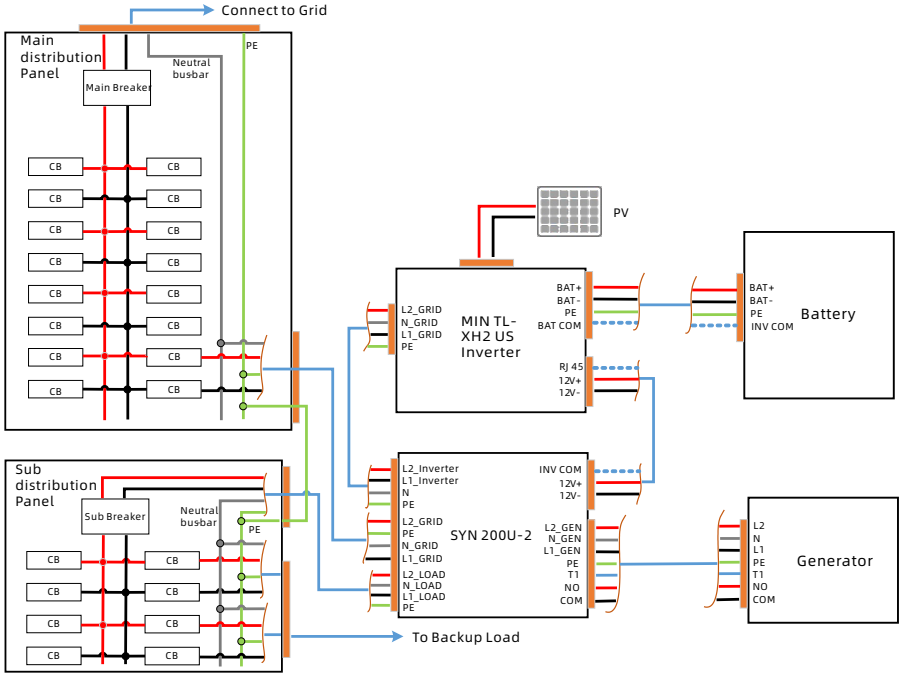


Figure 1-6 Residential Critical Load Backup System Wiring Diagram(DC Coupled)

MIN 3000-11400TL-XH2 US AC Couple system diagram is shown in the figure below:

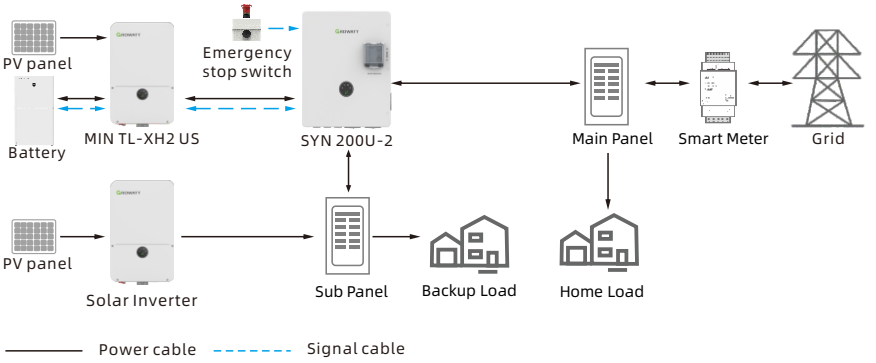


Figure 1-7 Residential Critical Load Backup System(AC Coupled)

The AC Couple system wiring diagram is as follows:

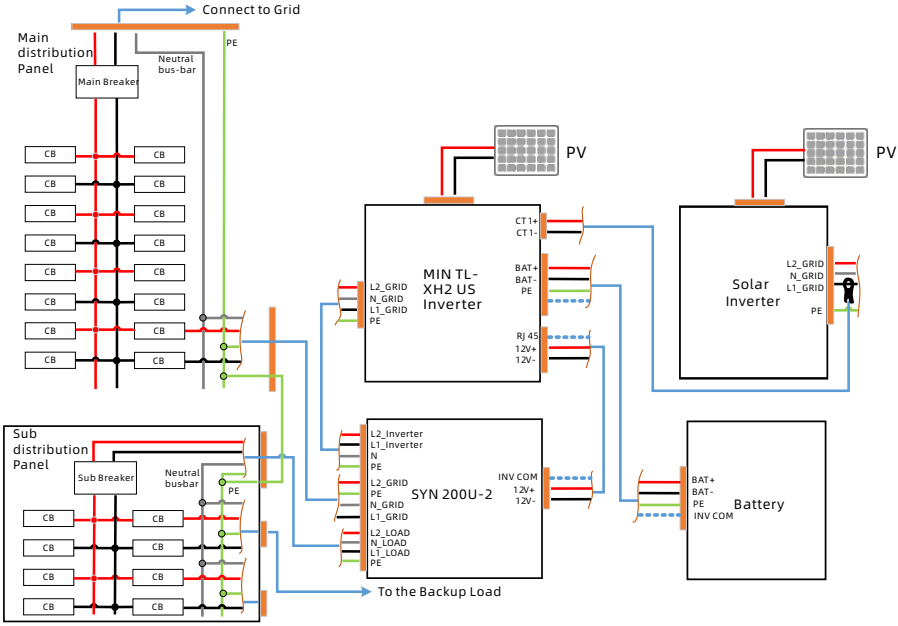


Figure 1-8 Residential Critical Load Backup System Wiring Diagram(AC Coupled)

Power on the system 2

All components were installed according to the installation guides, please check the following installation locations:
Power on the system according to the MIN 3000-11400TL-XH2 US Quick Guide which is included in the inverter package/box.

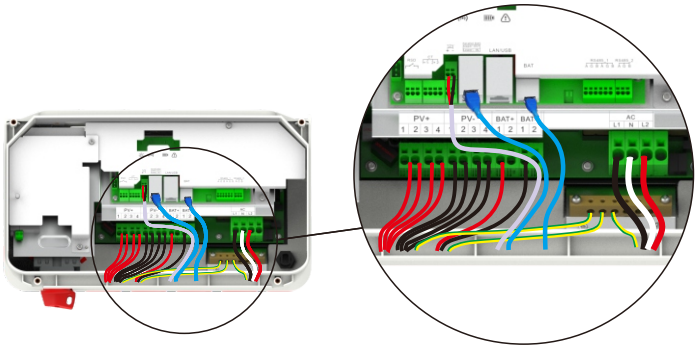


Figure 2-1 Inverter Box Wiring Diagram

- ARO Battery Wiring Diagram please refer to ARO 6.6-19.8H-C1-US Quick Guide QR code.
- APX Battery Wiring Diagram please refer to APX 5.0-30.0P-S0-US Quick Guide QR code.

【ARO Battery】

【APX Battery】

3 Shiner APP Setup

3.1 APP Download

There are two ways to download the Shiner APP:

a) Scan the QR code

➢ Scanning the QR code through phone camera for downloading the APP.



Figure 3-1 Shiner App QR code

b) APP Store

➢ Search for Shiner App from app stores (App Store or Play Store).

➢ The Shiner App icon is displayed the same as the Figure 3-2.

➢ Download and install the App by following the installation instructions.



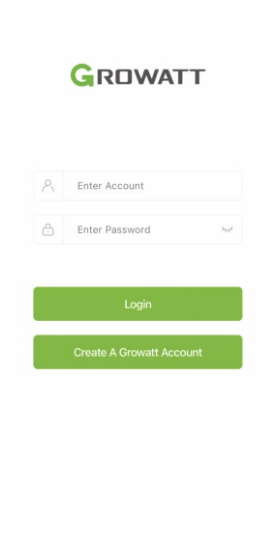
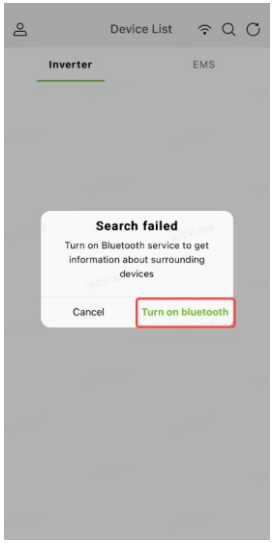
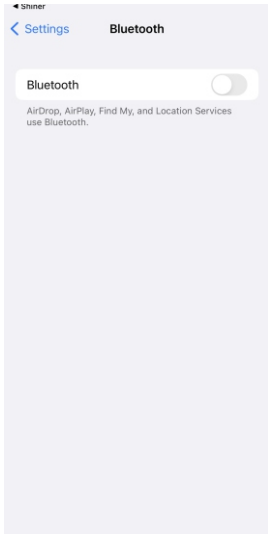
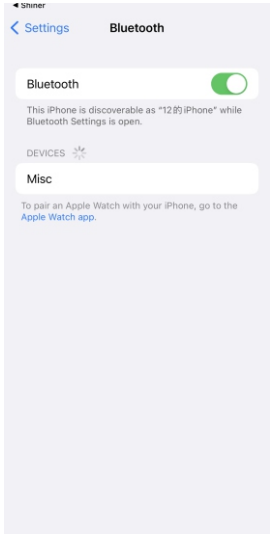
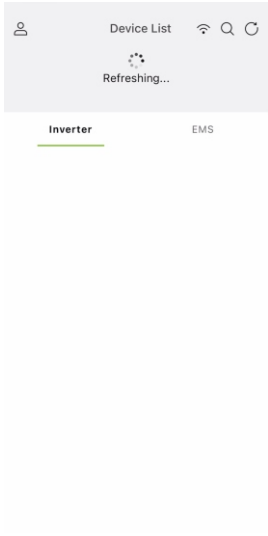
Figure 3-2 Shiner App icon

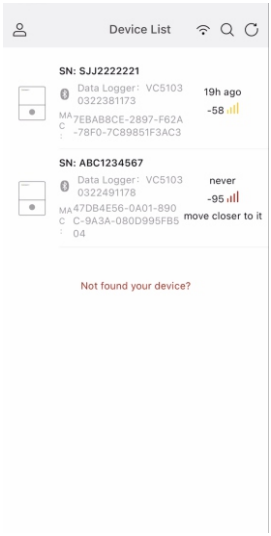
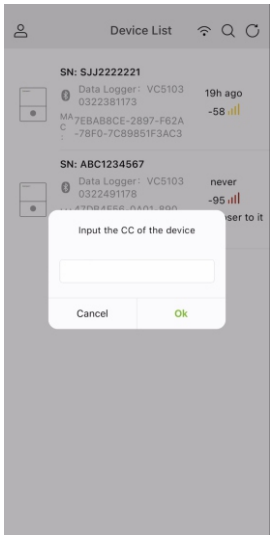
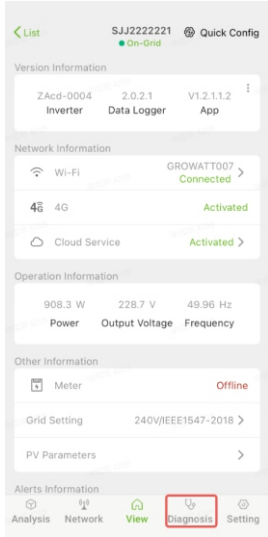
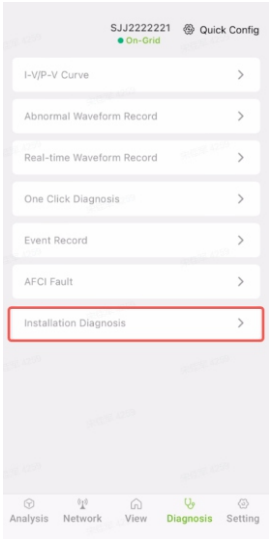
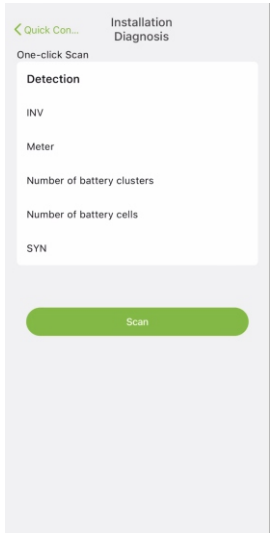
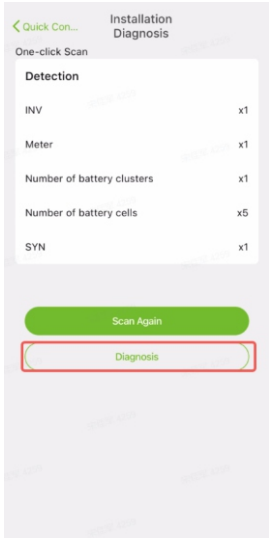
3.2 APP Introduction

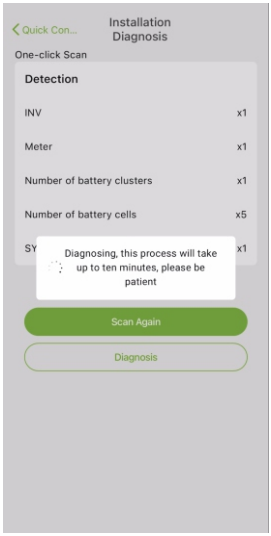
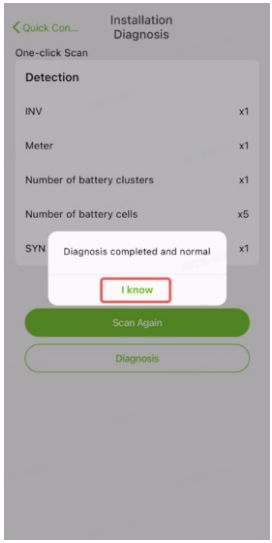
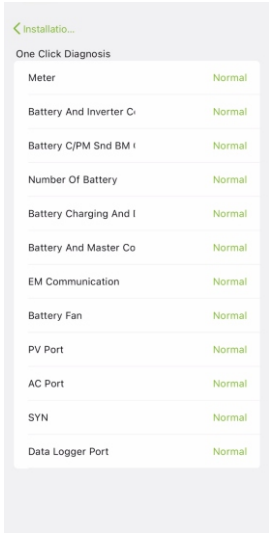
Shiner is the app designed for commissioning and troubleshooting. It facilitates communication with the inverter via a built-in Bluetooth, enabling real-time status monitoring, alarm queries, parameter configuration, diagnosis and other routine maintenance functions.

3.3 Installation Diagnosis

After installing the system, you need to perform installation diagnostics to ensure that the system can run normally. (The installer account is created by the superior channel or Distributor.)

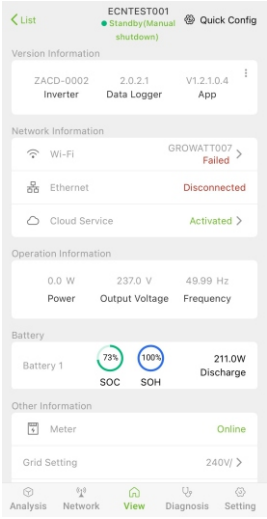
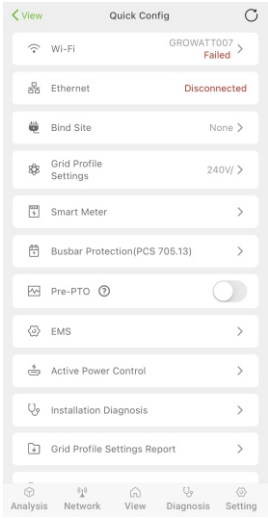
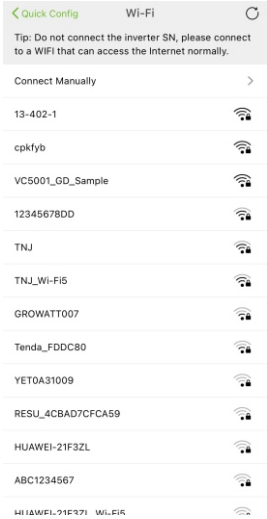
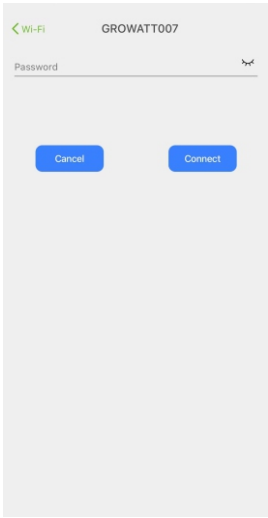
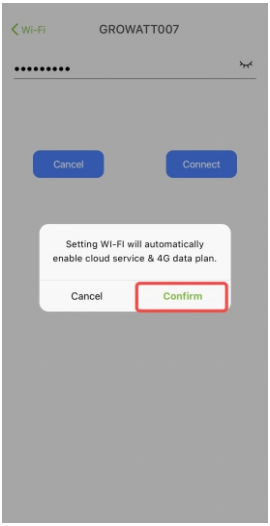
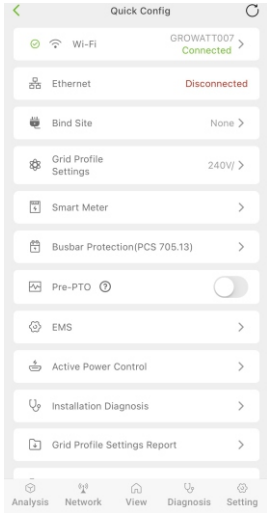
1. Login installer account.	2. Turn on Bluetooth. If it is already on, skip steps 2-4.	3. Click the button to turn on Bluetooth.
		
4. After turning on Bluetooth, return to the Shiner interface.	5. Get the CC and serial numbers of the inverter and data logger from the side of the inverter.	6. Pull down to refresh the device list.
		

7. Click your device.	8.Input the CC of your device.	9. Click "Diagnosis"
		
10. Click "Installation Diagnosis "	11. Click "Scan" to detect system components	12. Click "Diagnosis"
		

13. Wait a few minutes	14. Click "I Know"	15. The detailed diagnostic results are shown below
		

4 Grid Code Mapping Table

The first time the inverter is installed, it needs to be configured to connect to the home's Wi-Fi/4G to ensure the remote monitoring.

1. Tap in "Quick Config"	2. Click "Wi-Fi" to configure the network	3. Choose your Wi-Fi to connect
		
4. Enter password and then click "Connect".	5. Setting WI-FI will enable cloud service & 4G data plan.	6. Connect successfully
		

Note: If the network configuration has failed, please carefully check the Wi-Fi name, password and antenna installation connection, and then try again.

Notice: The inverter does not support 5GHz Wi-Fi network.

5 Grid Code Mapping Table

The factory Default grid mode of the inverter is IEEE1547-240, which can adapt to the most power grids. The different grid code can be changed according to local regulation in the network configuration interface from Quick Setting in Shiner App.

No.	Grid Code	No.	Grid Code	No.	Grid Code
1	HECO-208	2	HECO- 240	3	PRC-West-208
4	IEEE1547-208	5	IEEE1547-240	6	PRC-West-240
7	PRC-East-208	8	PRC-East- 240	9	ISO-NE-208
10	PRC- Quebec- 208	11	PRC-Quebec- 240	12	ISO-NE-240
13	RULE21- 208	14	RULE21-240	15	LUMA-208
16	NEWYORK-208	17	NEWYORK-240	18	LUMA-240
19	PHI-208	20	PHI-240	21	SMECO-208
22	SMECO-240	23	PE-208	24	PE-240
25	BGE-208	26	BGE-240	27	NEWYORK-ORU-208
28	NEWYORK-ORU-240	29	CENHUD-208	30	CENHUD-240
31	AMEREN-CGR-208	32	AMEREN-CGR-240	33	PNM-208
34	PNM-240				

Note:
The different grid codes can be changed according to local regulation in the Grid Code icon. Do not change the grid code during grid connection. It takes about 300 seconds for reconnection to the grid after changing the grid code.

Energy Management System(EMS) 6

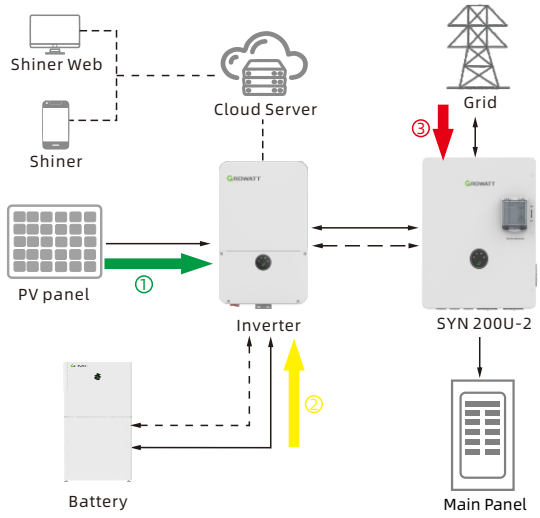
Note: This whole section only applies to Energy Storage Systems. If installing a PV-only system, please skip to section6.2.7(Power Sensor Setting). First time install the energy storage system, charge the battery for at least 1 hours or up to 60% SOC before powering off the system. This action will keep up the battery power to avoid running out while waiting for PTO.

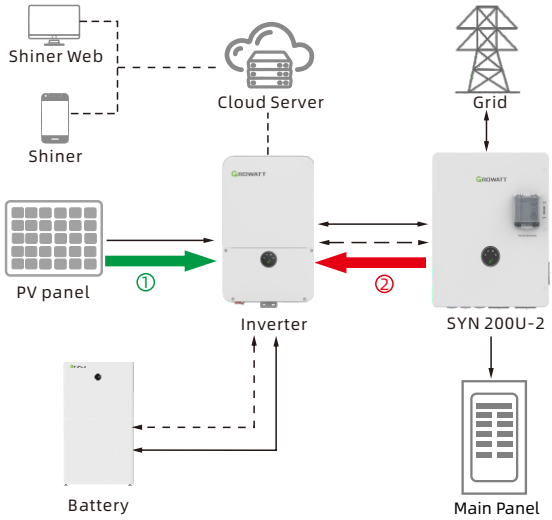
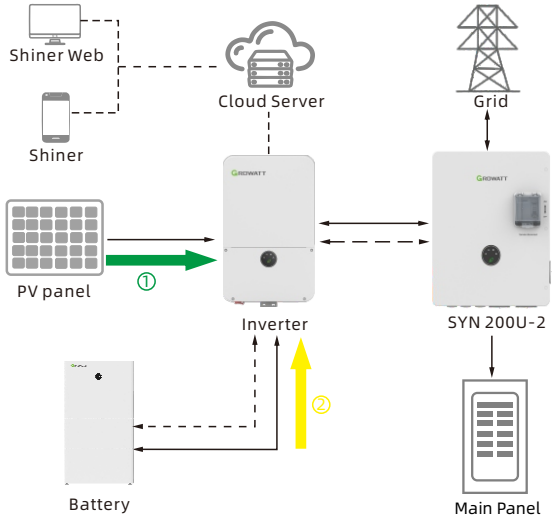
- The fastest method to charge the battery (if allowed by the utility) is to connect the AC output of the inverter to the grid without any PV input, turn on the AC charging function (6.2.3) and set the EMS mode of the system to TOU Charging (6.2.5).

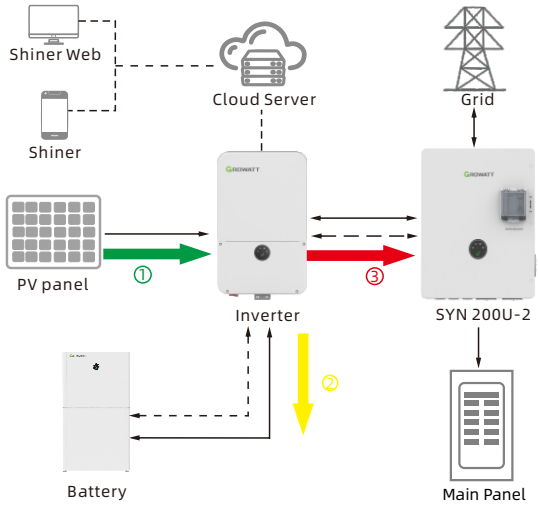
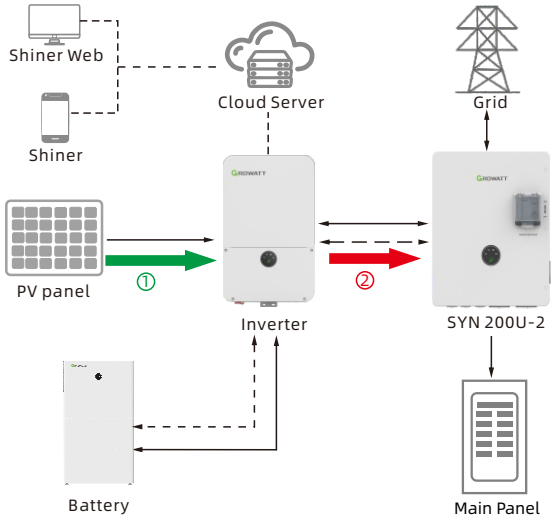
6.1 Management System Mode Introduction

The MIN 3000-11400TL-XH2 US system provides seven energy storage modes to choose.

Storage Mode	Description
Load First (Default)	Use PV production for self-consumption, then charge/ discharge battery as needed to maximize self-consumption.



Storage Mode	Description
Battery First (TOU Charging)	Charge battery from PV production and grid power (if needed) until it is full. Only then use PV production for self-consumption and grid.
	
Grid First (TOU Discharging)	If PV Production < Inverter Maximum Production (nameplate or limited power), discharge battery for self-consumption and grid export until the inverter reaches its power limit or max battery discharge power.
	

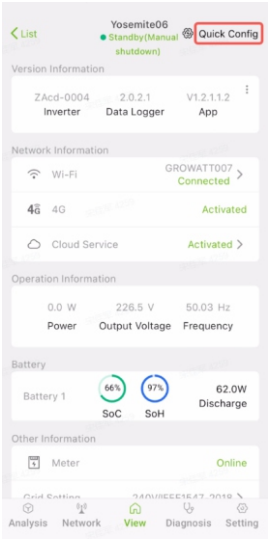
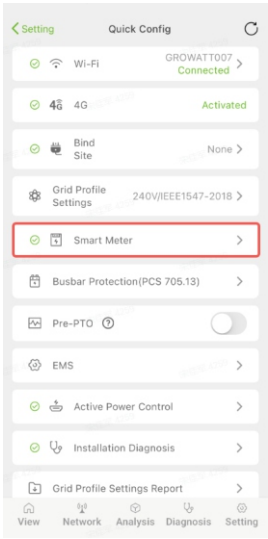
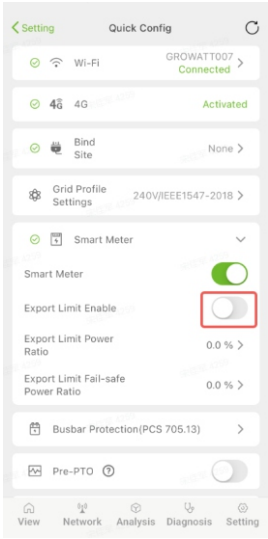
Storage Mode	Description
Solar Only Backup	The battery stays charged at 100%(tare loss accepted) and only charges from Solar, not the Grid. Grid can supply energy to the load. In the event of grid outage, the battery provides energy to home until it reaches a predetermined minimum reserve.
	
TOU Idle	The battery will not charge or discharge during on-grid. The system runs as if it were PV only, with the battery backup available for outages.
	

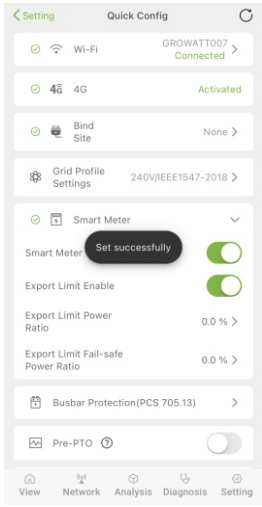
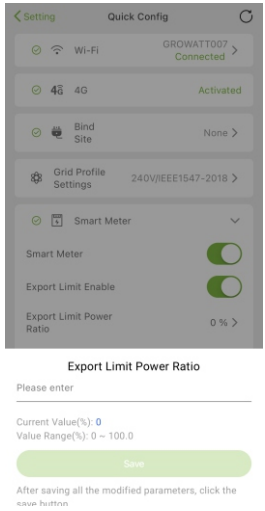
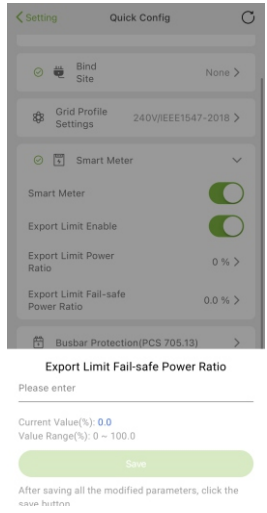
6.2 Energy Management System setting

For the photovoltaic energy storage system, several functions of the system need to set after the first installation and power-up.

6.2.1 Export Limitation Setting

If you want to stop the system energy from flowing to the grid, you can follow the steps below.
After completing the installation diagnosis, the smart meter will be automatically enabled.

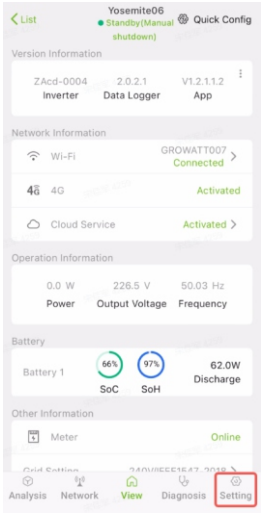
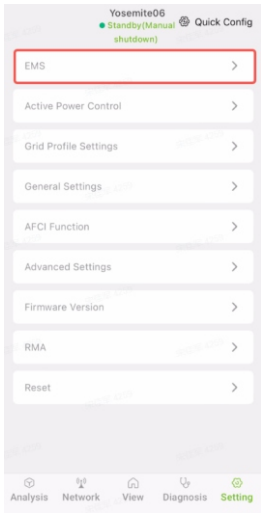
1.Tap in "Quick Config"	2. Click "Smart Meter"	3. Tap in ON/OFF button
		

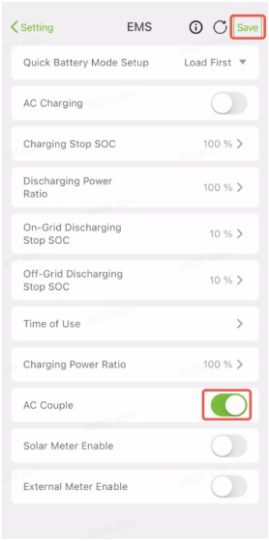
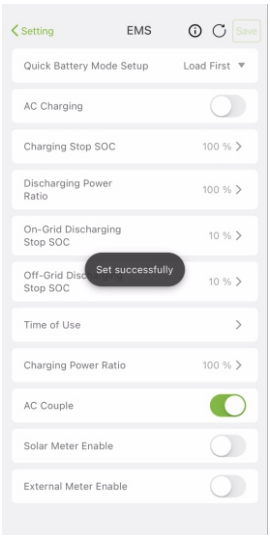
4. Set successfully	5. Click "Export Limitation Power Ratio". Enter the percentage of power.	6. Click "Export Limitation Fail-safe Power Ratio" and set the percentage.
		

6.2.2 AC Couple Setting

The AC Couple setting is what the AC Coupled system needs to set.

Factory Default is Disabled.

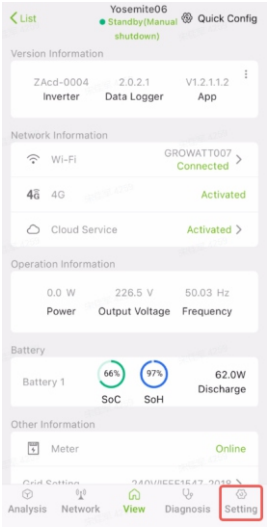
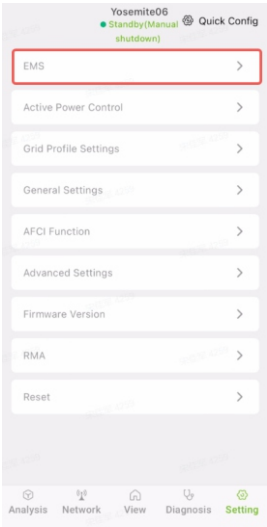
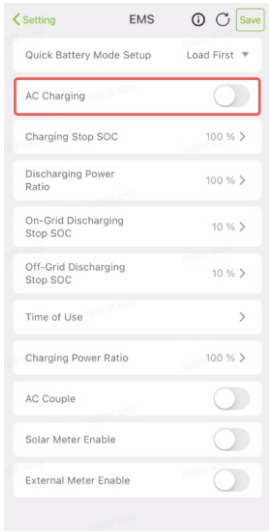
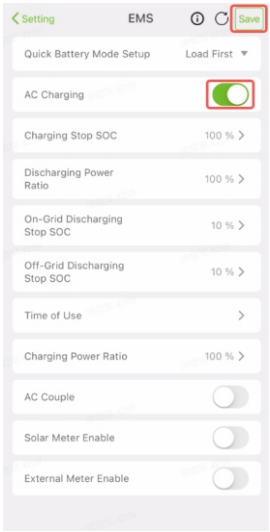
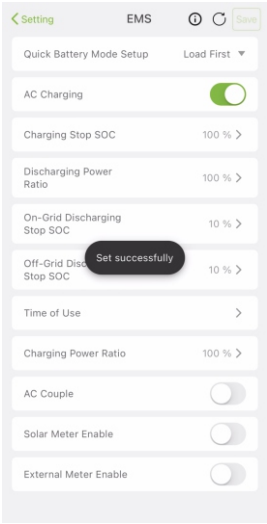
1. Tap in "Setting"	2. Click "EMS"	3. Find "AC Couple"
		

4.Tap in ON/OFF button and then click "Save"	5. Set successfully	
		

6.2.3 AC Charging Setting

The AC charging is used to set whether to allow charging the battery from the Grid.

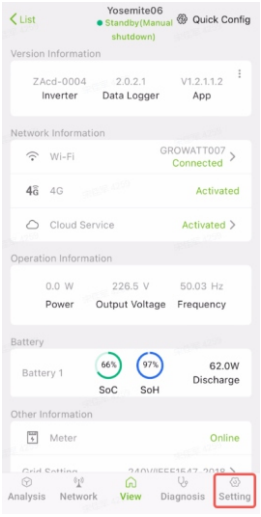
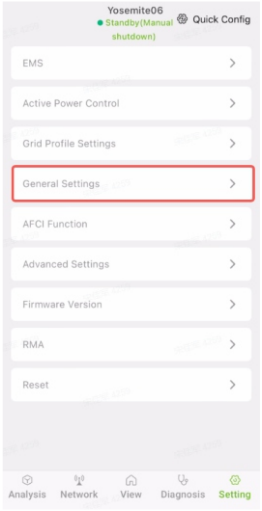
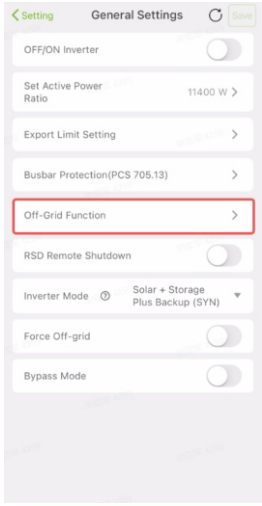
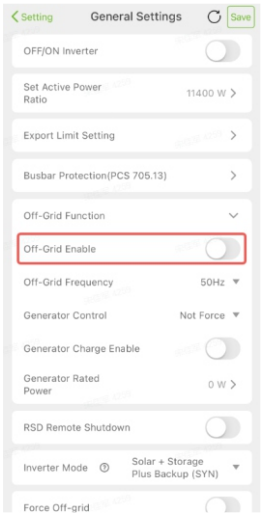
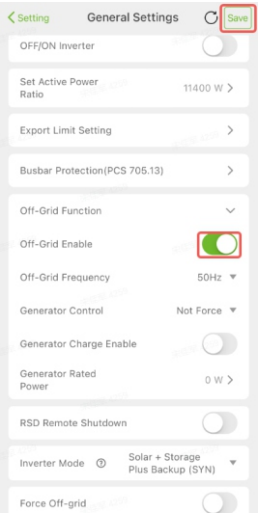
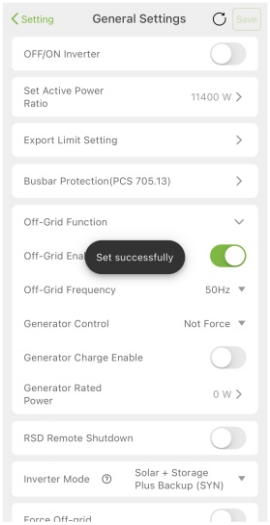
Factory Default is Disabled.

1. Tap in "Setting"	2. Click "EMS"	3. Find "AC Charging"
		
4.Tap in ON/OFF button and then click "Save"	5.Set successfully	
		

6.2.4 Off-Grid Setting

Note: Off-grid settings only apply for the system with SYN. After completing the installation diagnosis, the off-grid function will be automatically turned on.

Default: Disabled

1. Tap in "Setting"	2. Click "General Settings"	3. Find "Off-Grid Function"
		
4. Find "Off-Grid Enable"	**5. Tap in ON/OFF button and then click "Save"**	**6. Set successfully**
		

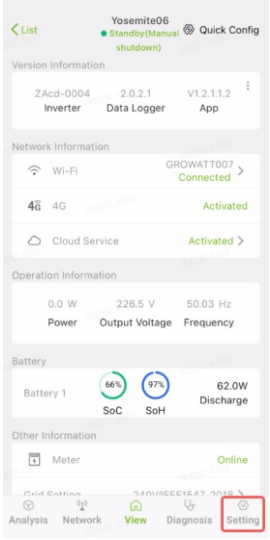
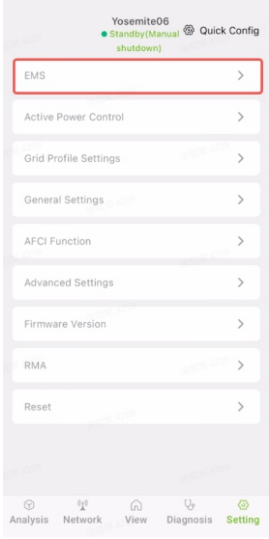
6.2.5 TOU Schedule Setting

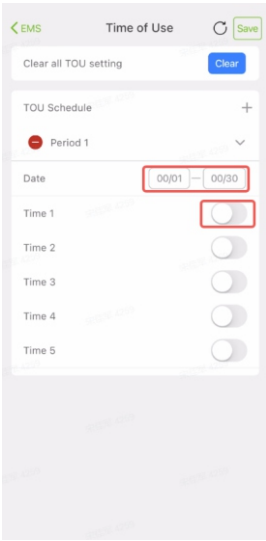
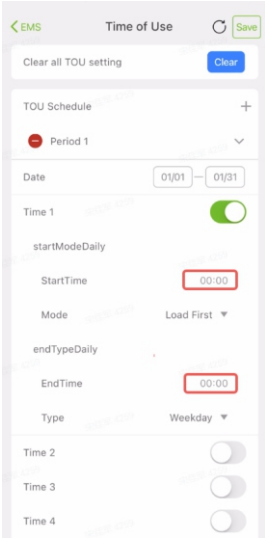
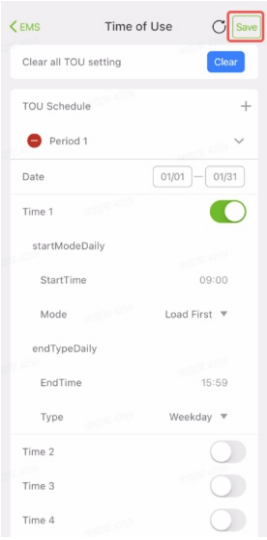
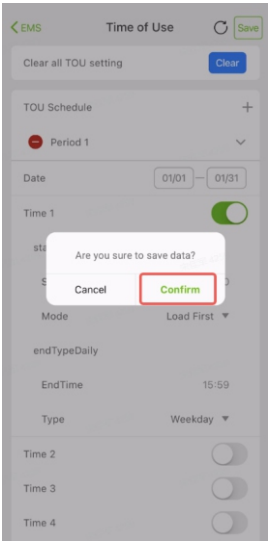
If any batteries are installed in the system, you can change the energy storage mode as you need. **(Factory Default is Maximum Self-consumption also referred to as "Load First")**.

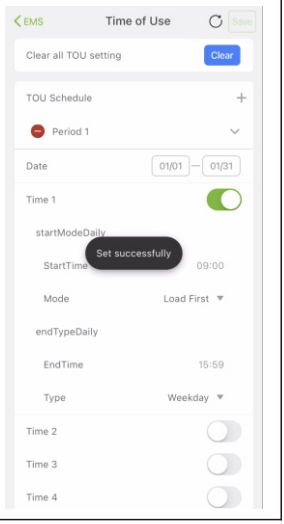
Example: If you want the inverter to run the EMS mode shown in the table below in January, please set it as follows.

Note: If you want to enable time period setting, you need to disable quick battery mode setting. At the same time, there should be no duplication of time between time periods.

No.	Time Period	EMS Mode
1	07:00-15:59	Maximum Self- consumption (Load First)
2	16:00-17:59	TOU Idle
3	18:00-19:59	TOU Discharging (Grid First)
4	20:00-06:59	TOU Idle

1. Tap in "Setting"	2. Click "EMS"	3. Find "Time of use"
		

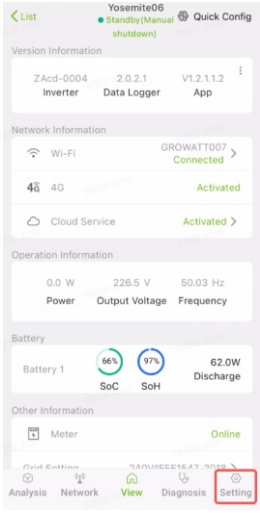
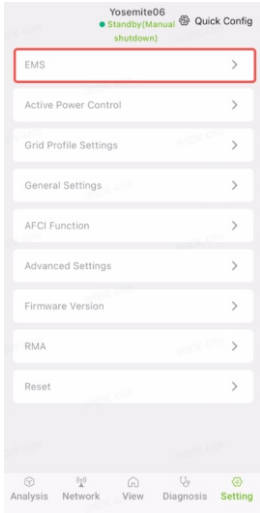
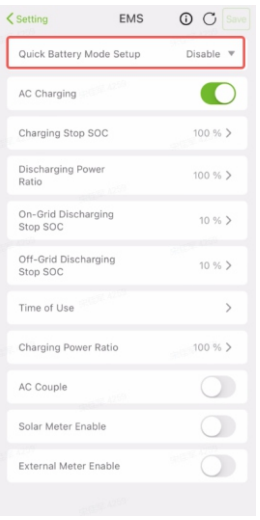
4. Click "+"	5. Click "Period 1"	6. Fill in date and then tap in ON/OFF button
		
7. Fill in "StartTime" and "EndTime"	**8. Click "Save"**	**9. Click "Confirm"**
		

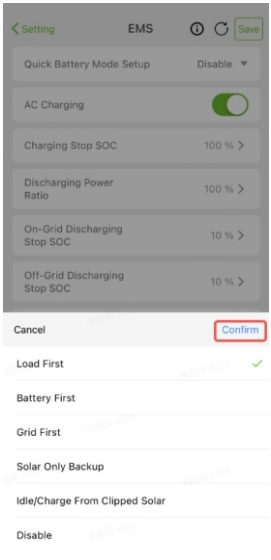
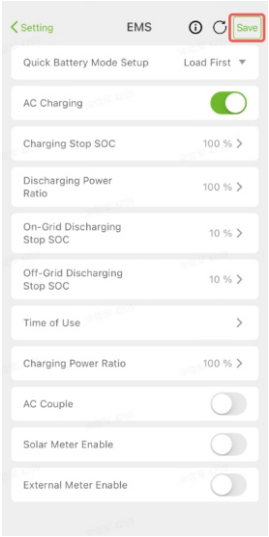
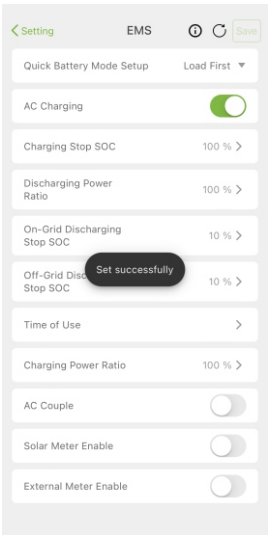
10. Set successfully


6.2.6 Quick Battery Mode Setting

If you need to use a battery working mode for the entire time, it will be more convenient to use Quick Battery Mode Setting. You can follow the steps below.

Note: Quick battery mode setting has the highest priority.

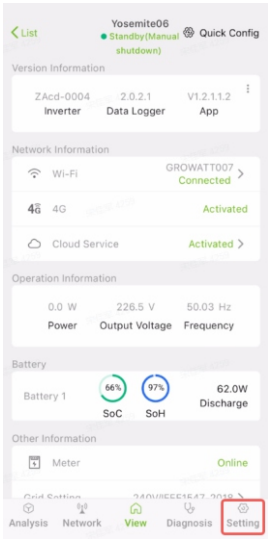
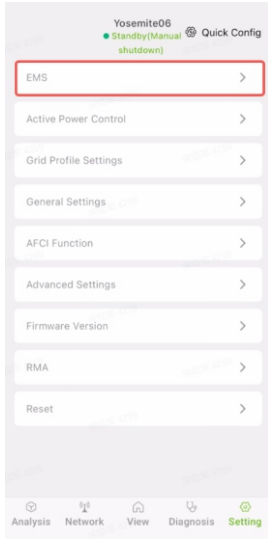
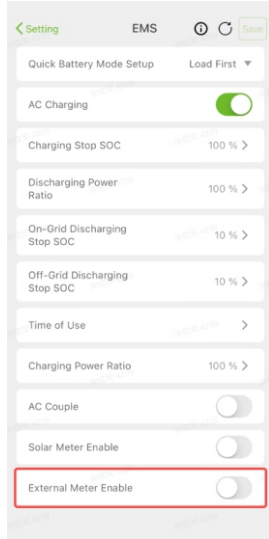
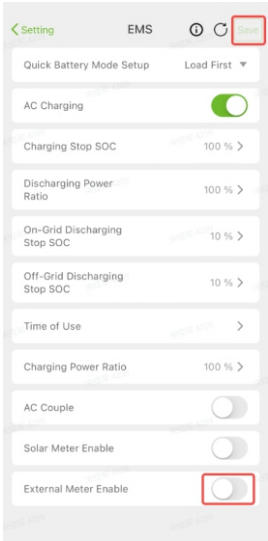
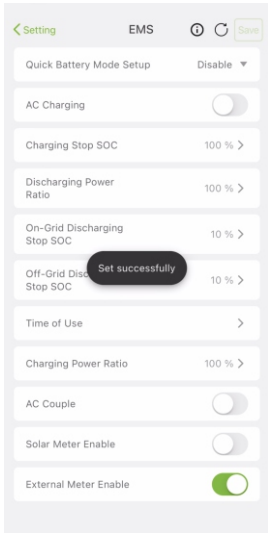
1. Tap in "Setting"	2. Click "EMS"	3. Find "Quick Battery Mode Setup"
		

4. Select mode and then click "Confirm"	5.Click "Save"	6.Set successfully"
		

6.2.7 External Meter Enable(PHB System)

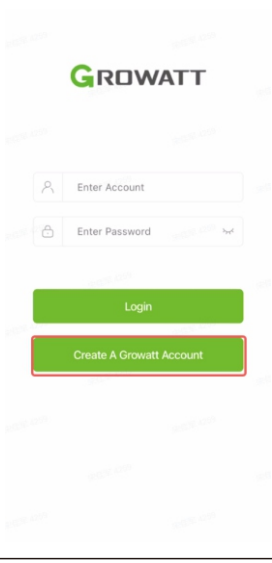
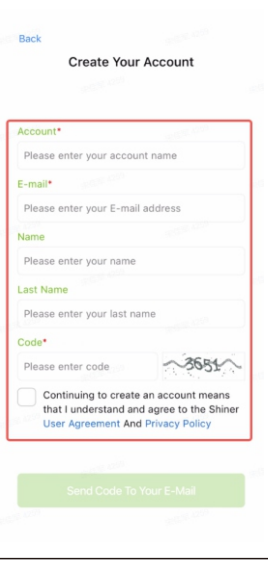
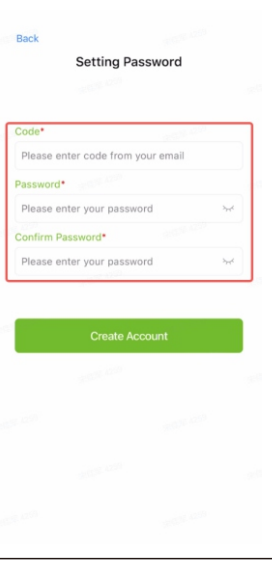
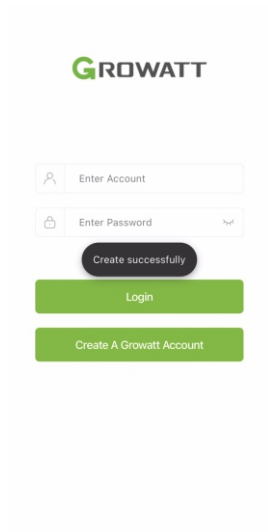
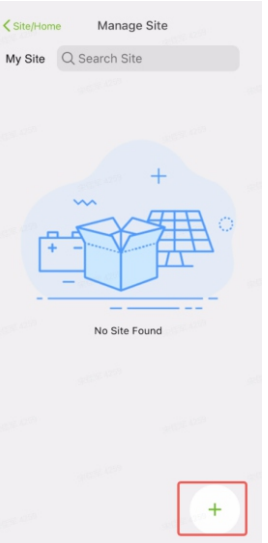
The External Meter is only used to collecting grid power in partial home backup(PHB) system.

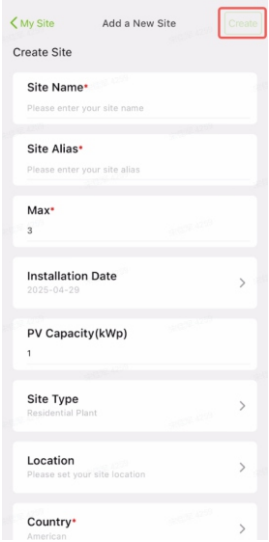
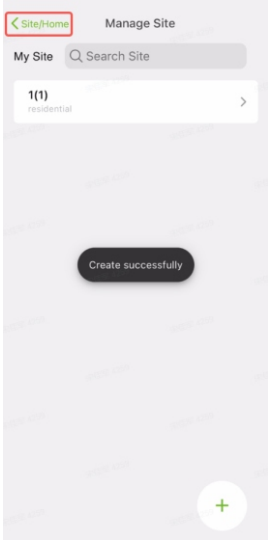
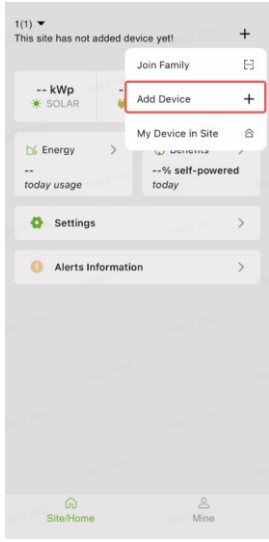
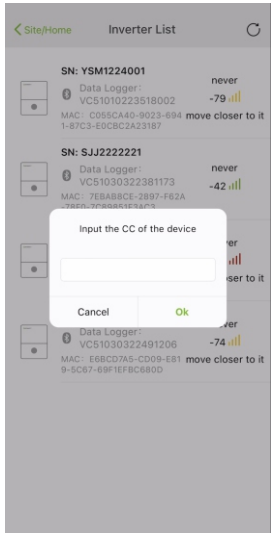
Factory Default is Disabled.

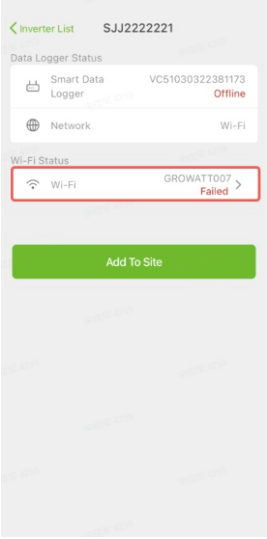
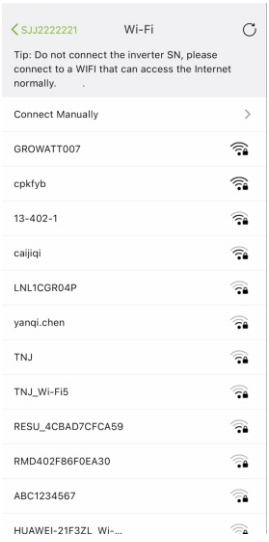
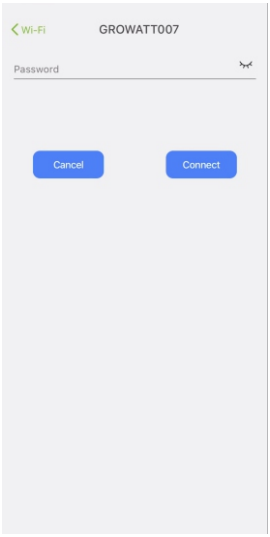
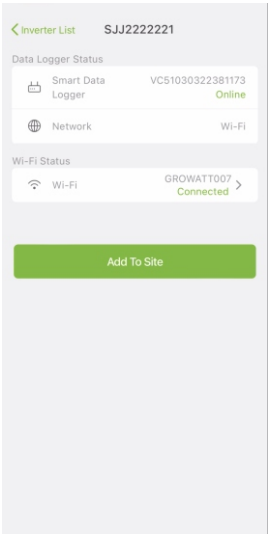
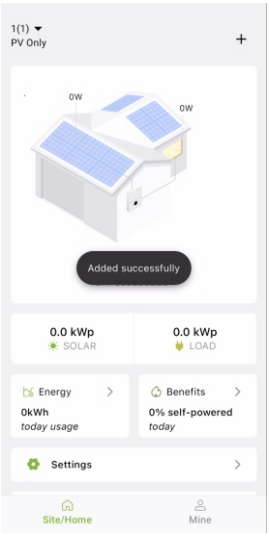
1.Tap in "Setting"	2. Click "EMS"	3. Find "External Meter Enable"
		
4.Tap in ON/OFF button and then click "Save"	**5.Set successfully**	
		

7 Quick Site Setup

When installing the inverter for the first time, you need to add the inverter to the power station (End User only).

1.Tap in "Create A Growatt Account"	2. Fill in the account information and click	3.Set Password and click
		
4.Create successfully. Login your account	5.Click "Manage Your Site"	6.Click " + "
		

7. Fill in the site information and click "Create"	8. Click "Site/Home"	9. Add Device
		
10. Get the CC and serial numbers of the inverter and data logger from the side of the inverter.	11. Click your device	12. Input the CC of your device
		

13. Click "Wi-Fi" to Connect to Network	14. Choose your Wi-Fi to connect	15. Enter password and then click "Connect"
		
16. Click "Add To Site"	**17. Added successfully**	
		

Battery Life Maintenance 8 (Important)

a) Unplug Battery power, Battery Communication cables and turn OFF battery modules power (Check battery quick installation guide for the detail), if the following conditions were met:

- The installation is not completed.
- No PV and AC power can charge the battery.

b) Charge the battery SOC above 60% or higher after installation is complete and pending for AHJ/city review and approval.

9 Shiner Web Operation

Shiner web is the online monitoring platform that allows remote access through the Shiner App or any web browser. However, the premise is that the Wi- Fi network has been configured.

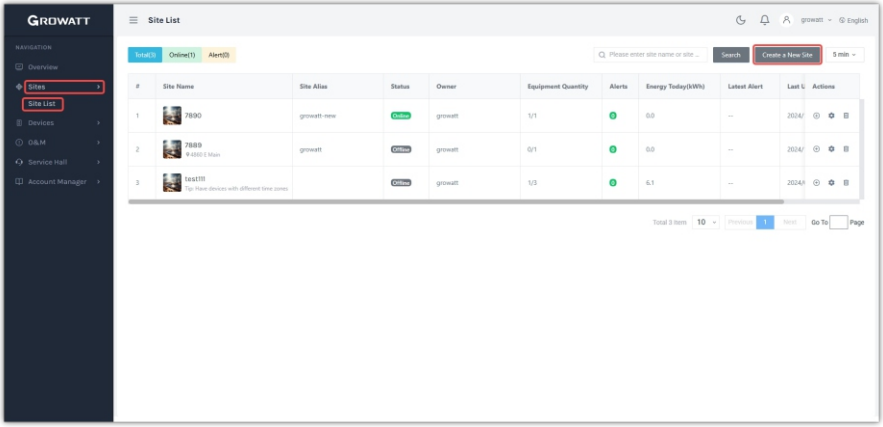
9.1 Login Account

End users cannot use the web interface for monitoring. The installer account is created by the superior channel or Distributor.
Log in to our monitoring website https://shiner-us.growatt.com and enter your account information.

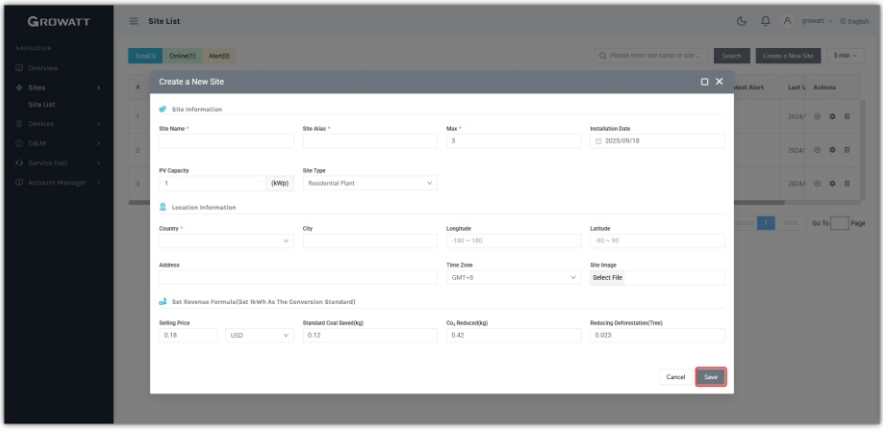


9.2 Create a site

a) Click "Sites" and "Site list" on the left side of the page to view the site list, then click "Create a New Sites".

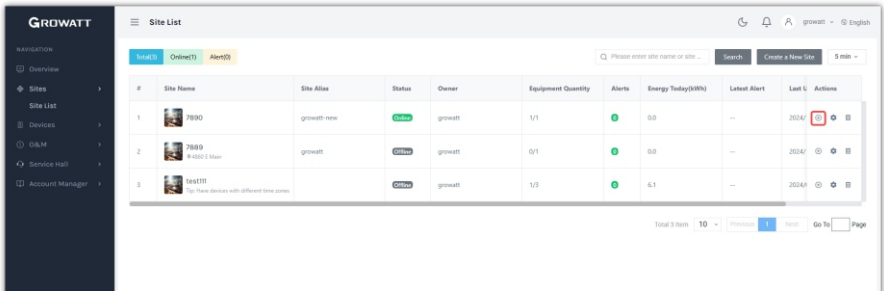


b) Fill in the corresponding site information and click "Save" to complete the site creation.

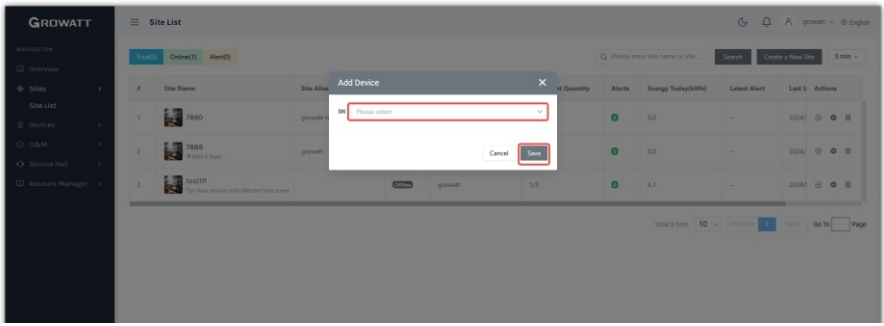


9.3 Add Device to site

a) Click the add symbol on the right side of the site.



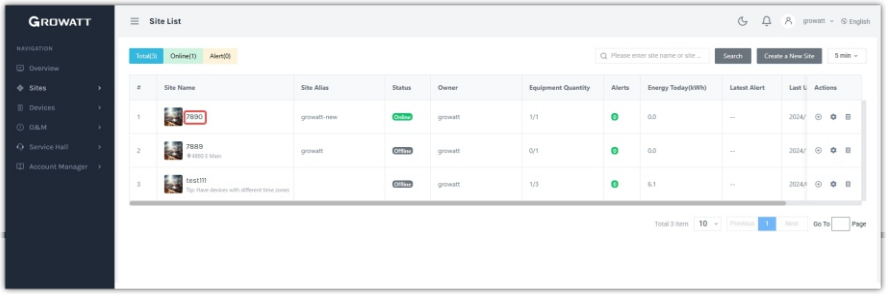
b) Add the device's SN number. The SN number of the device is on the barcode on the side of the SYN/INV.



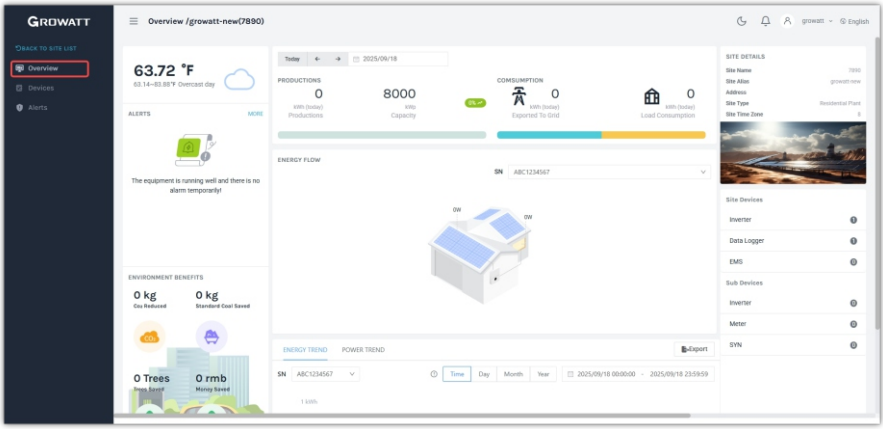
c) When you have completed these steps, you will be able to view the system remotely through any browser.

9.4 View system information

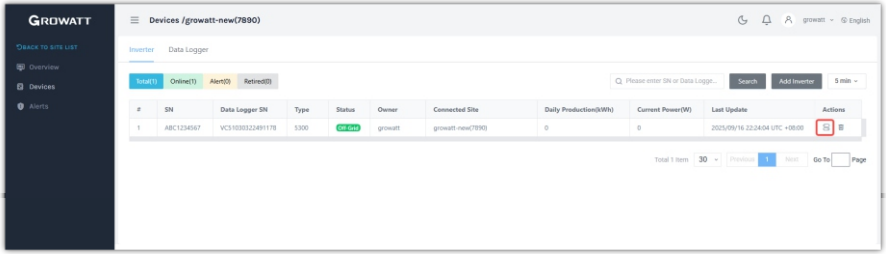
a) Click on the power station name to enter the power station to view detailed information.



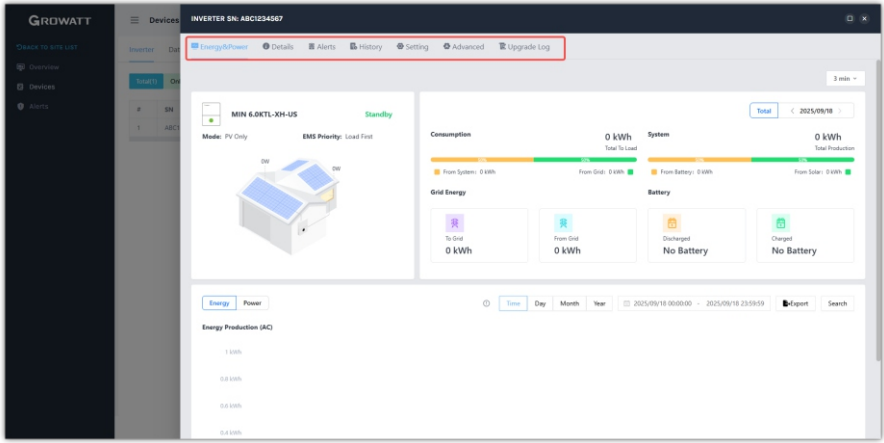
b) The first part is the system information overview. You can view the system energy flow on this page.



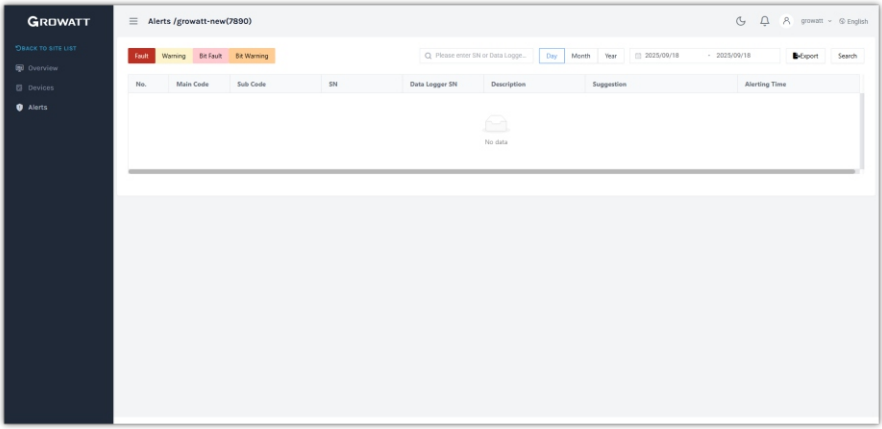
c) The second part is the device information. Click this button to view more detailed device information.



d) The upper column is respectively energy & power, details, alerts, history, settings, advanced, and upgrade log.



e) The third part is "Alerts". You can view device Fault and Warning information.



Growatt New Energy

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