MIN 3000-11400TL-XH-US + LG RESU10H/16H Prime Commissioning Guide

Table of Contents

1. Post-Purchase Process

1. Account Creation and Certification

1. **Register on LG Energy Solutions:**

   ○ Visit LG's Partner Portal.

   ○ Follow the step-by-step guide from the LG Energy Solution Registration Quick Guide found on Signature Solar's Product Information page under "Additional Information."

2. **Complete Certification:**

   ○ After registering on LG, proceed to the certification test.

   ○ Select "Signature Solar - LG RESU16H Prime Customer Certification Exam."

   ○ **The Certification exam will be based on the 16H Prime Installation Manual.** Please download the manual here: LG 16H Prime Installation Manual

3. **Register on LG Enblock Manager:**

   ○ Visit the LG Enblock Manager Registration Page.

   ○ Follow the step-by-step guide from the LG Enblock Manager Registration Quick Guide found on Signature Solar's Product Information page under "Additional Information."

   ○ Complete the registration and ensure that you save your username and password, as you will need this in order to use the Enblock Manager app.

   ○ Download the **Enblock Manager App** from iOS or Android stores.

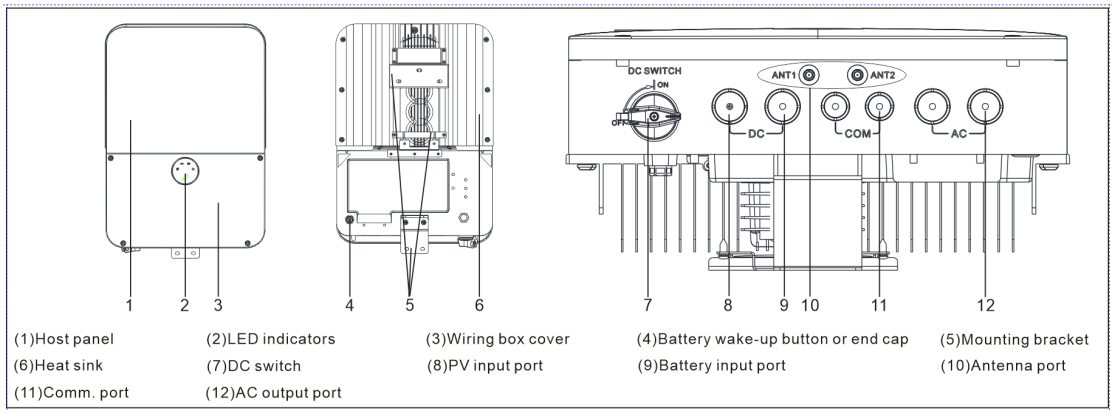
   ○ Use the app to register and manage your LG battery system.

2. Downloading the Required Apps for commissioning

- **Growatt Shinetools or Shiner App:** Available on iOS and Android.
  If the inverter's box contains the following sticker, download the Shiner App. Otherwise, download Shinetools App.

- **LG Enblock Manager App:** Download from App Store or Google Play.

2.General information-specification

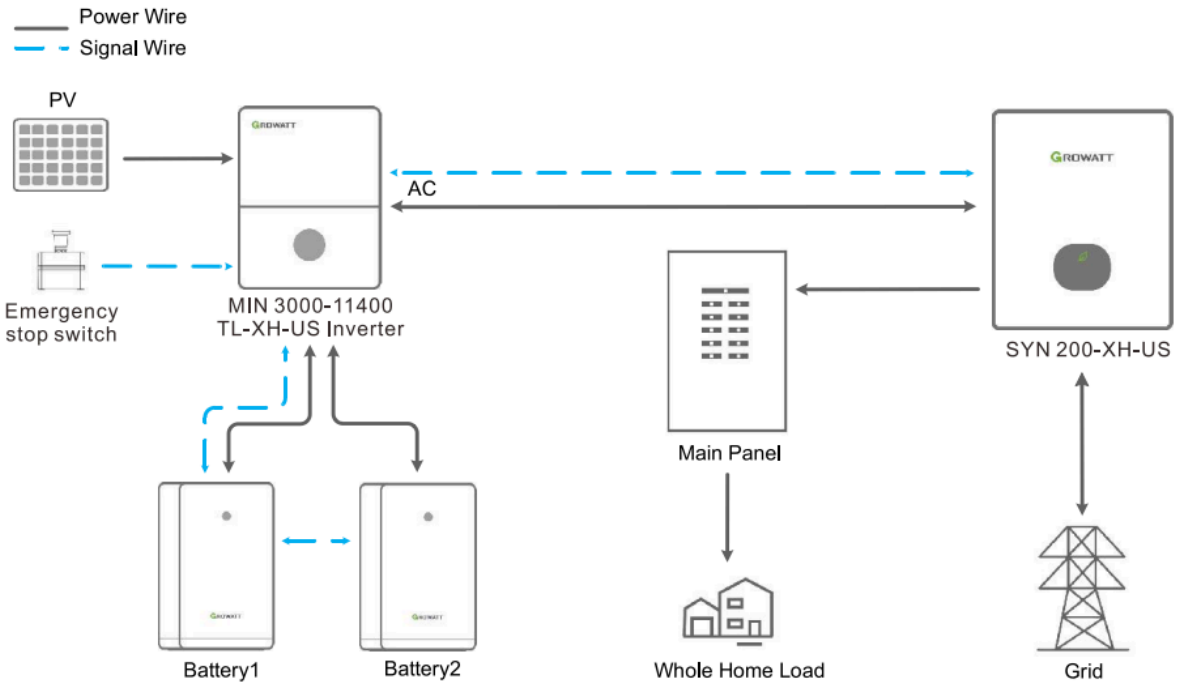


Note:
a. Before installing the device, ensure the package contents are intact and complete against the packing list. If any damage is found or any component is missing, contact your dealer.
b. This file will be updated from time to time due to product upgrades or other reasons. Unless otherwise agreed, this document is intended as a guide only. All information and suggestions do not constitute an express or implied warranty. The final interpretation of the content is at GROWATT.
c. This document is for quick guidance installation only. For details, please refer to the User Manual.
d. Damage caused by failure to follow the content is not covered by the warranty.

3. Installation

3.1 System Overview

Whole Home Backup



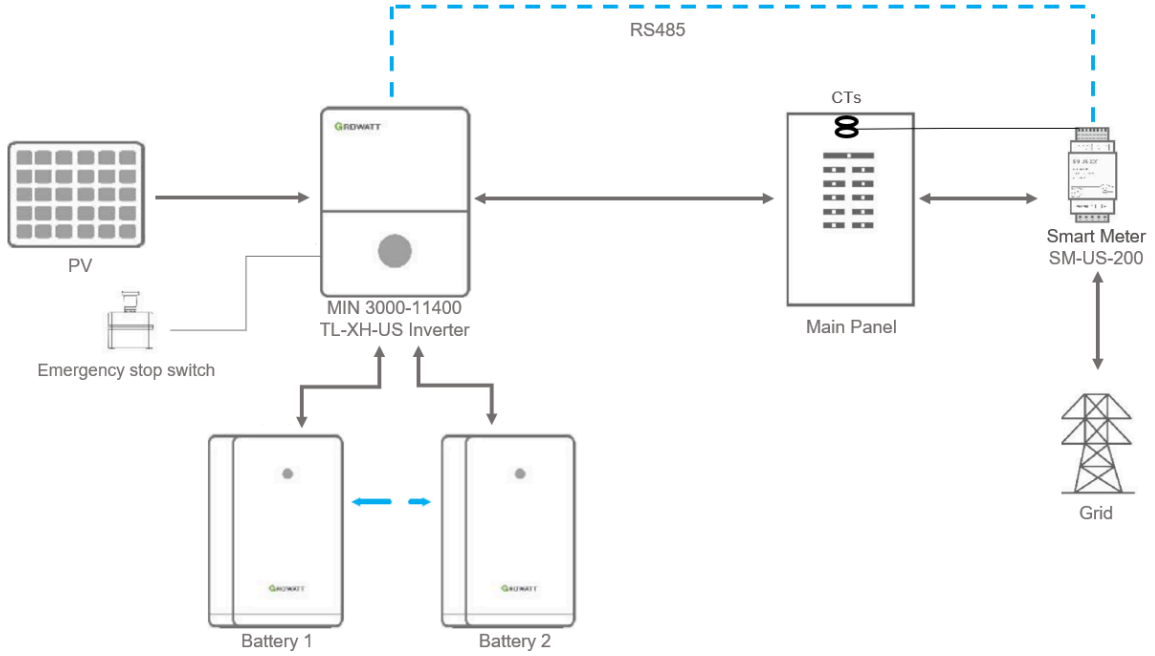
NOTE: the SYN 200XH-US+MIN-XH-US is designed for a whole-home backup application only. Meaning the line side of the SYN must connect to the service conductors

NOTE: the MIN TL-XH-US inverter has a built-in Tigo/APS rapid shutdown (RSD) Transmitter. Make sure to use compatible equipment for module-level rapid shutdown compliance.

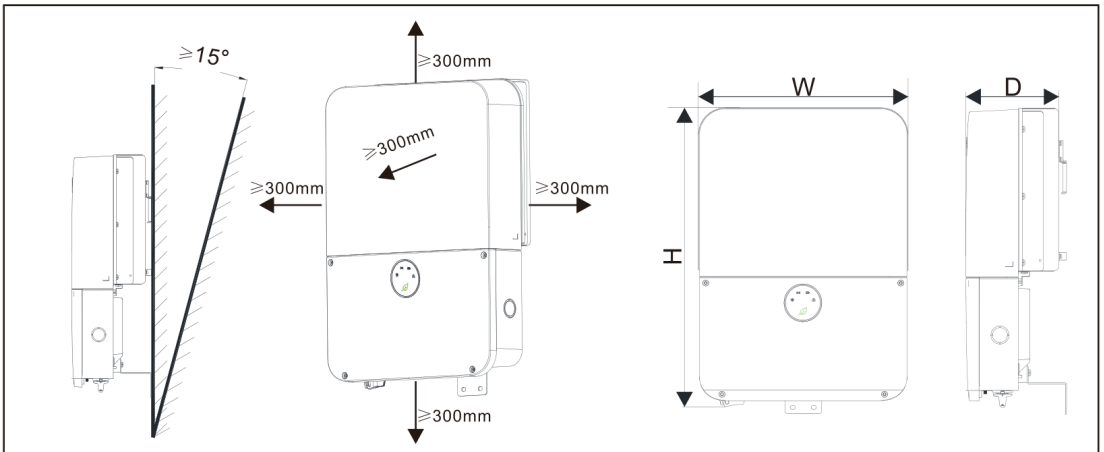
Compatible equipment:

- Tigo TS4-A-F / TS4-A-2F
- APS RSD-S-PCL / RSD-D-PLC

TOU rate arbitrage

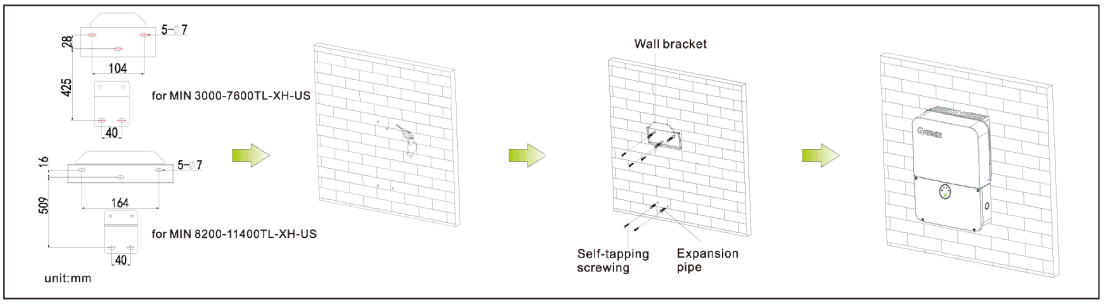


3.2 Installation requirements



Dimsesion	W (mm/inch)	H (mm/inch)	D (mm/inch)
MIN 3000~7600TL-XH-US	400/15. 75"	569/22.41"	177.5/6.98"
MIN 8200~11400TL-XH-US	400/15. 75"	649/25.55"	187/7.36"

3.3 Wall mounting

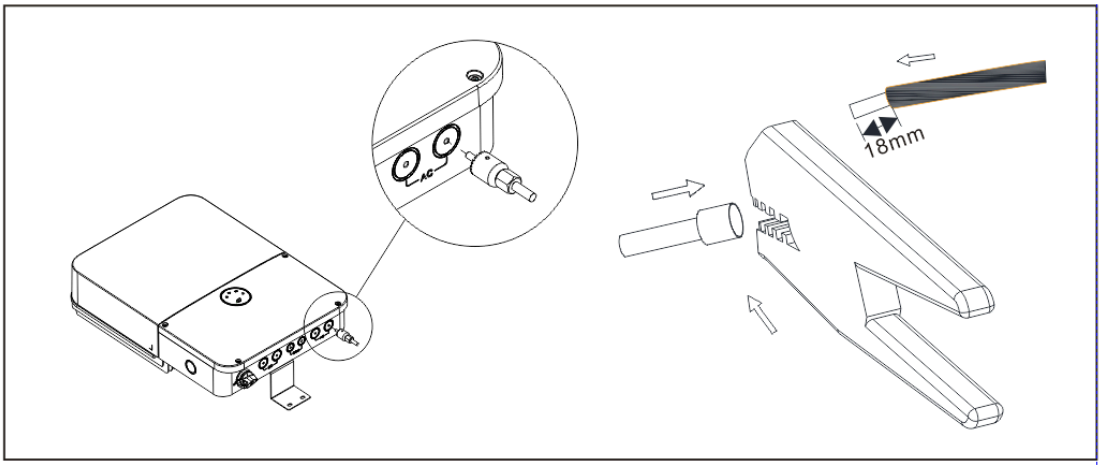


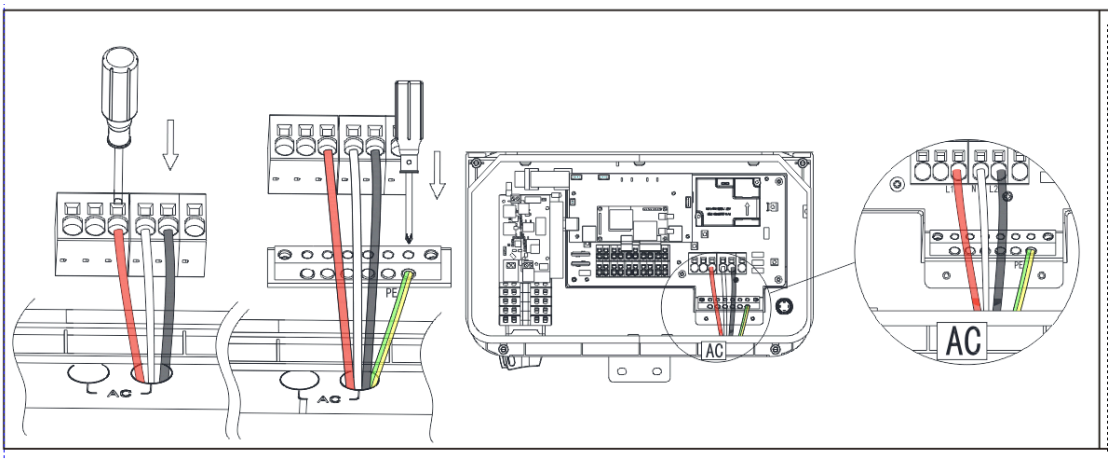
4. Electrical connections

No.	Cable name	Type	Recommend model
1	Grounding wire	Single multi-core yellow-green copper wire	AWG10≤Wire diameter≤AWG8
2	AC output wire	Two or three different color multi-core copper wires	AWG8≤Wire diameter≤AWG6
3	PV input wire	Photovoltaic dedicated cable(such as PV1-F)	AWG10≤Wire diameter≤AWG8
4	Battery input wire	Red and black multi-core copper	AWG10≤Wire diameter≤AWG8
5	Other communication	CAT5E suggested	/

NOTE: please make sure all switches are OFF before wiring

4.1 Grounding and AC connections



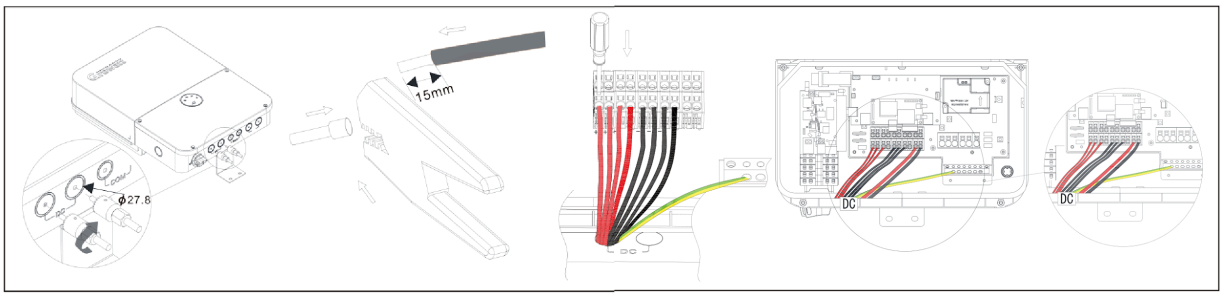


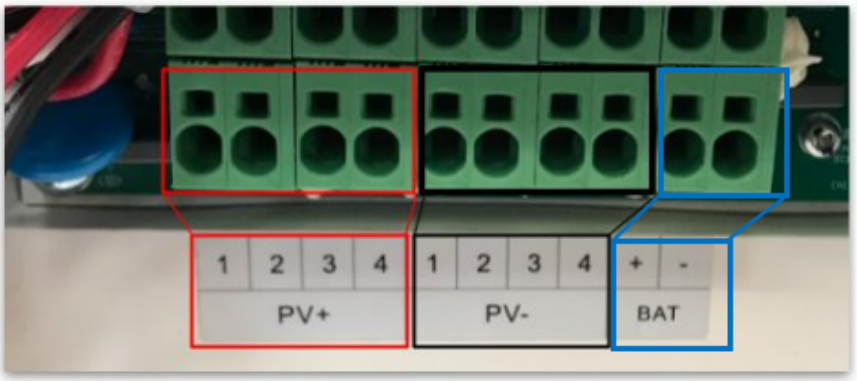
1. Strip 0.7 inches (18mm) of the AC cable insulation.
2. Complete conduit runs.
    - K/Os are 3/4”, Comms are 1/2”
    - AC + DC K/Os can be enlarged up to 1”
3. Insert a small screwdriver and press the release mechanism to open the clamp.
4. Connect the cable to the appropriate terminal blocks according to the labels on the terminal blocks (L1, N, L2, of AC Grid).
5. Insert the cable into the round opening and remove the screwdriver, then the cable is automatically clamped.
6. Connect the ground wire to the ground bar

4.2 DC connections

4.2.1 PV and Battery input terminal installation

1. Strip 0.59 inches (15mm) of the PV and Battery power cable insulation.
2. Complete conduit runs.
3. Insert a small screwdriver and press the release mechanism to open the clamp.
4. Connect the cable to the appropriate terminal blocks according to the labels (PV+1/2/3/4, PV-1/2/3/4, BAT+, BAT-).
5. Insert the cable into the round opening and remove the screwdriver, then the cable is automatically secured.
6. Connect the ground wire to the ground bar.

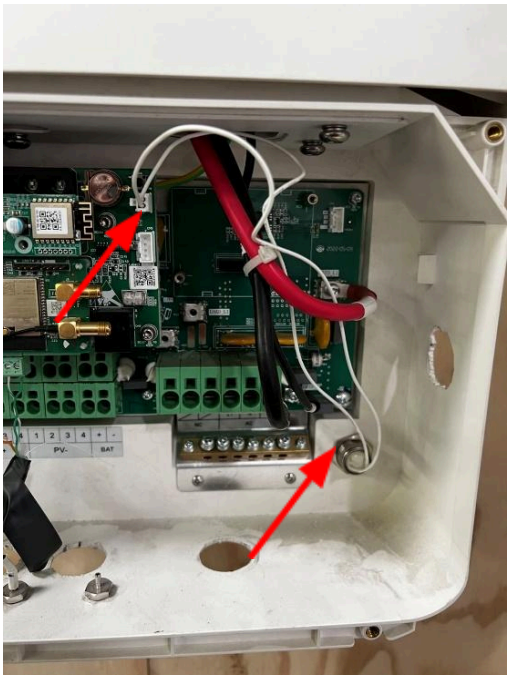




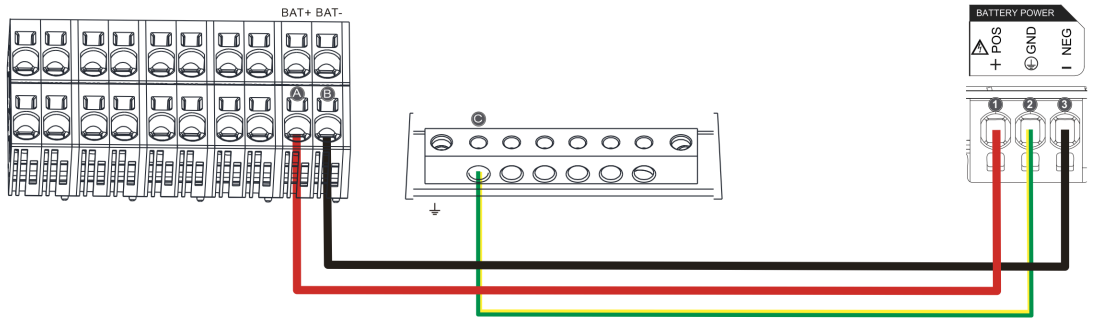
Inverter PV DC terminal blocks

4.2.2 Battery electrical wiring connection

4.2.2.1 Installing the External Dark Start Button: make sure the MIN-XH-US inverter includes the dark start button, as shown in the picture below. If not, check in the package contents or request the installation kit from Signature Solar. Proceed to install as shown in the picture below: drill or remove plastic knockout in the rear of the inverter, insert dark start button with the provided screw, and connect to the CN6 port on the inverter.



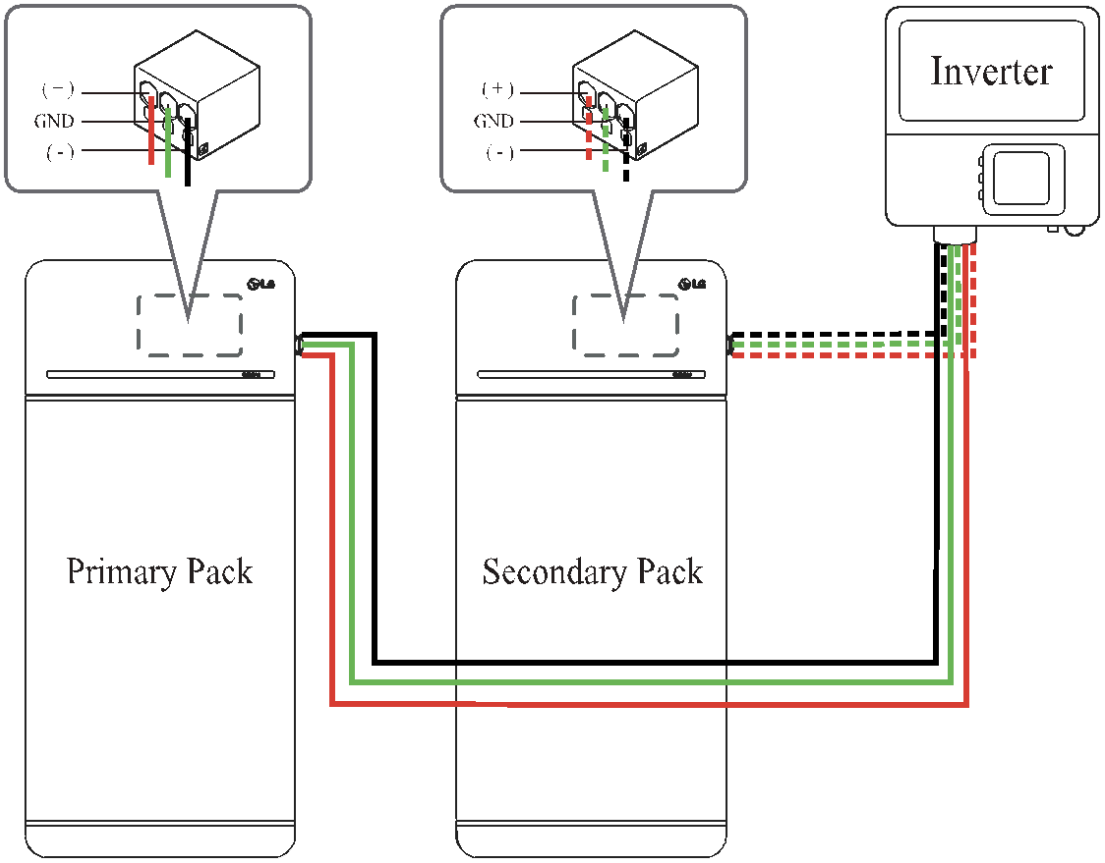
4.2.2.2 Single Battery Electrical wiring connections:

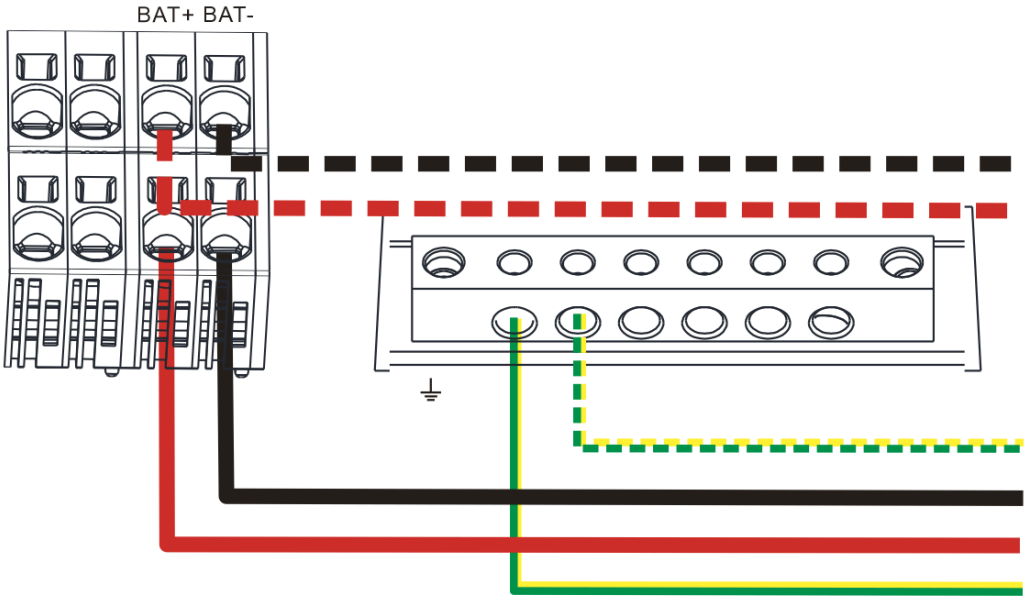


Clamping position	Assignment	Clamping position
A	BAT+	1
B	BAT-	3
GND	GND	2

Please refer to the following for the electrical connection of the parallel system.

The inverter includes 2 sets of terminals to connect parallel batteries as indicated in the image below.





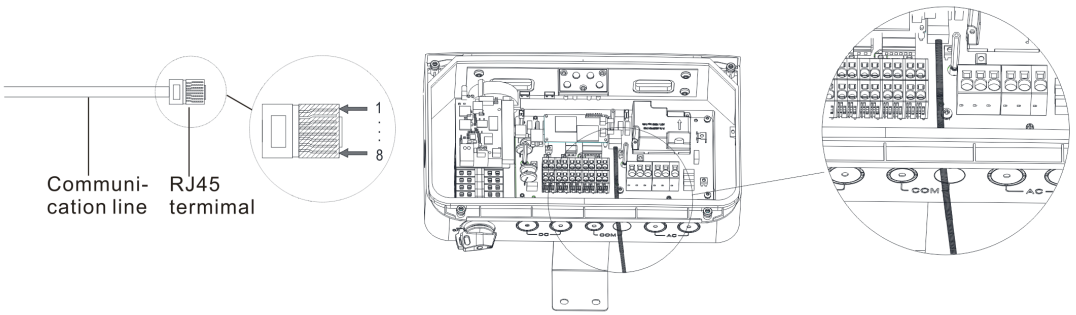
Battery 1 DC wires

Battery 2 DC wires

NOTE: If convenient, installers may also use a combiner box or polaris taps to parallel the output of both batteries to the bottom set of battery terminals in the inverter

4.3 Battery communication cables installation

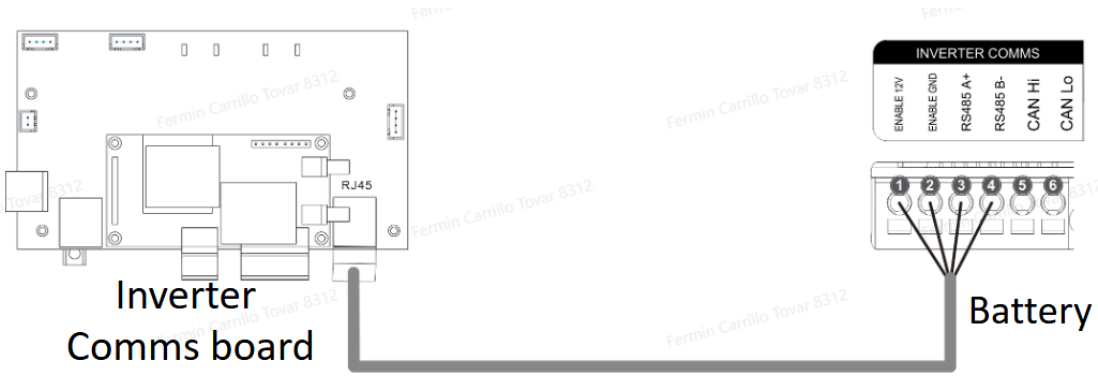
4.3.1 Battery-inverter communication cable connection



1. Insert the CAT 5/6 cable through the conduit to the inverter wiring box.
2. Remove the cable's external insulation using a crimping tool or cable cutter and expose eight wires.
3. Insert the eight wires into an RJ45 connector.
4. Use a crimping tool to crimp the connector.
5. Connect the signal cable from the battery to the RJ45 port on the communication board.

RJ45 Pin #	Wire Color		Signal definition	Fuction	RJ45 Pin #	Wire Color		Signal definition	Fuction
	T568B	T568A				T568B	T568A		
1	White/Orange	White/Green	Enable-	Battery wake-up signal	5	White/Blue	White/Blue	GND	GND
2	Orange	Green	Enable+		6	Green	Orange	Received-	NC
3	White/Green	White/Orange	CANL	Battery CAN communication	7	White/Brown	White/Brown	RS485B	Battery RS485 communication
4	Blue	Blue	CANH		8	Brown	Brown	RS485A	

4.3.2 Single battery communication cable connection

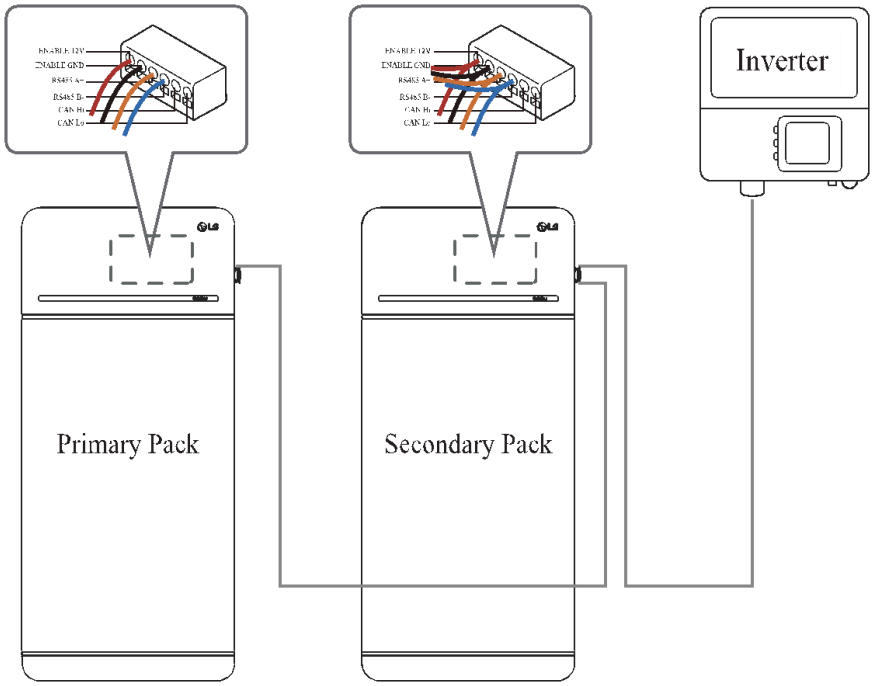


Clamping position		Assignment	Clamping position
RJ45 Pin#	2	Enable +	1
	1	Enable GND	2
	8	RS485 A+	3
	7	RS485 B-	4

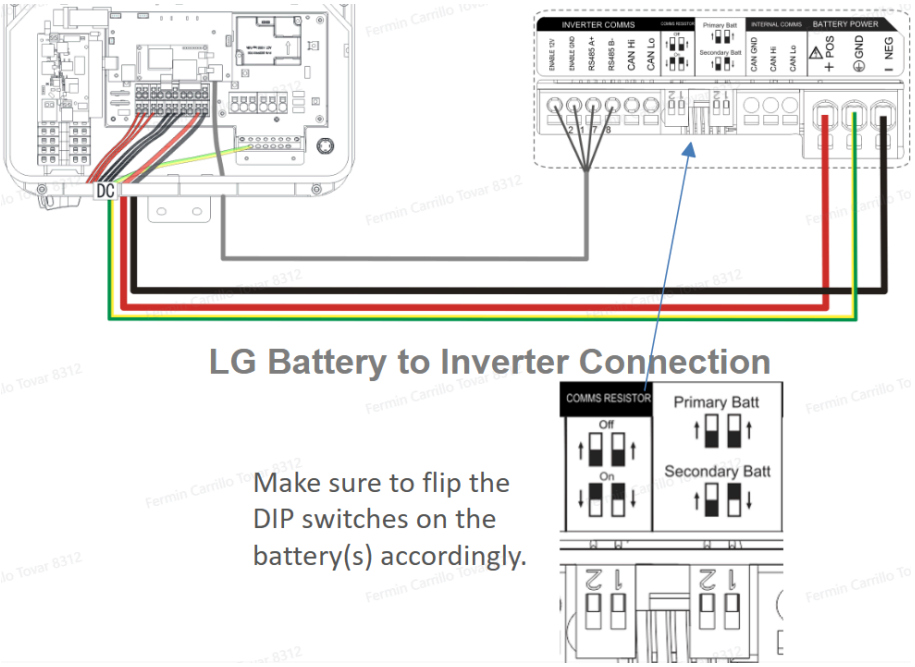
NOTE: RJ45 port on the communication board.

Refer to the following for the connection of the communication cable of a secondary battery pack

4.3.3 Parallel battery communication cable connection



When connecting a second RESU Prime battery, set the DIP switches accordingly.



NOTE: when installing two battery packs in parallel, the communication wiring must be configured as follows:

1. The communication cable from the Primary Pack must be connected to the designated port on the Secondary Pack's "Inverter Communications" Board.

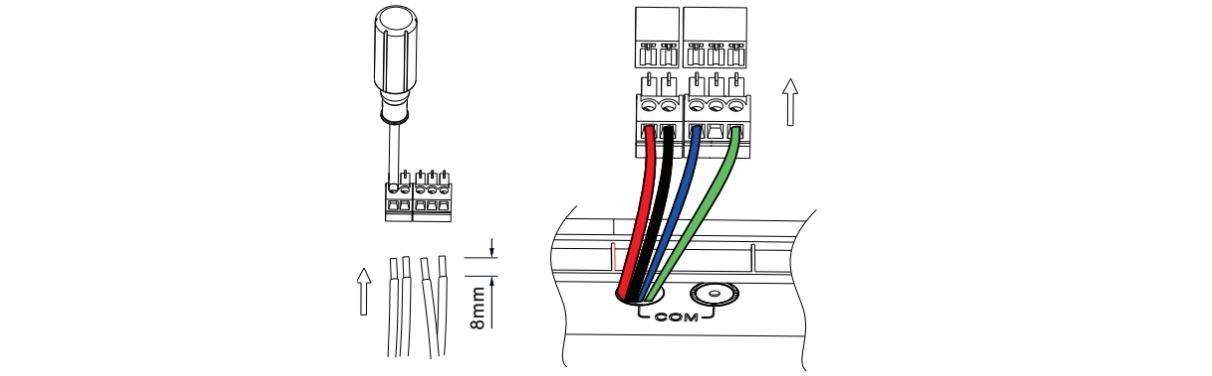
2. The communication cable that connects to the inverter must also be connected to this same communication port on the Secondary Pack.

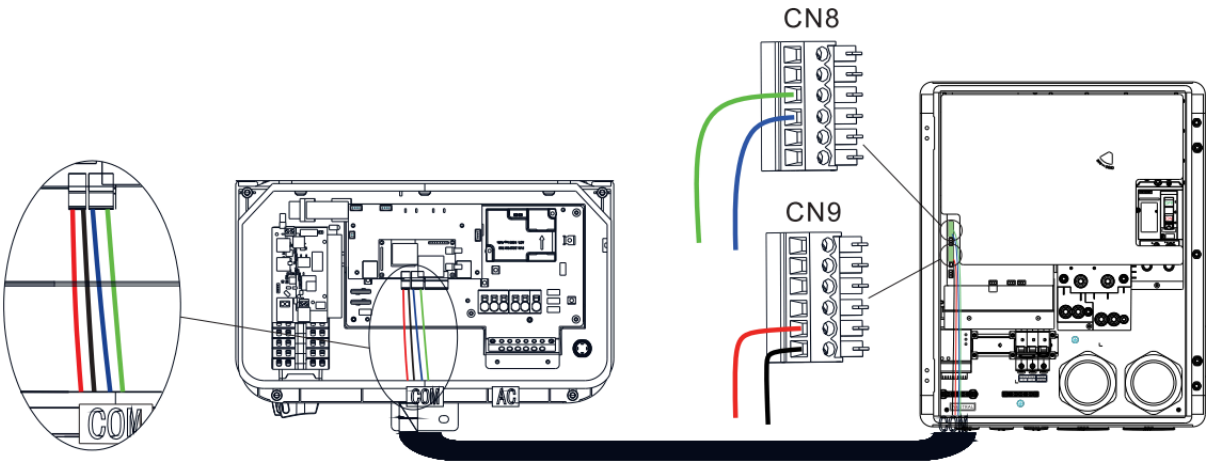
This means both the incoming communication cable from the Primary Pack and the outgoing cable to the inverter share the same port on the Secondary Pack's communication terminal, as shown in the diagram above.

This configuration ensures proper communication flow from the Primary Pack through the Secondary Pack to the inverter, maintaining system stability and functionality.

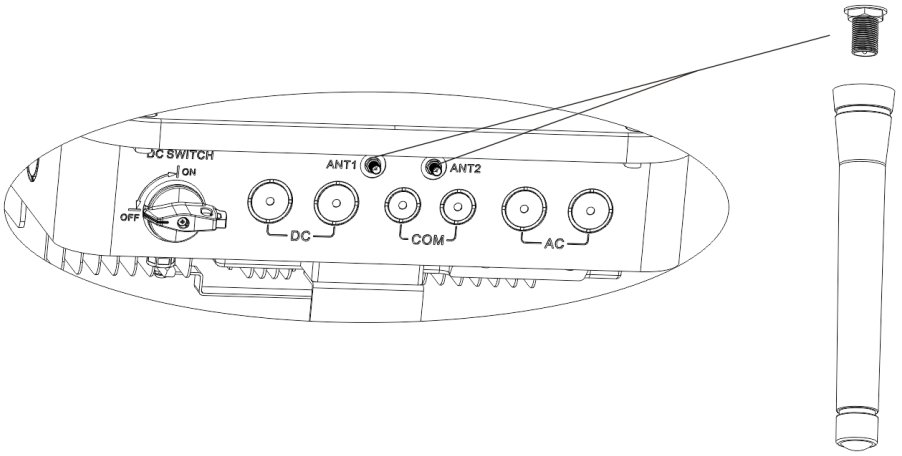
4.4 Communication cables installation between MIN inverter to SYN-200-XH-US

1. Insert the conduit into the left side COM drill guide that was opened.
2. Insert the cable through the conduit to the inverter wiring box.
3. Remove the cable's external insulation using a crimping tool or cable cutter.
4. Insert the cable into MIN TL-XH-US inverter RS485 connector (3 pin) and power connector (2 pin), as described in the following figure.
5. Insert the cable into SYN 200-XH-US RS485 connector (CN8) and power connector (CN9), as described in the following figure.





4.5 Installing the Antenna



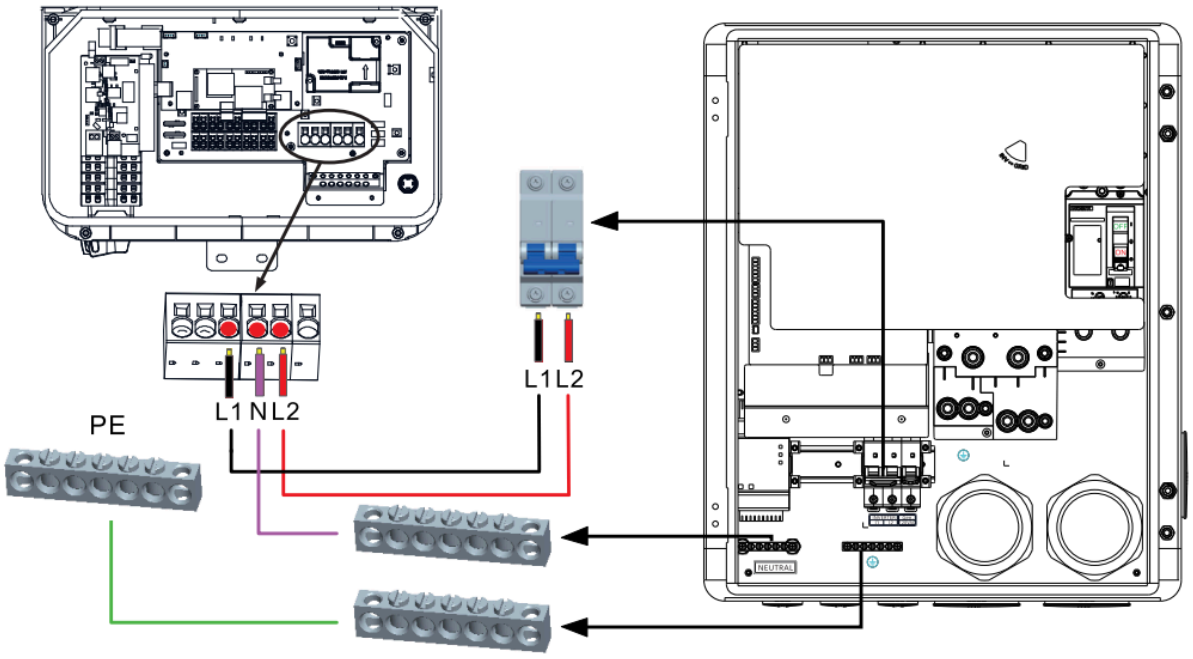
Install Wi-Fi and 4G antenna included in the accessory bag.

4.6 Installing SYN-200-XH-US

	Use	Type	Size
1	Grounding Conductors (Load/Generator/Inverters)	Yellow-green jacketed or solid bare copper	6~1/0 AWG(Load/Generator) 10~8 AWG(Inverters)
2	AC output conductors (Load/Grid)	Multi-color jacket, copper	0-4/0 AWG
3	Generator Input conductors		4~0 AWG
4	Inverter Input conductors		10~6 AWG
5	12V power output conductors	Red and black multi-color copper	16~14 AWG
6	Communication cable	CAT5E suggested	/

4.6.1 Connecting MIN-XH-US inverter to SYN

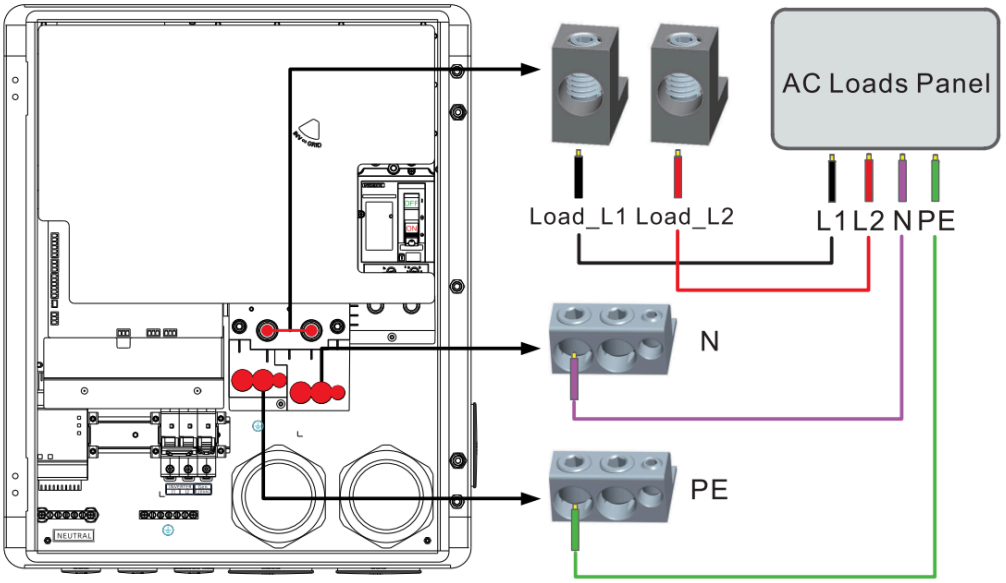
1. Connect the neutral and grounding wires to the corresponding terminals. Tighten with a torque of 2N.m/18 in.lbs.
2. Connect the GRID L1 and GRID L2 terminal of the MIN-TL-XH-US inverter to the INV breaker terminal of SYN-200-XH-US. Tighten with a torque of 2N.m/18 in.lbs.



Power cable connection between SYN 200-XH-US and Inverter

4.6.2 Connecting SYN to service conductors and load panel

1. Release the allen screws of the upper cover and open the cover.
2. Install a conduit of the required diameter into the grid conduit entry. Use the conduit holder to support the conduit.
3. Switch the breaker until to the OFF position.
4. Pass the grid cables/service conductors through the grid conduit to the terminals of the 200A breaker. Tighten the terminal screws with a torque of 35N·m/310in·lbs, as shown in the figure.
5. Connect the neutral and grounding wires to the neutral and grounding terminals. Tighten the terminal screws with a torque of 2N·m/18in·lbs.
6. The temperature resistance requirement for wires is higher than 105°C (221°F).
7. Install a conduit of the required diameter into the loads conduit entry. Use the conduit holder to support the conduit.
8. Pass the loads cables through the conduit to the Load_L1 and Load_L2 terminals of the SYN 200-XH-US. Tighten the terminal screws with a torque of 35N·m/310in·lbs.
9. Connect the neutral and grounding wires to the neutral and grounding terminals. Tighten the terminal screws with a torque of 35N·m/310in·lbs, as shown on the right.



4.7 Installing SM-200-US

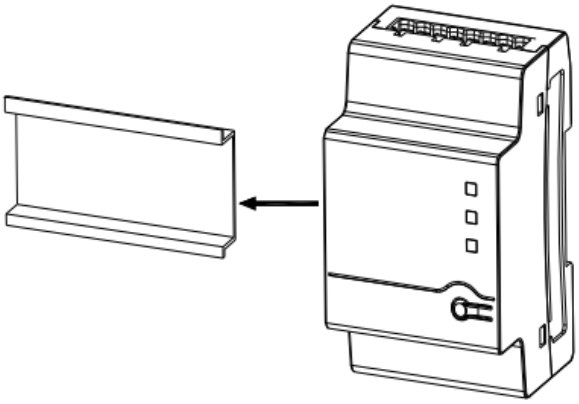
The SM-200-US measures the power running at the location of the CTs. It provides real-time information to the inverter to manage instantaneous power flow from the system to the local loads or grid. Therefore, correct location of the CTs is important.

Know before installing:

1. The meter is connected to the inverter using RS485
2. AC wire specifications: 1.3 to 2.0 mm diameter / 22-18 AWG stranded wire, 600 V, type THHN, MTW, or THWN. RS485 wiring specifications: Cable type: Min. 3-wire shielded twisted pair (a 4-wire cable may be used) Wire cross-section area: 0.32- 0.81 mm²/ 24-18 AWG (a CAT5 cable may be used)
3. The meter is considered “permanently connected equipment” and requires a disconnect means (circuit breaker, switch, or disconnect) and overcurrent protection (fuse or circuit breaker). The meter draws 10-30mA, therefore the rating of any switches, disconnects, fuses, and/ or circuit breakers is determined by the wire gauge, the mains voltage, and the current interrupting rating required.
4. The switch, disconnect, or circuit breaker must be located near the meter and be easily operated. Use circuit breakers or fuses rated for 20A or less. The circuit breakers or fuses must protect the mains terminals labeled L1 and L2. In cases where neutral has overcurrent protection, the overcurrent protection device must interrupt both neutral and the ungrounded conductors simultaneously. The circuit protection / disconnect system must meet all national and local electrical codes.

Installation:

1. The meter should be mounted in a Power Distribution Box 2.Mount the meter on a 35mm DIN rail.

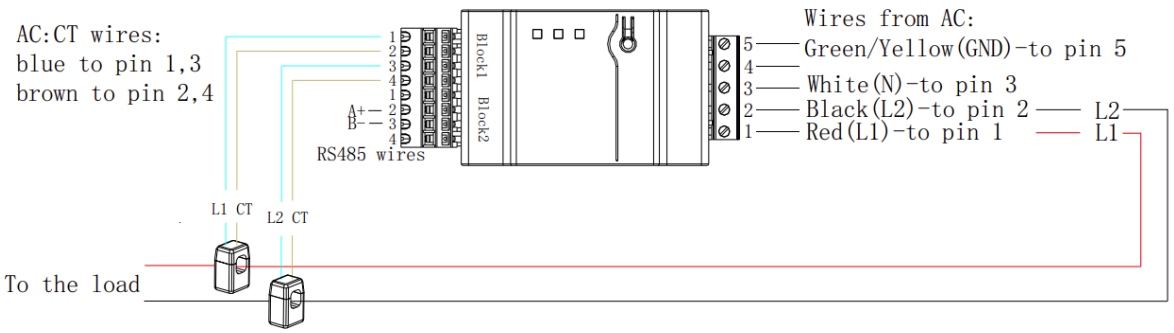


2. Install CTs:

    a. Turn off AC power before clamping on current transformers.
    b. Install the CTs around the conductor to be measured. Split-core CTs can be opened for installation around a conductor. A nylon cable tie may be secured around the CT to prevent accidental opening.
    c. Install the CT with the arrow pointing to the load for consumption. The current transformers are packed together with the meter.

3. Wire the meter:

    a. If you are connecting the meter to the inverter, Refer to the connection diagram below



    b. Verify that power is OFF before making connections.
    c. Connect a grounding wire from Pin 5 of the 5-pin terminal block to the grounding terminal.
    d. Connect the AC side wires (meter input) using the 5-pin terminal block:
        i. Loosen the appropriate screws on the 5-pin terminal block.
        ii. Connect each AC wire to the appropriate screw terminal (pins 1, 2). Verify that the lines match the symbols printed on the meter front label.
        iii. Connect ground to pin 5 and neutral to pin 3.
        iv. Tighten the screws making sure the wires are fully inserted and cannot be pulled out easily.
        v. Insert the 5-pin terminal block into the socket on the meter making sure it is fully seated in the meter.

4. Connect the CT wires to the 4-pin terminal block(block1):

    a. Connect the blue and brown wires according to the dots printed on the label: blue to pins 1/3, brown to pins 2/4.

b. Insert the 4-pin terminal block into the socket on the meter, making sure it is fully seated in the meter.

5. Connect the RS485 twisted pair cable to the 4-pin terminal block (block2):

   a. Insert the wires through the appropriate conduit and the knockout that was opened.
   b. Connect the wires to the A+ and B- terminals, and connect the shield to the G terminal. c. Insert the 4-pin terminal block into the socket on the meter making sure it is fully seated in the meter

6. Return the terminal block end-stops to the sides of the meter.

5. Check before powering

No.	Check Item	Acceptance Criteria	No.	Check Item	Acceptance Criteria
1	Inverter installation	The inverter is installed correctly, securely, and reliably.	6	Cable connections	The AC output power cable, DC input power cable, battery cable, and signal cable are connected correctly, securely, and reliably.
2	Cable layout	Cables are routed properly as required by the customer.	7	Unused terminals and ports	Unused terminals and ports are fitted with waterproofing bolts or watertight caps or drill guide unopended.
3	Cable tie	Cable ties are secured evenly,with no sharp protrusions.	8	Cable routing pipe sealing	All cable routing pipes at the bottom of the enclosure are sealed.
4	Grounding	The ground cable is connected correctly, securely, and reliably.	9	Cleanliness in the maintenance compartment	The maintenance compartment interior is clean and tidy.
5	Switches	The DC switch and all the switches connecting to the MIN TL-XH US are in the OFF position.	10	Installation environment	An appropriate installation space has been chosen, and the installation environment is clean and tidy.

6. Commissioning

Before powering on, ensure all voltages and currents are within the inverter specifications. Otherwise, it may cause damage to the inverter.

6.1 System Startup

1. Turn on the switch between the battery and the inverter.
2. Turn on the PV switch.
3. Turn on the Battery breaker.
4. Turn on the inverter’s AC breaker.

6.2 Download the commissioning app

If the inverter’s box contains the following sticker, follow the Shiner App commissioning process. Follow the Shinetools commissioning process shown below otherwise. To continue with the Shiner application commissioning process, skip to: **6.2.2 Shiner App Introduction and Commissioning Guide.**

If this sticker goes unnoticed, when connecting using the Shinetools app, you'll receive a notification to do the commissioning process using the Shiner App.

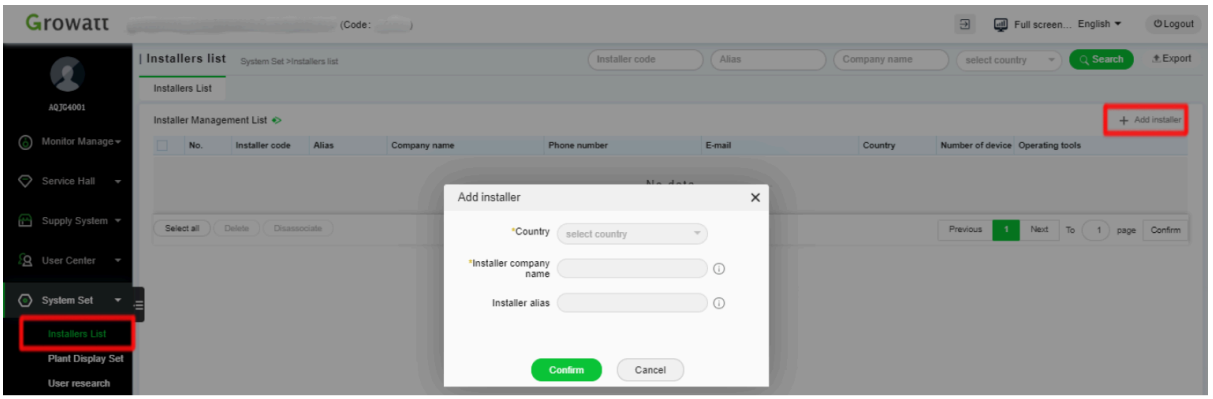
6.2.1 Using the Shinetools App:

1. Download Shinetools from the App Store or Google Play store

2. If logging into Shinetools for the first time, create an "Installer" user account at https://oss-us.growatt.com/login?lang=en , click on "Register" and follow the steps

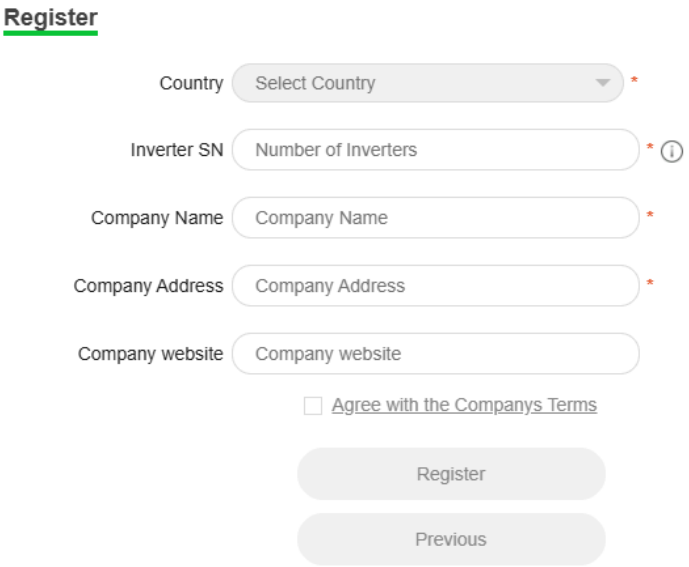
3. Growatt OSS Installer Account Creation:

   Installer Account
   There are two ways of creating an account in oss.growatt.com
   1. The distributor has the option to create installer OSS accounts for their clients following the next steps: Login► System Set►+Add installer► fill in the necessary info

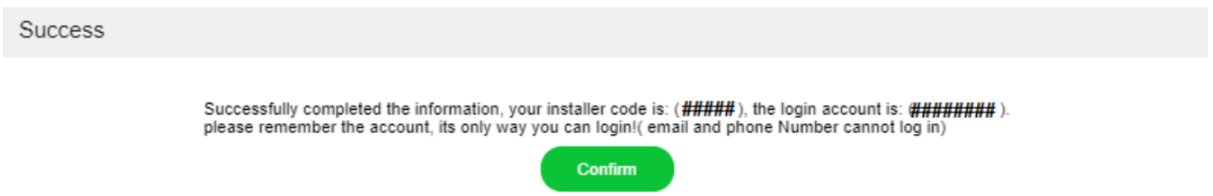


2. The installer can create an account for itself, following the next:

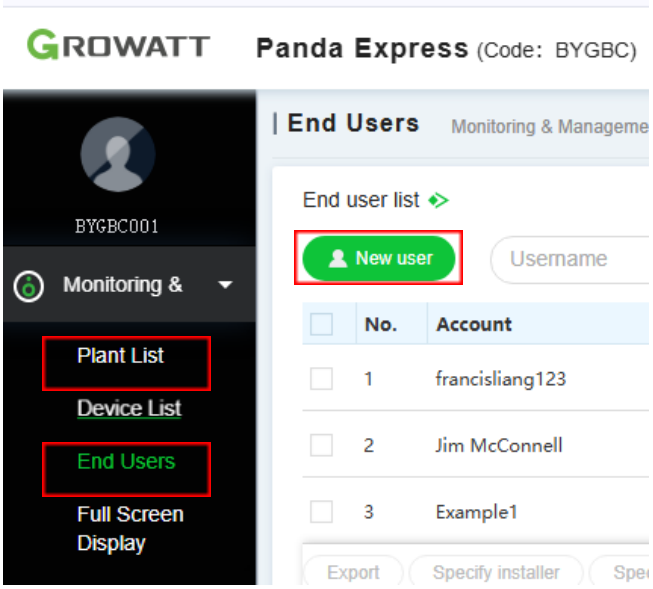
Go to oss.growatt.com ► Register ►Installer► Agree the terms ► Confirm► fill in the necessary information► record username and password



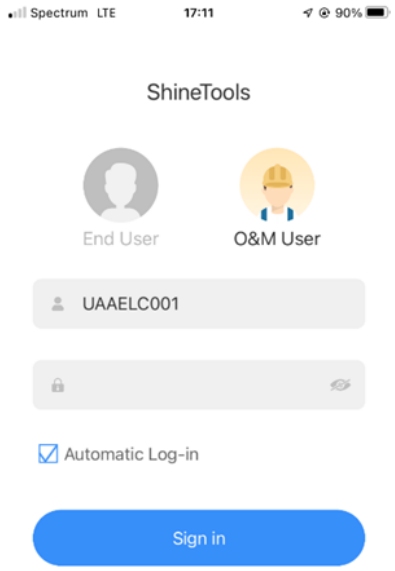
In both ways, the system will show you the installer code, and the logging account code, which then will be needed for logging.



4. Create end user account and plant



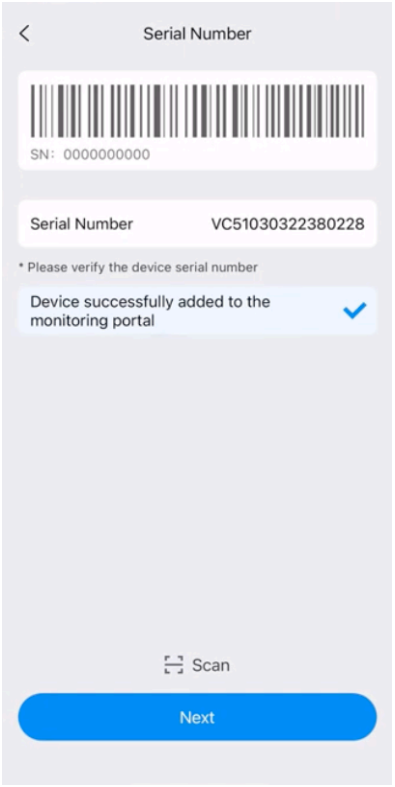
5. Return to the Shinetools app and log in using OSS credentials as an O&M user



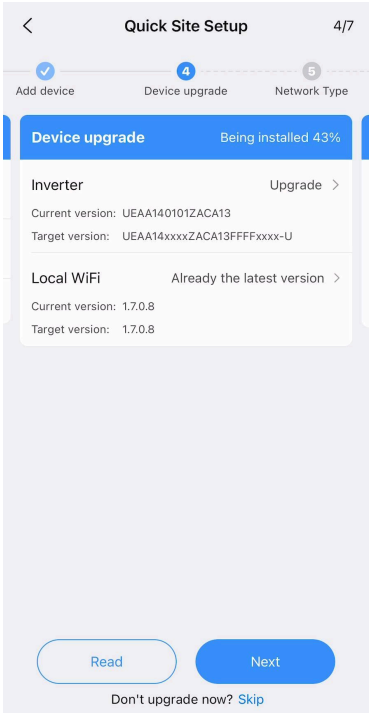
6. Once logged in, go to click the the top right icon and click “Quick Site Setup”

7. Tap “Server User” and select end user account, then hit Next
8. In step 2, select the assigned plant just created in OSS, hit next.

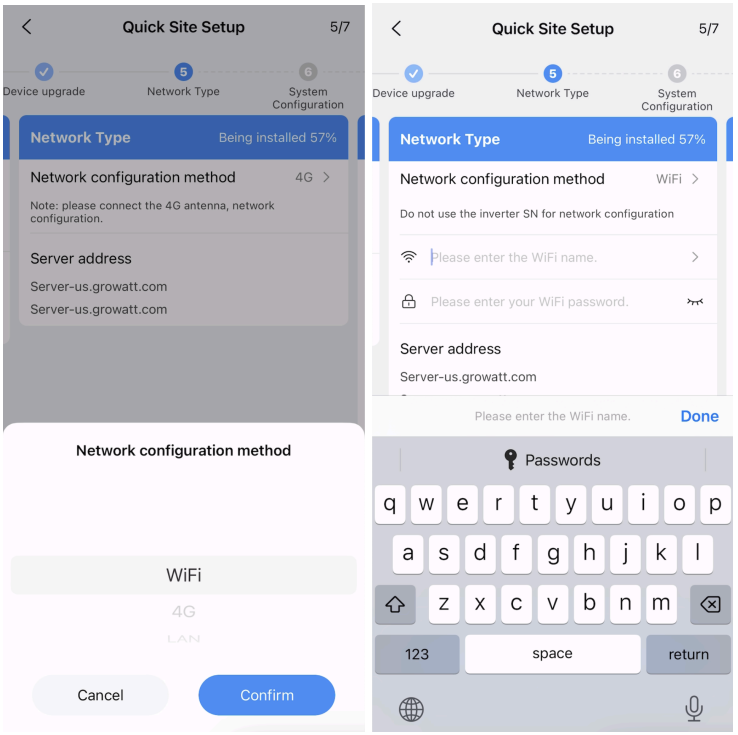
9. In step 3, scan the datalogger and device SN and wait for confirmation



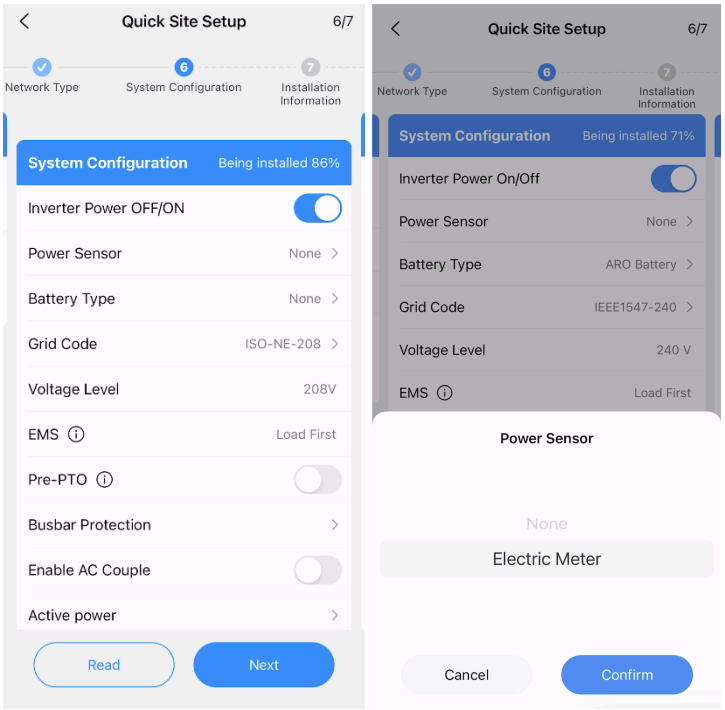
10. In step 4, upgrade FW as needed on all devices (2 FW files for inverter, 1 FW file for SYN, and 1 for battery). If you skip this step, you'll be able to upgrade later.



11. In step 5, choose network connectivity, either WiFi or 4G. Note: if the inverter is connected through LAN port the connection is done automatically. You may need to enter Wifi name manually in this step.

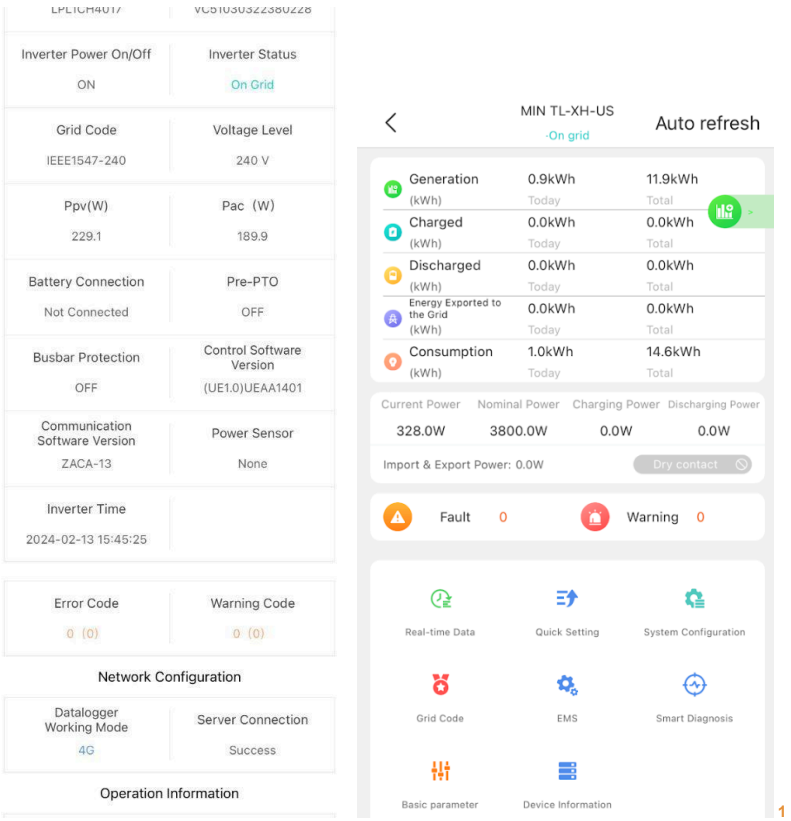


12. In step 6, system configuration, make sure to select “Electric Meter” in Power Sensor, select the LG Battery Type, EMS mode and Grid Code/Profile, then tap next.



NOTE: the grid profile is defined by the electric utility. If the utility requires a profile that’s not available in the dropdown list, please contact Growatt technical support
NOTE: some utility grid profiles may require an inverter ZACA firmware upgrade

13. In step 7, verify there are no errors or warnings, good internet connectivity, and successful server connection



14. Verify appropriate power flow in the power flow diagram according to EMS mode by tapping Real Time Data icon in the home screen

EMS modes description:

1. Self-Consumption
How it works: This mode minimizes grid power usage. During the day, solar power supplies the home, and any extra energy charges the battery. At night or when solar power isn't enough, the battery provides energy until it reaches a set minimum charge level. If both solar and battery power are unavailable, the system pulls power from the grid.
Best for: Customers who want to lower electricity bills by using battery power daily.

2. Battery First Mode
How it works: The system charges the battery as quickly as possible, prioritizing solar energy. If solar isn't enough, grid power is used to top up the battery. Once fully charged, the battery stays charged until needed (e.g., during a power outage). Any extra solar power first covers home energy use, and only the remaining energy is sent to the grid.
Best for: Preparing for possible power outages or taking advantage of low electricity rates for charging.

3. Grid First
How it works: The system delivers maximum power output by using both solar and battery energy. Solar power is used first, then the battery. If solar power isn't enough to meet demand, the battery makes up the difference until it reaches a set minimum charge level.
Best for: Maximizing energy exports when grid export rates are high or optimizing energy costs.

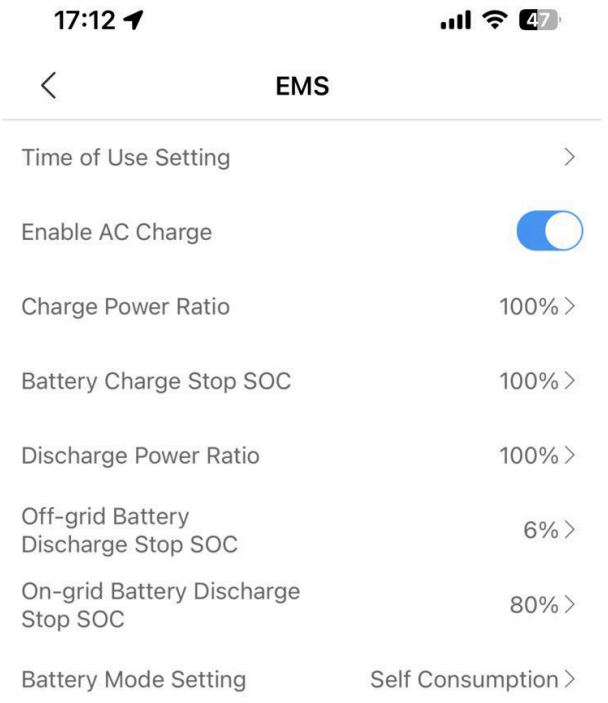
4. Solar-Only Backup

How it works: The battery charges only from solar energy and remains fully charged in case of a power outage. If solar power exceeds the battery's charging capacity, extra solar power is used to support home energy needs.
Best for: Ensuring backup power for outages while keeping electricity costs low by charging only from solar.

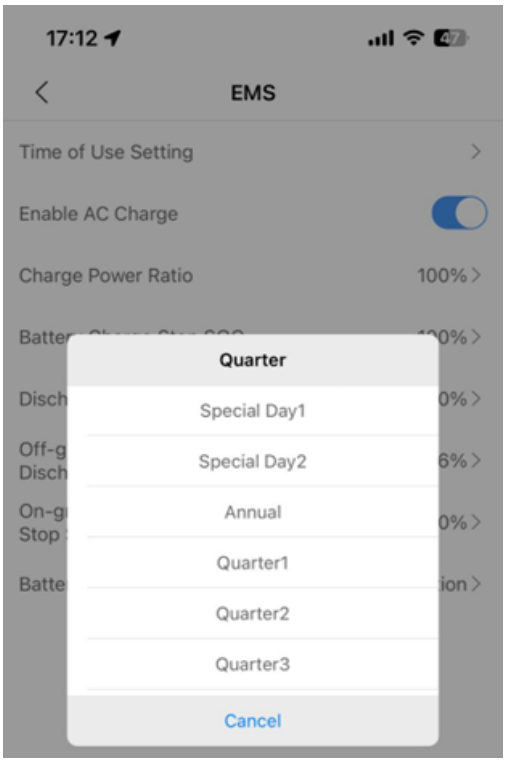
5. Idle/Charge from Clipped Solar
How it works: The system first supplies power to the home. If there's extra solar energy, it is sent to the grid. If a power outage occurs, the battery and solar power the home's backup loads. The battery only charges when solar production exceeds the inverter's capacity, helping to prevent energy losses.
Best for: Reducing energy losses by capturing excess solar power that would otherwise be wasted.

6. Disabled
How it works: This mode makes the system follow a programmed Time of Use schedule instead of other settings. If no schedule is set, the system stops converting power (no AC output). While in this mode, solar energy charges the battery until it's full.
Best for: Users who want the system to follow a Time of Use schedule for energy savings.

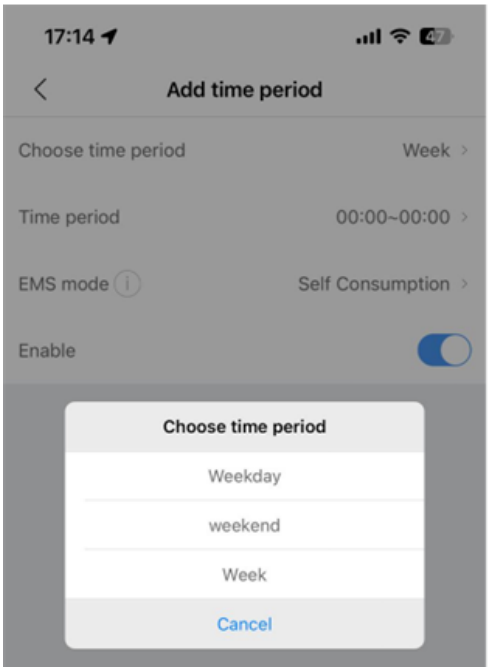
15. Setting up a TOU schedule
    a. Tap the EMS icon in the home screen. Then, tap on Battery Mode Setting and choose "Disabled"
    b. Go to "Time of Use Setting"



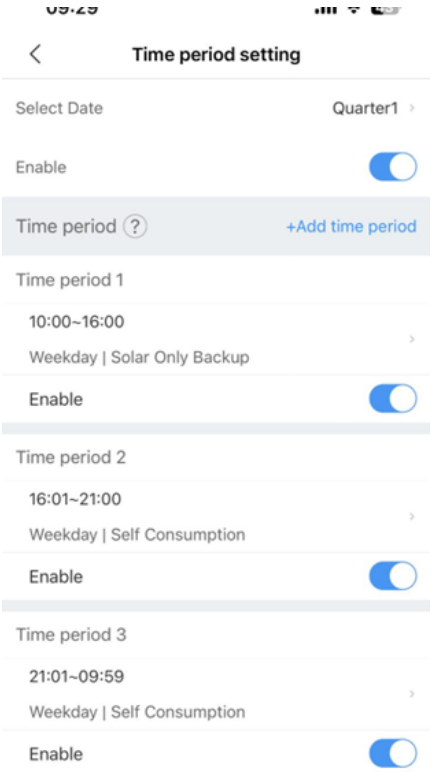
    c. There are three time levels that can be used. Special Day, Annual, and Quarters



d. Once chosen, add time periods and EMS mode. There are three options for adding time periods (weekday, weekend and week)



e. Check and confirm final schedule



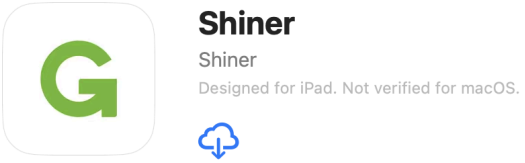
6.2.2 Shiner APP Introduction & Commissionin

Using Shiner App:

The Shiner APP, introduces a new activation & configuration method designed to help installers set up inverters quickly and easily. These steps will guide you through the process of activating, upgrading, and commissioning the inverter using the Shiner APP

To commission the system using the Shiner app, enter the same login credentials created in the OSS portal. If you are a new installer and don't have an OSS account, contact Growatt customer service at +1 866-686-0298 or email usaservice@ginverter.com, to create an account.

1.Download Shinetools from the App Store or Google Play store

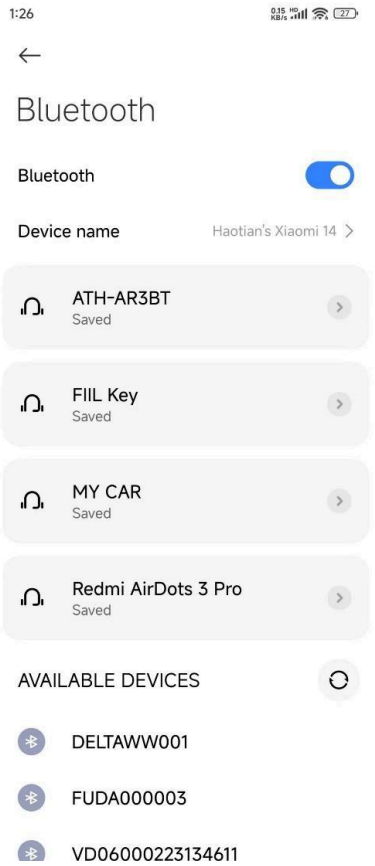


2. If logging into Shiner for the first time, you will need to contact Growatt customer support (+1-866-686-0298) in order to create an "Installer" account. Only taking a few minutes, once you have your account credentials, you may continue.

Connect to Your Device

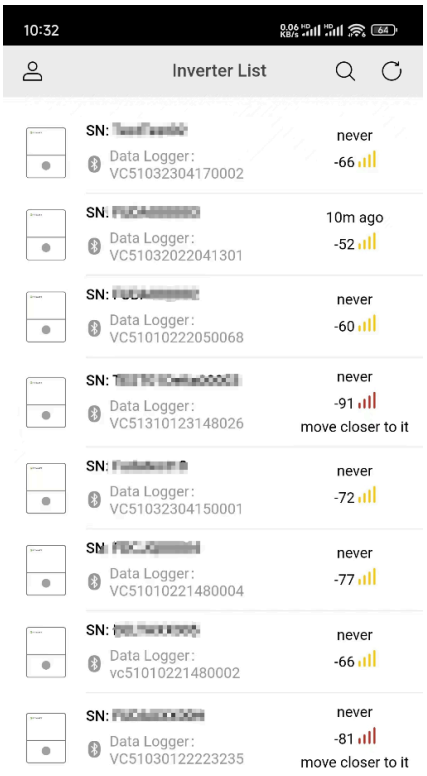
6.2.3 Turn on Bluetooth

Please make sure that your phone's Bluetooth is turned on.



6.2.4 Connect to the Inverter

1) Once signed in, select the inverter you want to configure from the list of devices connected to the Shiner.

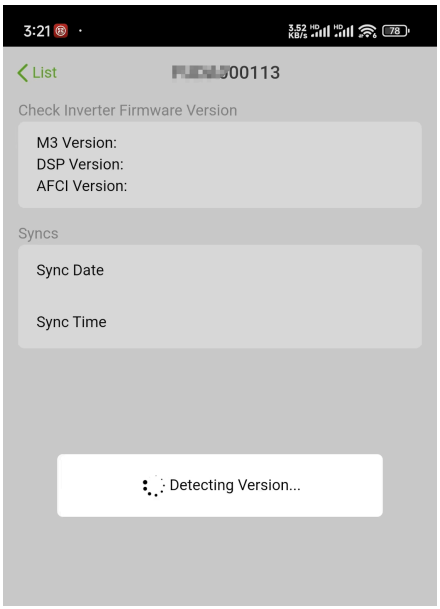


#	Function	Description
1	Search	If you have multiple devices, you can enter the device's serial number (SN) to search for the device.
2	Refresh	Click to obtain real-time device information and signal strength.

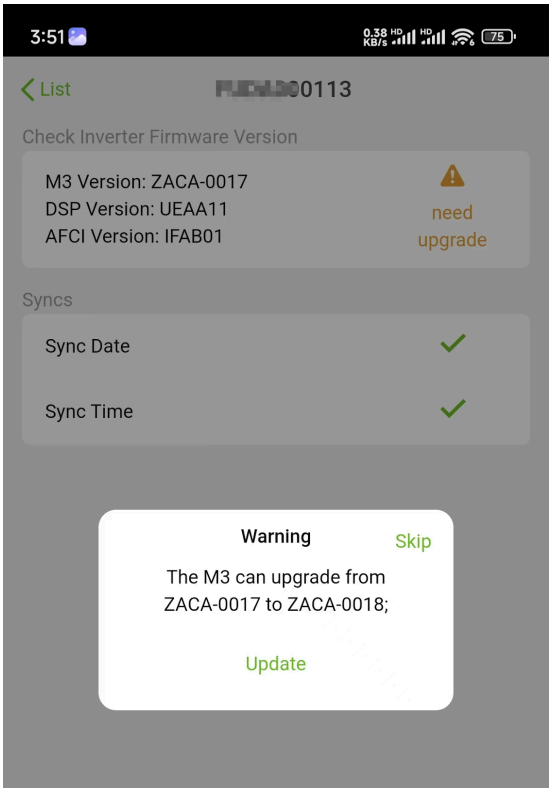
2）Enter the pin/CC code for this device. The pin code of each device is affixed to the side of the inverter, as shown below:

6.2.5 Check and Upgrade the Firmware

If you can successfully access the device, the Shiner will detect the current inverter version information automatically. If the detected version is lower than the version in use, it will prompt the user to upgrade the firmware.

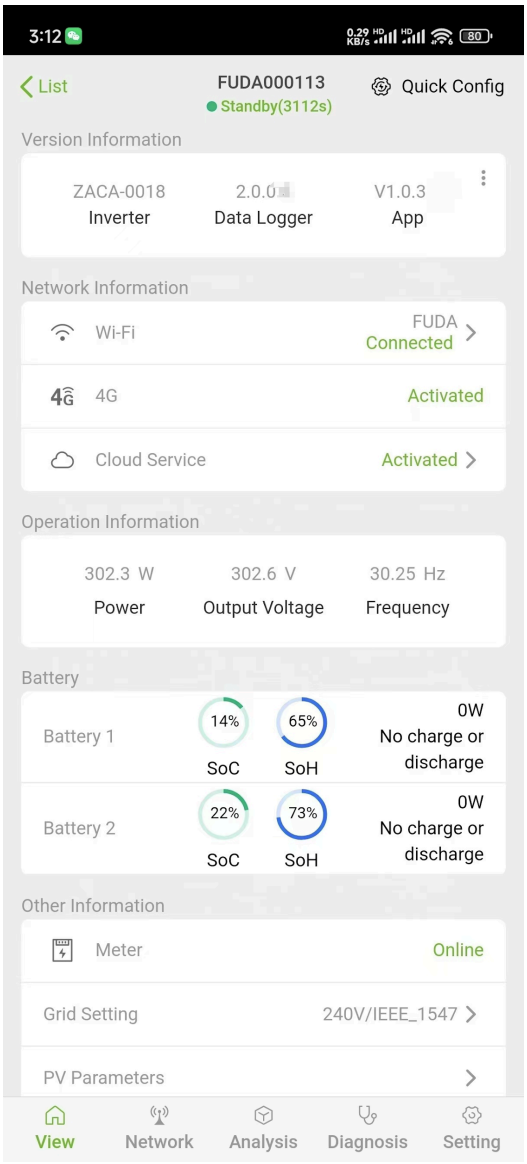


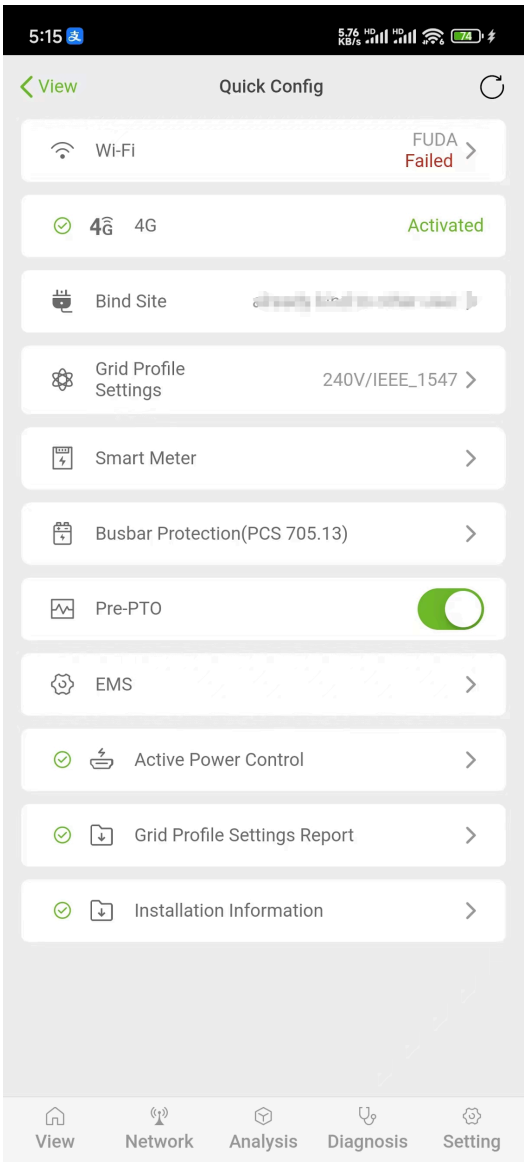
To ensure the consistency and advancement of functions, **we recommend that you choose to upgrade the firmware immediately**. All devices upgrade process takes approximately 30 minutes. However, it takes less than 5 minutes for the APP to transfer the new firmware to the inverter. You just need to ensure that the new firmware has been successfully transferred from the APP to the device, and then you can leave the site. If you prefer not to upgrade at this time, you can skip this step.



6.2.6 Quick Config

After the firmware upgrade process is completed, you'll be directed to the Home Page.You can use the Quick Config function to quickly set up the inverter. At the same time, the Shiner will provide prompts indicating the status of each setup step.





6.2.7 Inverter Wi-Fi Configuration

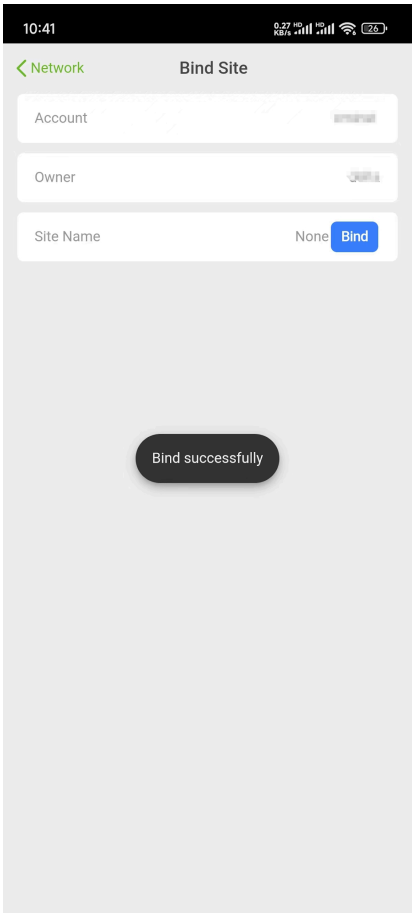
Select the Wi-Fi you want to connect to and enter the password to complete the connection.

6.2.8 4G cellular (optional)

If your inverter has the 4G cellular function, you need to activate it before it can function properly.

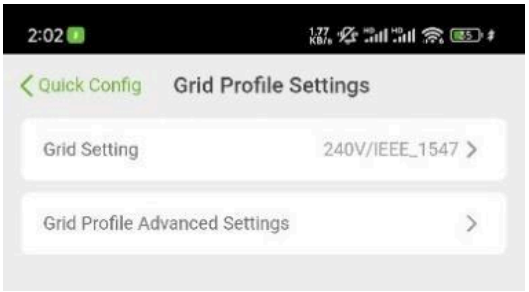
6.2.9 Bind Site

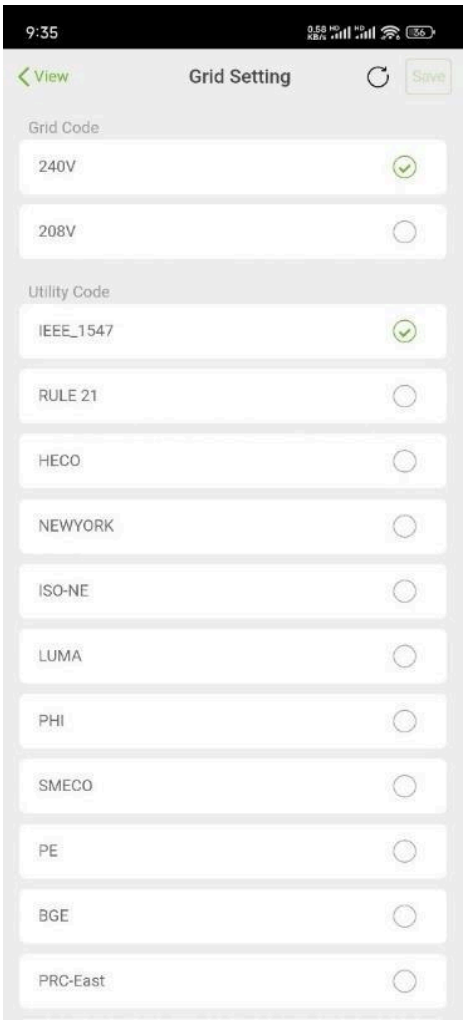
On this page, you can bind this device to your installer account and select a site. End users can create a site too when they log in to the Shiner App (end user interface)



6.2.10 Grid Profile Settings

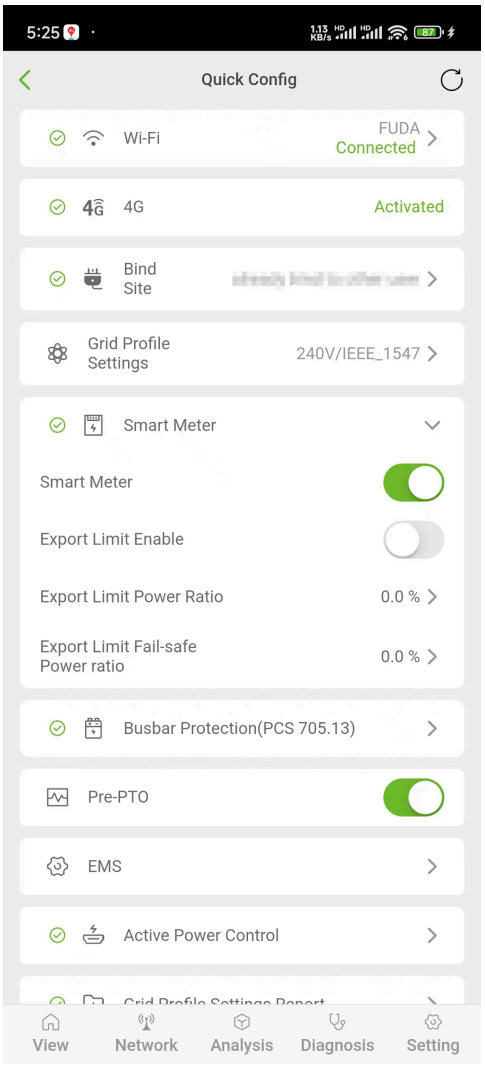
Set your grid connection information.





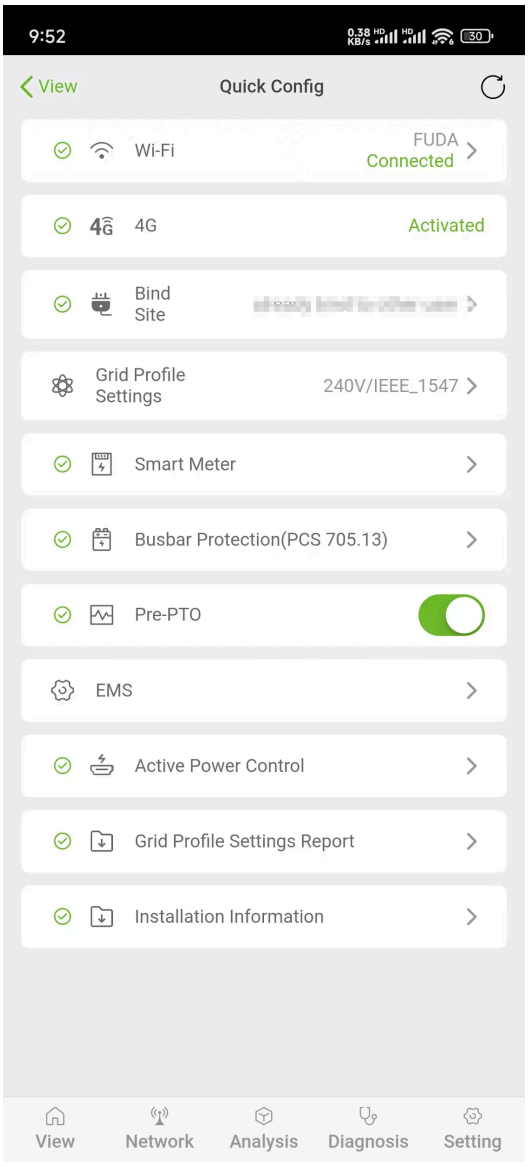
6.2.11 Smart Meter

Enable the Smart Meter and set export limit configuration (if required by utility).



6.2.12 Pre-PTO

You can choose to enable or disable the Pre-PTO mode. In Pre-PTO mode, the system will disable all active power output and will only charge the batteries from available PV



6.2.13 Set EMS settings

With these settings, you can configure settings such as battery type, operating mode, and more

Battery mode setup:

1. Self-Consumption
How it works: This mode minimizes grid power usage. During the day, solar power supplies the home, and any extra energy charges the battery. At night or when solar power isn't enough, the battery provides energy until it reaches a set minimum charge level. If both solar and battery power are unavailable, the system pulls power from the grid.
Best for: Customers who want to lower electricity bills by using battery power daily.

2. Battery First Mode
How it works: The system charges the battery as quickly as possible, prioritizing solar energy. If solar isn't enough, grid power is used to top up the battery. Once fully charged, the battery stays charged until needed (e.g., during a power outage). Any extra solar power first covers home energy use, and only the remaining energy is sent to the grid.

Best for: Preparing for possible power outages or taking advantage of low electricity rates for charging.

3. Grid First
How it works: The system delivers maximum power output by using both solar and battery energy. Solar power is used first, then the battery. If solar power isn't enough to meet demand, the battery makes up the difference until it reaches a set minimum charge level.
Best for: Maximizing energy exports when grid export rates are high or optimizing energy costs.

4. Solar-Only Backup
How it works: The battery charges only from solar energy and remains fully charged in case of a power outage. If solar power exceeds the battery's charging capacity, extra solar power is used to support home energy needs.
Best for: Ensuring backup power for outages while keeping electricity costs low by charging only from solar.

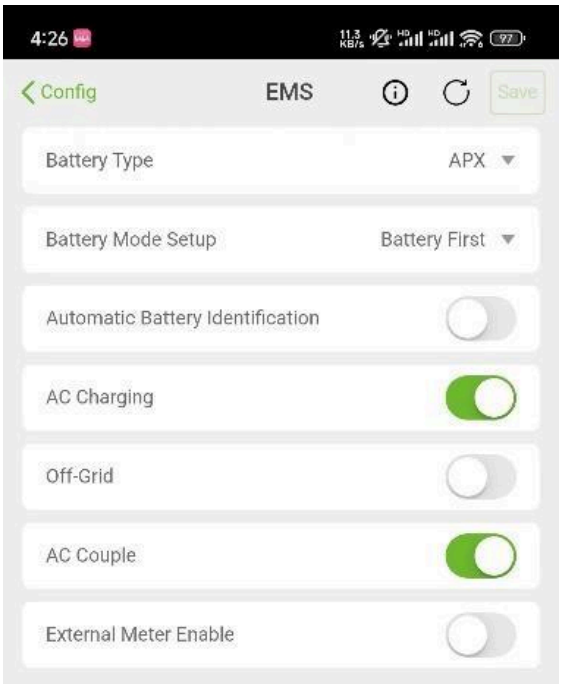
5. Idle/Charge from Clipped Solar
How it works: The system first supplies power to the home. If there's extra solar energy, it is sent to the grid. If a power outage occurs, the battery and solar power the home's backup loads. The battery only charges when solar production exceeds the inverter's capacity, helping to prevent energy losses.
Best for: Reducing energy losses by capturing excess solar power that would otherwise be wasted.

6. Disabled
How it works: This mode makes the system follow a programmed Time of Use schedule instead of other settings. If no schedule is set, the system stops converting power (no AC output). While in this mode, solar energy charges the battery until it's full.
Best for: Users who want the system to follow a Time of Use schedule for energy savings.

AC charging: allows the battery to charge from grid power

Off-grid: if enabled, allows the system to operate when there's a grid outage

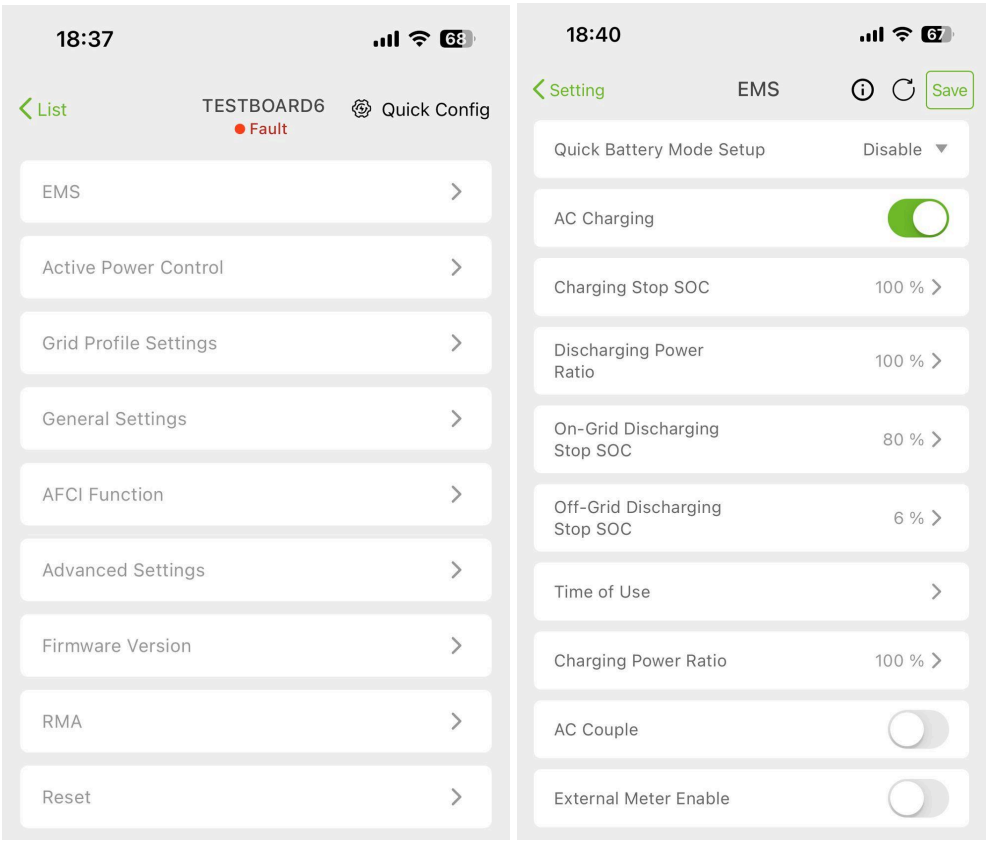
AC coupled: used when installed with a third-party AC coupled PV system. This function is currently not available



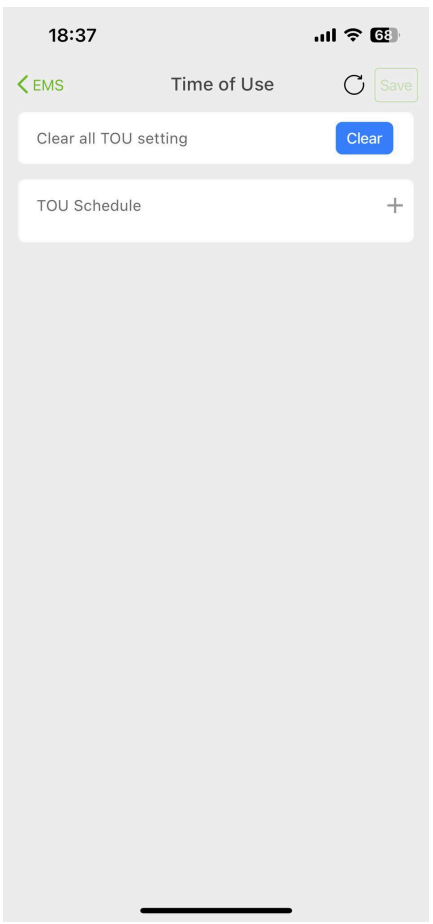
6.2.14 Time of Use schedule configuration

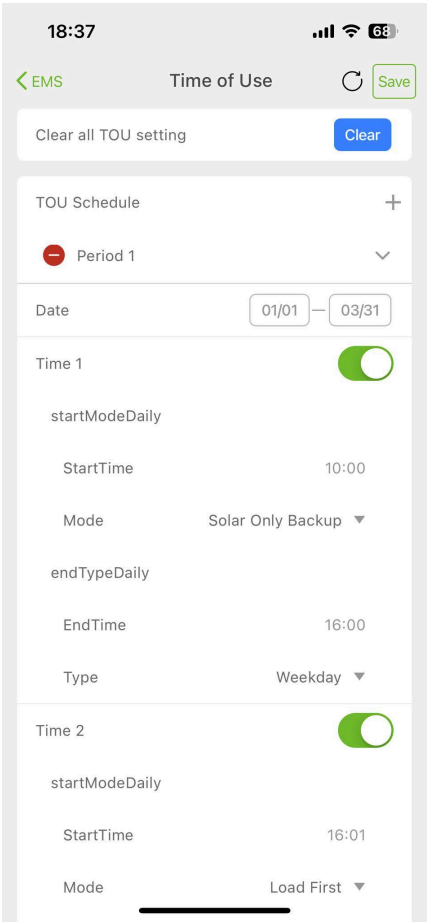
The "Time of Use" feature enables you to customize the TOU (Time of Use) schedule by setting the start time and end time, specifying whether it applies on weekdays or non-workdays, and selecting the desired mode for each time segment.

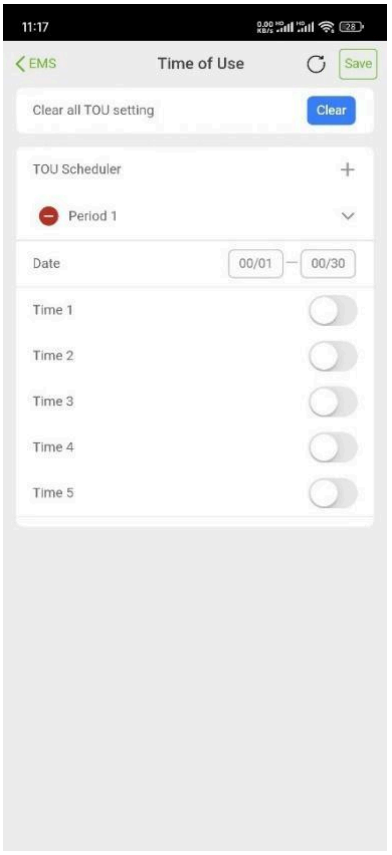
Step 1: Go to “Setting”, select EMS, and change the Quick Battery Mode Setup to “Disable”



Step 2: Create a new TOU Scheduler.


18:37
EMS
Time of Use
Save
Clear all TOU setting
Clear
TOU Schedule


18:37
EMS
Time of Use
Save
Clear all TOU setting
Clear
TOU Schedule
Period 1
Date
01/01
03/31
Time 1
startModeDaily
StartTime
10:00
Mode
Solar Only Backup
endTypeDaily
EndTime
16:00
Type
Weekday
Time 2
startModeDaily
StartTime
16:01
Mode
Load First


11:17
EMS
Time of Use
Save
Clear all TOU setting
Clear
TOU Scheduler
Period 1
Date
00/01
00/30
Time 1
Time 2
Time 3
Time 4
Time 5

Step 3: Personalize your settings.

You can add more time segments and configure the yimr periods.

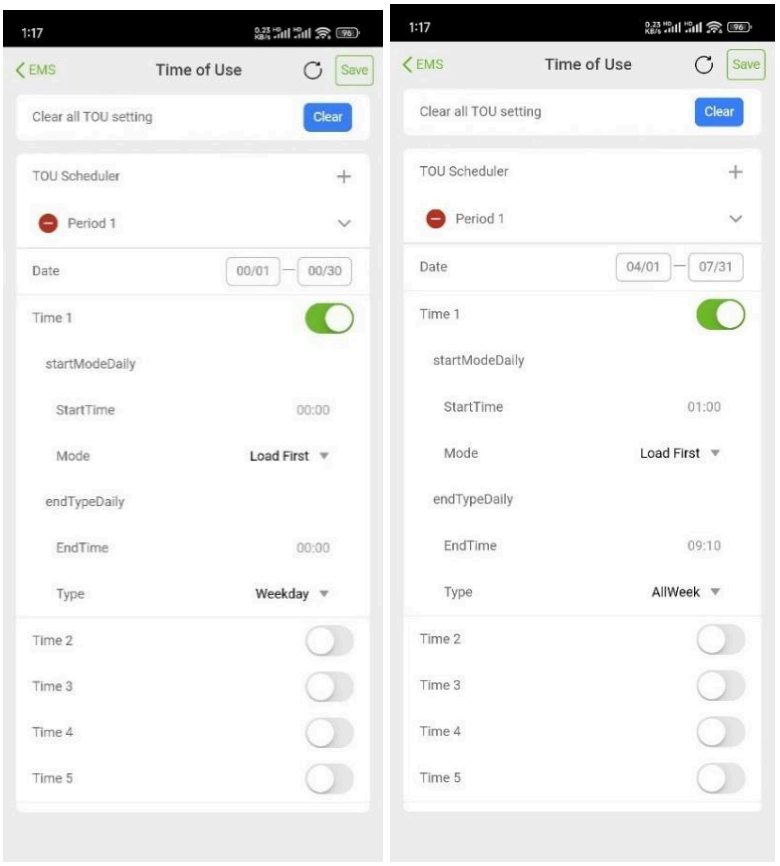
Select your battery mode

Set your end time

Set your start time

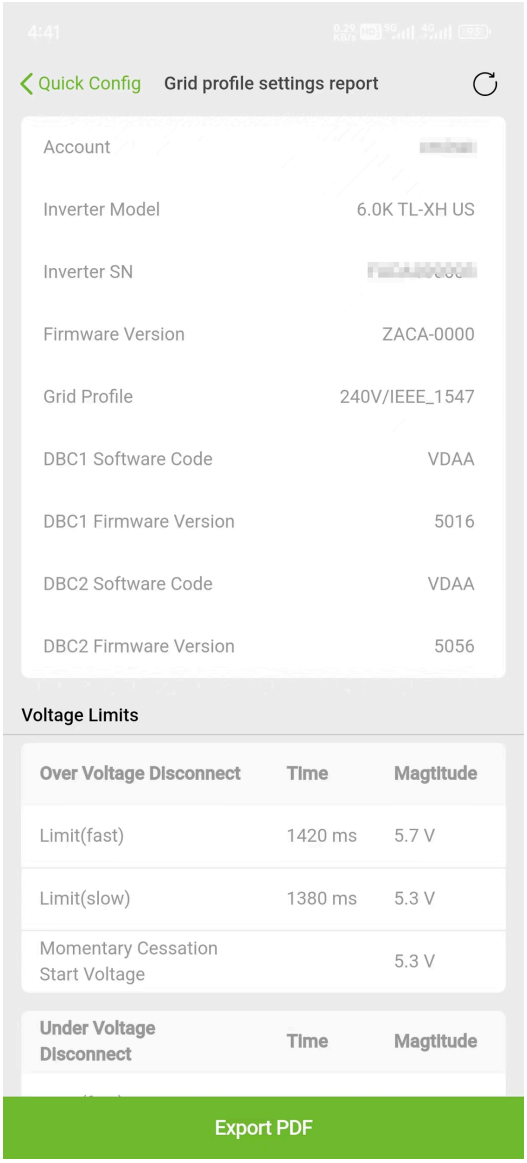
Select your start date and end dates.

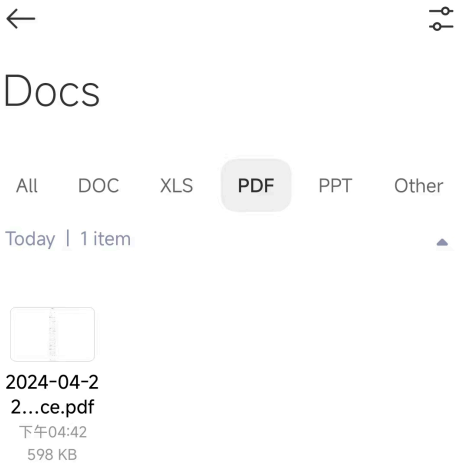
Step 3: Save your changes.



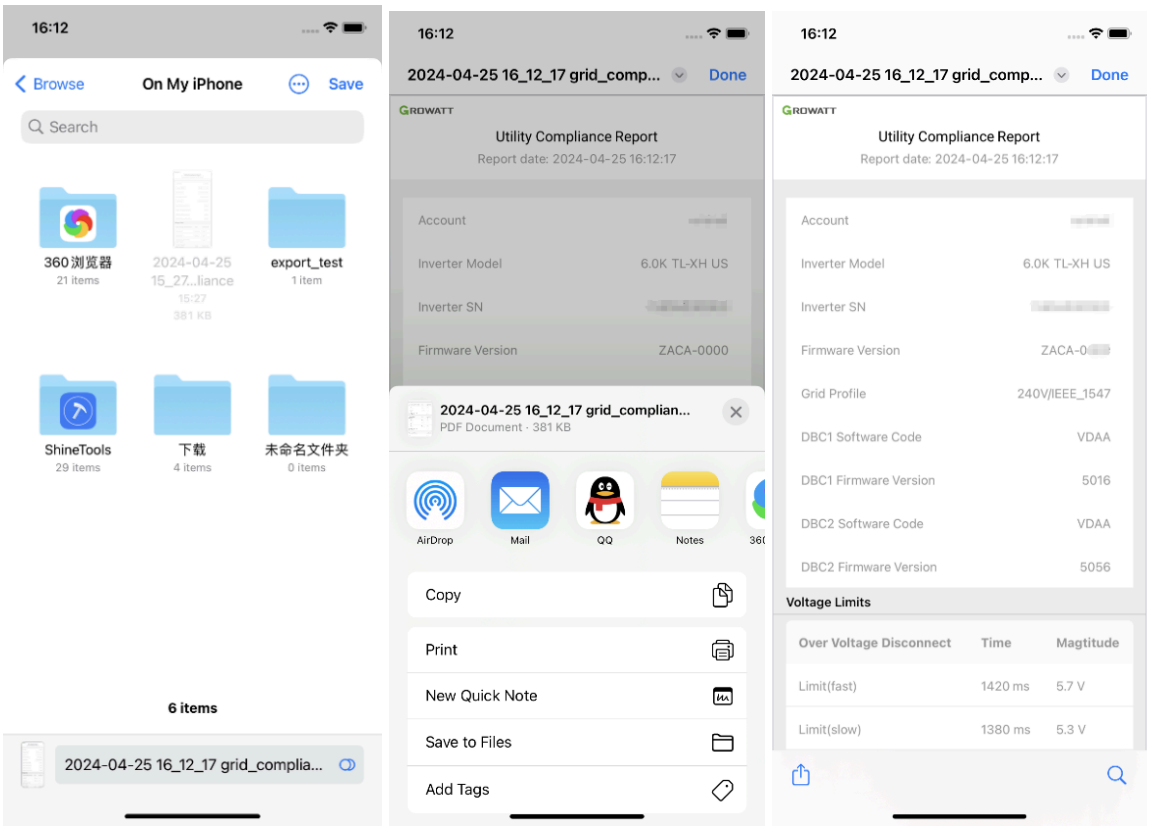
6.2.15 Grid Profile Settings Report

In some cases, the utilities require a grid profile settings report for the specific inverter installation to make sure all settings comply with their required values. After the installer completes the configuration, you can go to the **Grid profile settings report** page and click **Export PDF** to export the configuration. The PDF document will be saved in your file management.





If you are an iPhone user, you can choose your preferred export path.

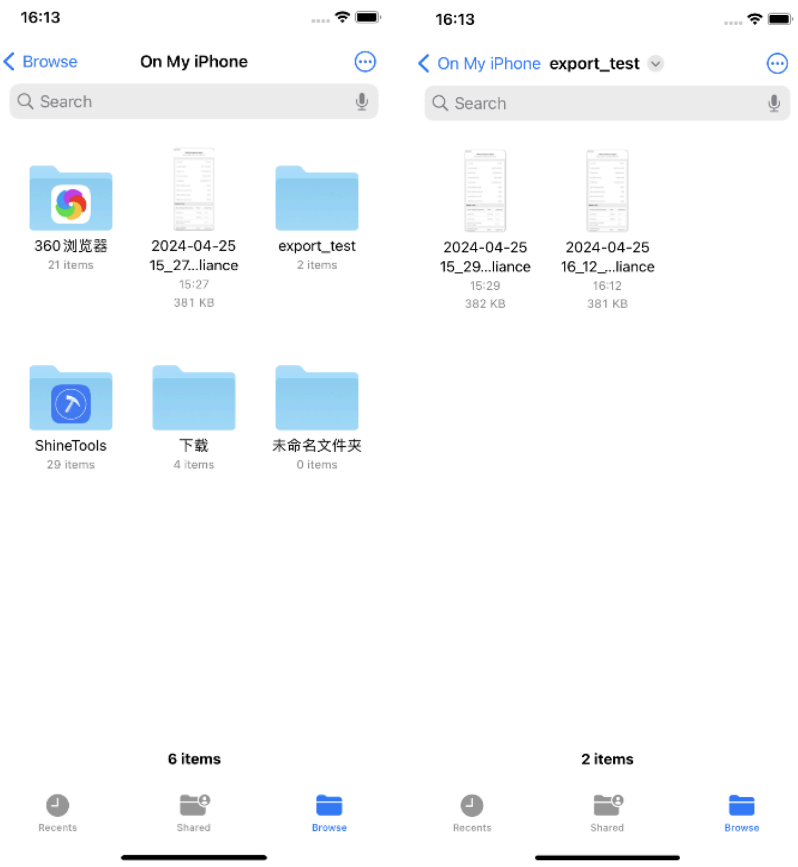


.

First, select the export path.

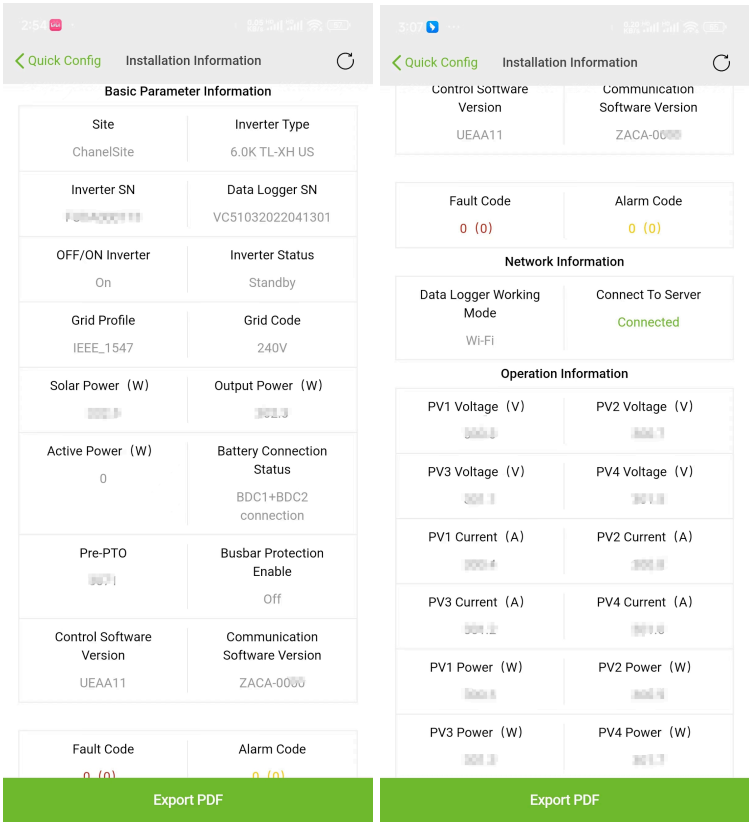
Second, click Save.

Finally, you can find the PDF in the path you selected.



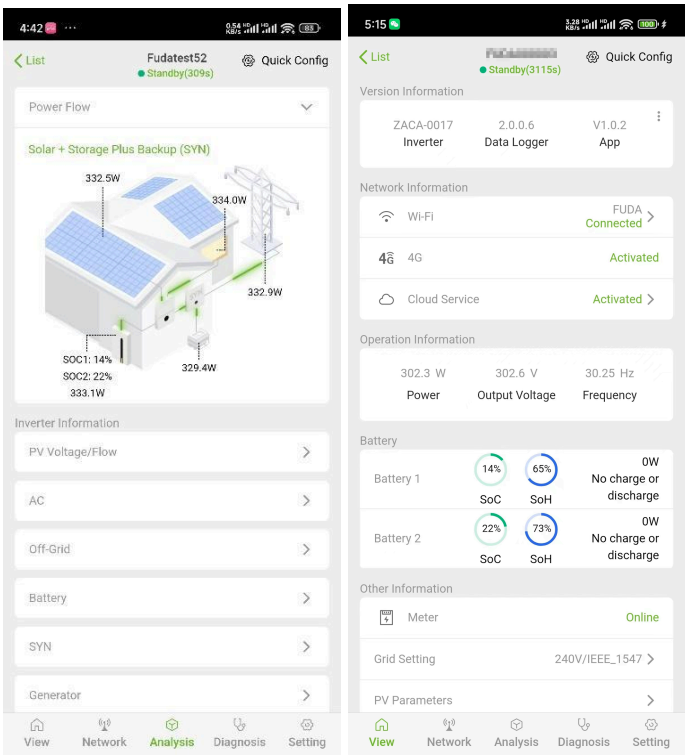
6.2.16 Installation Information Report

You can view the device's installation information on this interface, including basic parameter information, network information, and operational information. You can also click **Export PDF** to export the Information. The PDF document will be saved in your file management.



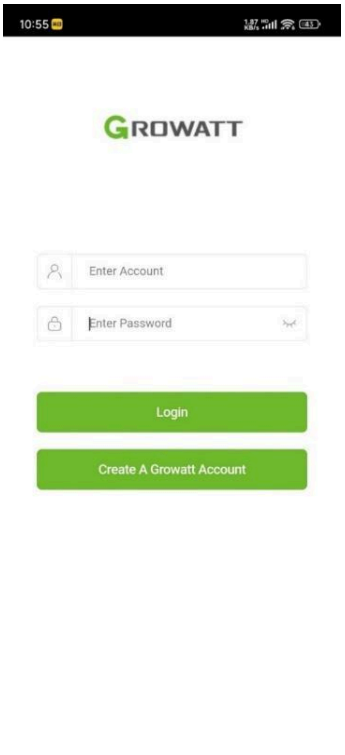
6.2.17 Home Page

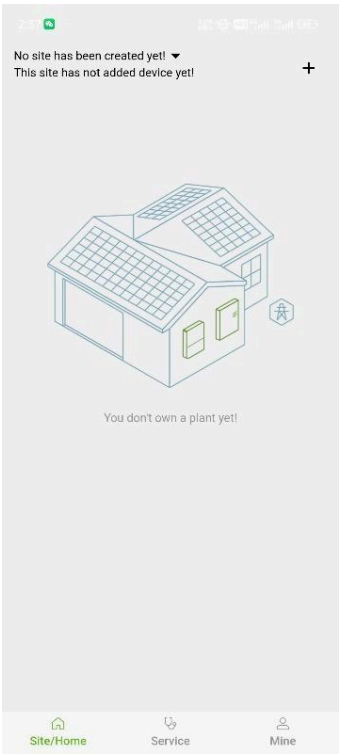
On the Home Page, you can view detailed information about the inverter, battery, meter and other devices. Click on the relevant item to access detailed monitoring parameters or settings.



7. End User Account Creation & Connection

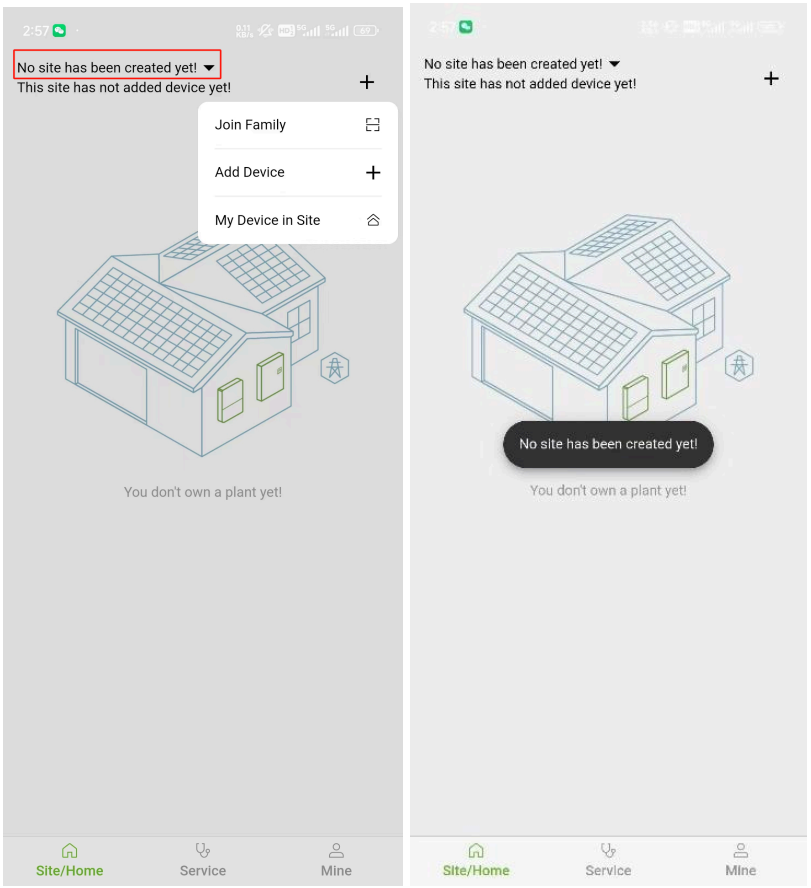
If you are an end user, need to create an account using the “Create A Growatt Account” option in the Shiner App



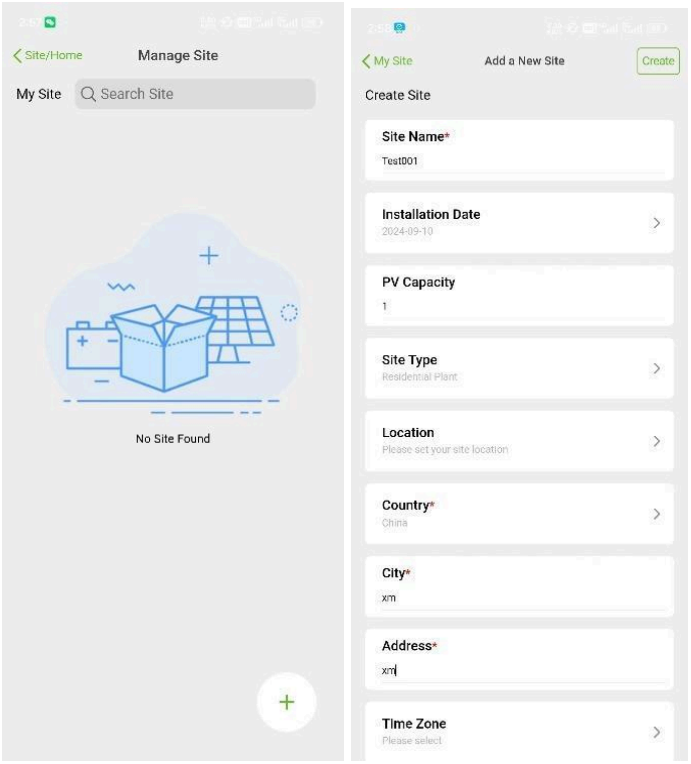


7.1 Create Your Site

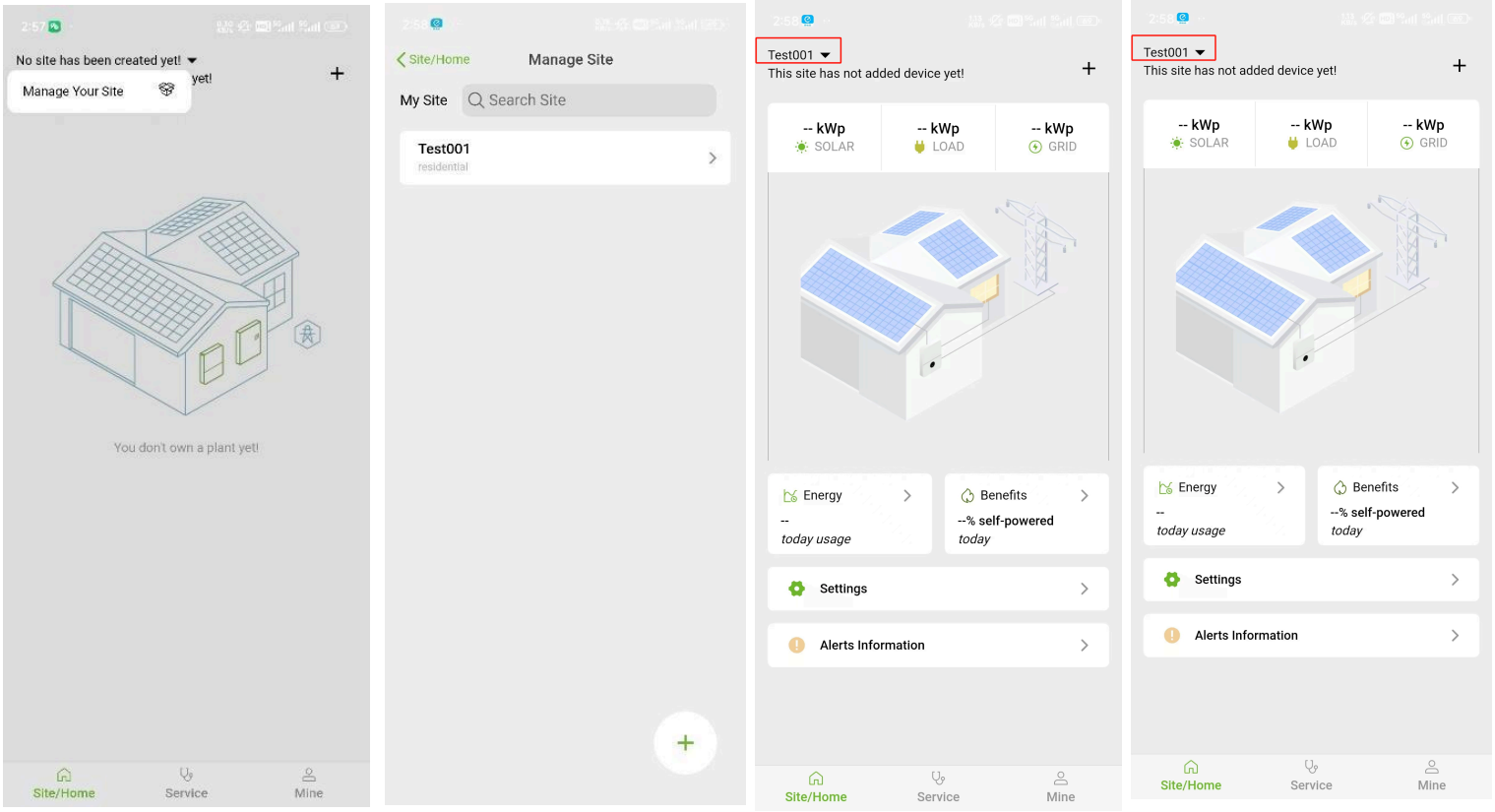
Before connecting to the device, create a site first. If no site has been created, you will receive a prompt.



Click **Manage Your Site** and click the **plus** sign to add a new site. Enter the site information and click **Create** to save it.

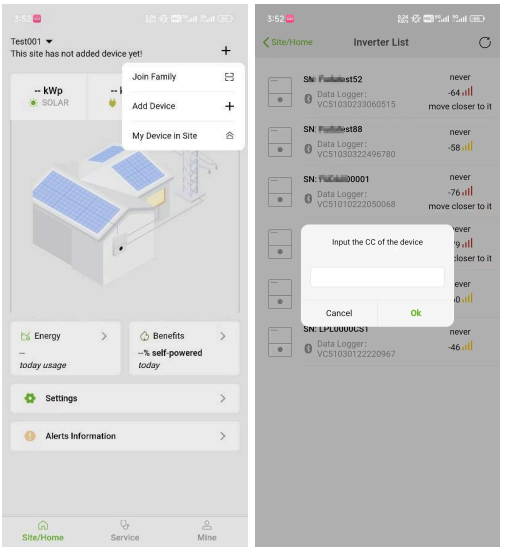


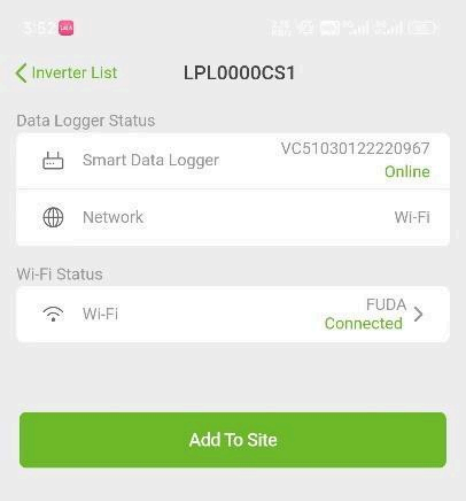
After successfully creating the site, you can see it listed on the Manage Site page and in the upper left corner of the Home Page.



7.2 Connect to Your Inverter

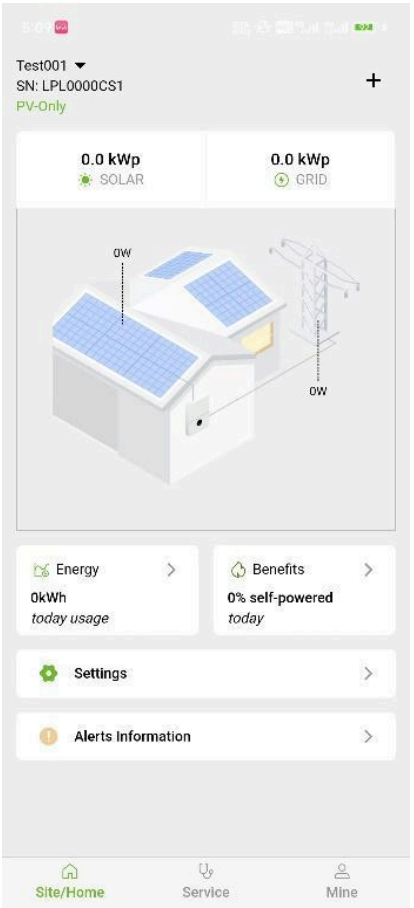
Click the **Plus** icon in the upper right corner of the Home Page and click **Add Device** to connect to the inverter.





Site/Home Page

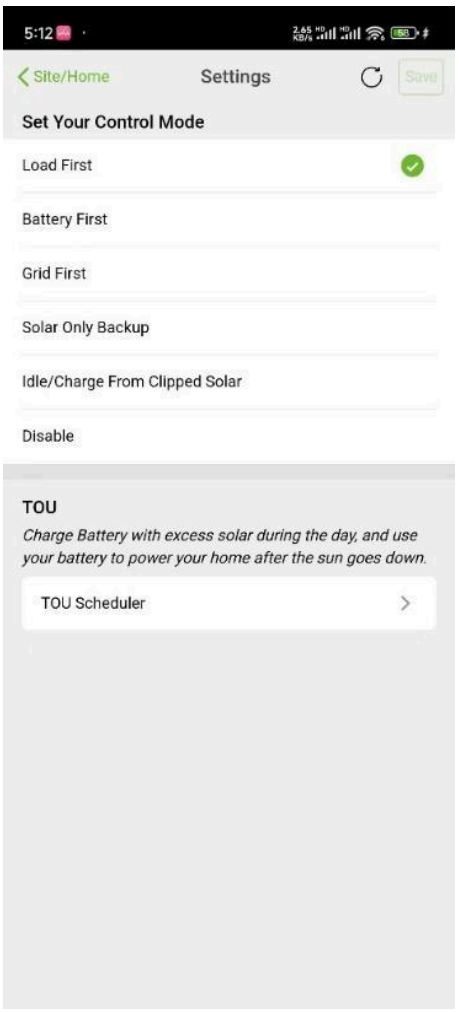
After connecting to the inverter successfully, you can view the electricity statistics, real-time power generation and consumption, as well as the remaining battery power on the Site/Home Page.



7.3 Settings

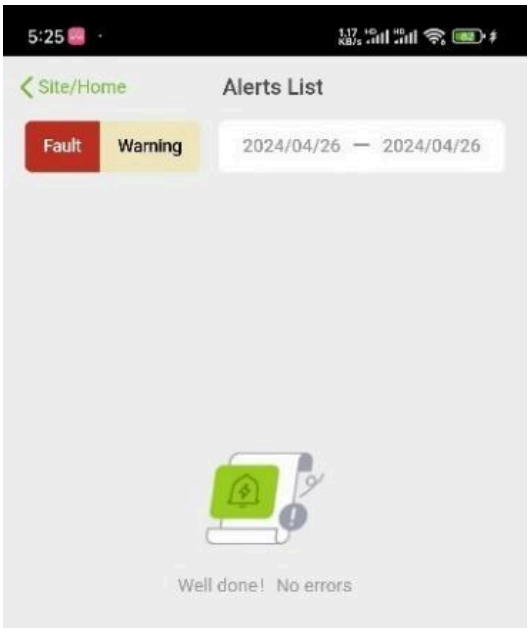
On this page, you can set your control mode and customize your battery schedule using the TOU (Time of Use) settings based on your specific needs for different time periods. For details, please refer to Chapters 11.1 and 11.2.

Figure13-9



7.4 Alerts List

On this page, you can check the Fault and Warning information by time.



8. Status of the Inverter

After finishing the installation process, be sure to complete a final check of the inverter and complete the following site tasks:

1) Ensure there are no error codes on the homepage of the Shiner or ShineTools applications. If there are any codes, see the Growatt user manual to help troubleshoot, or contact customer support directly.

2) Ensure the inverter, PV, and battery are left on and in the desired operational mode.

3) Perform an “Outage Simulation” by switching the 200A breaker pull lever on the SYN transfer switch. This will simulate a loss of grid power and the inverter and battery should remain operational and begin to power the connected AC loads.

4) Restore the 200A breaker pull lever to the upright and on position and wait for grid power to return and show in the application. Once this is complete, your system is online!

5) Ensure your work area is clean and free of debris that could cause any issue and that the customer is happy with the install.