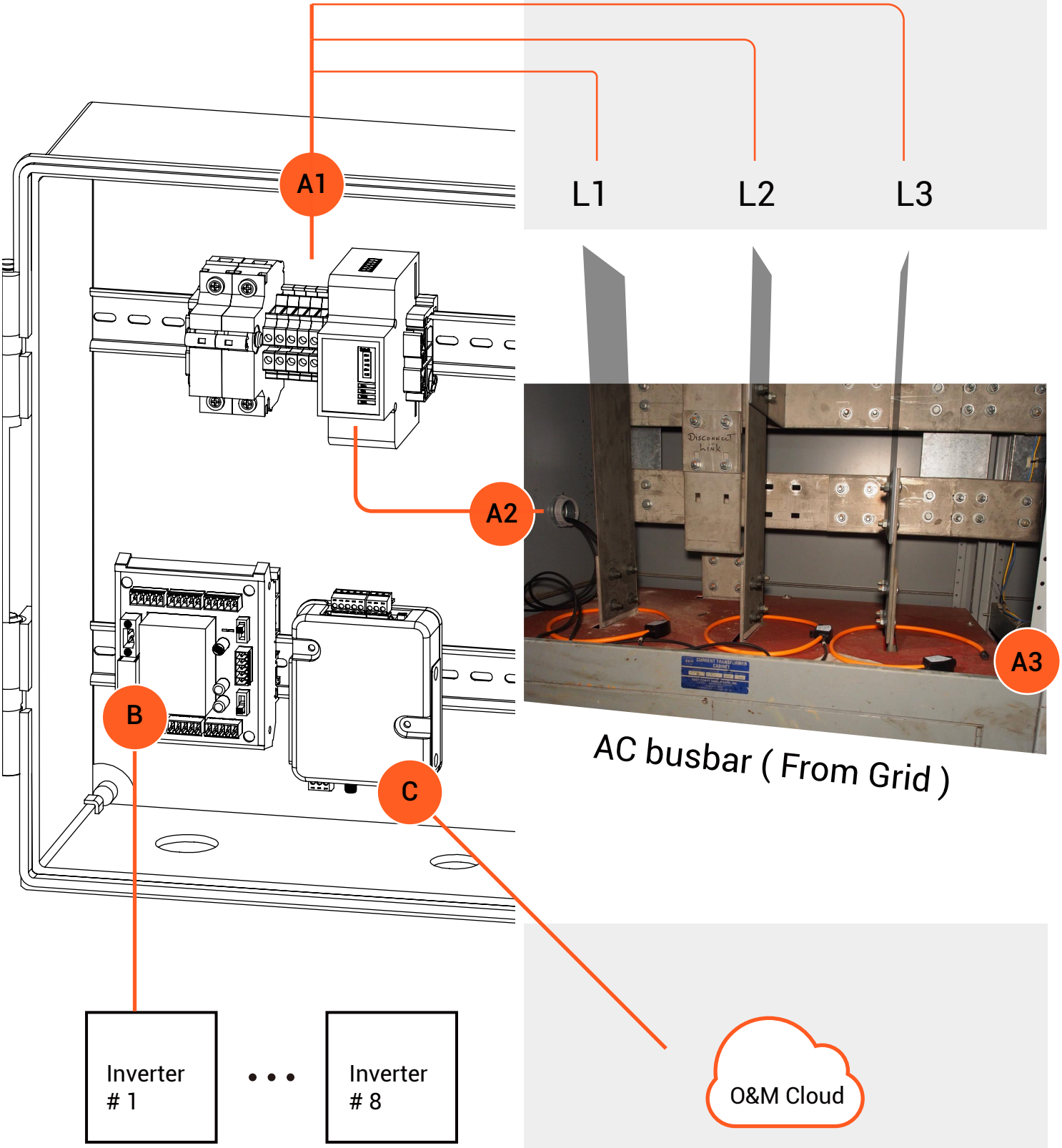


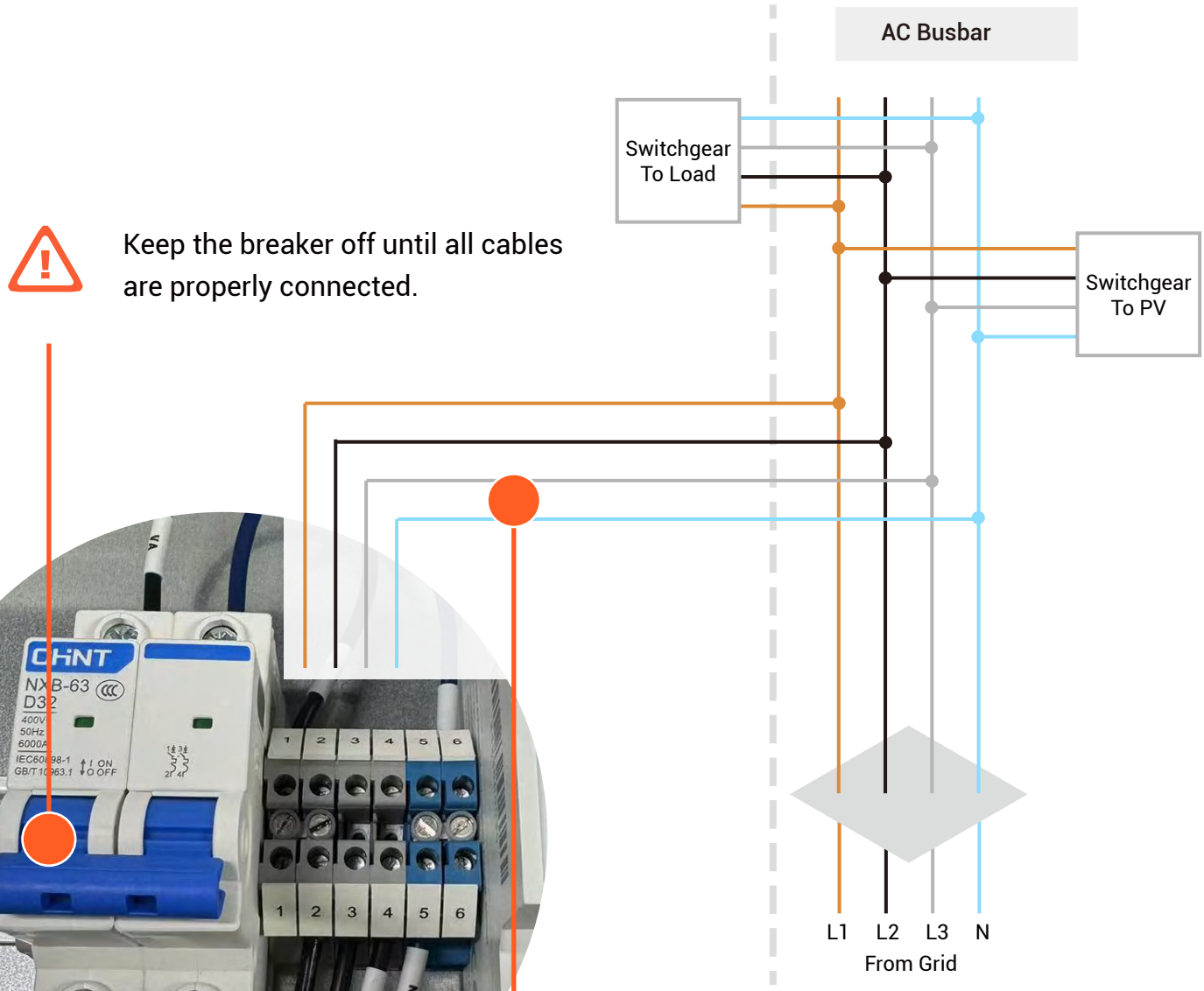
Quick Guide for SE-FC2-E

07/08/2024

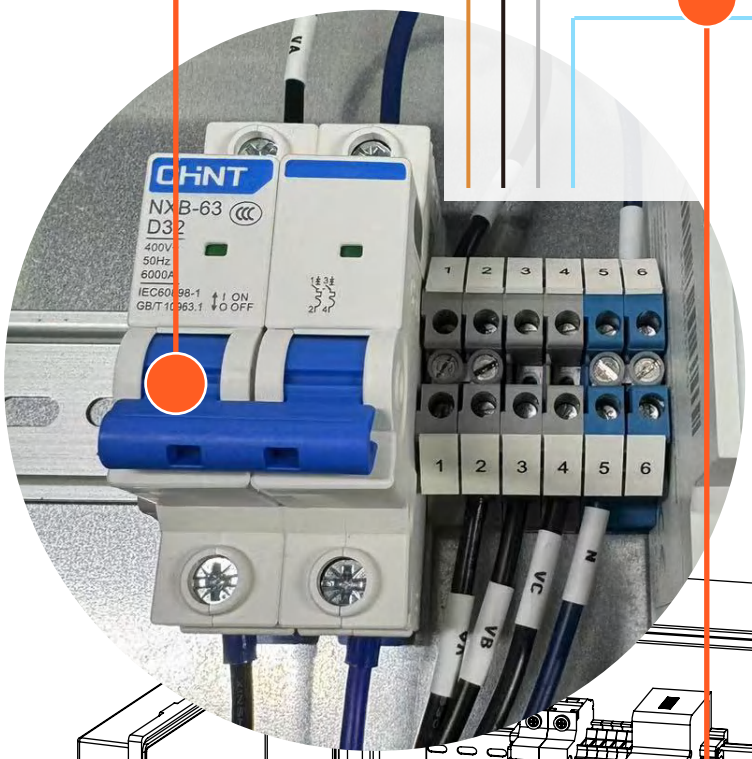
Revision 7.1

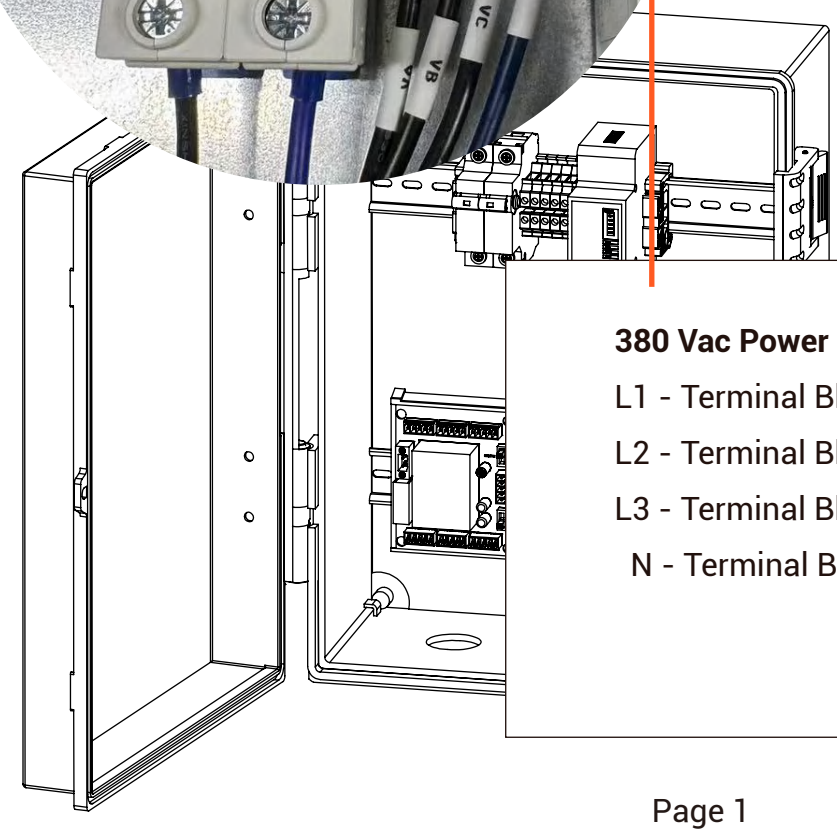
CHINT POWER

A1 Connecting AC Input for SE-FC2-E



Keep the breaker off until all cables are properly connected.





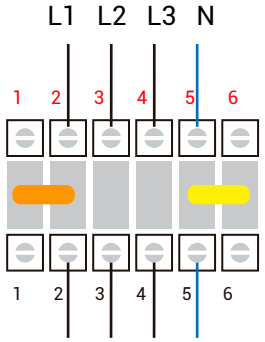
380 Vac Power Input (3P4W)

L1 - Terminal Block 2

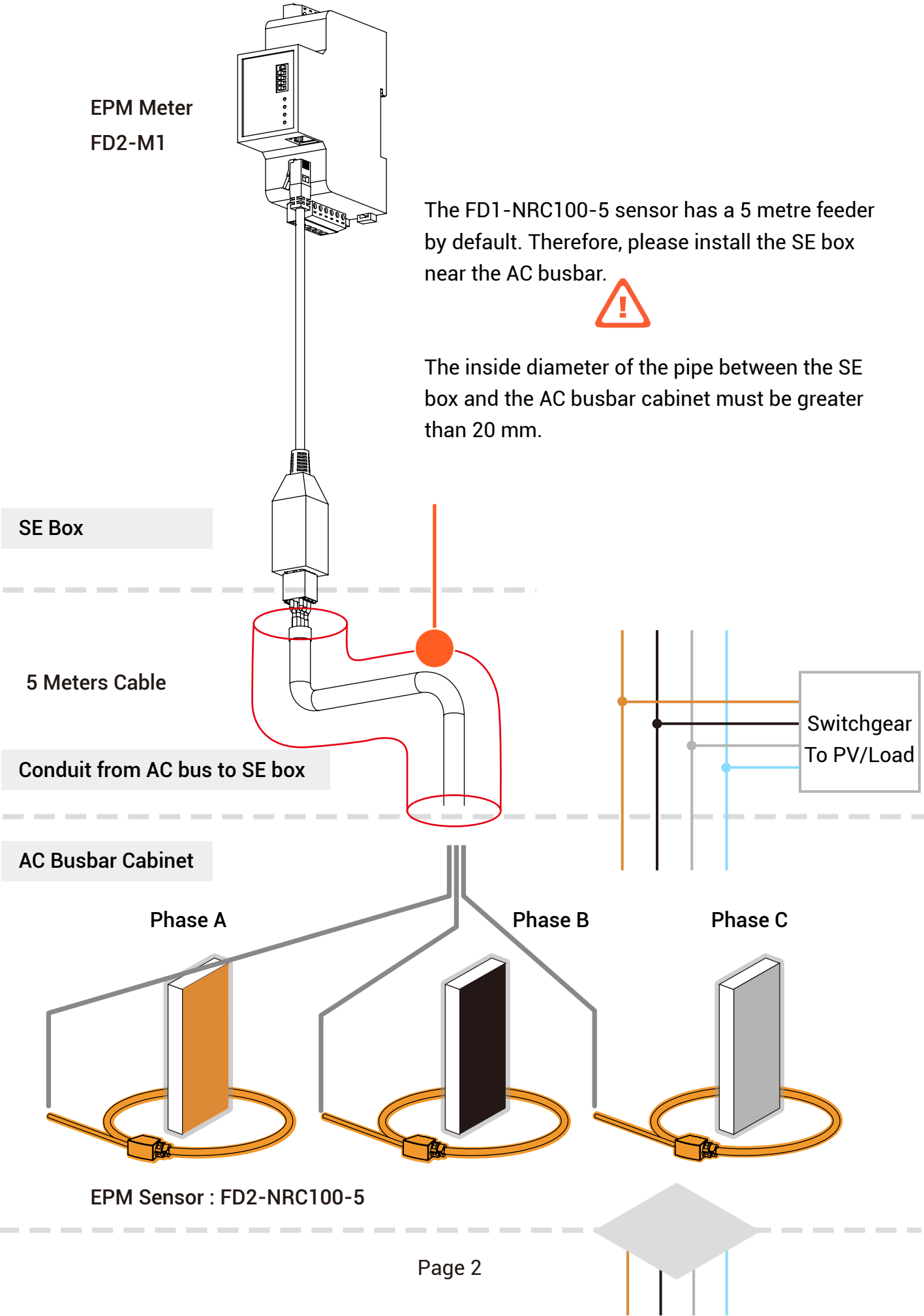
L2 - Terminal Block 3

L3 - Terminal Block 4

N - Terminal Block 5



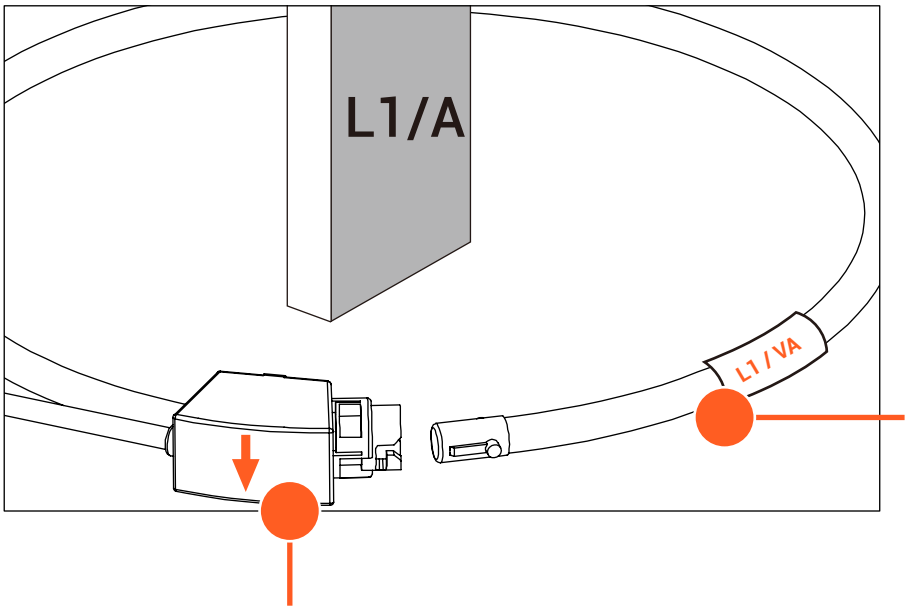
A2 Thread the sensor cable through the pipe



The FD1-NRC100-5 sensor has a 5 metre feeder by default. Therefore, please install the SE box near the AC busbar.

The inside diameter of the pipe between the SE box and the AC busbar cabinet must be greater than 20 mm.

A3 Installing three coils

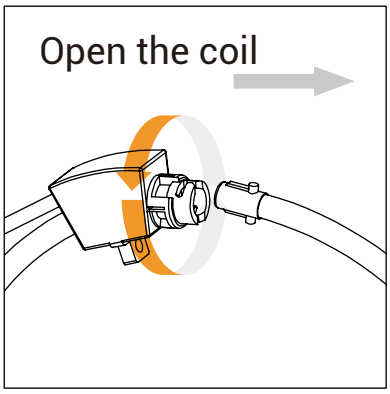


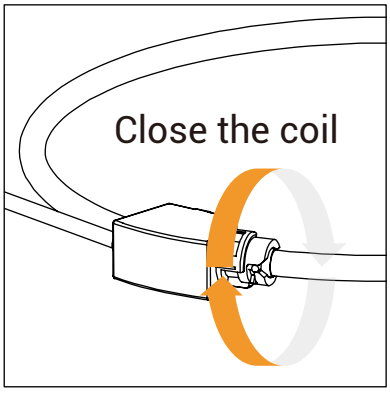
The direction of the arrows must be the same for all three coils.
Preferably all facing in the Grid direction.

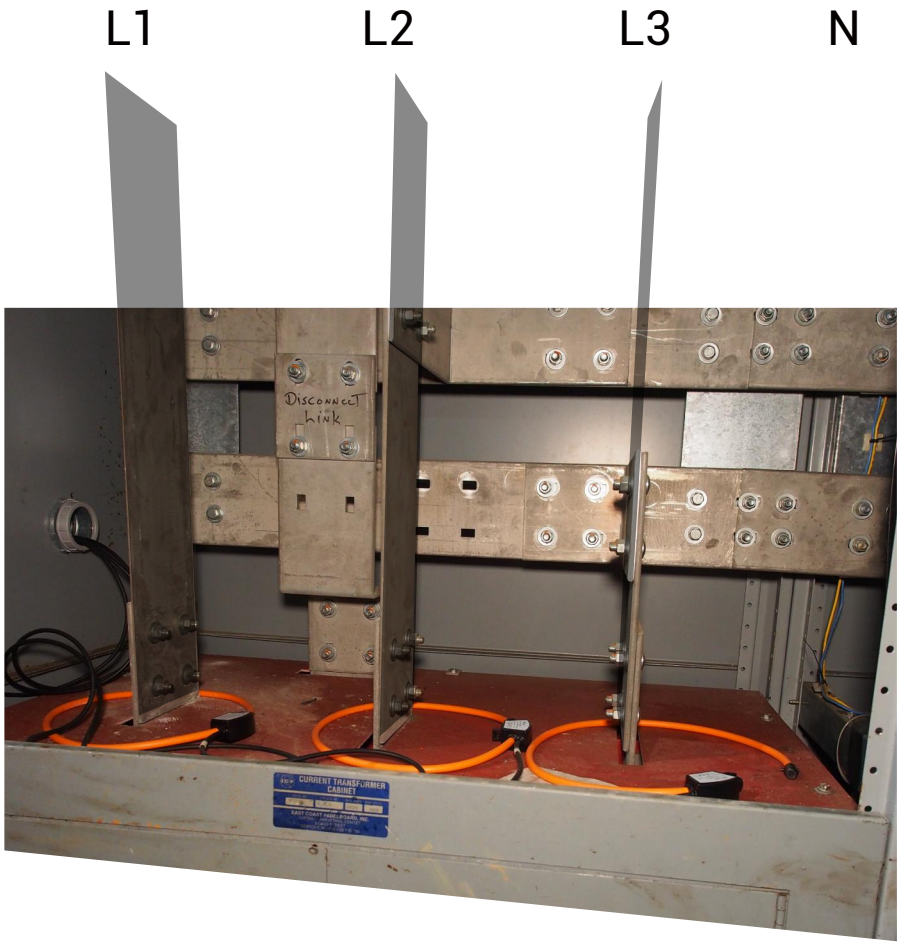
Do not pull or fold the coil with force.

Each sensor has three coils with L1/L2/L3 labels on the coils.

Pass the coils through the AC busbar, three coils for L1/L2/L3 respectively.

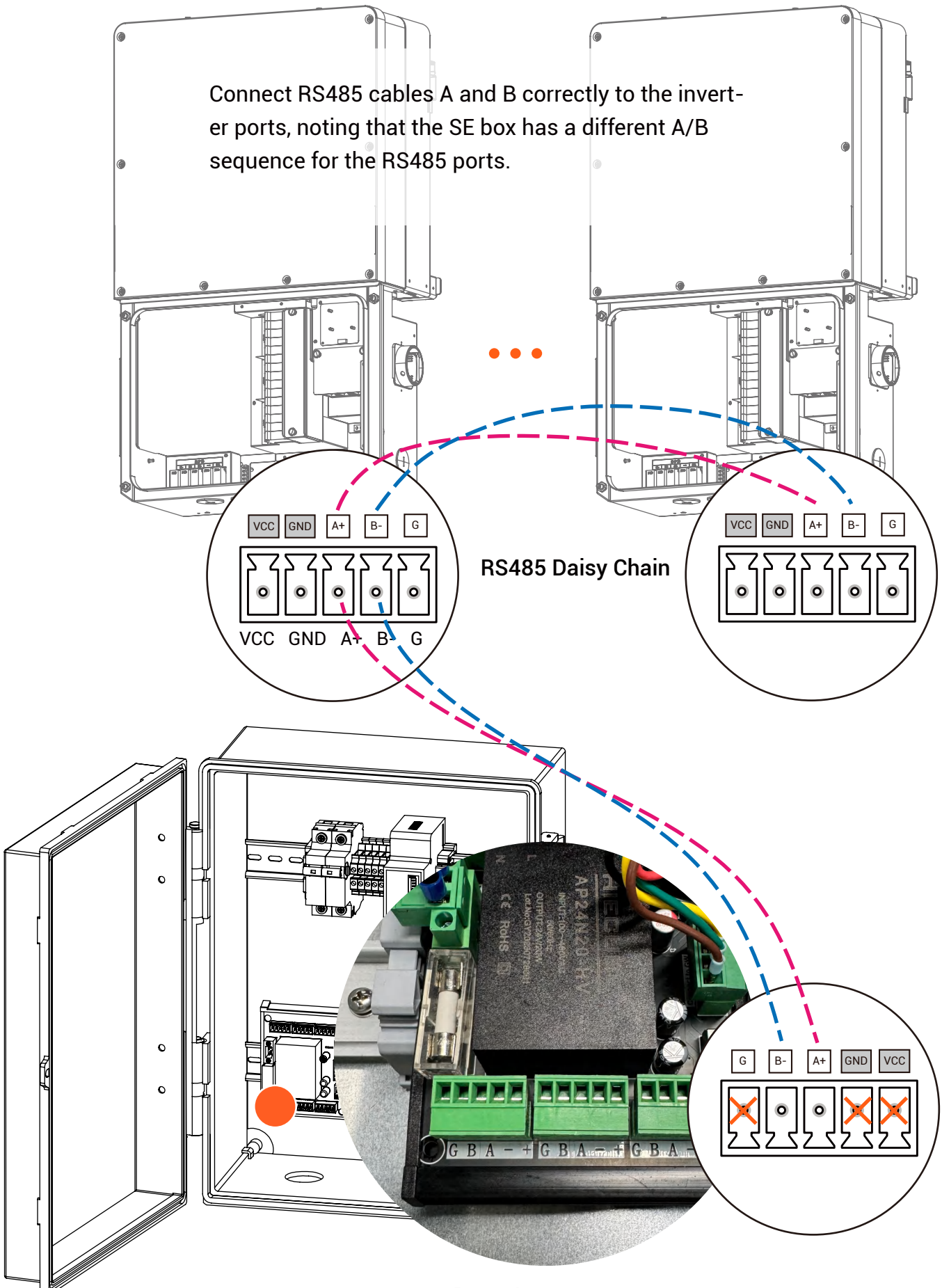






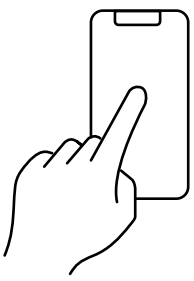
B Daisy-chain the inverter to SE-FC2-E

Connect RS485 cables A and B correctly to the inverter ports, noting that the SE box has a different A/B sequence for the RS485 ports.



Make sure the cables are connected correctly and switch the breaker to ON.

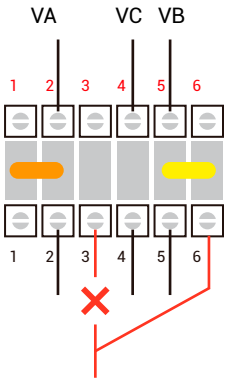
C Setting the gateway to connect to the Internet via APP



Download the APP

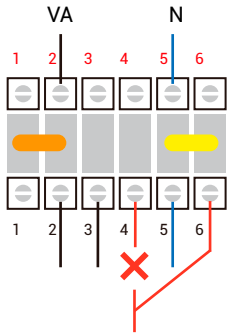
Chint Connect APP

It is necessary to move the VB (L2) of the preset cable from the No. 3 terminal block to the No. 6 terminal block first.



380 Vac Power Input (3P3W)
L1 - Terminal Block 2
L2 - Terminal Block 5
L3 - Terminal Block 4

It is necessary to move the VC (L3) of the preset cable from the No. 4 terminal block to the No. 6 terminal block first.

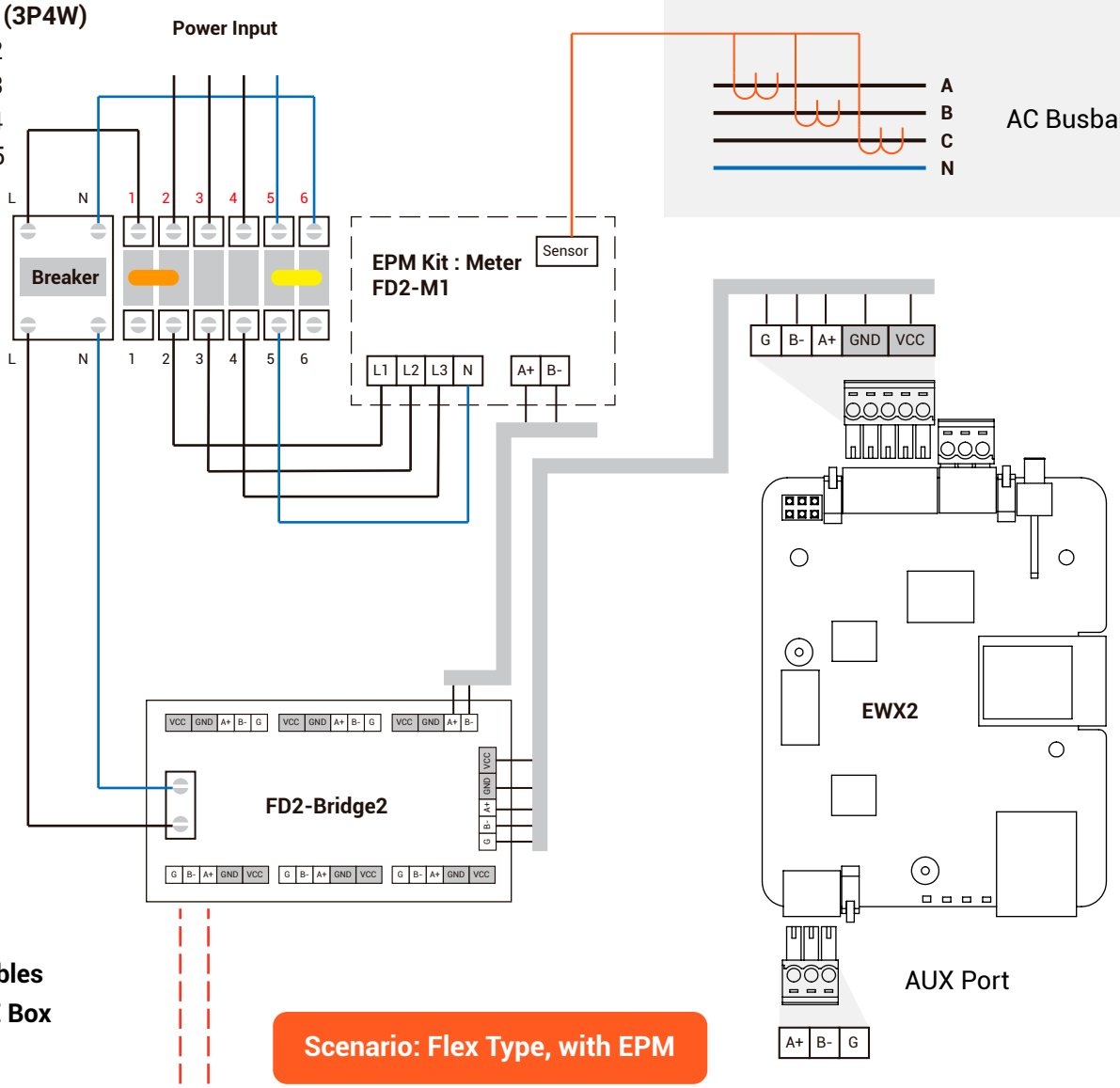


120/ 220 Vac Power Input
L1 - Terminal Block 2
N - Terminal Block5

EPM Kit : Sensor
FD2-NRC100-5
Up to 5000A and 0.5% Accuracy

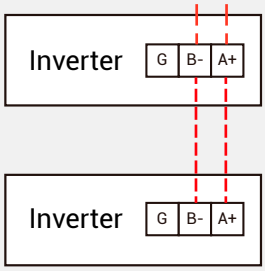
AC Busbar

380 Vac Power Input (3P4W)
L1 - Terminal Block 2
L2 - Terminal Block 3
L3 - Terminal Block 4
N - Terminal Block 5

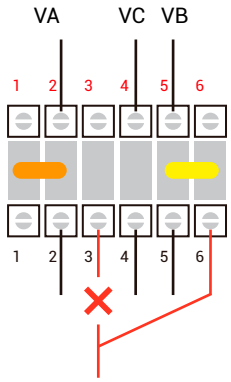


Pre-installed cables inside SE-FC2-E Box

Scenario: Flex Type, with EPM

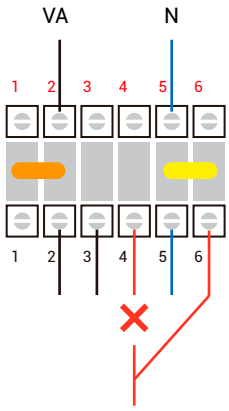


It is necessary to move the VB (L2) of the preset cable from the No. 3 terminal block to the No. 6 terminal block first.



380 Vac Power Input (3P3W)
L1 - Terminal Block 2
L2 - Terminal Block 5
L3 - Terminal Block 4

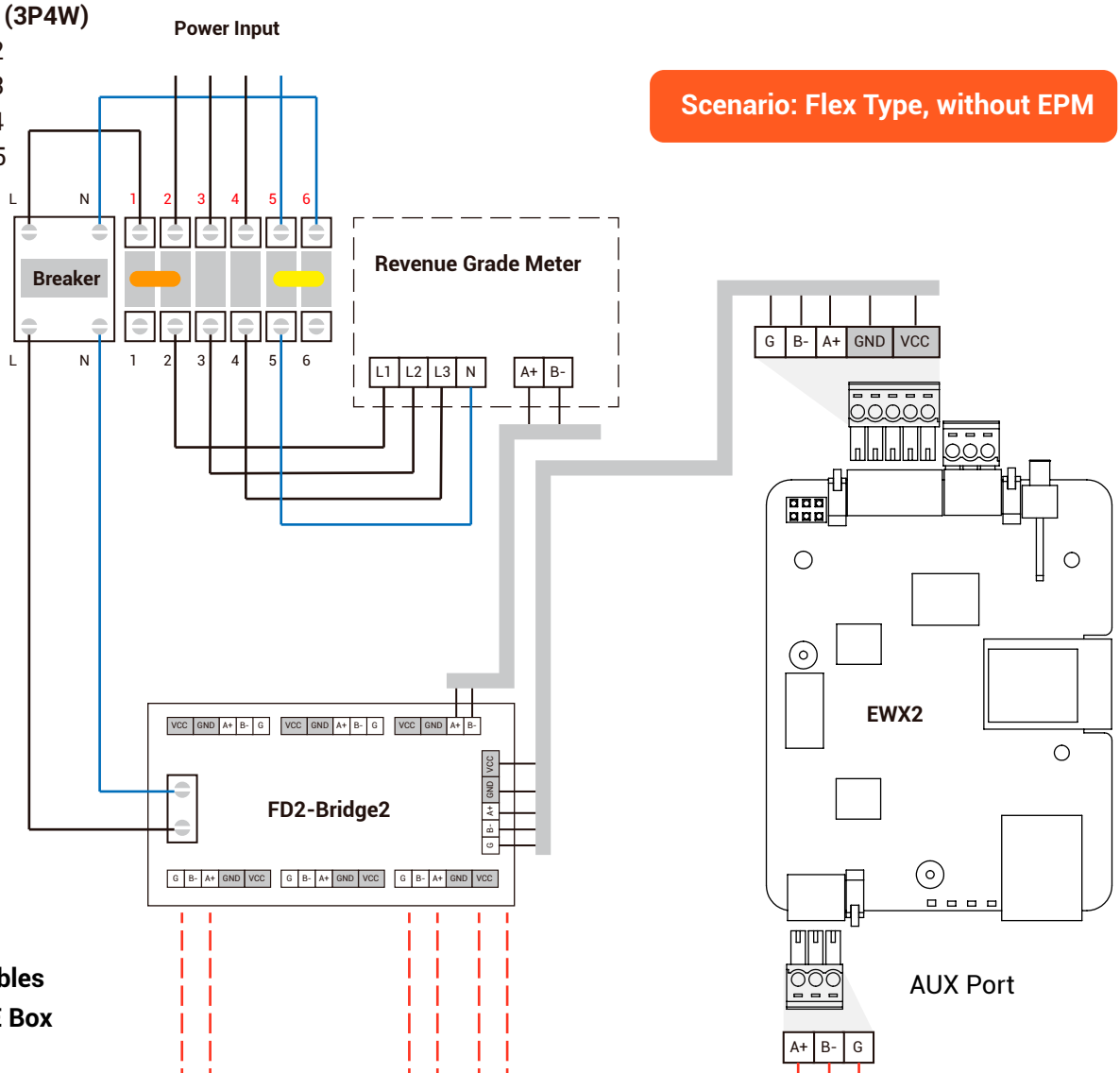
It is necessary to move the VC (L3) of the preset cable from the No. 4 terminal block to the No. 6 terminal block first.



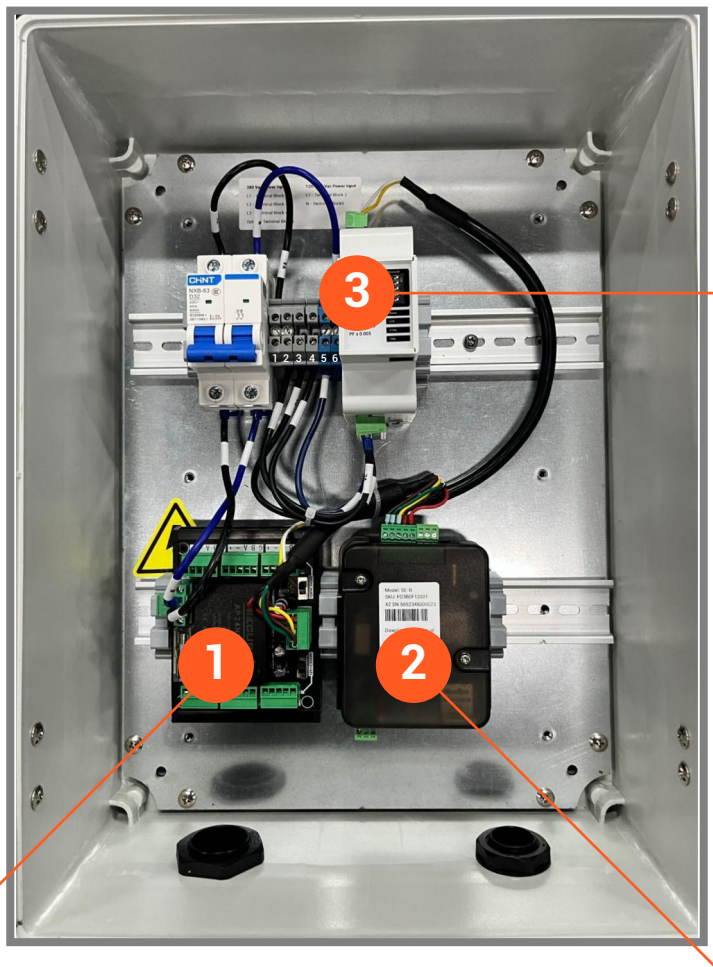
120/ 220 Vac Power Input
L1 - Terminal Block 2
N - Terminal Block5

380 Vac Power Input (3P4W)
L1 - Terminal Block 2
L2 - Terminal Block 3
L3 - Terminal Block 4
N - Terminal Block 5

Scenario: Flex Type, without EPM



Pre-installed cables inside SE-FC2-E Box



EPM kit - Meter

FD2-Bridge2
solves the problem of connecting RS485 to different hardware such as inverters, meters, sensors, etc.

EWX2/EHX2 Gateway

Quick Guide for SE-FC2-E

07/08/2024
Revision 7.1

Table of Contents

1 Safety Precautions	12
2 Warranty Policy	13
3 Gateway specifications	-
3.1 Datasheet	14
3.2 Dimensions	22
3.3 Interfaces and indicators	23
3.4 Housing and mounting	27
4 System design for X2 gateway	-
4.1 Gateway default : Flex Type (NO RSD)	29
4.2 Super Type (NO RSD)	30
4.3 Zero-export and load-monitoring (Requires EPM kit)	32
4.4 Multi-party management	36
5 Hardware installation	-
5.1 Zero-export with Flex Type	38

6 Non-registered User (Installer)	-
6.1 APP connect to gateway	39
6.2 Setting up the gateway to connect to the WiFi router	45
6.3 Gateway connects to the Internet via 4G	48
6.4 Gateway connects to the LAN router via Ethernet	50
6.5 Auto-commissioning the inverter daisy chain (Super Type)	52
6.6 Setting FCB autodiscovery policy	56
6.7 Initialize the inverter	57
6.8 Setting inverter parameters	58
6.9 Enable “EPM Mode”	59
6.10 Upgrade inverter firmware	61
6.11 Upgrad gateway firmware	64
6.12 Quickly check hardware running status	65
6.13 Setting the site time zone	67

7 Portfolio Owner (End User)	-
7.1 Self-registered “End User" account through the APP	68
7.2 Bind site to account	70
7.3 Remote checking of hardware running status	71
7.4 Unbind site from account	72
7.5 Authorize an O&M partner to control the site	73
7.6 Diagnose wiring communications at the site	74

Safety Precautions

NOTICE

Before performing operations, read through this manual and follow all the precautions to prevent accidents. The safety precautions provided in this document do not cover all the safety precautions. CPS shall not be liable for any consequence caused by the violation of the safety operation regulations and design, production, and usage standards.

Declaration

CPS shall not be liable for any consequence caused by any of the following events.

- Transportation
- The storage conditions do not meet the requirements specified in this document.
- Violate the operation instructions and safety precautions in this document for installation, cable connecting, and maintenance.
- Operation in extreme environments which are not covered in this document.
- Unauthorized modifications to the product or software code.
- Installation or use in environments which are not specified in related international standards.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Personal Requirements

- Only qualified electrical technicians are allowed to install and operate the X2 Gateway.
- Operation personnel should receive professional training.
- Operation personnel should read through this document and follow all the precautions.
- Operation personnel should be familiar with the safety specifications about the electrical system.
- Operation personnel should understand the composition and working principles of the grid-tied PV power system and local regulations.

Installation

- Ensure that the X2 Gateway is not connected to a power supply and is not powered on before starting installation.
- Ensure that the X2 Gateway is installed in a well ventilated environment.
- Do not perform any operation on other components inside the chassis except connecting AC power cables and communications cables.
- Ensure that all electrical connections comply with local electrical standards.

DANGER

High voltages may cause electric shocks and serious injuries during X2 Gateway operating.
Do not touch components such as AC cables, circuit breakers and connectors during X2 Gateway is energized.

- Maintain the X2 Gateway with sufficient knowledge of this document and proper tools and testing equipment.
- Before performing maintenance tasks, power off the X2 Gateway and perform lockout/tagout (LOTO) of the source circuit.
- For personal safety, wear personal protective equipment (PPE), including insulaed gloves and protective shoes.

Warranty Policy

- The warranty policy of this product is specified in the contract; otherwise, the standard warranty is 2 years.
- For warranty terms, please refer to the CPS accessories warranty policy in place at time of purchase.

3 Hardware specifications

3.1 Datasheet

Specification	
Wiring Type	3P4W / 3CT, 3P3W / 3CT, 1P2W (L-N)
Input Power	120 / 220 / 380 Vac
Accessories and Replacement Parts	
Breaker	32A, 400V
AC/DC Power Supply	FD2-Bridge2
Gateway	EWX2 by default, Optional EHX2
EPM Kit	FD2-M1 Meter and FD2-NRC100-5 Sensor
Environmental Limits	
Operating Temperature	-40℃ to 60℃ (-40 to 140°F), Natural convection
Ambient Relative Humidity	5 to 85% (non-condensing)
Physical Characteristics	
Installation Options	Wall Mounting
IP Rating	Outdoor, Polycarbonate Construction
Dimensions	400 mm / 300 mm / 170 mm
Weight	2kg

SE Component : FD2-Bridge2

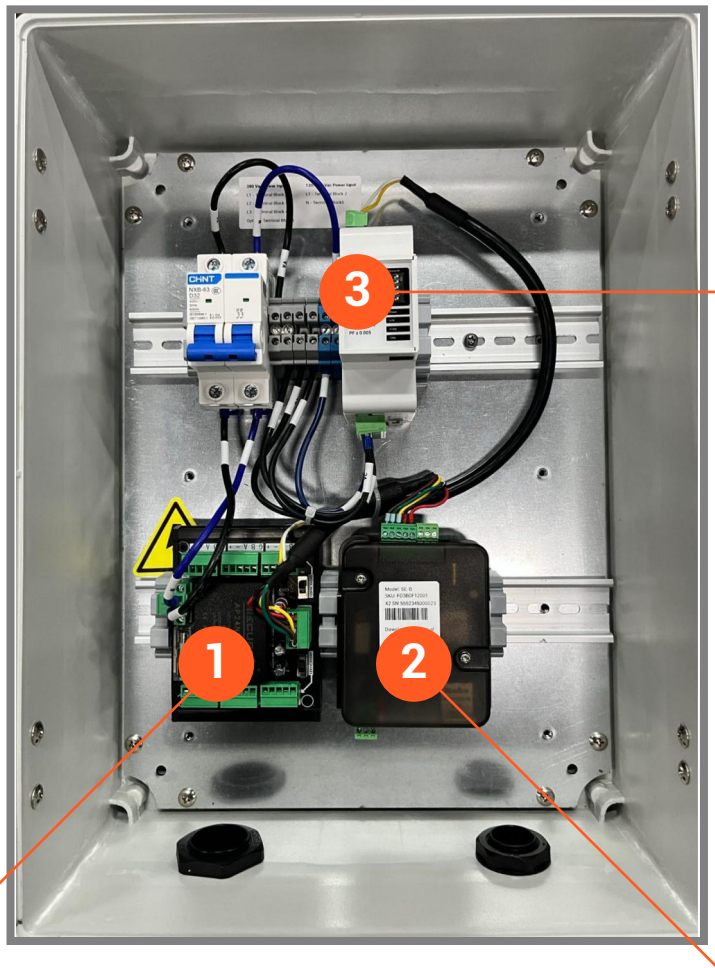
RS485 HUB	
No. of Ports	6 (5-Pole Terminal Block , RS485 + DC output)
Protocol	Modbus RTU
Work Mode	6 ports star connected, with one port connected to the gateway
Power Parameters	
Input Voltage	100~400 Vac (L-N , 3P4W; Requires manual wiring to meet 3P3W)
Output Voltage	12 Vdc / 24 Vdc Selectable
Max Output Power	20W
Dimensions	90 mm / 90 mm / 45 mm
Weight	200g
Compliance	
RoHS	IEC 62321, (EU) 2015/863
CE - EMC	EN 55032 / 55035, EN 61000-3-2/-3-3
CE - RED	EN 301 908 / 300 328, EN 301 489-1/-17/-52, EN 62368-1
CE - LVD	EN 62368-1

EPM Kit : FD2-M1 Meter

Specification	
Wiring Type	3P4W / 3CT, 3P3W / 3CT, 1P3W, 1P2W
Sensor Type	Rogowski Coil, FD2-NRC100-5
Voltage Range	0~480 VAC
Max. Voltage	528 VAC
Accuracy	
Current	0.1% +Current Sensor Accuracy
Voltage	±0.2% (60V~600V AC)
Frequency	±0.01% (45~65Hz)
Power Factor	±0.005
Active and Apparent Power	IEC62053-22 Grade:0.5S
Reactive Power	IEC62053-21 Grade:1S
Active Energy	IEC62053-22 Grade:0.5S
Reactive Eergy	IEC62053-21 Grade:1S
Physical Characteristics	
Housing	Plastic, DIN rail mounting
Dimensions	93 mm / 80 mm / 36 mm
Weight	122g

EPM Kit : FD2-NRC100-5 Sensor

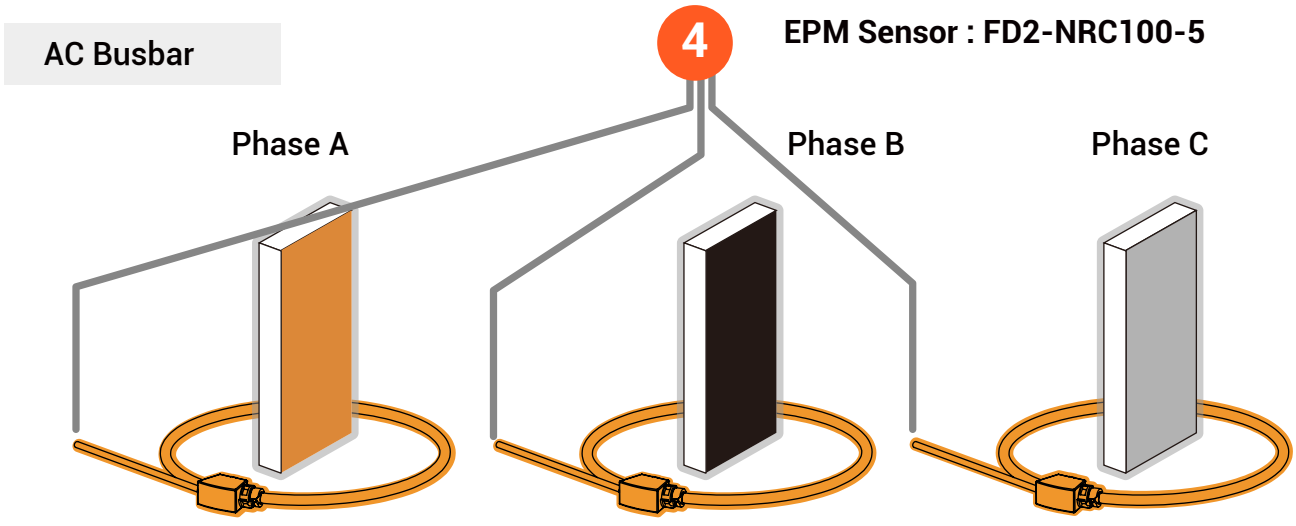
Specification	
Rated Current	5000A
Sensitivity @50Hz	Calibrated 100mV/kA, 85mV/kA
	Uncalibrated 108mV/kA, 90mV/kA
Temperature Drift	Calibrated ＜100ppm/℃
	Uncalibrated ＜50ppm/℃
Accuracy	0.5%（Vertical Centering）
Internal Resistance	50～250 Ω
Coil Cross-sectional Thickness	8mm
Signal Length	5 meters



EPM kit - Meter

FD2-Bridge2
solves the problem of connecting RS485 to different hardware such as inverters, meters, sensors, etc.

EWX2/EHX2 Gateway



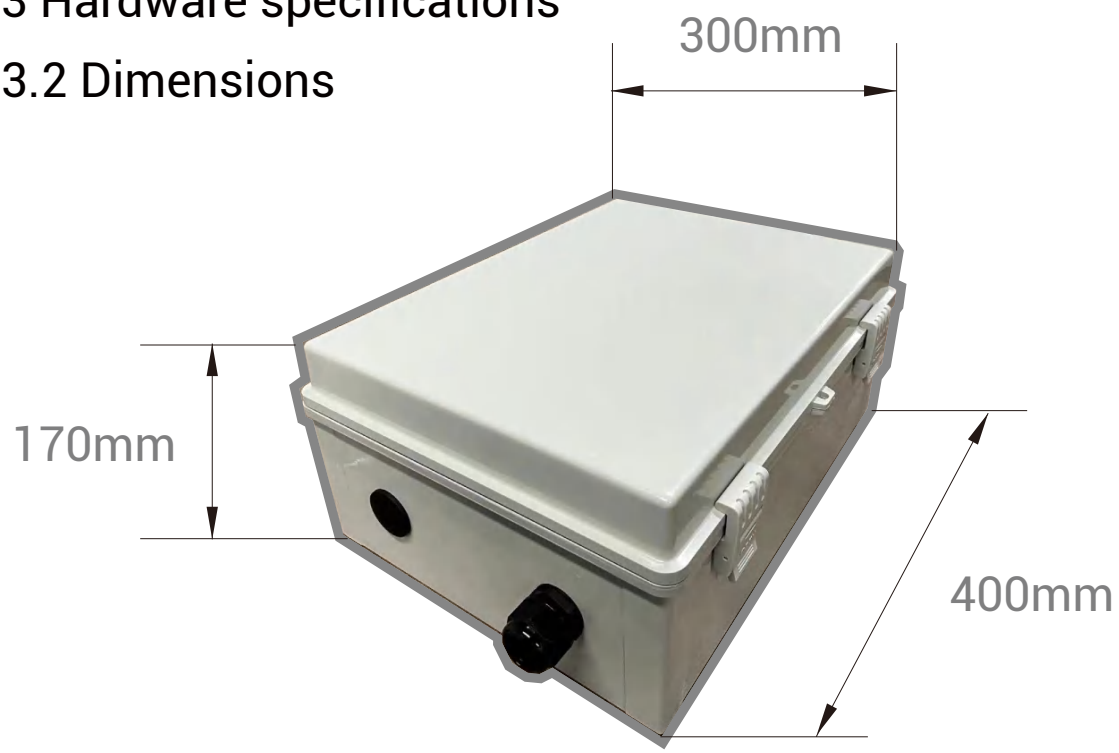
		EHX2	EWX2
Daisy Chain Interface		✔	✔
No. of Ports	1 (5-pole Terminal Block or 6 Pin Connector)		
Protocol	Modbus RTU		
Modbus RTU Mode	Master		
Terminator for RS485	120 ohms		
Isolation	5 kV		
CAN Interface		✔	✔
No. of Ports	1 (3-pole Terminal Block)		
Signals	CAN_L, CAN_H, CAN Signal GND		
Terminator	120 ohms (configurable)		
Isolation	3 kV (built-in)		
AUX Interface		✔	✔
No. of Ports	1 (3-pole Terminal Block)		
Protocol	Modbus RTU		
Modbus RTU Mode	Slave (RS485 pass-thru)		
Terminator for RS485	120 ohms		
Isolation	5 kV		
Bluetooth Interface		✔	✔
Standard	BLE 4.2		
Antenna	Built-in		

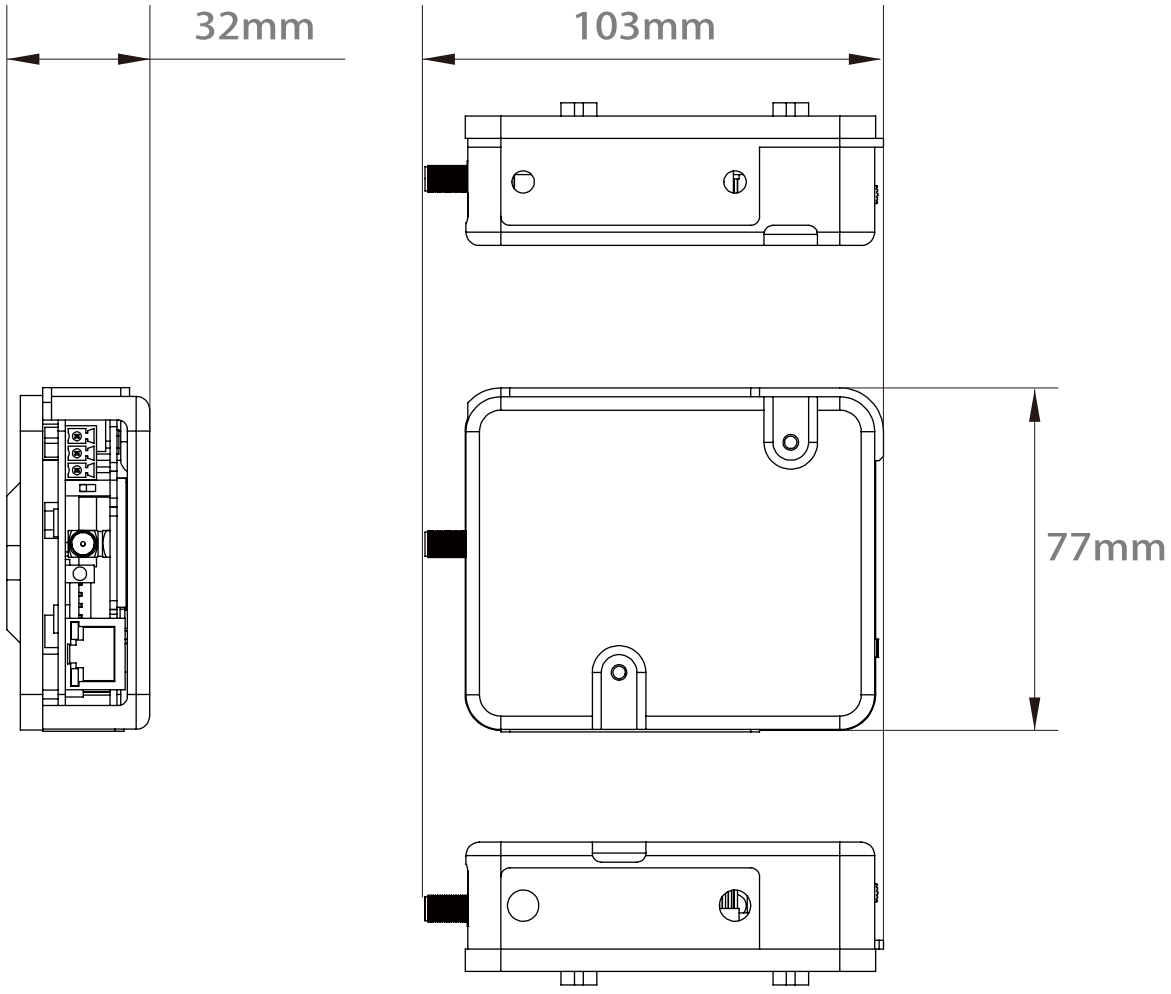
		EHX2	EWX2
Ethernet Interface		✓	✓
10/100BaseTX Ports	1 (RJ45 connector)		
Protocol for Cloud Applications	MQTT		
SCADA controllers on the same LAN subnet	Modbus TCP		
Modbus TCP		✓	✓
Mode	Server (Slave)		
Max. No. of Client Connections	2		
WLAN Interface		✓	✓
WLAN Standards	802.11 b/g/n		
Frequency Band	2.4 GHz		
Wireless Security	WEP, WPA/WPA2		
Antenna	Built-in		
Cellular Interface		✓	✗
Cellular Standards	LTE-FDD/LTE-TDD		
No. of SIM Slot	1		
Cellular Antenna Connectors	1 SMA female		
Power Parameters		✓	
Input Voltage	8 to 24 Vdc		
Power Consumption	2.5 W, Max. 5 W		
Power Connector	Terminal Block		

	EHX2 / EWX2
Environment limits	✔
Operating Temperature	-30℃ to 85℃, Natural convection
Storage Temperature	-40 to 85°C
Ambient Relative Humidity	5 to 85% (non-condensing)
Physical Characteristics	✔
Housing	Plastic, DIN rail mounting
IP Rating	IP20
Dimensions	101 mm / 69 mm / 21 mm
Dimensions (with housing)	103 mm / 77 mm / 32 mm
Weight	150g / 200g (with housing and clip)
Compliance	✔
RoHS	IEC 62321, (EU) 2015/863
CE - EMC	EN 55032 / 55035, EN 61000-3-2/-3-3
CE - RED	EN 301 908 / 300 328, EN 301 489-1/-17/-52, EN 62368-1
CE - LVD	EN 62368-1
FCC	SDoC Part 15B, ID Part 15C
Production Metering	ANSI C12.20 accuracy class 0.5, working with EPM kit
Consumption Metering	Accuracy class 2.5, working with EPM kit

3 Hardware specifications

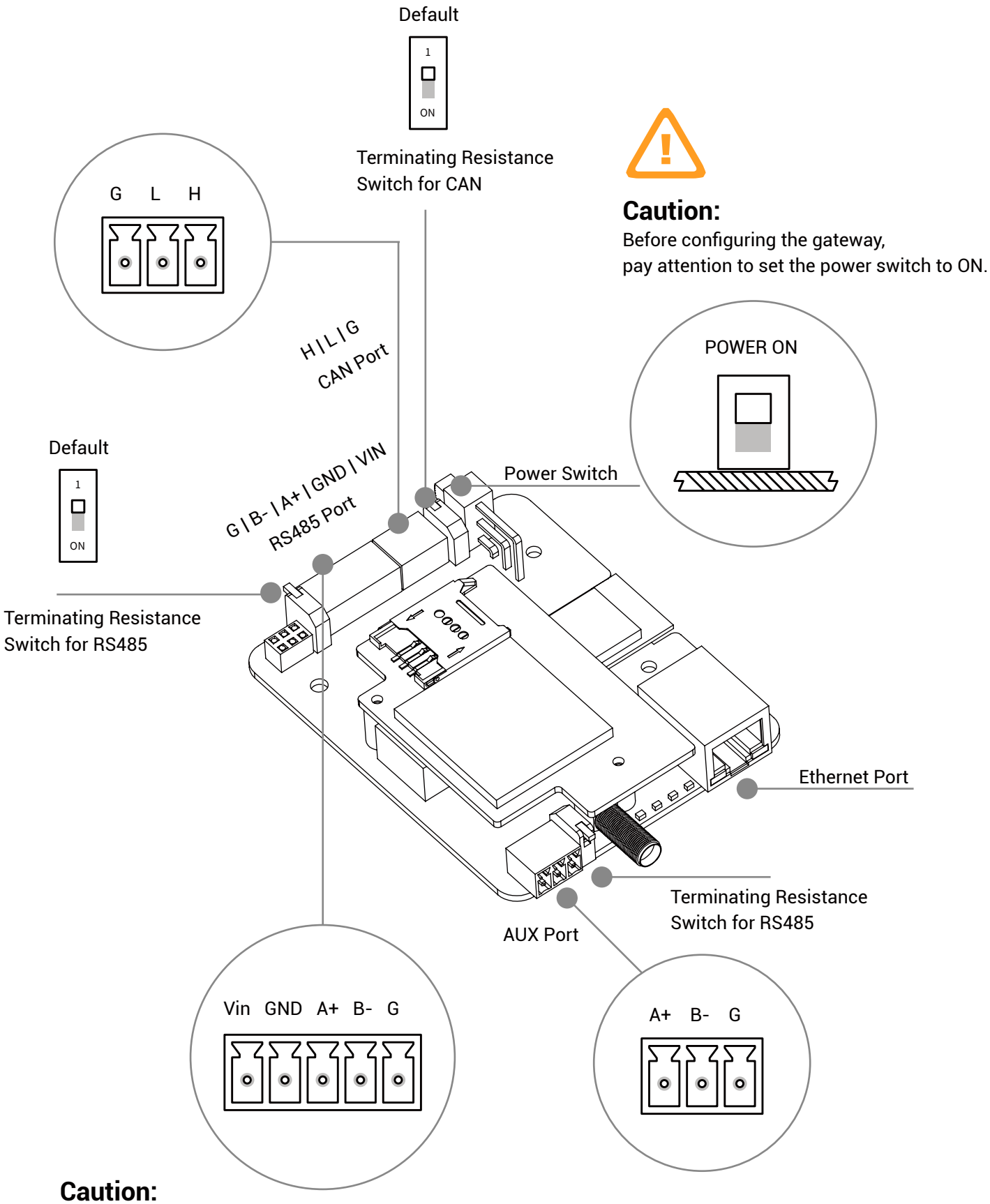
3.2 Dimensions





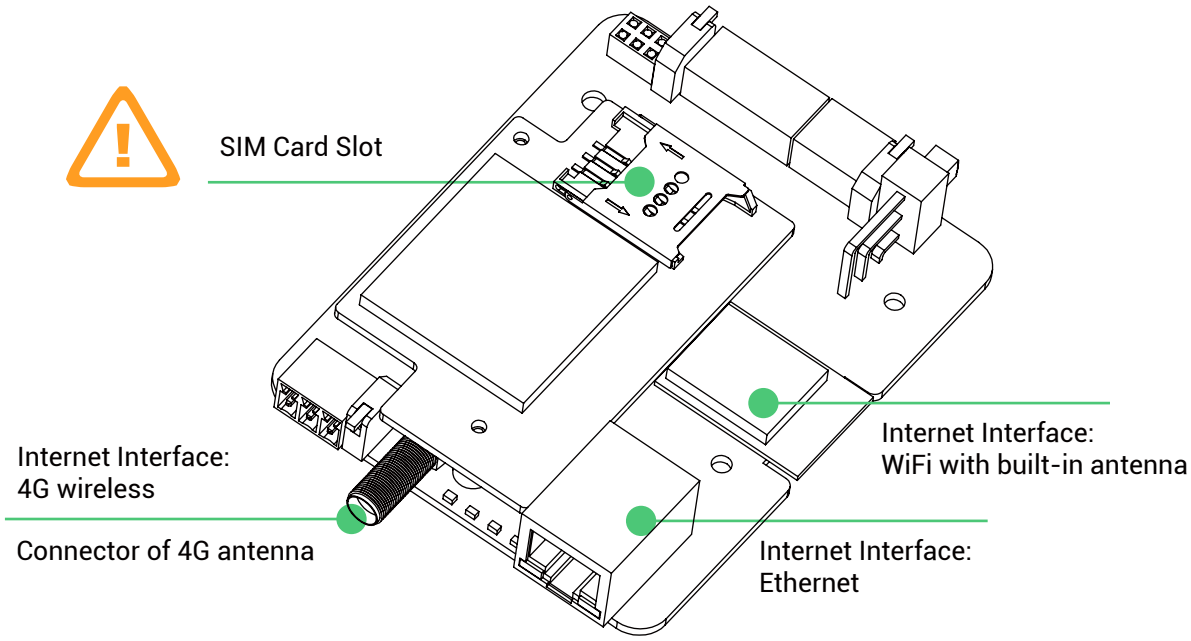
3 Hardware specifications

3.3 Interfaces and indicatiors



Caution:

If the length of the cable connecting to RS485 port or AUX port of the gateway is over 1000 meters, the Switch button must be set to ON.



Caution:

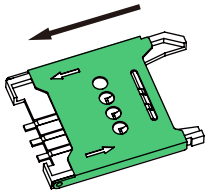
CPS SIM can only be used in CPS Gateway.

By default, CPS Gateway support customers' unrestricted use of the existing and future remote O&M functions of CPS Portal.

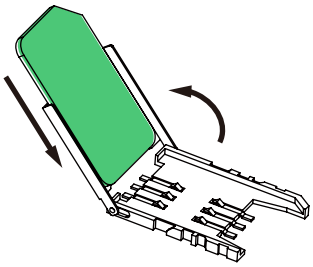
DATA PLAN CONSUMPTION STATISTICS ARE NOT PROVIDED.

At the same time, CPS Gateway does not guarantee the 3rd party SIM card.

CPS Gateway hardware warranty is valid by default within the validity period of our data plan.

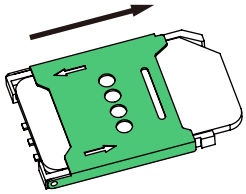


1) Push in the direction shown to unlock the flap



2) Open the flap

Then, insert the SIM card into the flap along the slot in the flap. Fold the flap and SIM card into place on the SIM card holder



3) Push in the direction shown to lock the flap

Internet interface : 4G (Optional)

The CPS/FOMware SIM card can operate in multiple carrier environments in all regions of the world, for example, North America supports AT&T + T-mobile + Verizon at the same time.
After the gateway is powered on and works normally, it will select and connect to the provider network with the strongest or most stable signal.

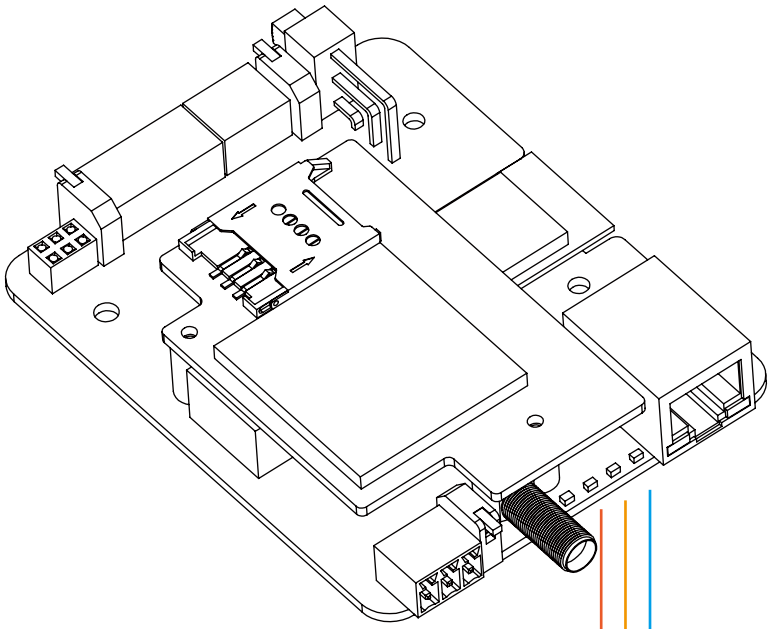
If you need to purchase CPS SIM, please contact CPS sales staff for detailed information.

Internet interface : WIFI / Ethernet

Firewall Issue : WIFI / Ethernet

If the gateway is connected to the Internet using WiFi/ Ethernet instead of 4G.
Open the LAN firewall ports before commissiong !

The following ports must be opened both ways (incoming and outgoing communications):
global-2.chintpower.com



Cellular Error

Indicates whether the cellular is faulty

Light Off		No cellular module or no error
Light On		Error

RS485 Device

Indicates whether the RS485 device is connected to the gateway and whether there is a RW command to the daisy chain being executed

Light Off		Found Nothing
Light On		Some Devices Found

IP ACK

Indicates whether the gateway is connected to the CPS portal or target server via the Internet

Light Off		Unable to connect to LAN router or 4G base station
Blink		Connected to a LAN router or 4G base station, but not yet connected to the target server
Light On		Connected to the target server

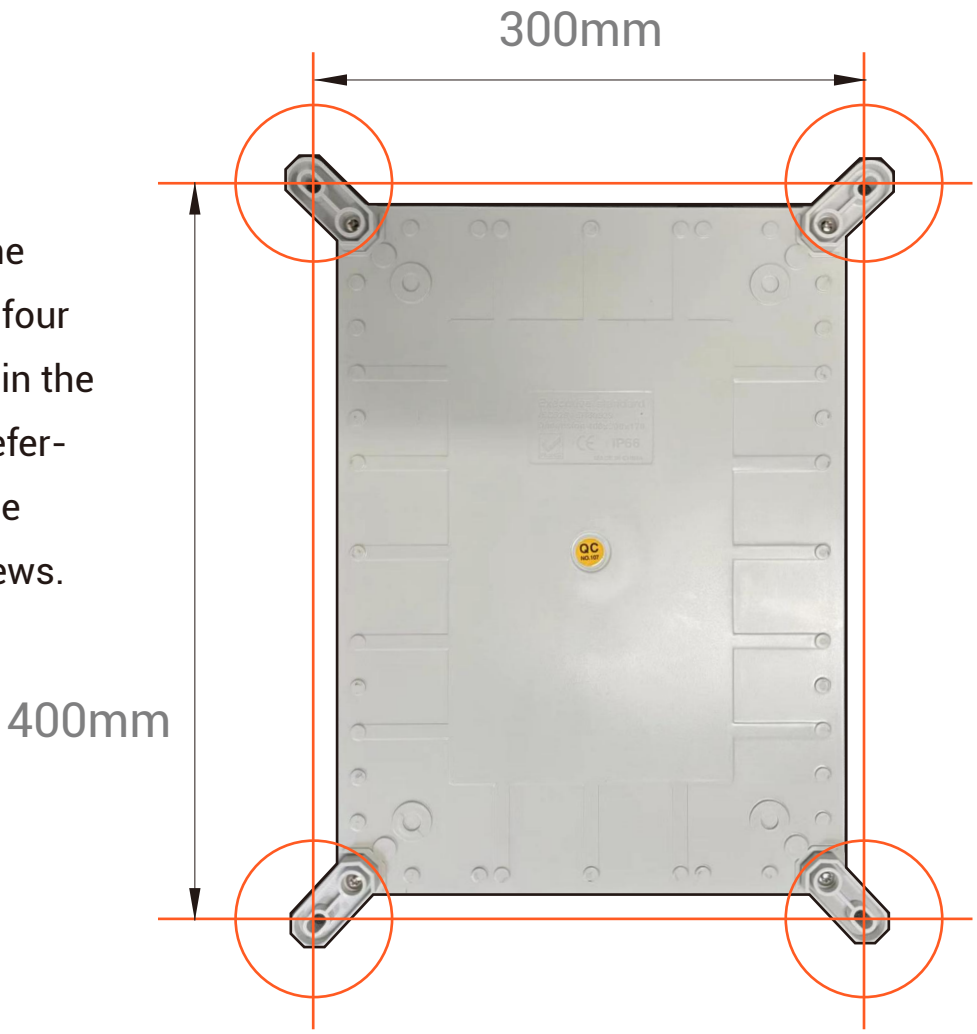
3 Hardware specifications

3.4 Housing and mounting

SE box accessories bag with wall mounting accessories and screws,

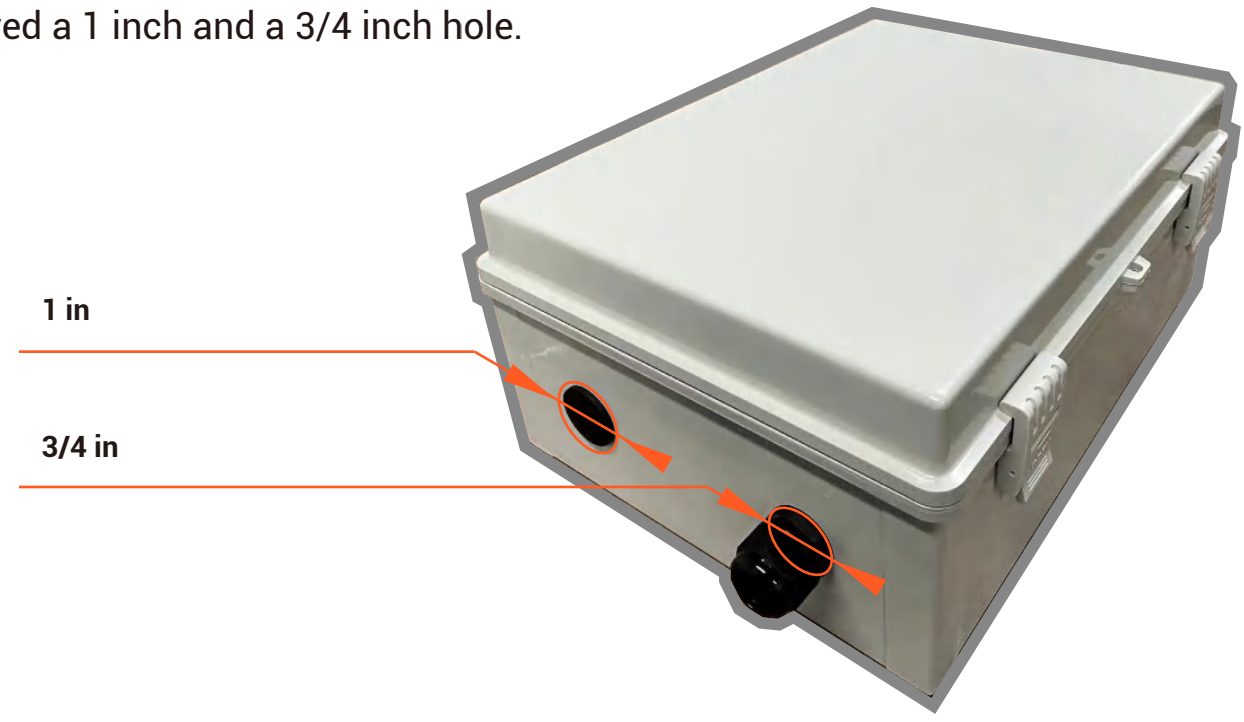
using a screwdriver to screw the accessories one by one to the four corners of the box

Pre-open four holes in the wall with an impact drill, four holes spacing as shown in the figure, the depth of the refer-ence installer to purchase their own expansion screws.



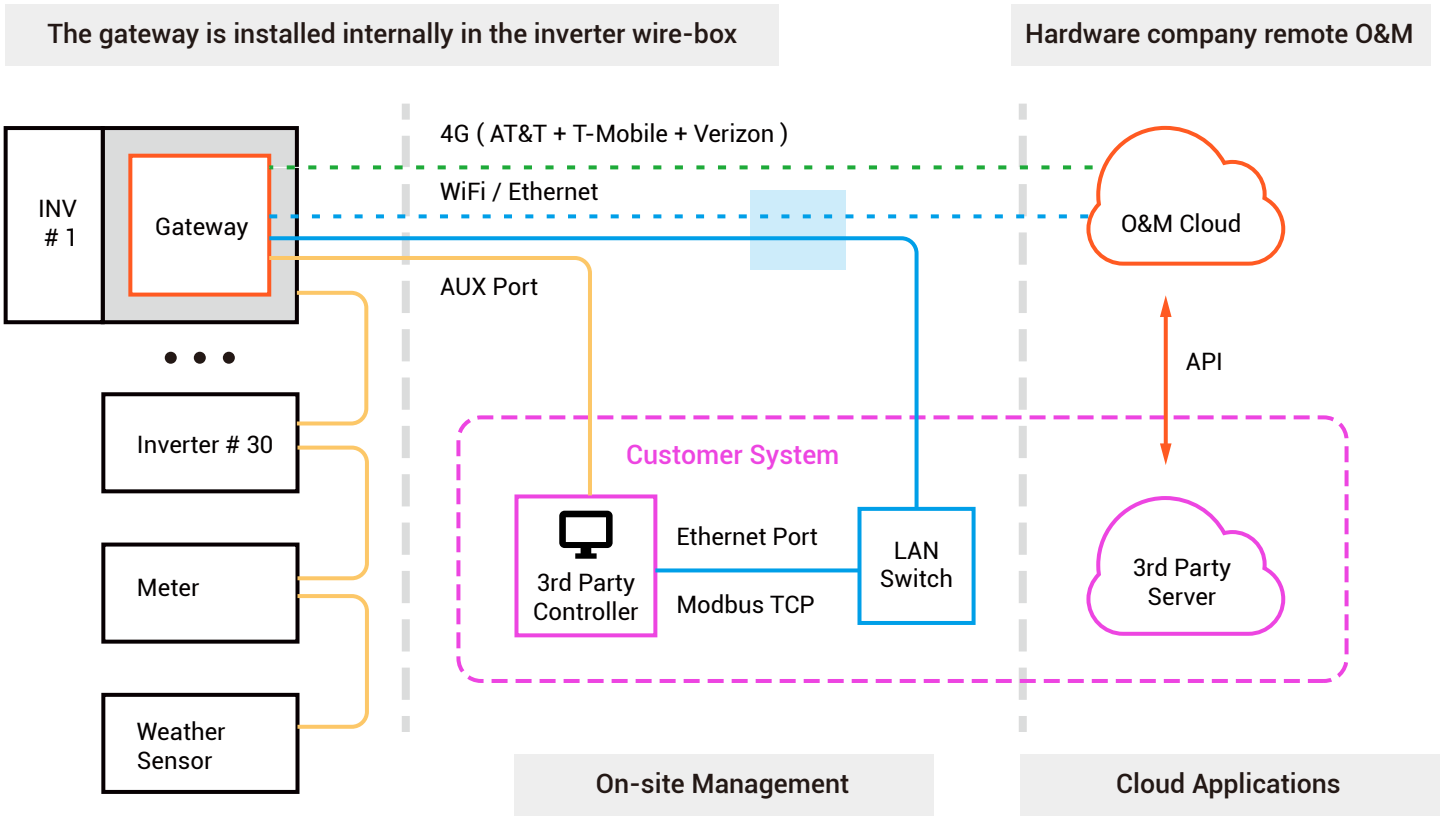
Fix the SE box to the wall by expansion screws, and check if it is firmly installed.

In order to facilitate the laying of pipes and then connect the cables, SE Box has reserved a 1 inch and a 3/4 inch hole.



4 System design for X2 gateway

4.1 Gateway default : Flex Type (NO RSD)



If the gateway is installed in the inverter wire-box, note that the CommBoard needs to be replaced in the inverter wire-box where the X2 gateway is installed.

On a daisy chain cable, users can connect different kinds of hardware or different versions of the same model. The gateway can be configured with different data communication protocols depending on the Modbus ID.

The gateway can be connected to up to 32 inverters (or different hardware).

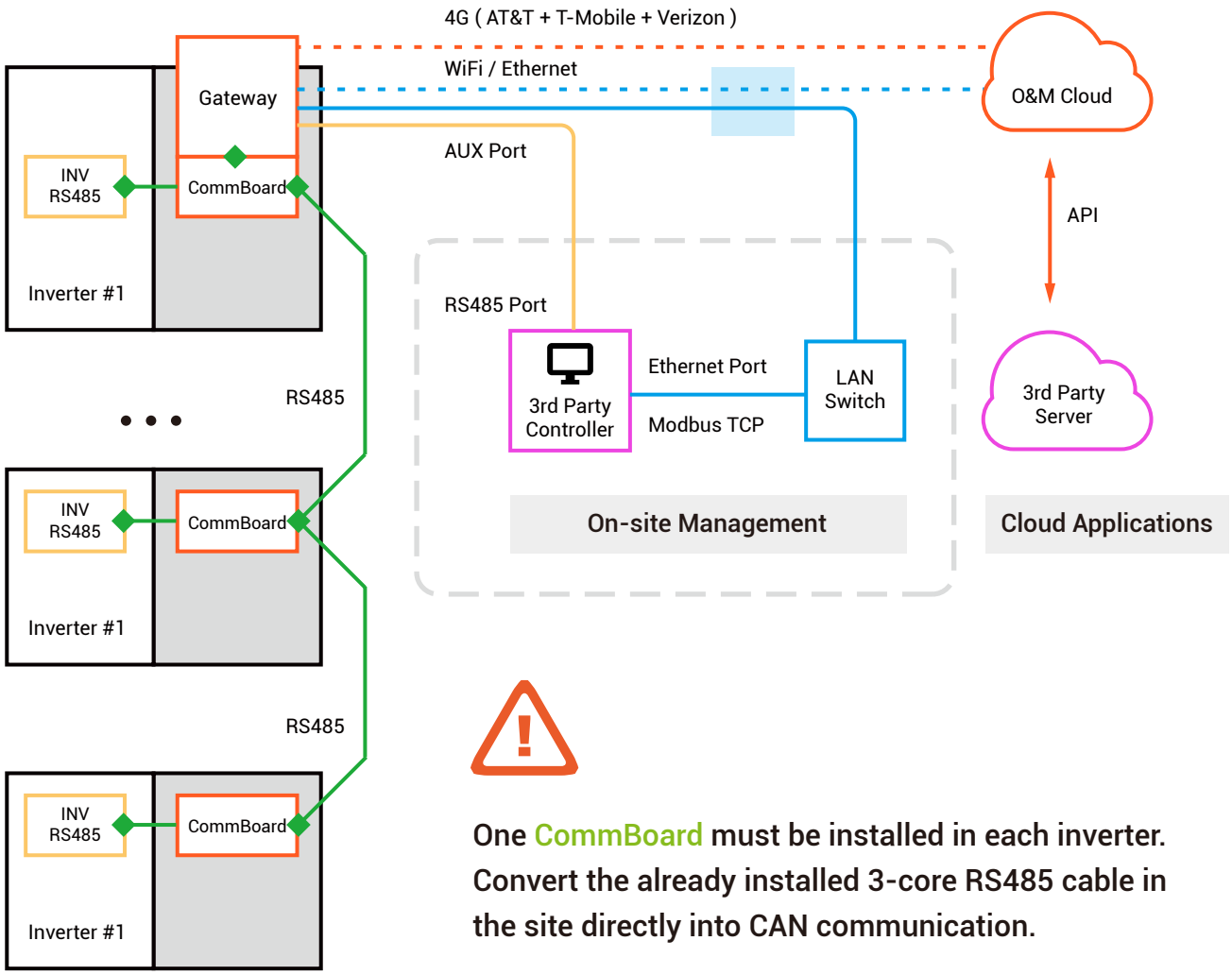
Connect directly to the daisy-chained X2 gateway.
Do not set the gateway to Super Type, as this will cause communication to be interrupted.

4 System design for X2 gateway

4.2 Super Type (NO RSD)

The gateway is installed internally in the inverter wire-box

Hardware company remote O&M



One CommBoard must be installed in each inverter. Convert the already installed 3-core RS485 cable in the site directly into CAN communication.

Auto-commissioning :

After the entire Inverter daisy chain has been replaced with FCB , the X2 Gateway automatically discovers all the hardware, eliminating the need for the user to configure Modbus IDs for the inverters one by one.

In scenarios without MLPE connection, the gateway can be connected to up to 32 inverters (or different hardware).

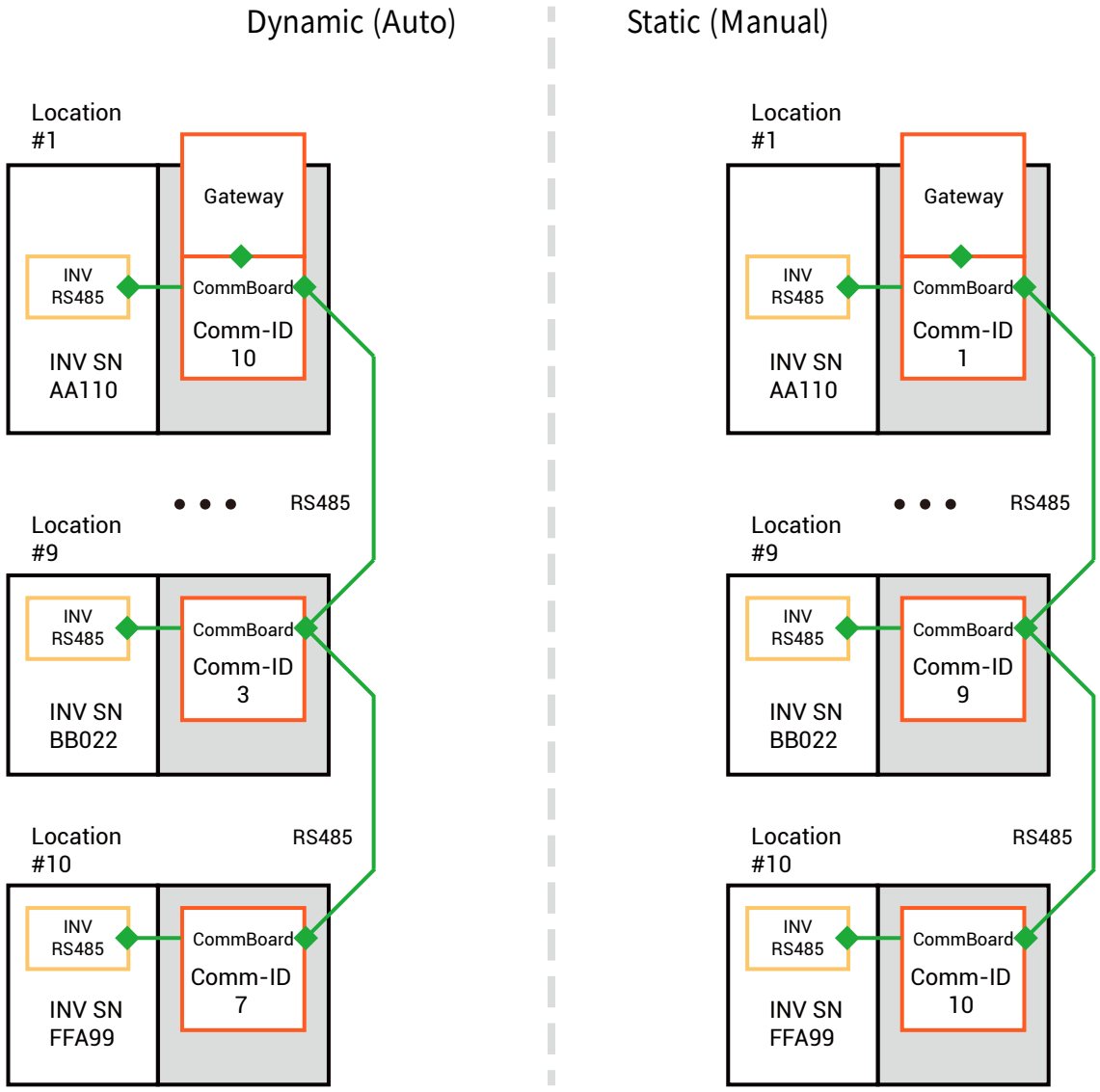
In Super Type, the installer can automatically commission the entire daisy chain of inverters. As a result, the Modbus ID of all inverters is kept at the default #1.
At the same time, the gateway automatically assigns a Comm-ID to each CommBoard based on the number of inverters connected to the gateway (which can be changed manually).

The format of Comm-ID is the same as Modbus ID 1~254, also use 1~254 integer.

When the third party controller needs to read/write the inverter daisy chain, just send read/write commands to the target Comm-ID (inverter) according to the Comm-ID and follow the standard Modbus RTU commands.

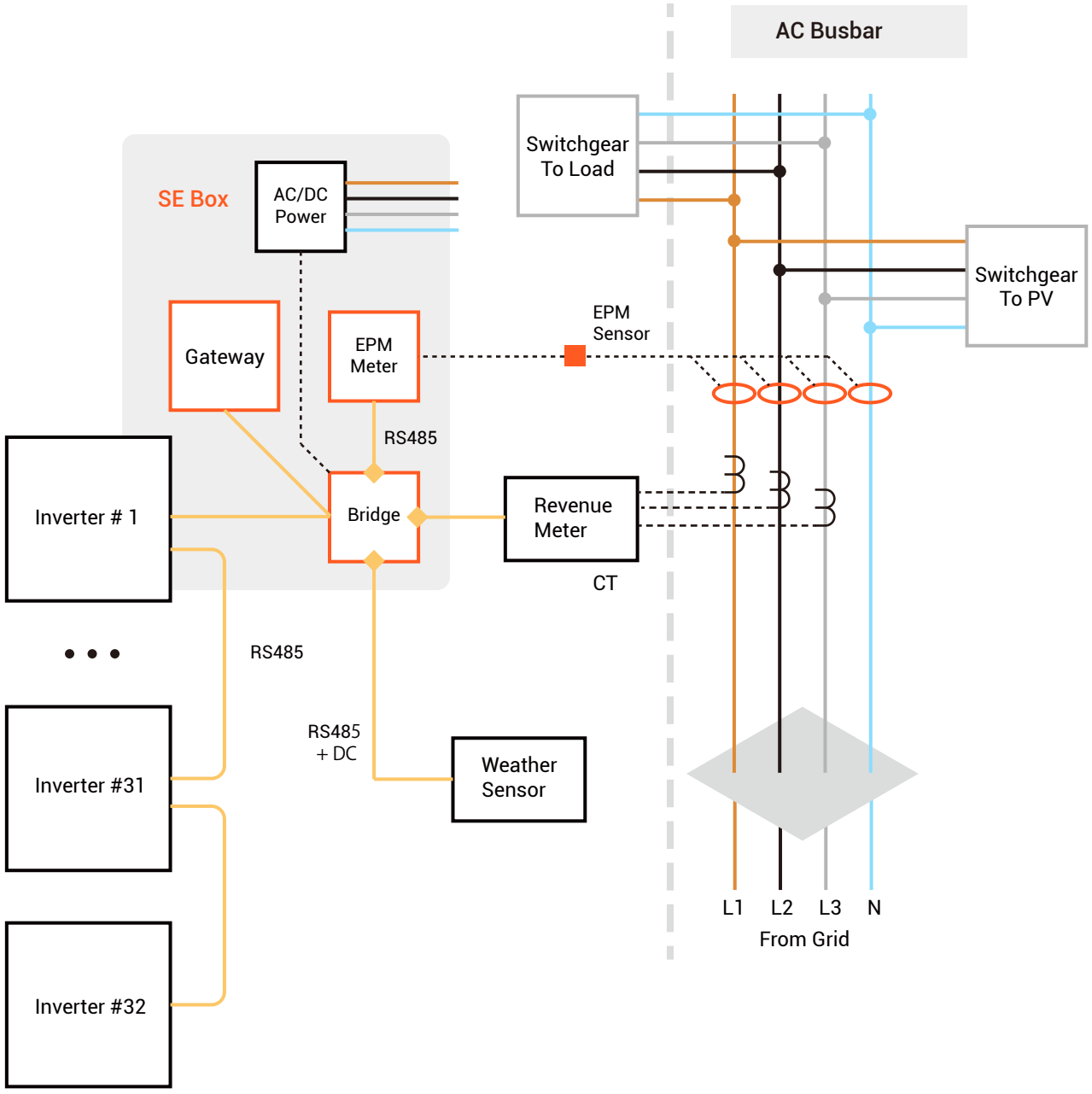
The Comm-IDs are read/written sequentially and then the entire inverter daisy chain is polled. This will complete the polling of the entire Daisy Chain.

The relationship between the Comm-ID and the inverter SN is created automatically by the gateway and can be viewed via the APP/WEB. You can also manually reassign Comm-IDs



4 System design for X2 gateway

4.3 Zero-export and load-monitoring (Requires EPM kit)



- Convenient and safety hardware that accommodates C&I sites of all sizes.
- Set everything up with one click and diagnose incorrect wiring.
- More than "zero exports" and adjusting generation with intelligence.

The X2 gateway works in conjunction with the EPM kit to provide real-time "Zero Export" dynamic control of multiple inverters in C&I sites in response to load variations.

"Zero Export" is completely dependent on the reliability and timeliness of communication between the gateway and the devices in the daisy chain, and EPM performance is based on the premise of reliable communication.

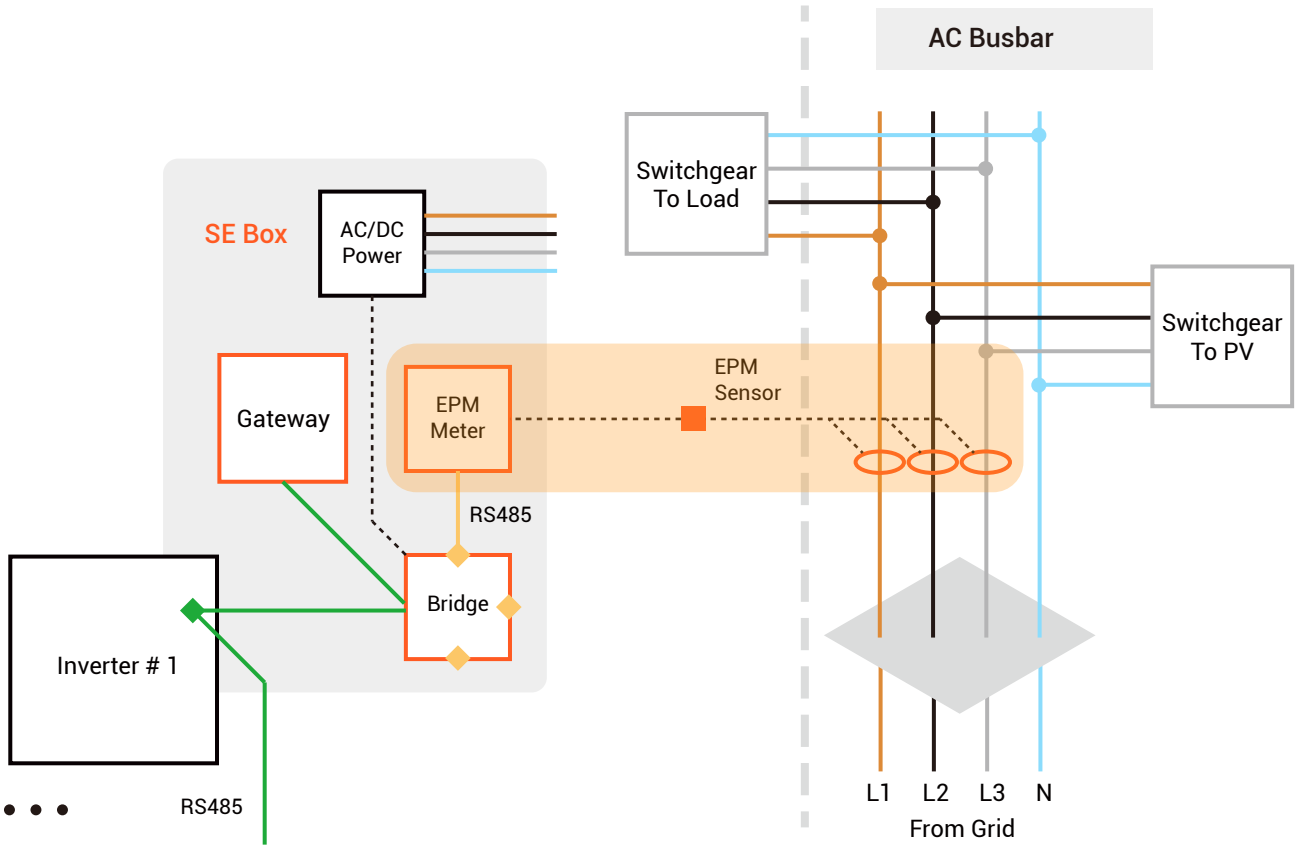
Notice:

EPM is completely dependent on the reliability and timeliness of communication between the gateway and the devices in the daisy chain, and EPM performance is based on the premise of reliable communication.

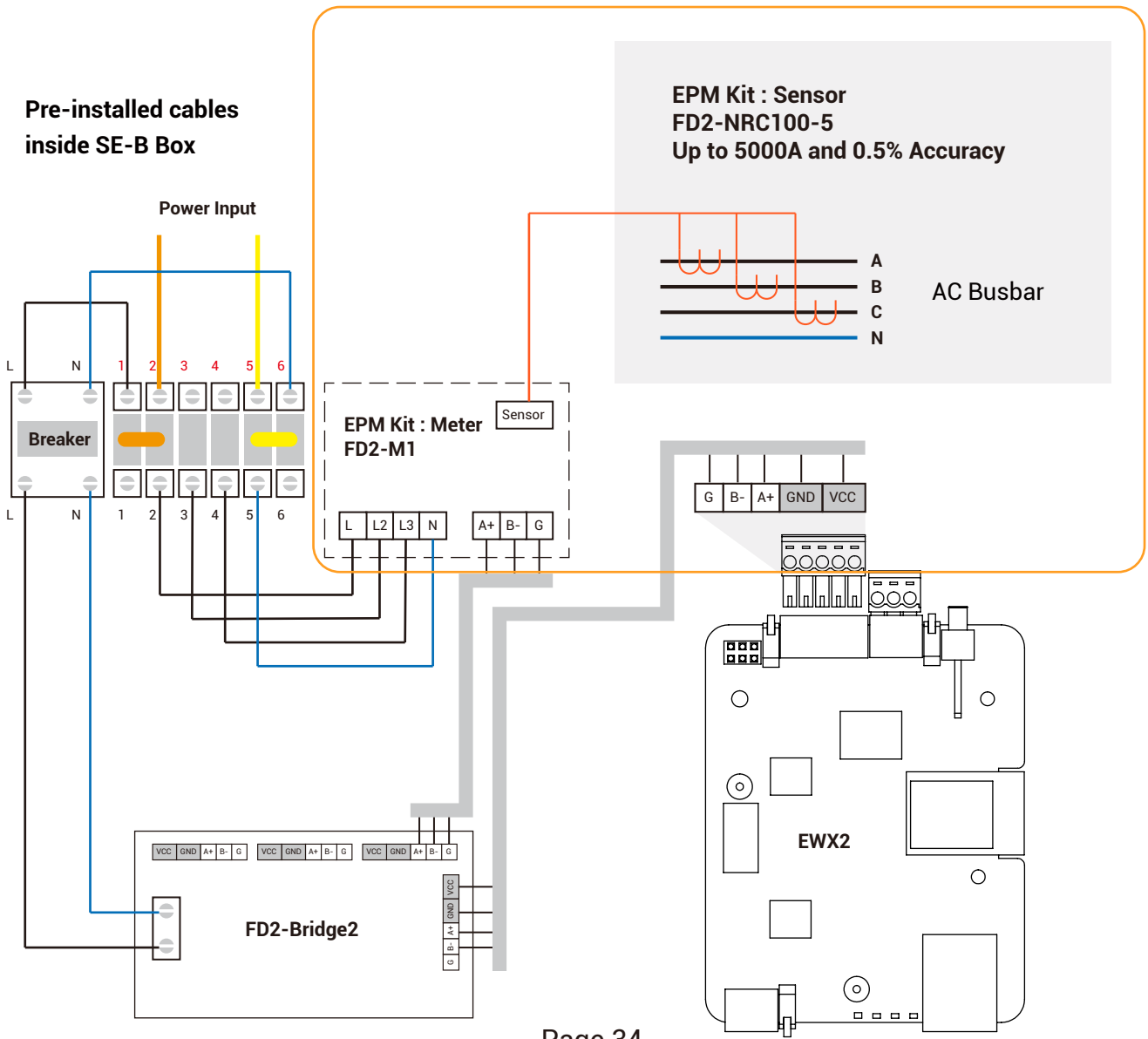
Minimum time interval for the entire daisy chain to perform a single derating	Maximum time for the inverter to execute a write command	
	< 100 ms	~ 200 ms
2 Seconds	5	2
5 Seconds	16	8

Maximum number of inverters that can be connected

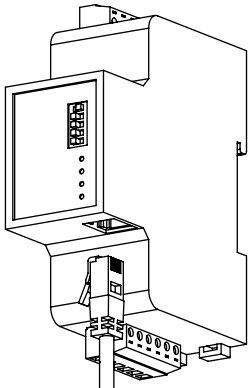
When running in EPM mode, the gateway cannot perform any other scenarios.



Pre-installed cables inside SE-B Box



EPM Meter
FD2-M1

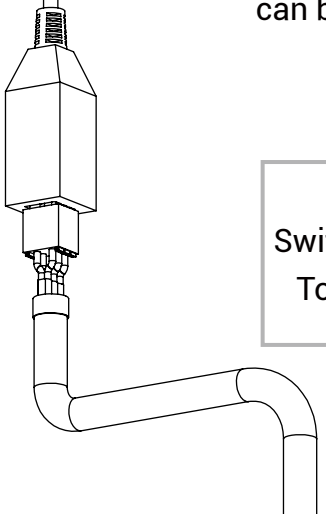


The EPM sensor is capable of measuring currents up to 5000 A.

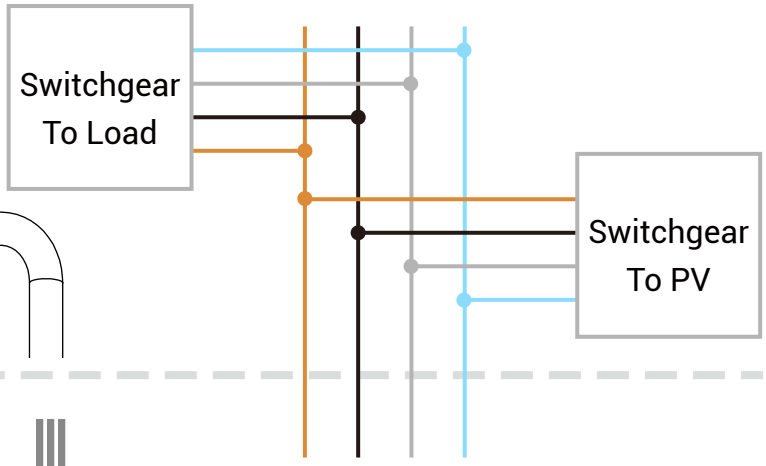
The EPM meter supports 480 VAC by default (800 VAC optional).

Therefore, it can be directly applied to all kinds of C&I sites.

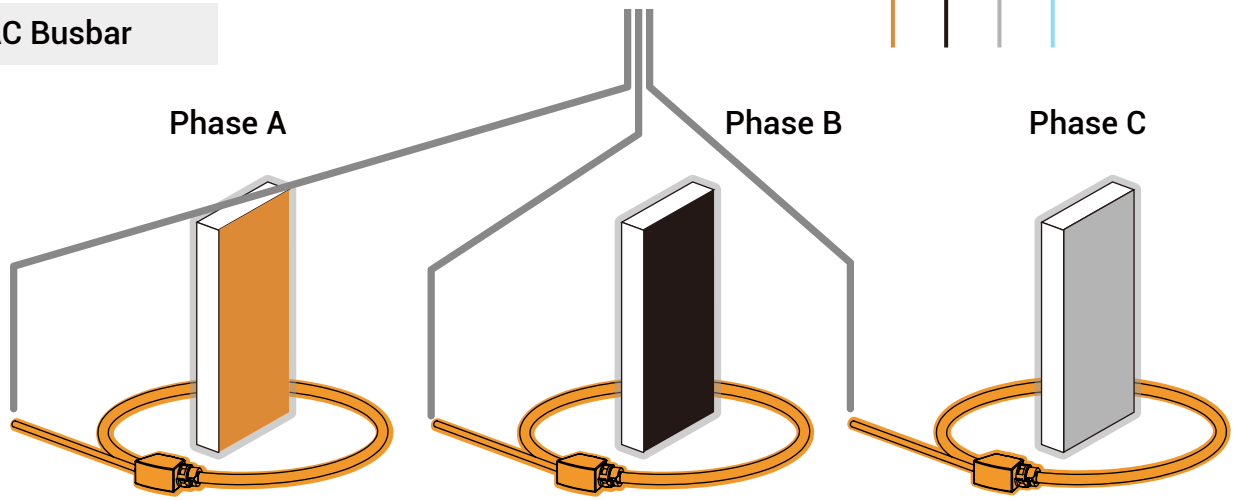
Once the EPM kit is connected to the X2 gateway, the Zero-export and Load-monitoring functions can be activated via App/Web.



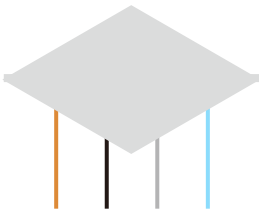
5 Meters Cable



AC Busbar



EPM Sensor : FD2-NRC100-5

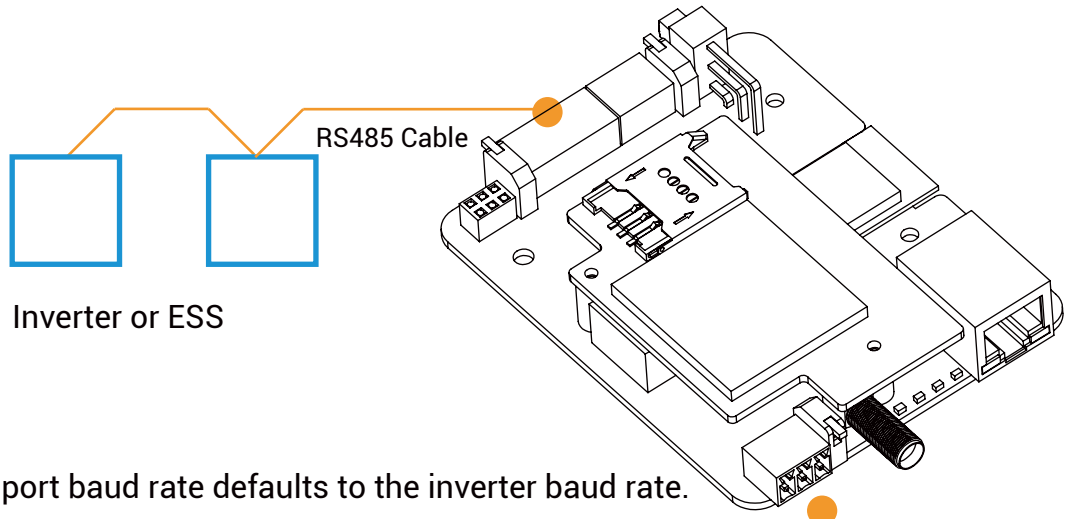


4 System design for X2 gateway

4.4 Multi-party management

Option A : RS485 Pass-thru

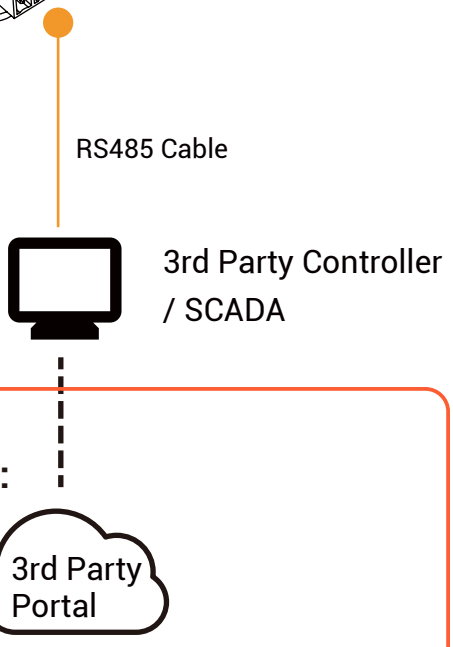
The RS485 interface of the third-party controller is connected to the AUX interface of the gateway, which is equivalent to a direct transmission connection with a daisy chain.



AUX port baud rate defaults to the inverter baud rate.

Users can change the inverter baud rate to 1200,2400,4800,9600,19200,38400,57600,115200.

The AUX port can be modified and adapted to different rates.



Key parameters for third-party controllers/SCADA:

Interval between polls: 300 milliseconds or more

Response timeout :

200ms minimum for read commands, recommended to be more than 500ms;

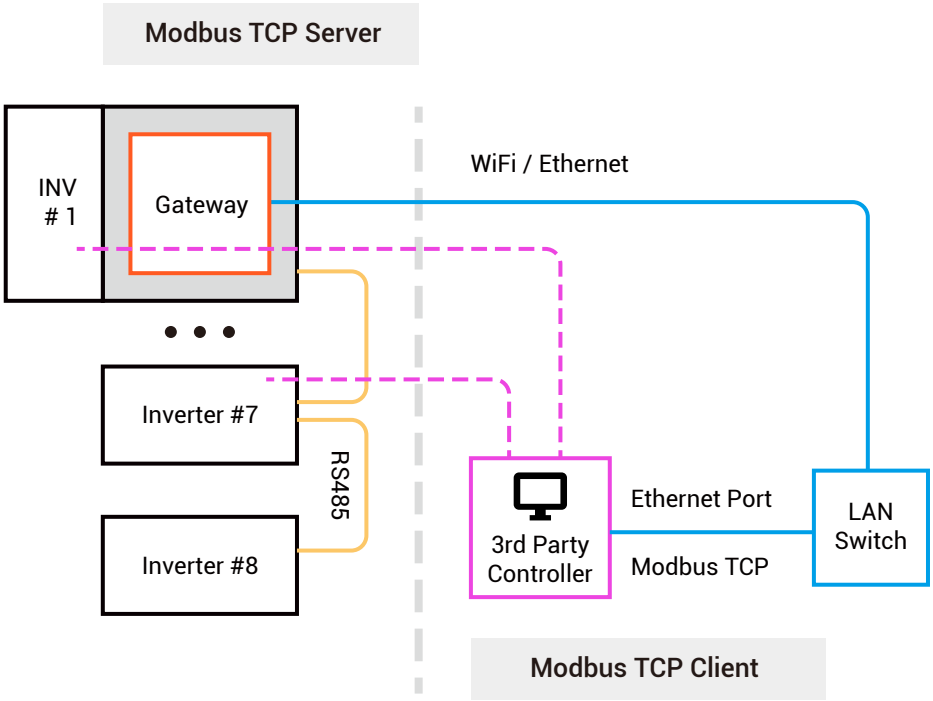
400ms minimum for write commands, recommended to be more than 700ms;

2.5s for connection via AC-PLC;

4 System design for X2 gateway

4.4 Multi-party management

Option B : Modbus TCP Pass-thru



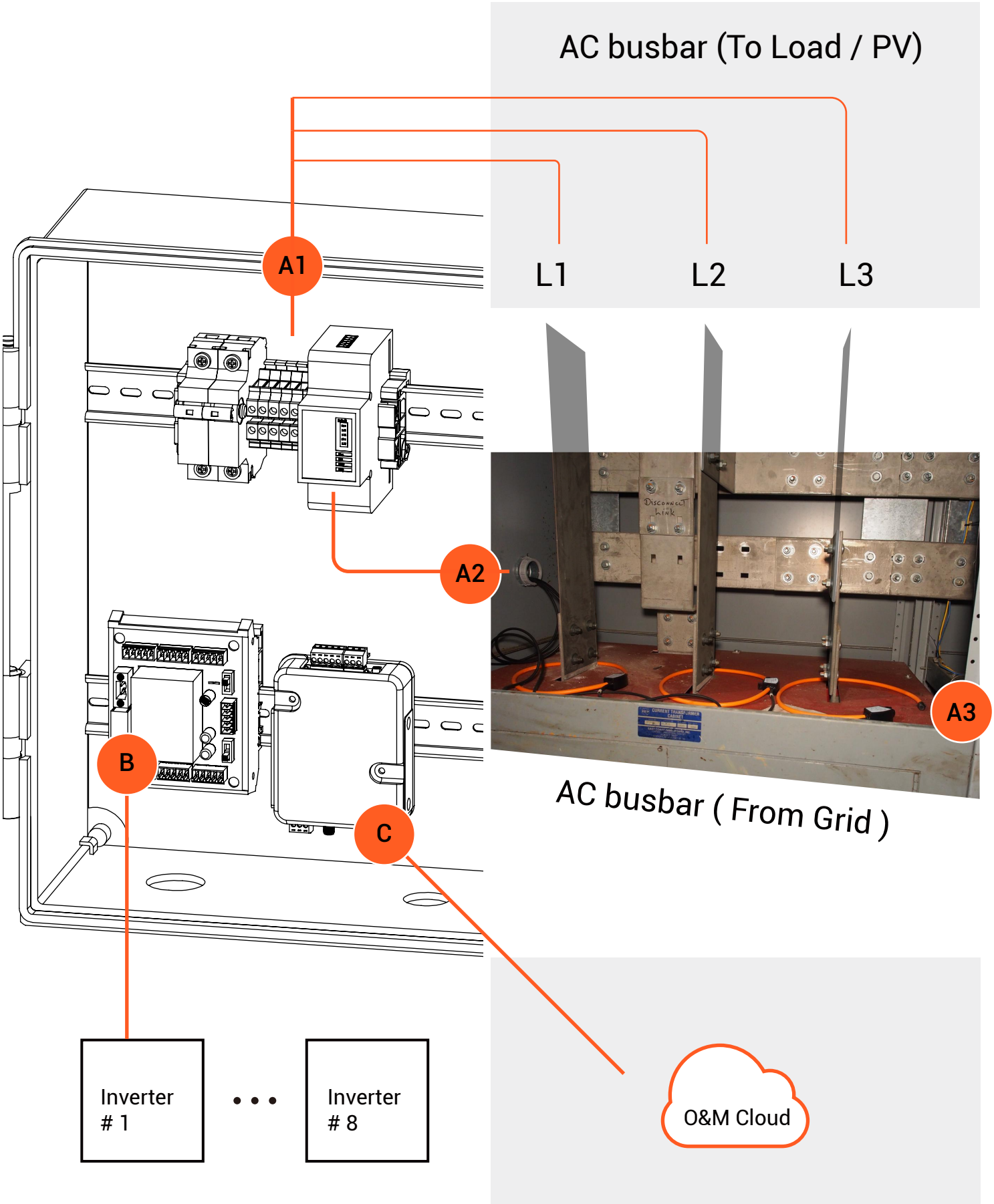
The gateway connects to the Daisy Chain and is created as a Modbus TCP server object for each device with a different Modbus ID.

A third party SCADA acts as a Modbus TCP client and connects to the target Modbus ID device via a TCP channel.

The gateway can be connected to up to 8 Modbus TCP clients.

5 Hardware installation

5.1 Zero-export with Flex Type (check page 1~7)



6 Non-registered User (Installer)

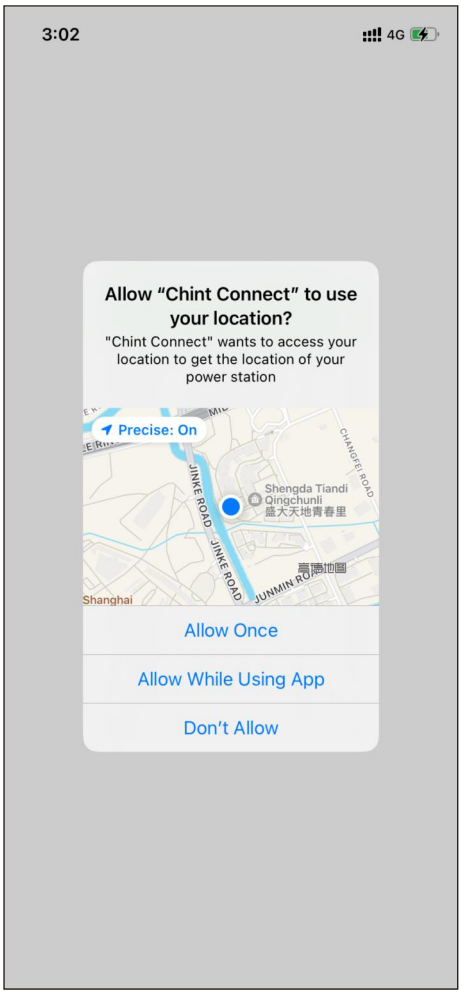
6.1 APP connect to gateway

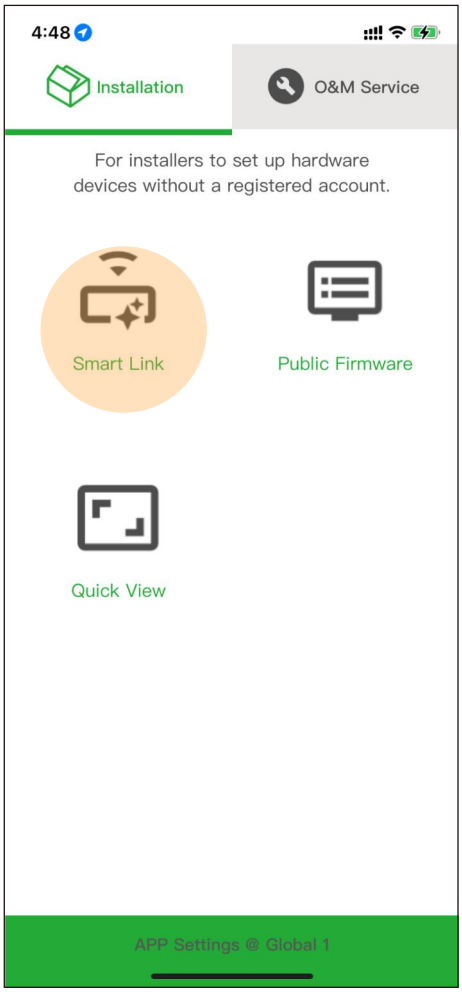
Scan the QR-code to complete APP download and installation by using the mobile phones that can access the Internet. Or search for “Chint Connect" in Apple Store and Google Play.

The Android/iPhone user interface may look slightly different but the setup procedure will be the same as shown.

global-2.chintpower.com

“Portfolio Owner" manages the site remotely through a web console and can log in from the URL global-2.chintpower.com



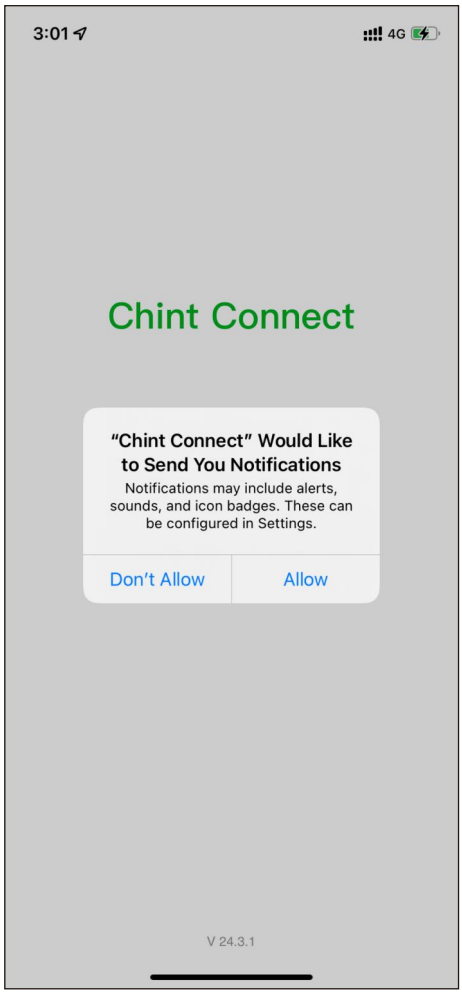


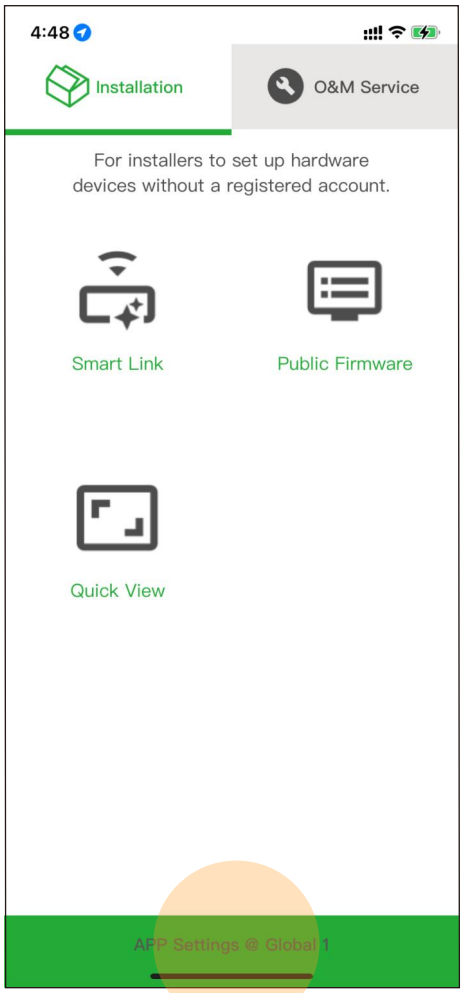
Launch the APP,

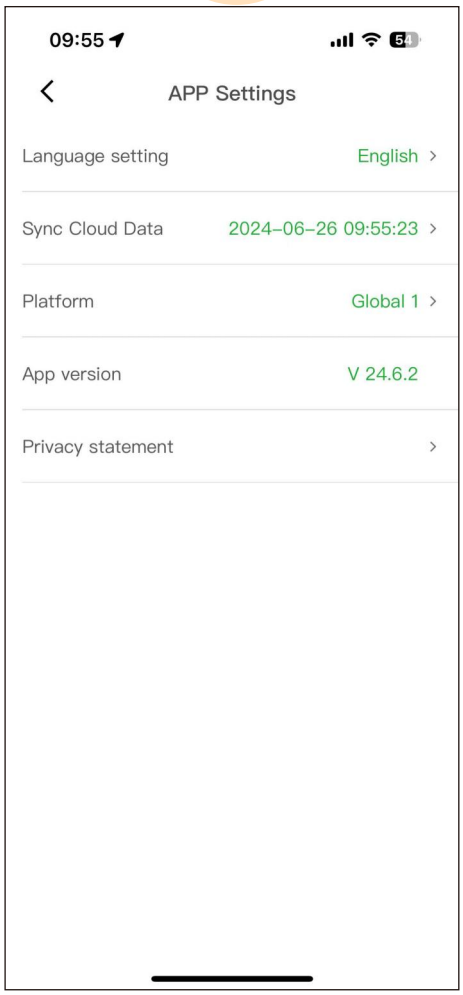
note that you must allow the APP to obtain the two mobile phone permissions of location and Bluetooth, otherwise the APP will not work properly.

By clicking "Smart link",

the APP will automatically detect the connected hardware scene and provide different interactive interfaces after connecting to the gateway.







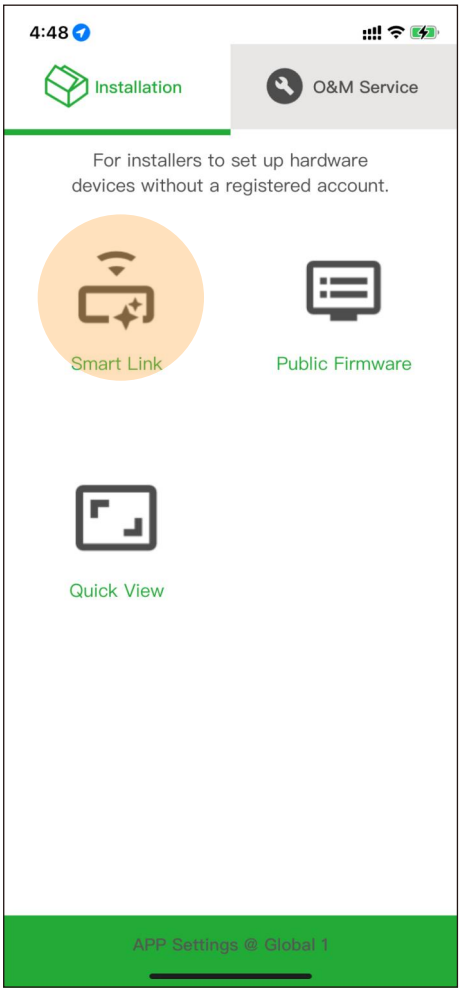
When launching an app, it is recommended to allow the app to send notifications.

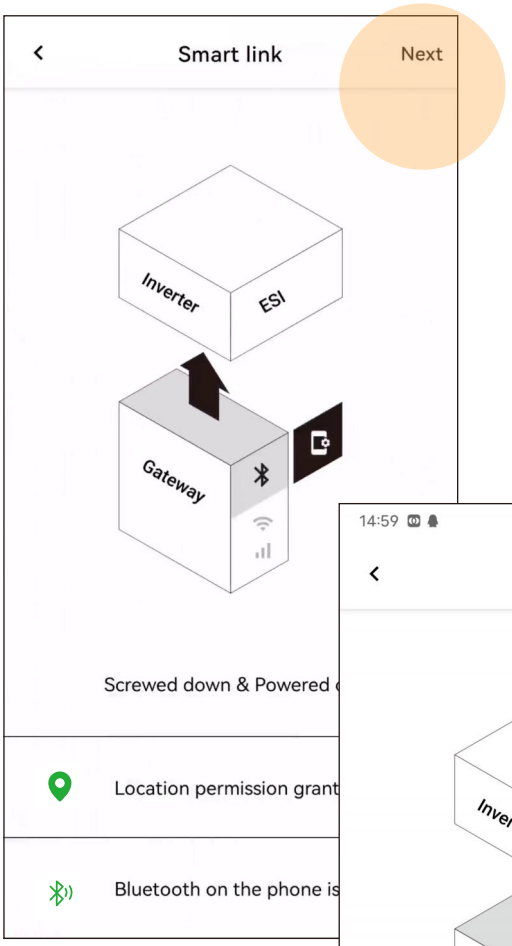
Otherwise users cannot receive subscribed real-time hardware alertsconnecting to the gate-way.

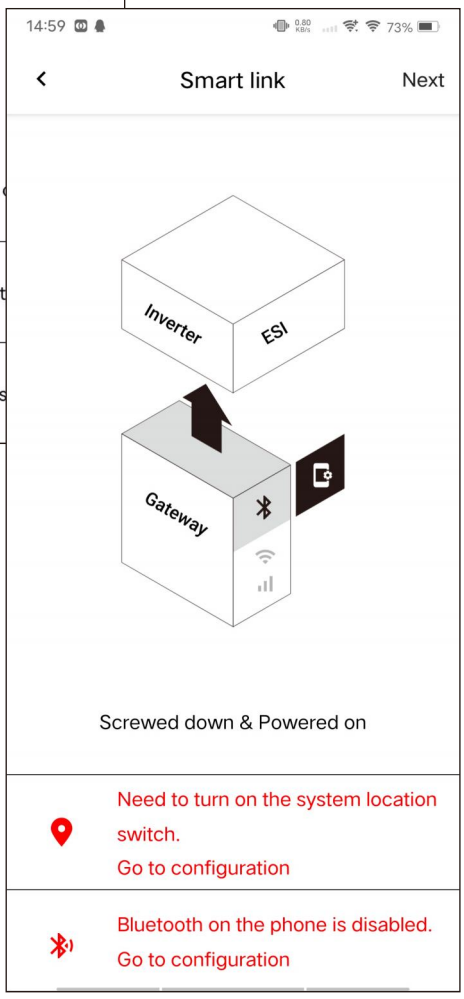
In the APP settings interface, users can change the language, synchronise scene data and switch servers at any time.

Make sure your phone can connect to the Internet when you run the app for the first time.

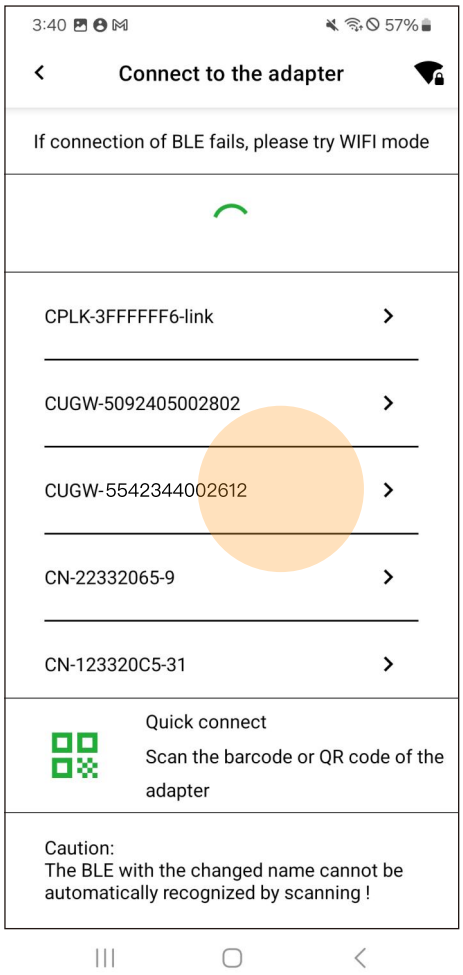
The APP needs to sync some important data from the cloud.

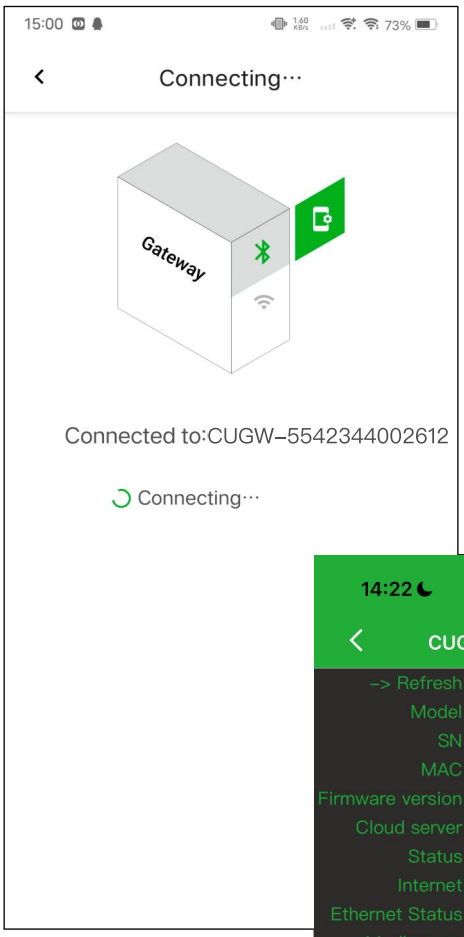


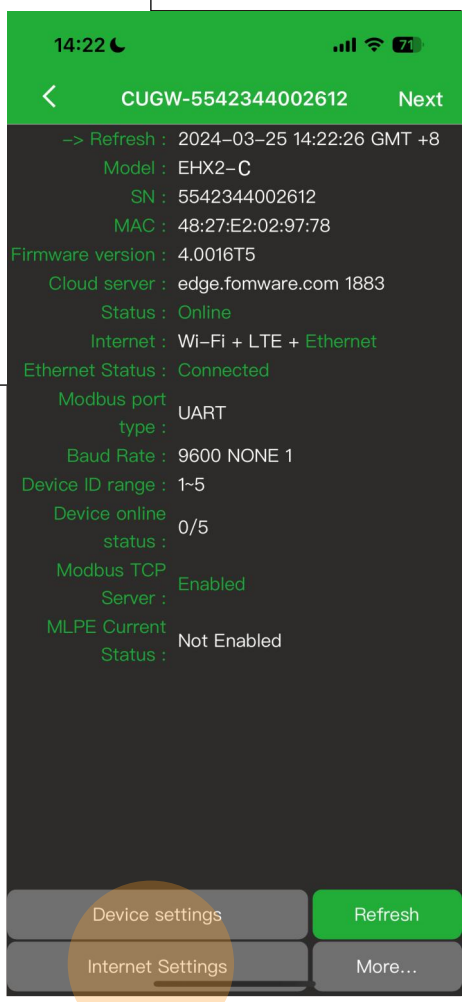




When the APP prompts for location and Bluetooth permission issues, please tap the warning area to enter the phone settings interface.







The gateway SN is included in the BLE signal name, and the APP will list the scanned signals.

Select the SN consistent with the target gateway label and click to enter.

Click on the gateway SN, when the APP connects to the gateway, if there is a problem, it will indicate a specific error.

Bluetooth troubleshooting

“ Connection failure "

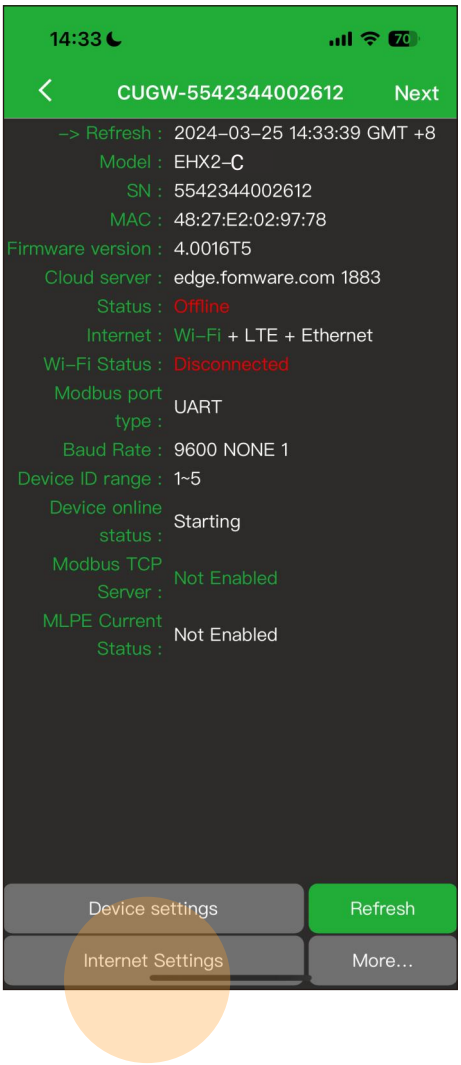
- Phone is too far away from the gateway.
- Another phone has been connected to the gateway and is communicating normally.
- Android 14 (or other versions) may have issues communicating with the gateway and will need to upgrade the gateway to the latest version.

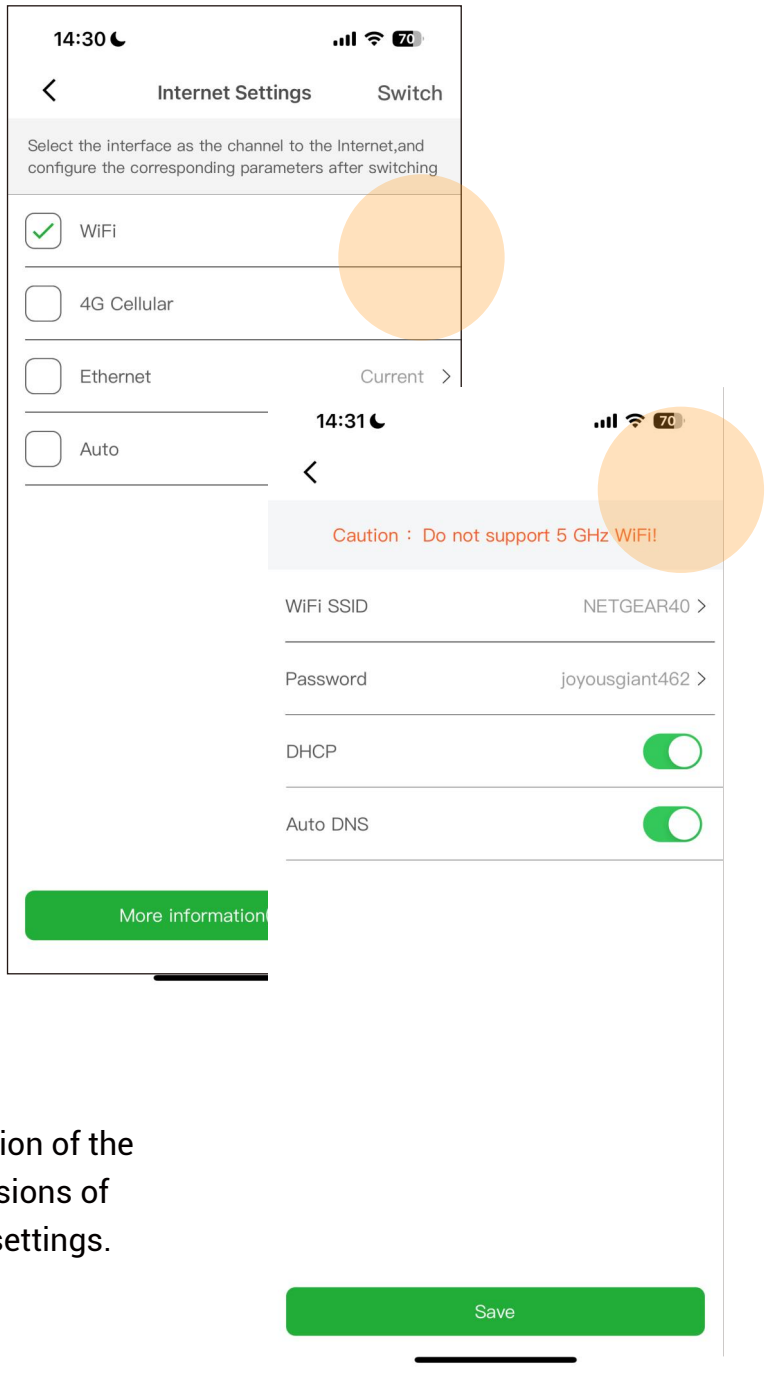
“The gateway must be upgraded with firmware to work properly, please wait for about 5 minutes"

- Unknown communication error, try to solve it by updating the firmware.

6 Non-registered User (Installer)

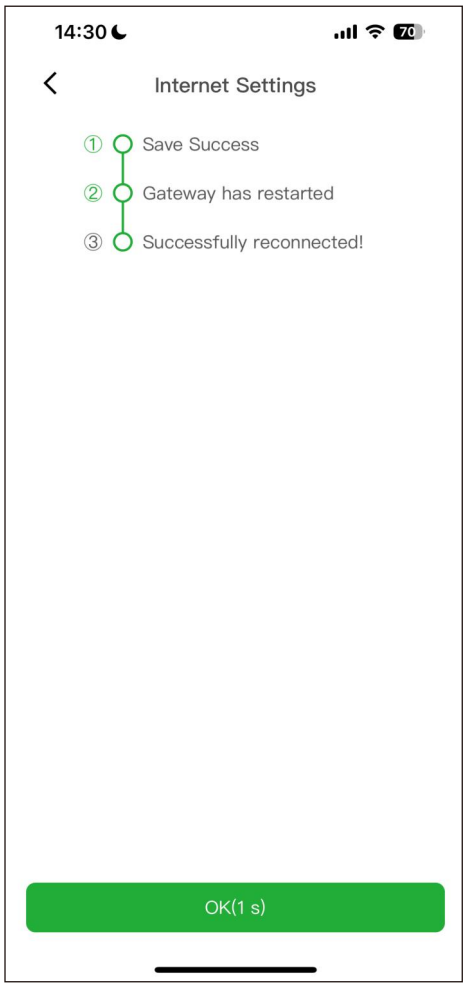
6.2 Setting up the gateway to connect to the WiFi router





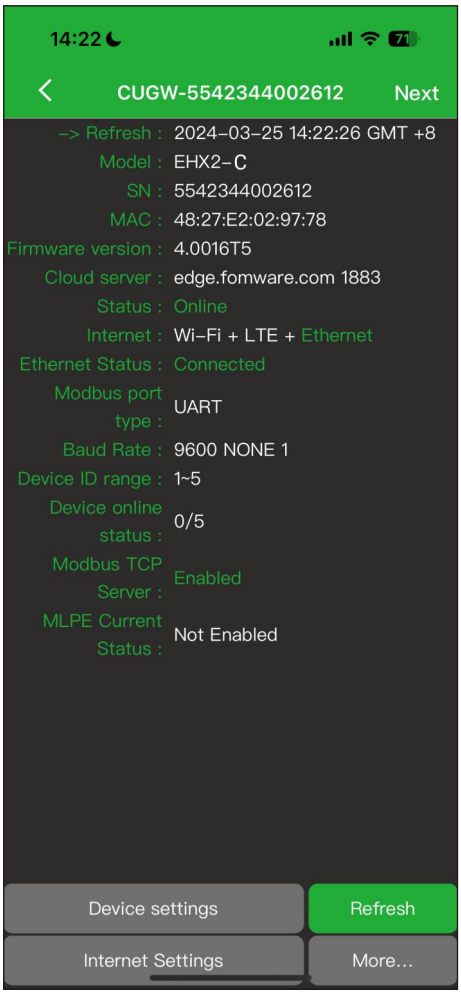
Click on "Internet Settings" , the WiFi version of the gateway only has WiFi settings, other versions of the gateway will list both Ethernet or 4G settings.

Caution : The gateway does not support 5Ghz WIFI gateways, as well as WIFI users who need to open a browser and redirect to an account-verified router.



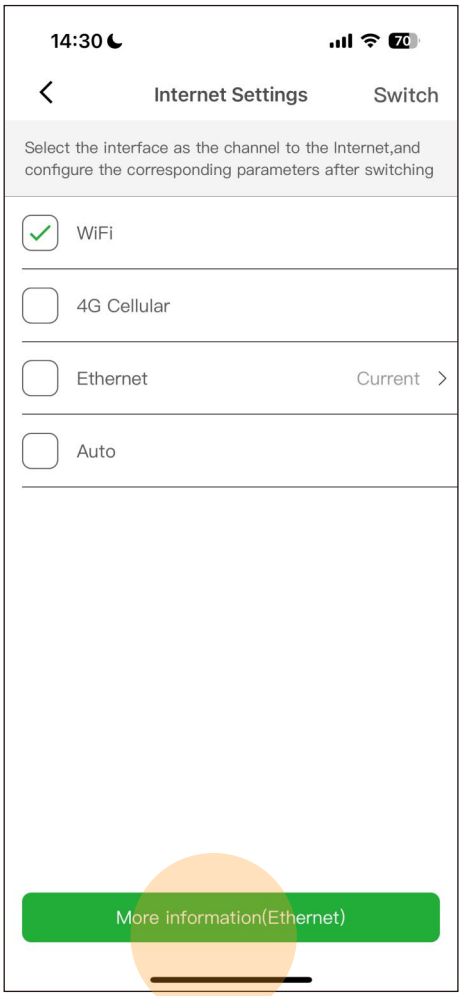
After entering the SSID and password of the WiFi, save the settings and the gateway will automatically connect to the WiFi router.

If the gateway reports an error, there is a high probability that the character input is wrong.



Caution :

If the user cannot judge the network status of the WLAN router, the user can configure the WiFi hotspot of the mobile phone to the gateway for reference.

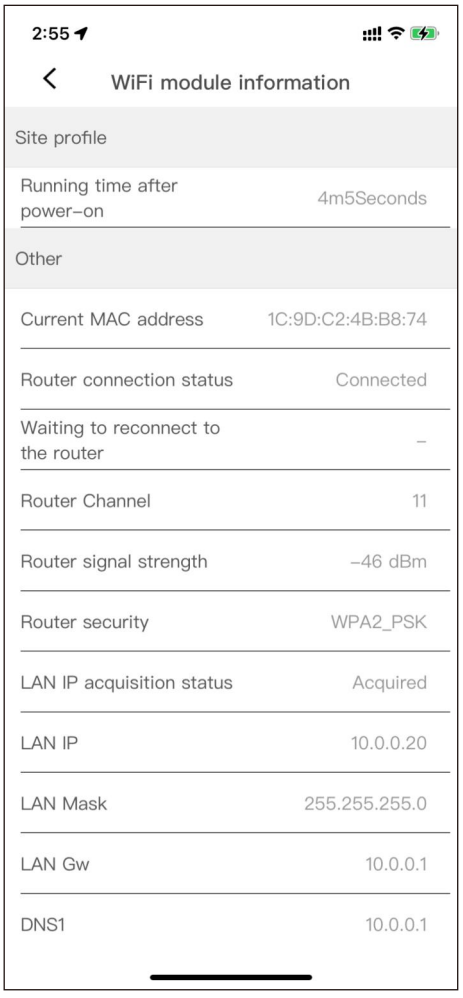


The gateway may not be able to access the Internet even if it is connected to a WiFi router, in this case, the gateway is also not working properly.

Usually there is a firewall in the LAN to which the WiFi router is connected, and you need to add a TCP access policy for the gateway.

Click "More Information" to check whether the gateway is connected to the WiFi router properly.

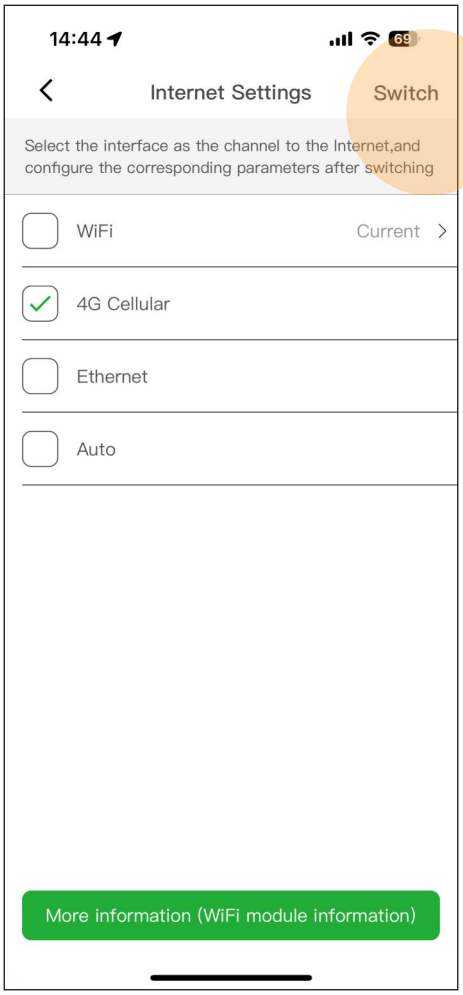
It can help to diagnose if the firewall must be found and to increase the policy.

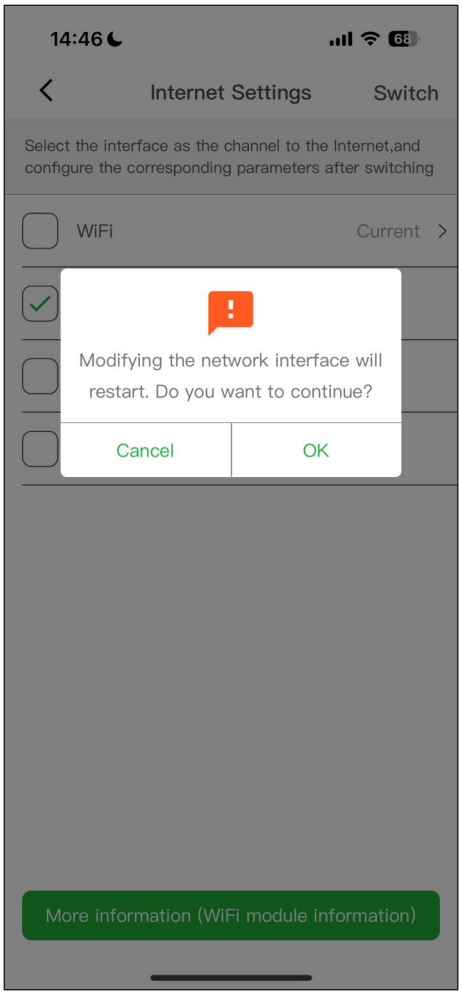


Open the LAN firewall ports before commissiong !

The following ports must be opened both ways (incoming and outgoing communications):
global-2.chintpower.com

6 Non-registered User (Installer)
6.3 Gateway connects to the Internet via 4G

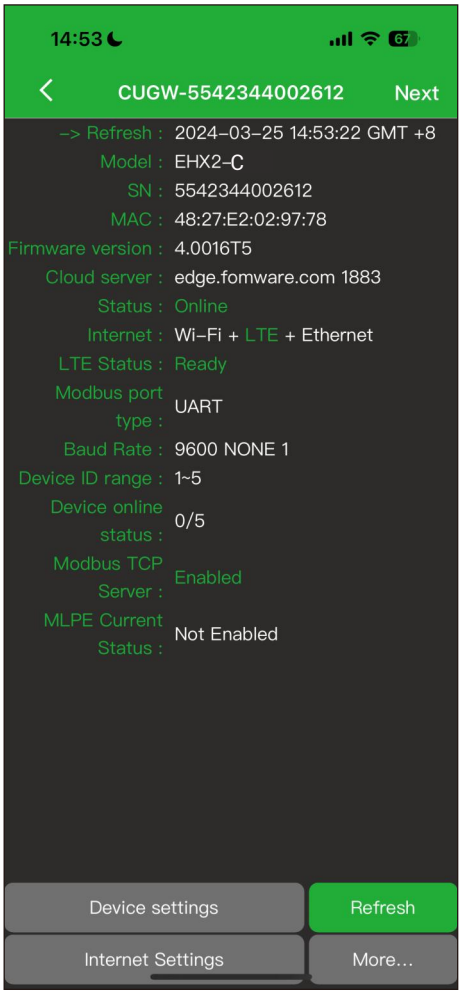




Different versions of the gateway have different options for connecting to the Internet. Users can select 4G and click "Switch" to change the connection options.

Changing the connection will cause the gateway to reboot and it will take about 1~5 minutes for the 4G to connect to the Internet properly.

The gateway connects to the Internet via 4G and can still connect to the Modbus TCP client via WIFI at the same time.



Cellular troubleshooting

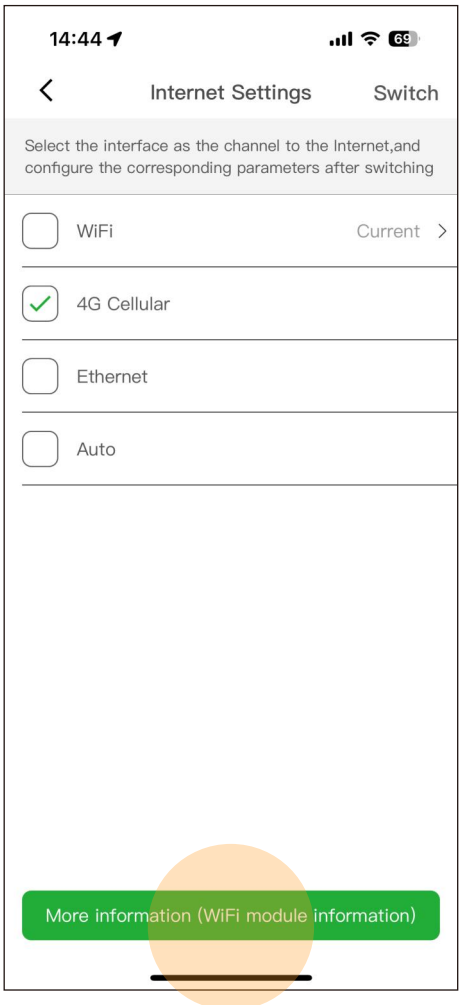
“ Not Ready ”

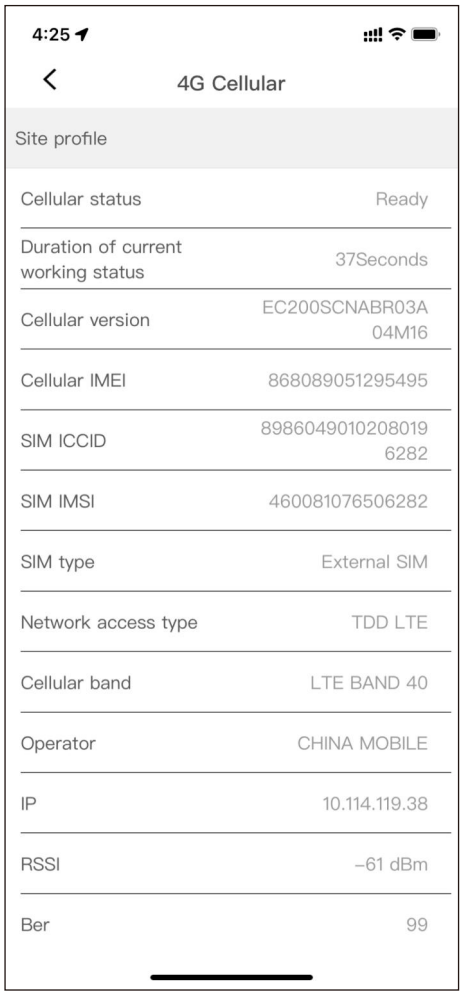
- The 4G modem is searching/registering for a cellular network, if it fails it will reboot and try again.

  Check “More Information” for networking details.
-

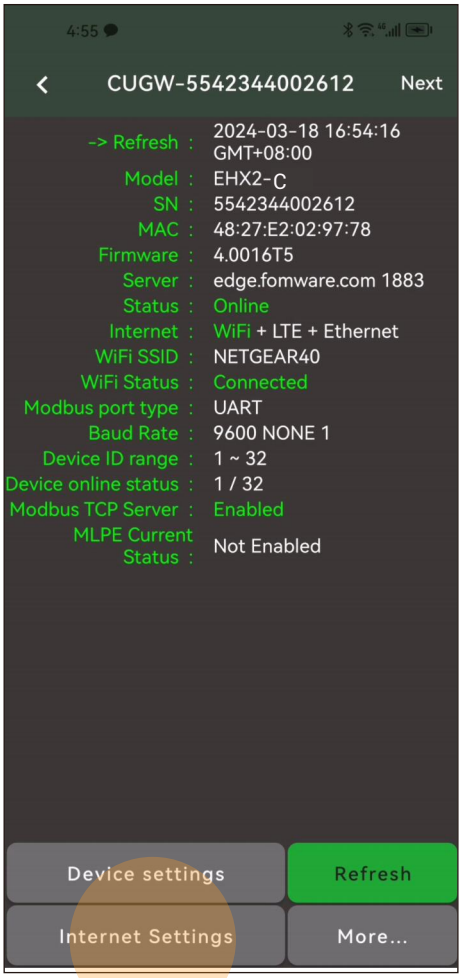
“ Ready ”

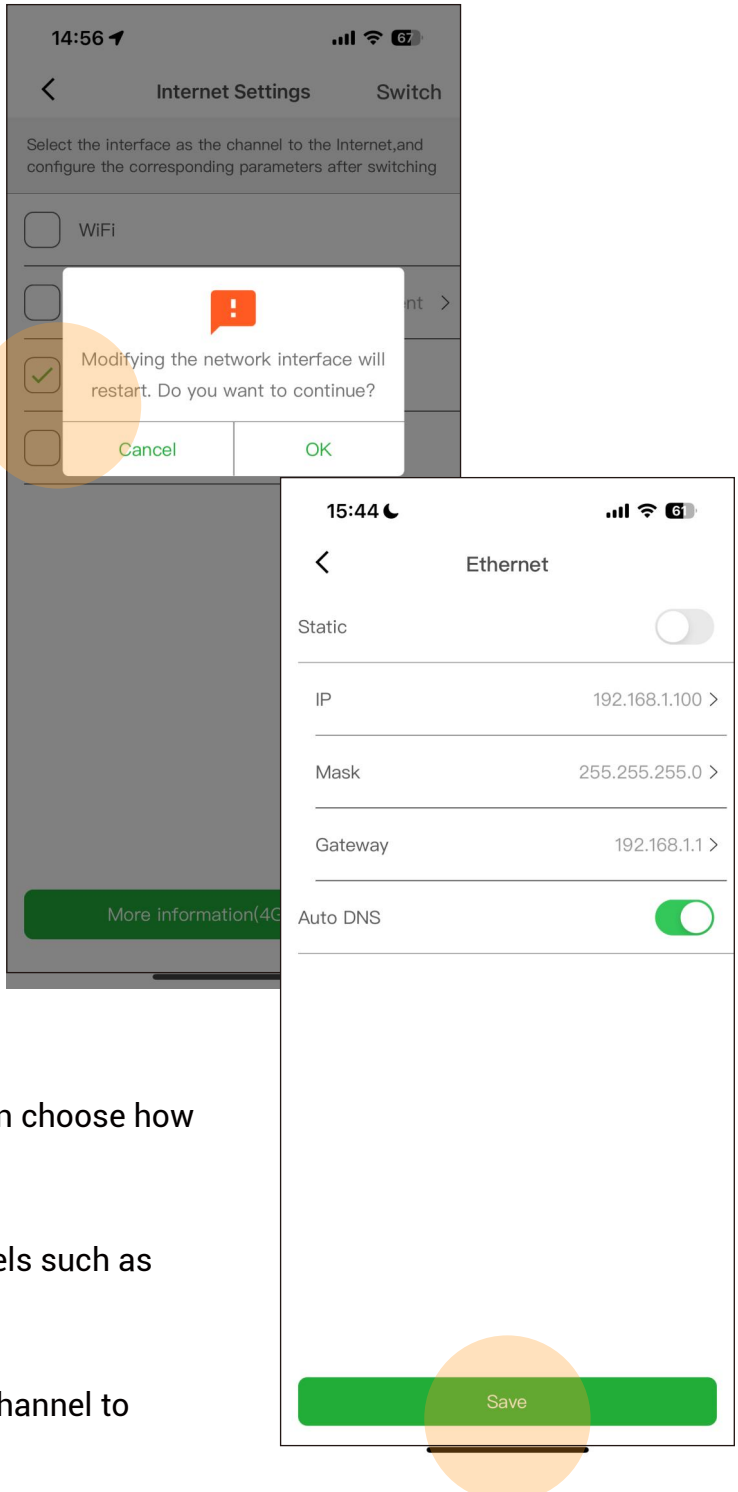
- Everything went well.





6 Non-registered User (Installer)
6.4 Gateway connects to the LAN router via Ethernet





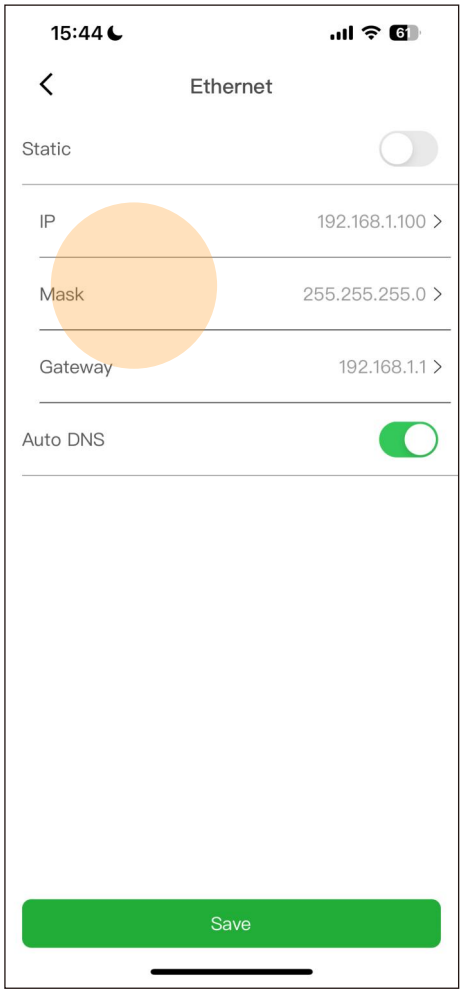
By clicking on "Internet settings", you can choose how to connect to the Internet.

Different gateways have different channels such as Ethernet + WiFi + 4G.

The gateway automatically selects the channel to connect to the Internet in "Auto" mode.

As shown in the figure, click "Save" after finishing the Ethernet parameter setting.

Then click "Switch" to make the channel selection effective.



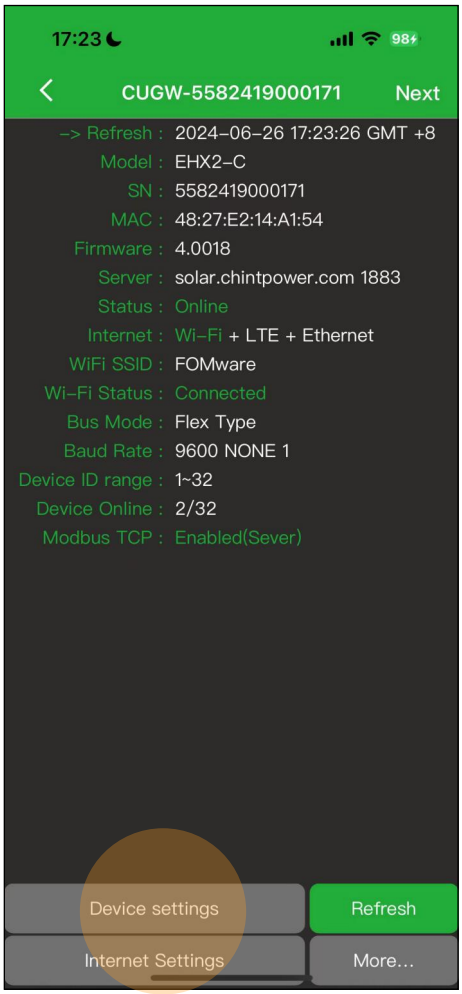
Typical Modbus TCP applications, it is recommended to go through Ethernet and a static IP address and related parameters must be configured.

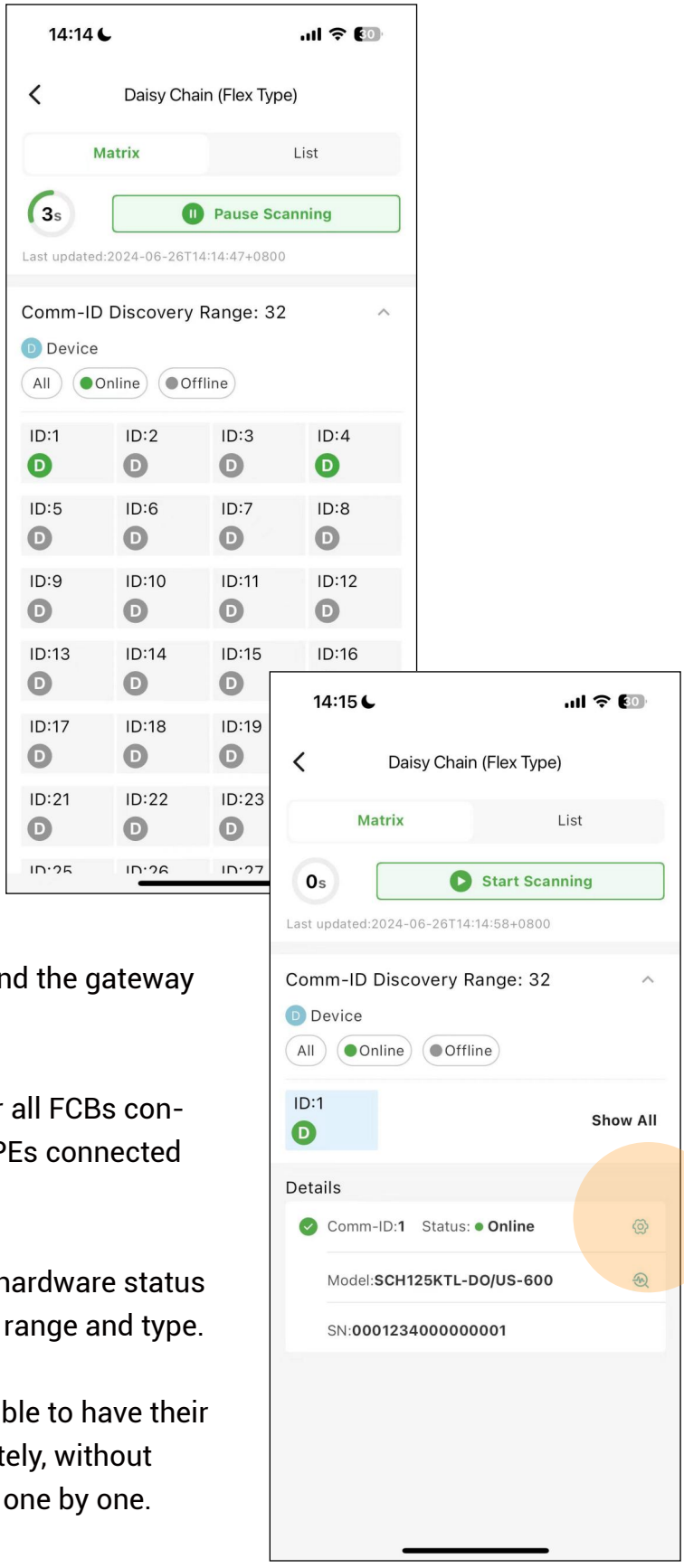
It must be ensured that the gateway is on a LAN subnet with the third party SCADA.

Open the LAN firewall ports before commissiong !

The following ports must be opened both ways (incoming and outgoing communications):
TCP 1883 with destination IP 18.220.98.124

6 Non-registered User (Installer)
6.5 Auto-commissioning the inverter Daisy Chain



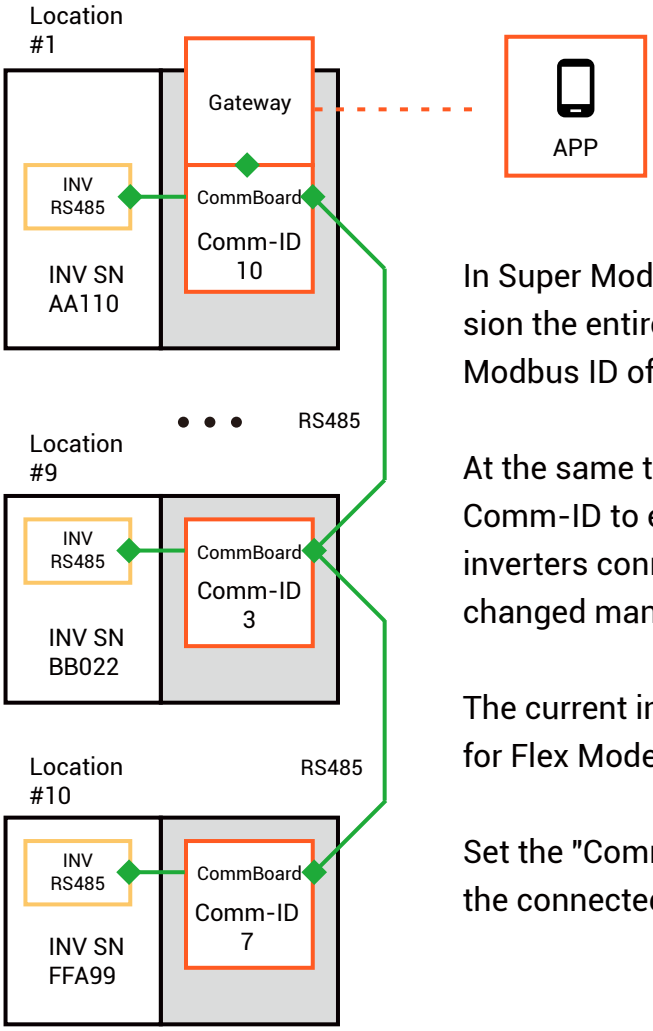


After completing the wiring of the site and the gateway and inverter are properly powered up.

The gateway will automatically discover all FCBs connected, as well as the inverters and MLPEs connected to the FCBs.

The gateway is able to give an intuitive hardware status after setting the gateway's ID discovery range and type.

The inverters listed in the gateway are able to have their initialisation parameters modified remotely, without having to operate them on the inverters one by one.

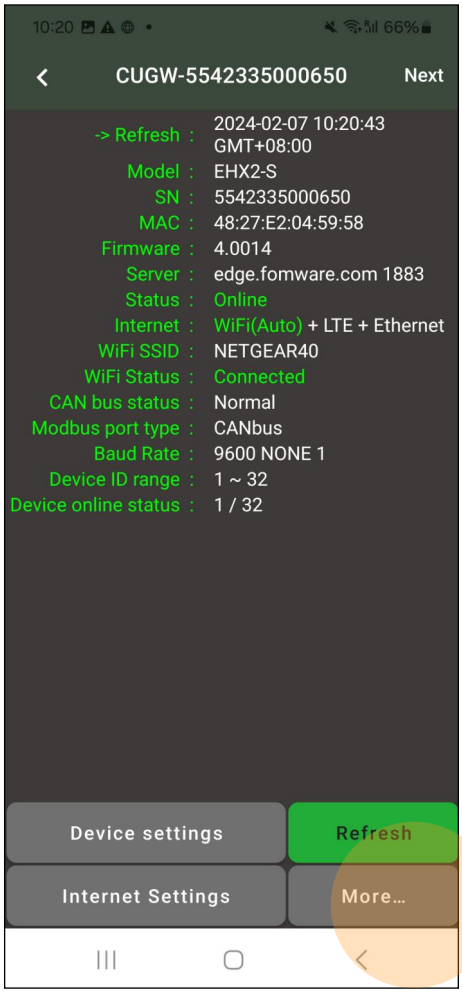


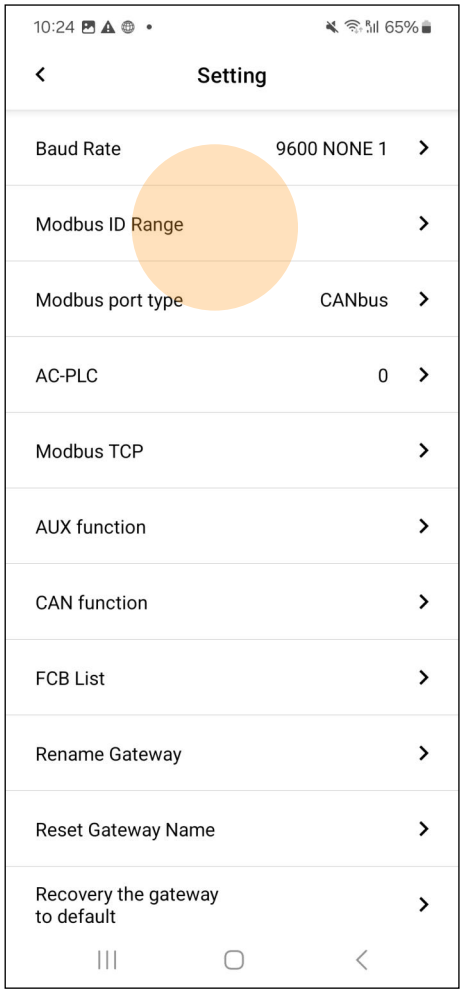
In Super Mode, the installer can automatically commission the entire daisy chain of inverters. As a result, the Modbus ID of all inverters is kept at the default #1.

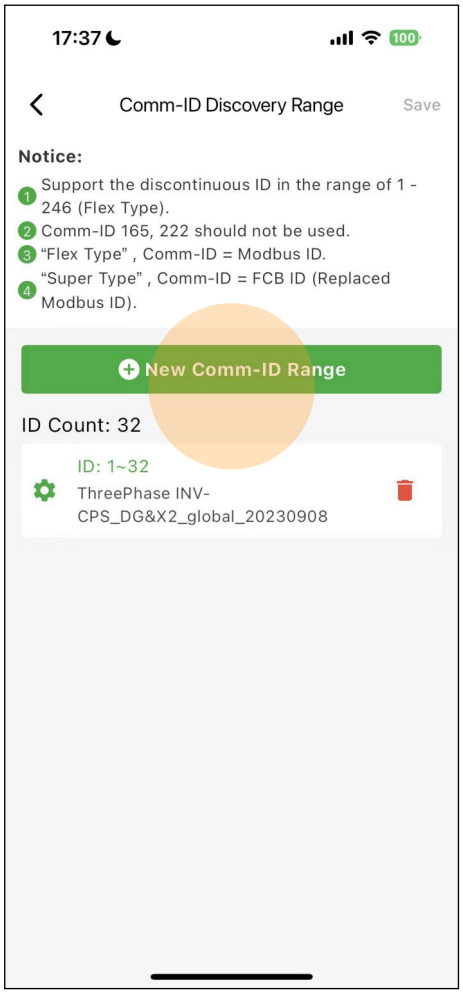
At the same time, the gateway automatically assigns a Comm-ID to each CommBoard based on the number of inverters connected to the gateway (which can be changed manually).

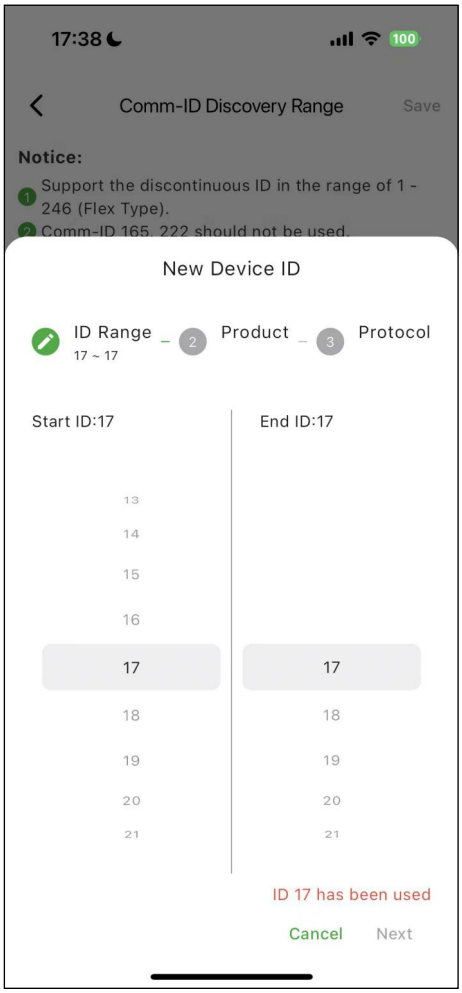
The current interface is partially described inaccurately for Flex Mode compatibility.

Set the "Comm-ID Range" and the gateway will discover the connected devices by ID range and hardware type.









The gateway is able to automatically discover connected hardware based on protocols or models with different Comm-ID segments.

The gateway is in "Flex Mode" and each hardware on the Daisy chain must be correctly set with a unique Modbus ID.

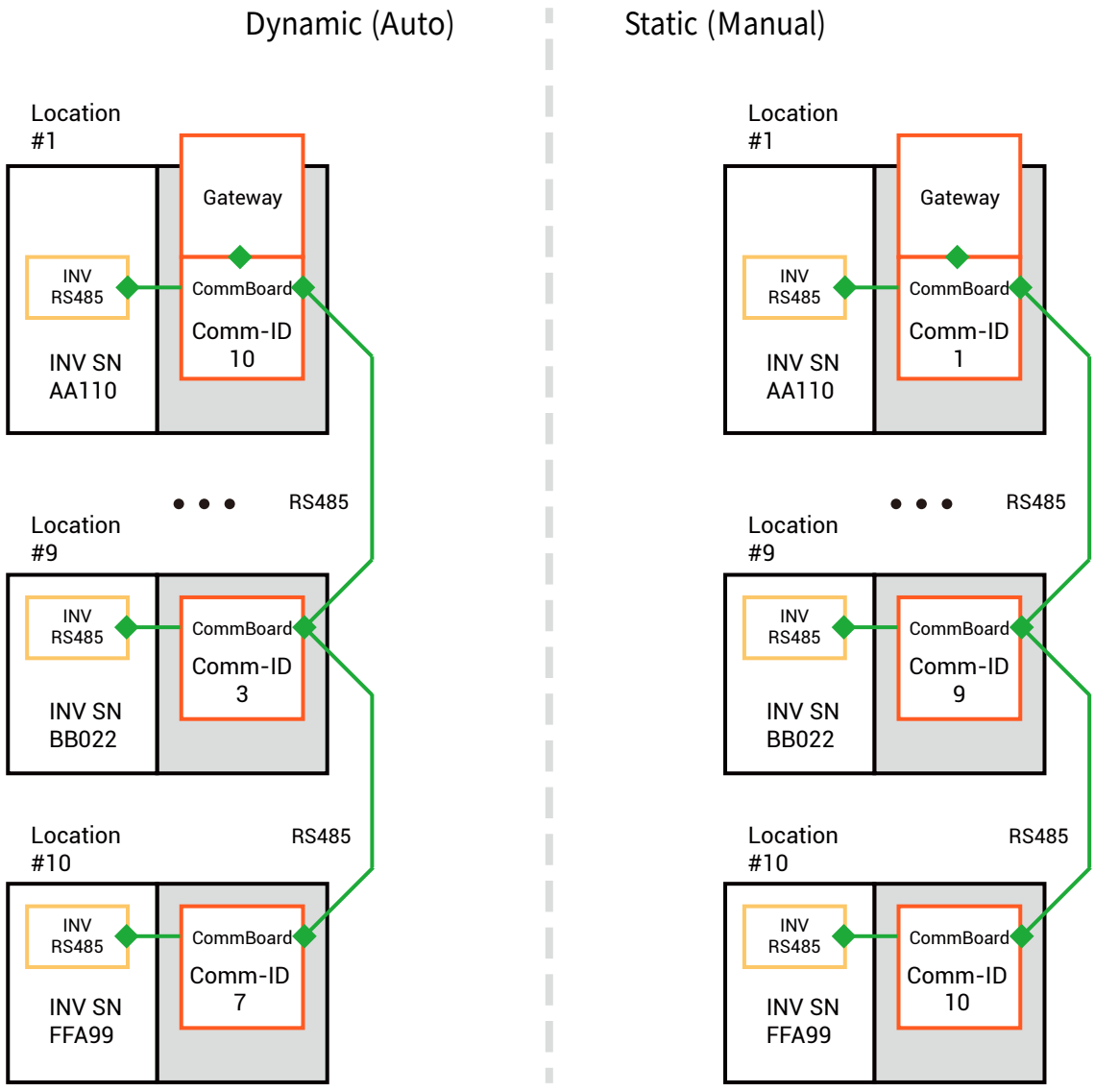
The gateway is in "Super Mode", where the inverters on the Daisy Chain do not need to be set up in any way, and the gateway is able to auto-discover and remotely modify the registers.

The format of Comm-ID is the same as Modbus ID 1~254, also use 1~254 integer.

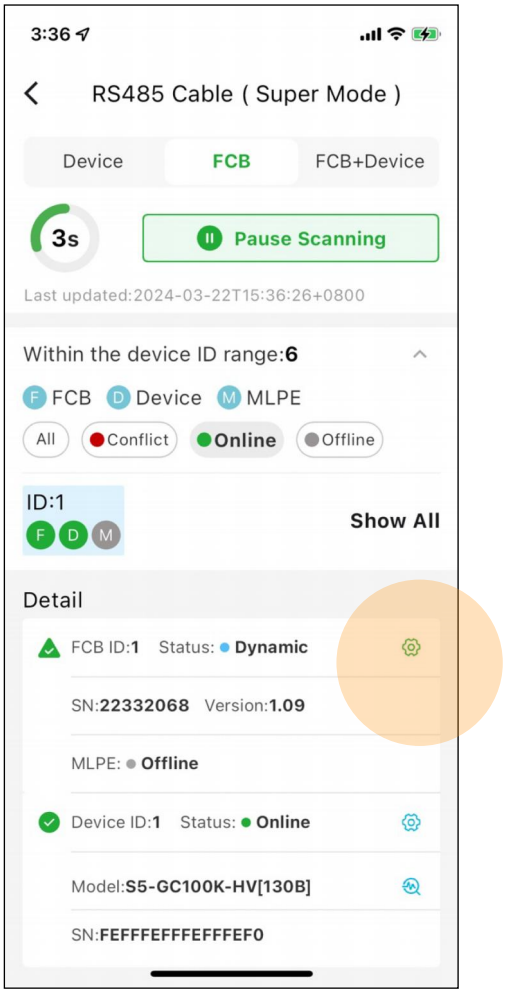
When the third party controller needs to read/write the inverter daisy chain, just send read/write commands to the target Comm-ID (inverter) according to the Comm-ID and follow the standard Modbus RTU commands.

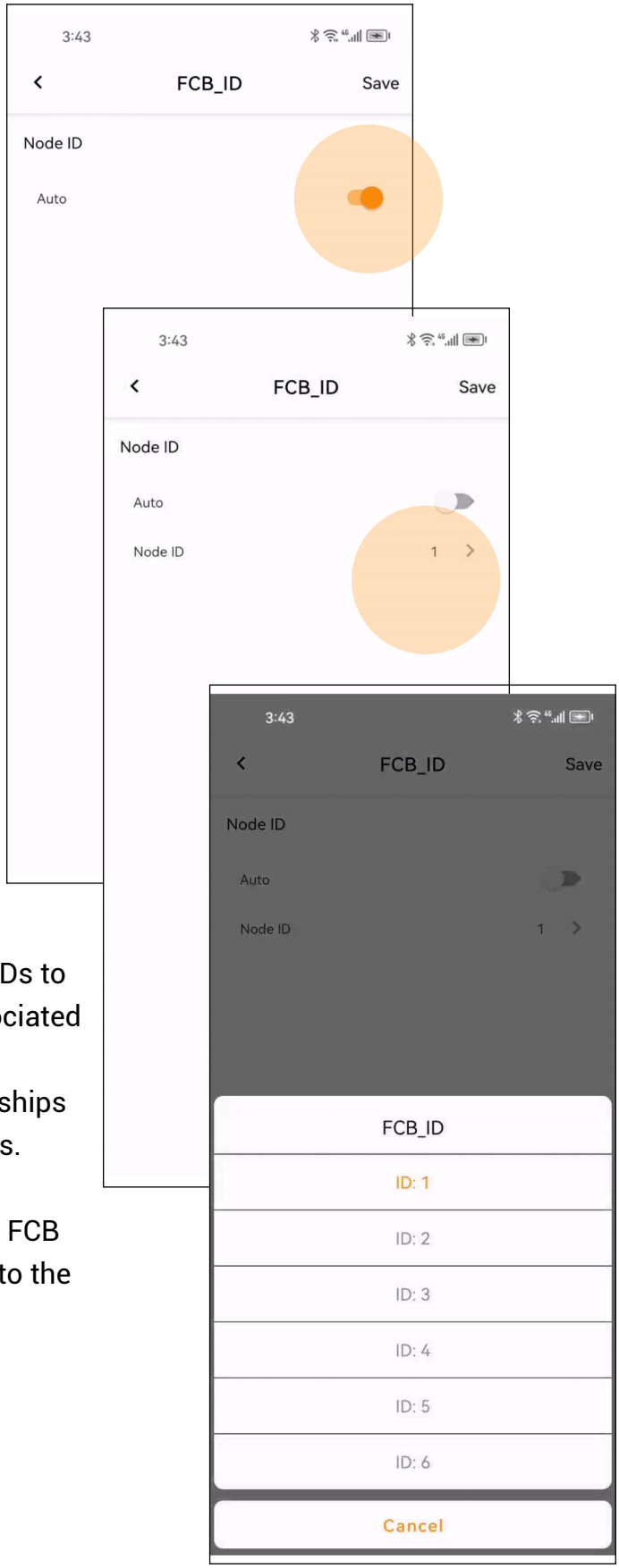
The Comm-IDs are read/written sequentially and then the entire inverter daisy chain is polled. This will complete the polling of the entire Daisy Chain.

The relationship between the Comm-ID and the inverter SN is created automatically by the gateway and can be viewed via the APP/WEB. You can also manually reassign Comm-IDs one by one according to the physical installation order via APP.



6 Non-registered User (Installer)
6.6 Setting FCB autodiscovery policy

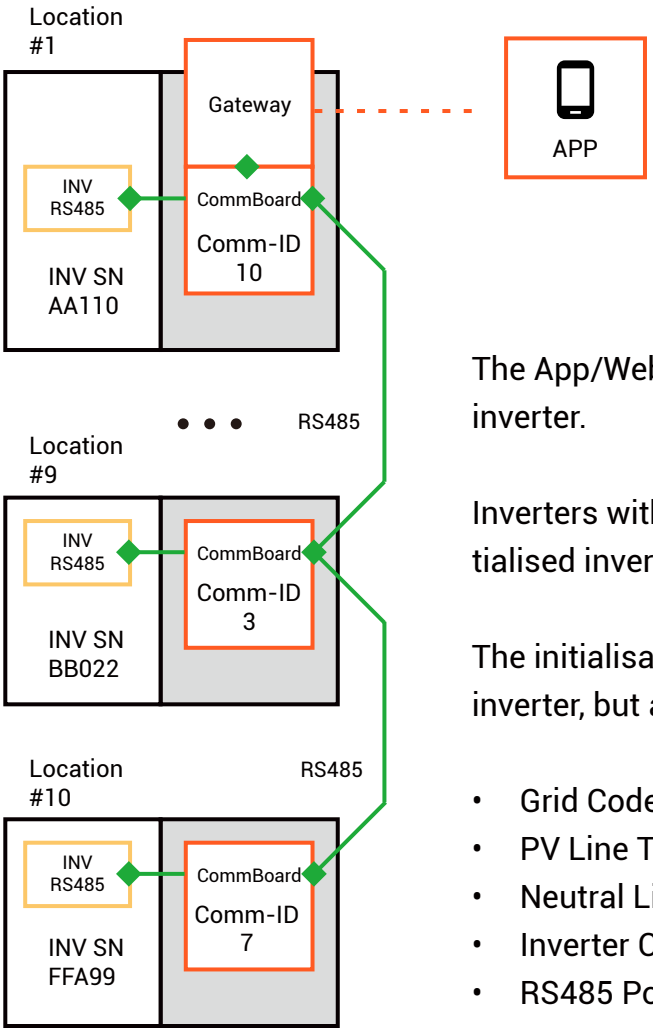




When the gateway automatically assigns IDs to FCBs, the FCBs are randomly ranked (associated with inverters),
and the ranking order and inverter relationships are solidified once normal operation occurs.

However, the user can manually adjust the FCB IDs, usually by reordering them according to the physical installation order of the inverters.

6 Non-registered User (Installer)
6.7 Initialize the inverter



The App/Web will show the initialisation interface of the inverter.

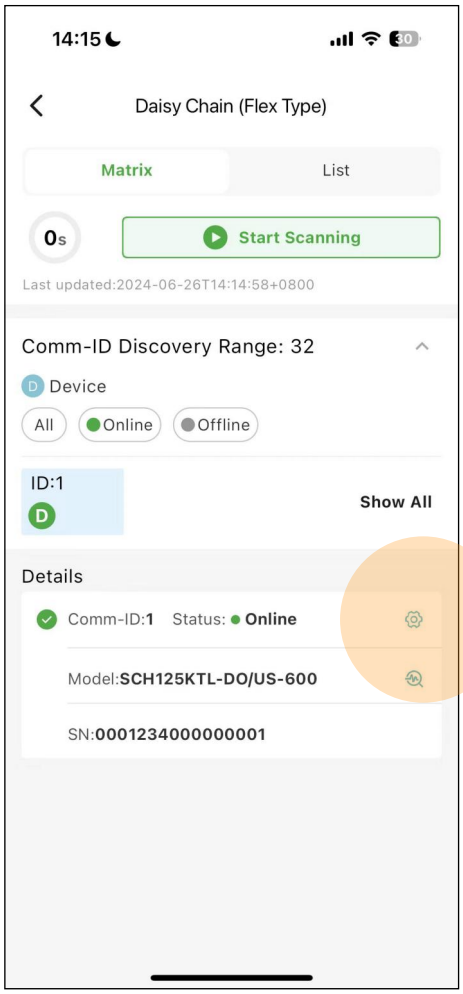
Inverters without Grid code are considered as uninitialised inverters.

The initialisation screen varies slightly from inverter to inverter, but all will ask for settings:

- Grid Code
- PV Line Type
- Neutral Line
- Inverter Clock
- RS485 Port

Initialising the inverter / changing inverter parameters / upgrading firmware is recommended to be done remotely via the web, and it is easier to operate from the web through the Super Mode.

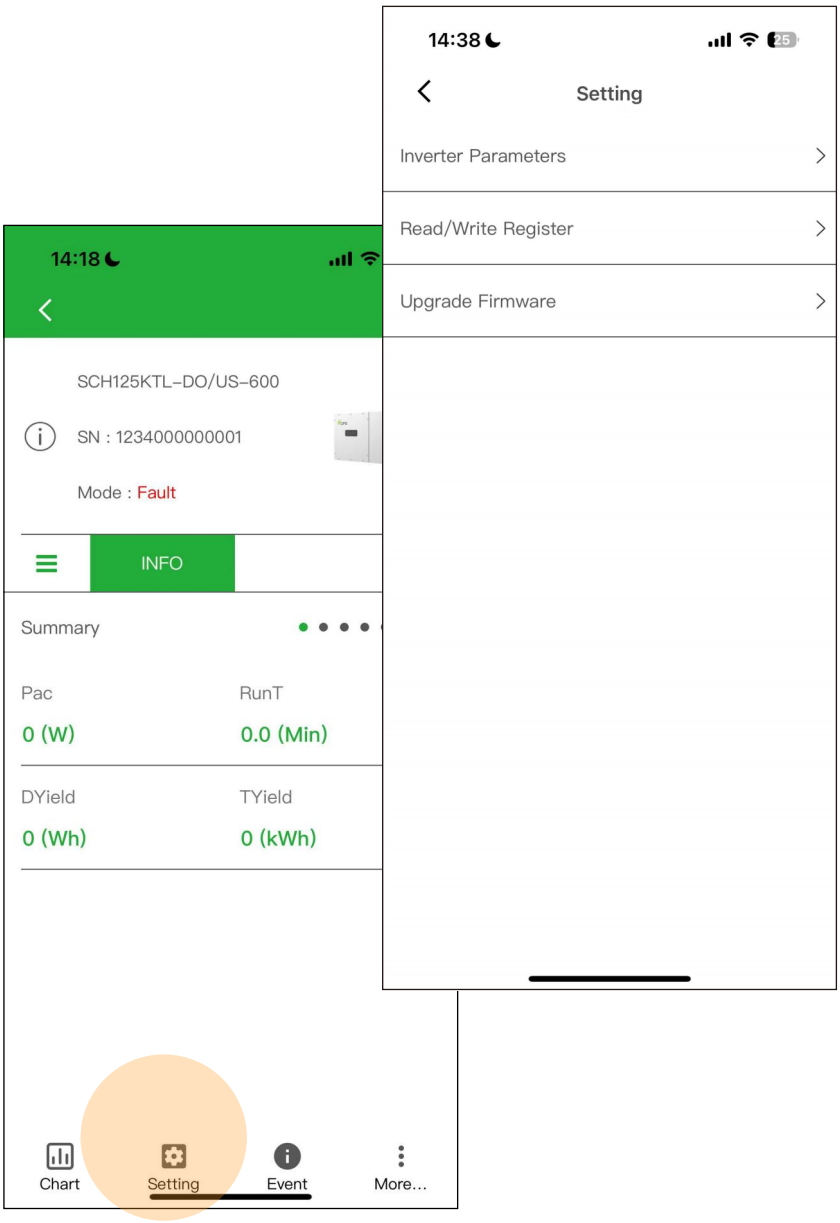
6 Non-registered User (Installer)
6.8 Setting inverter parameters



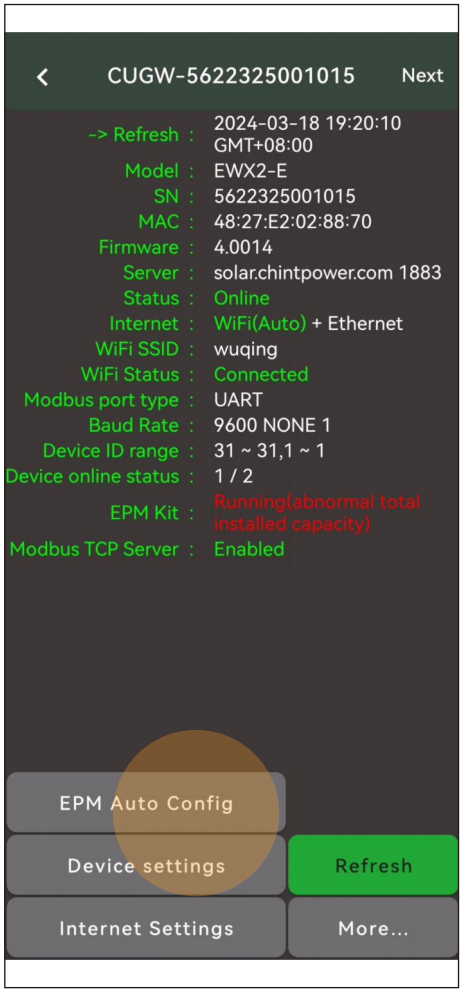
Click "Device Settings" to view the devices in daisy chain.

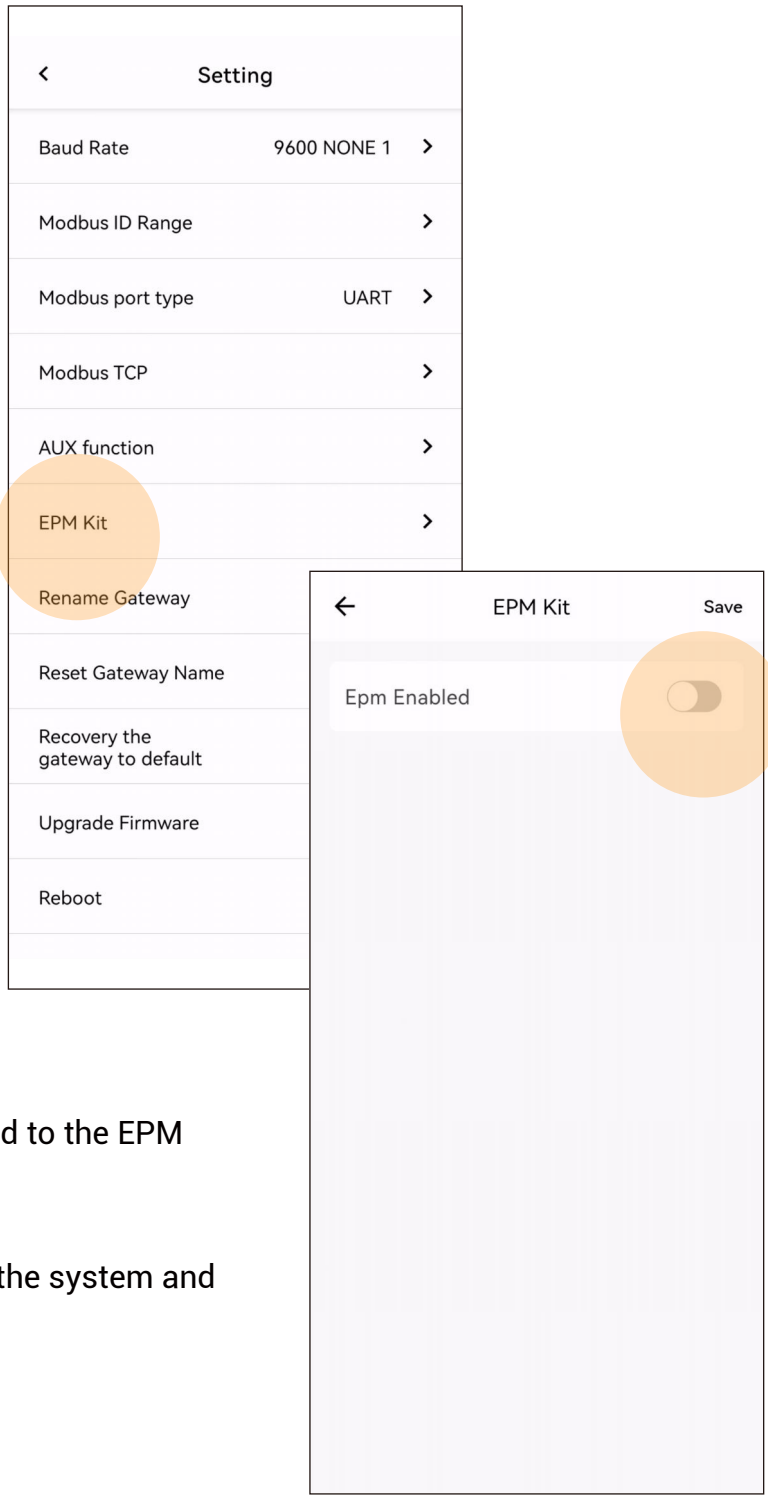
Users can scan the daisy chain to discover normal/abnormal connected devices.

Perform read/write operations or firmware upgrades on devices



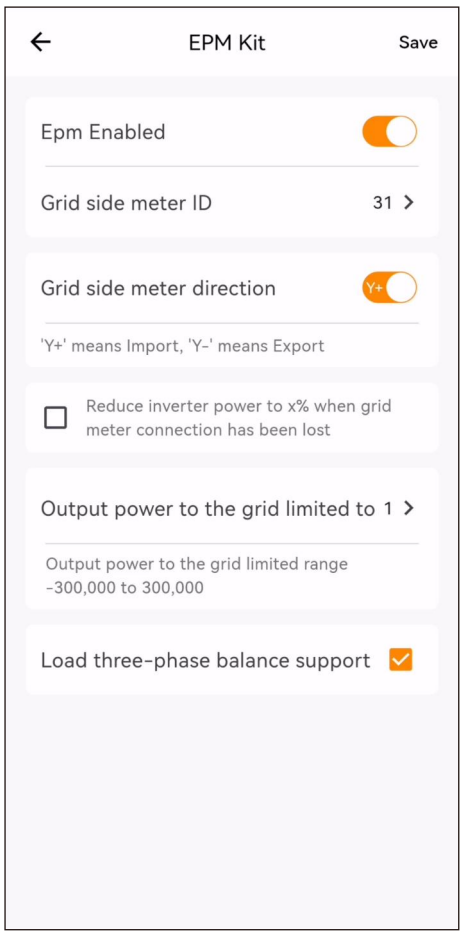
6 Non-registered User (Installer)
6.9 Enable “EPM Mode”

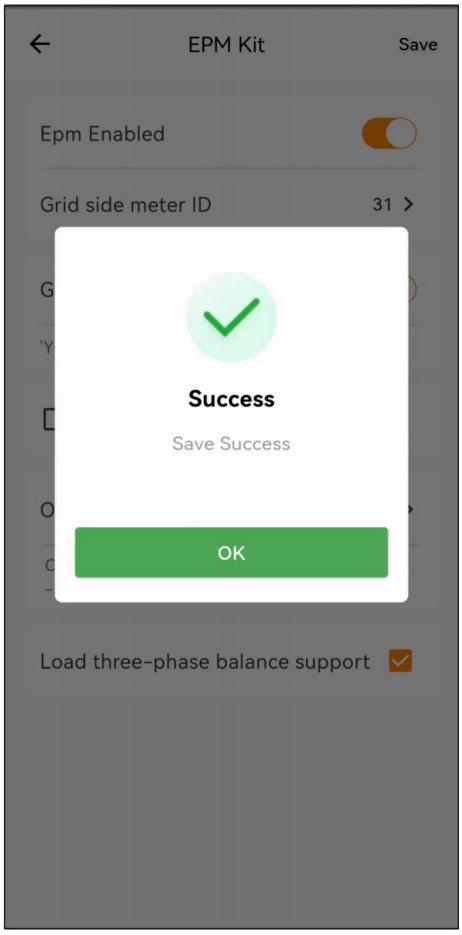




Once the gateway is properly connected to the EPM Kit, click "EPM Auto Config".

The gateway will automatically detect the system and give the operation status:
1) Abnormal, cannot start
2) Running
3) Running, meter not connected
4) Running, meter abnormal
5) Running, kWp detection abnormal
6) Running, Daisy Chain occupied



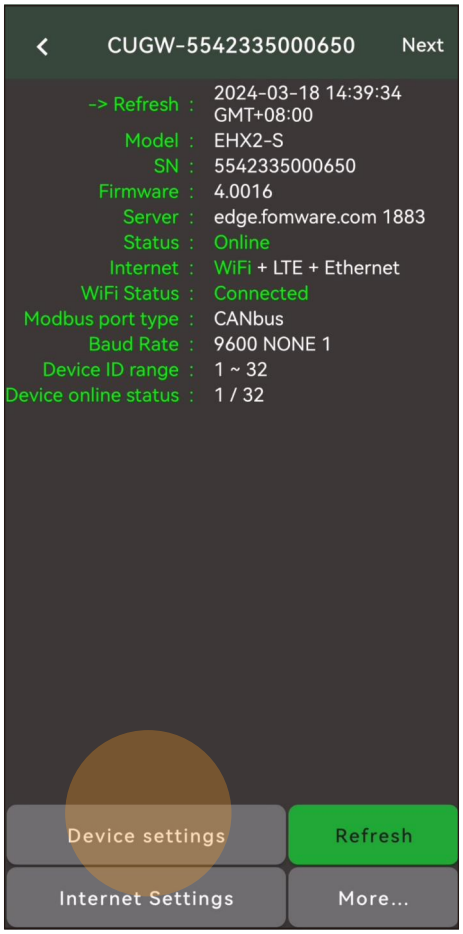


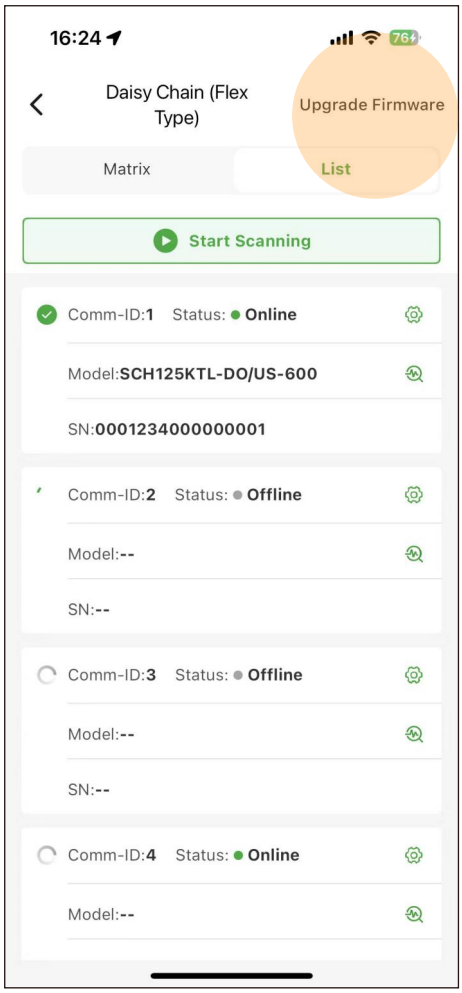
The policy adjustment required for Zero-export scenarios can be set via the APP.

When you find a problem with the Zero-export operation at your site, it is very likely that you have selected the wrong AC Busbar location for the Grid Edge, or there is a problem with the inverter version.

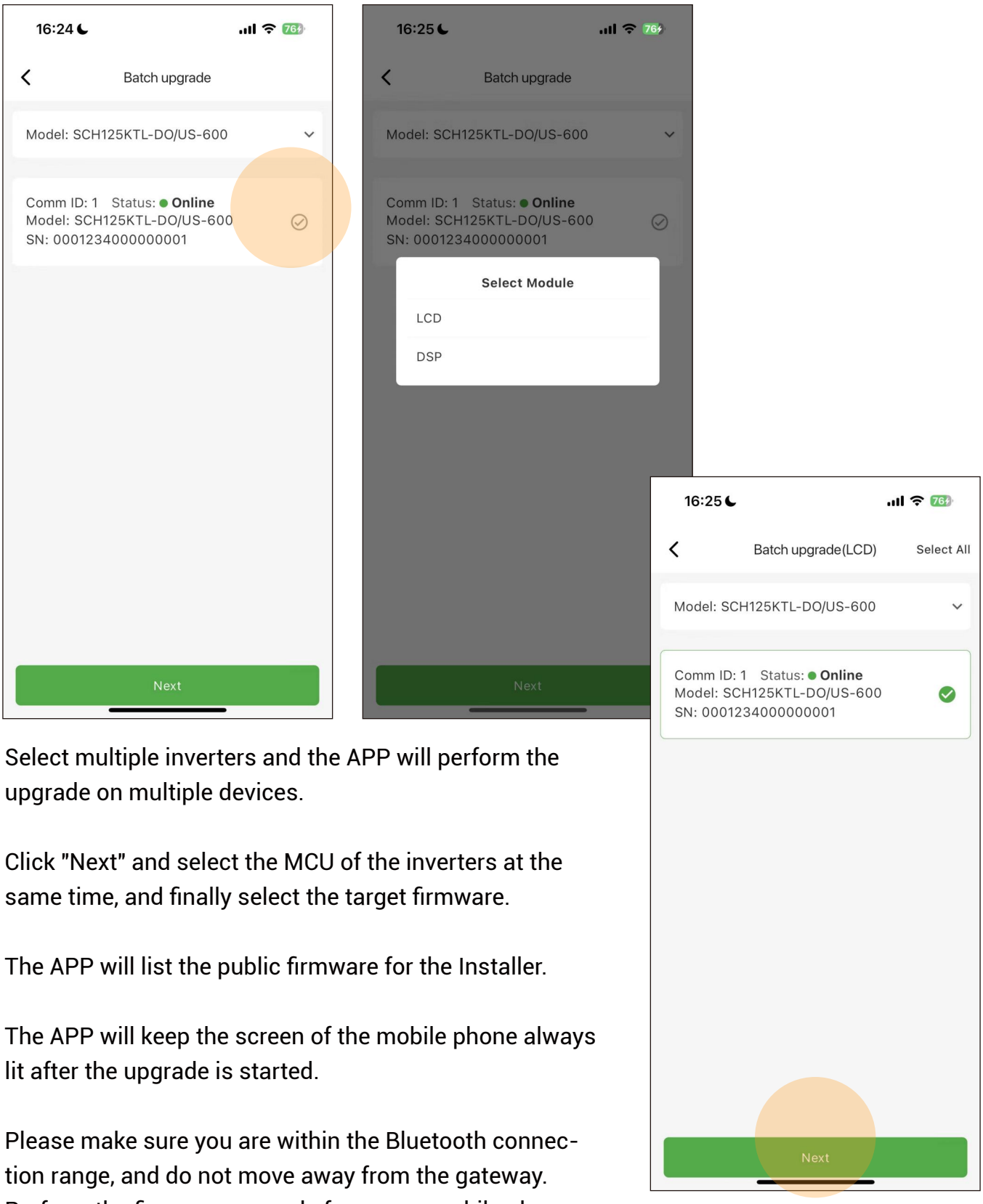
Please contact the after-sales service.

6 Non-registered User (Installer)
6.10 Upgrade inverter firmware





Click "Device Settings", APP will display the scanning result of inverter daisy chain, for the correctly listed inverter model and operation status, user can directly execute the firmware upgrade.



Select multiple inverters and the APP will perform the upgrade on multiple devices.

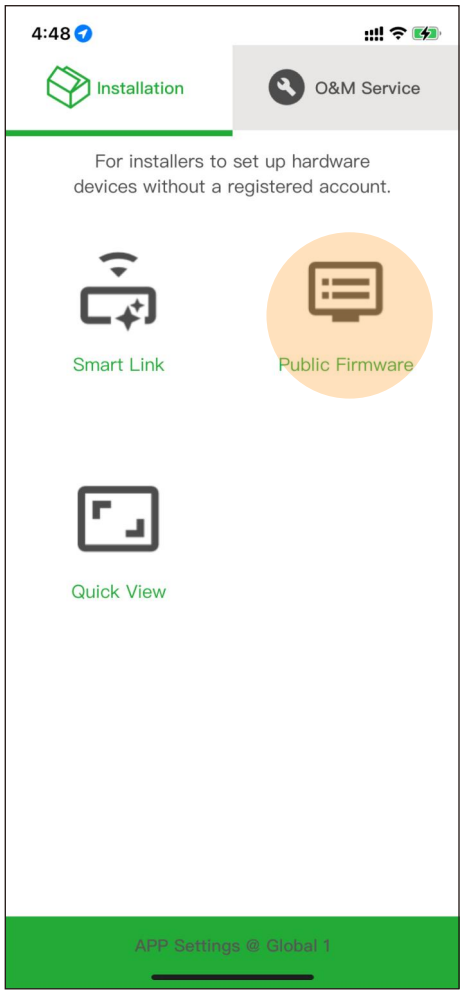
Click "Next" and select the MCU of the inverters at the same time, and finally select the target firmware.

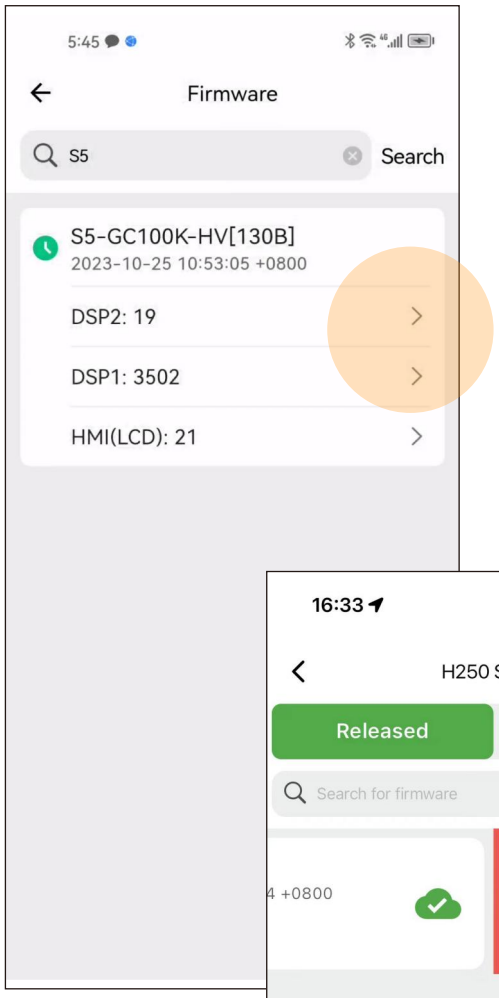
The APP will list the public firmware for the Installer.

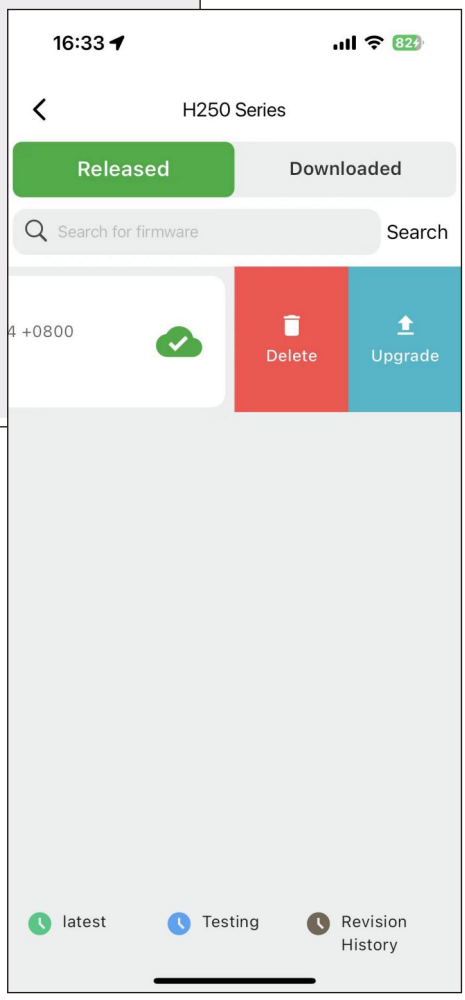
The APP will keep the screen of the mobile phone always lit after the upgrade is started.

Please make sure you are within the Bluetooth connection range, and do not move away from the gateway. Perform the firmware upgrade from your mobile phone, phone calls during the process will interrupt the upgrade process.

Firmware upgrade interruptions do not cause the inverter to fail, restarting the firmware upgrade is sufficient.





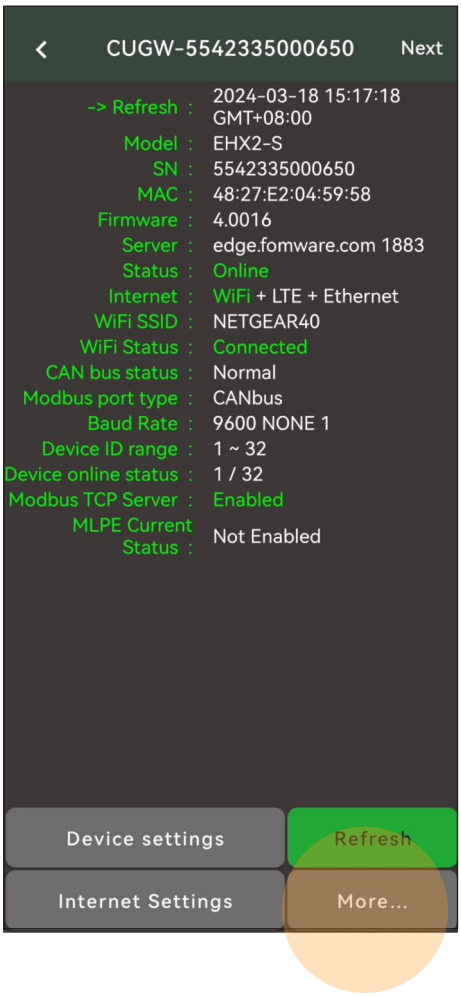


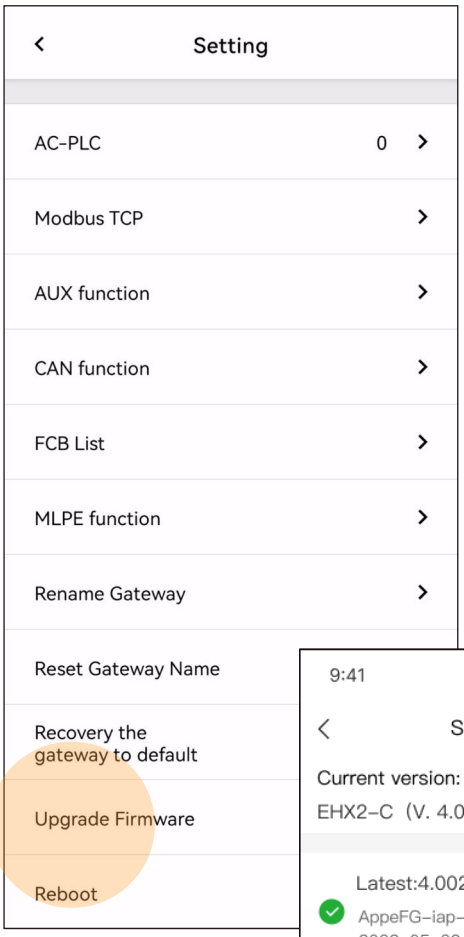
Installers can simply use the latest or most stable public version of the firmware.

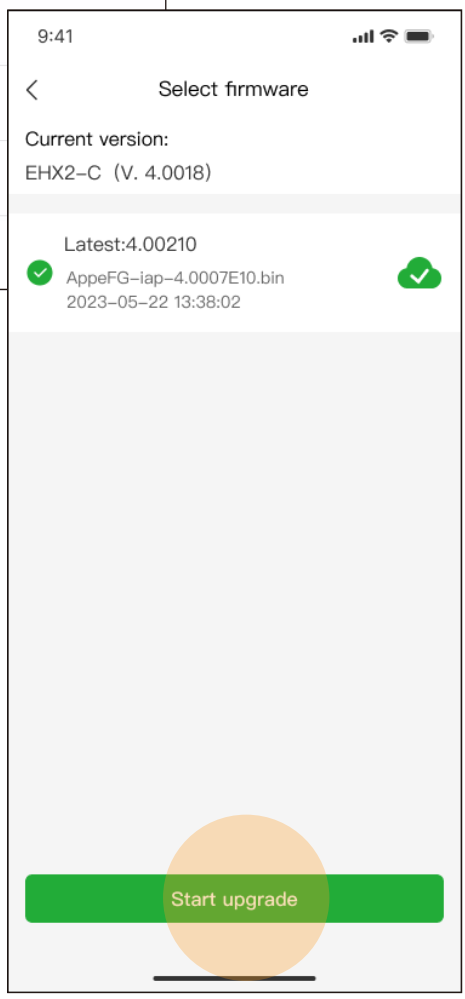
Click on the desired model to get a list of firmware and then click to download.

If there is no required model, it means APP has not released the public version firmware at present, please contact the after-sales service.

6 Non-registered User (Installer)
6.11 Upgrade gateway firmware







Click “More" and then click "Upgrade Firmware".

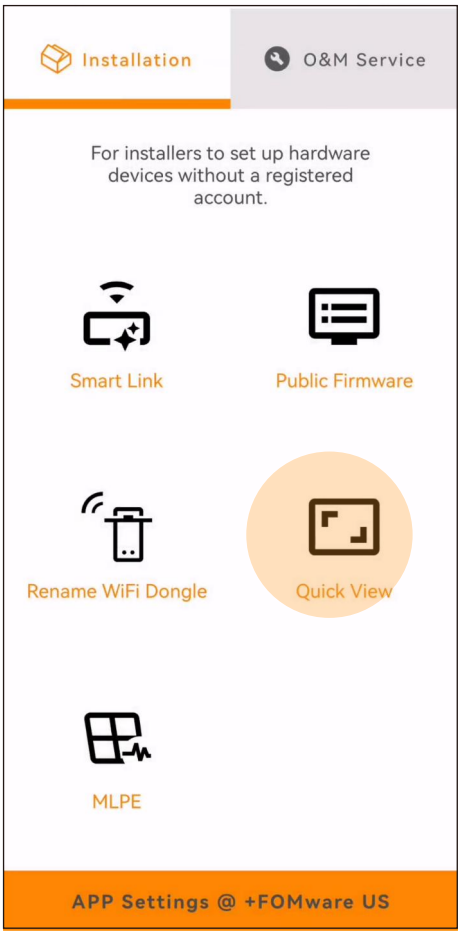
Select the gateway firmware to be upgraded, and the APP will list the public firmware for the Installer.

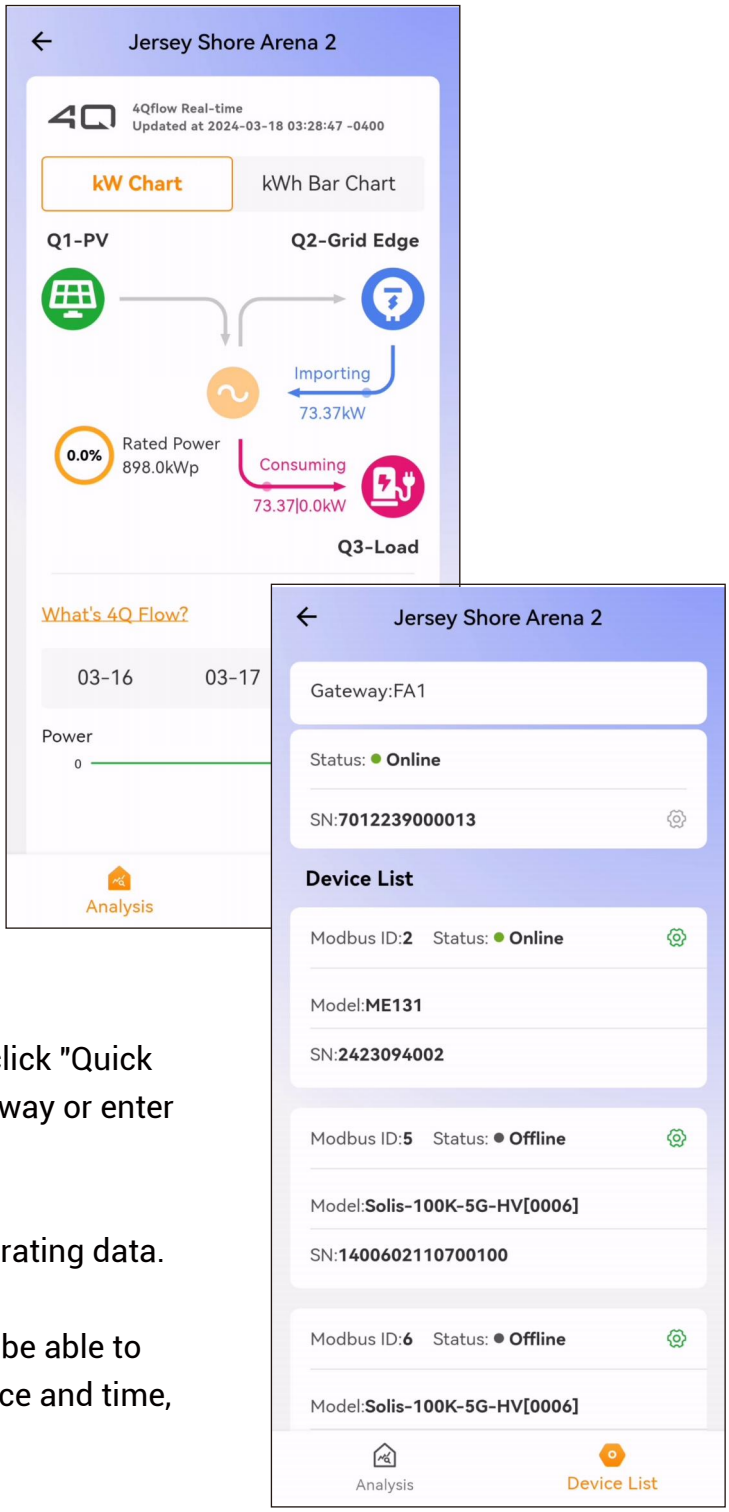
The APP will keep the screen of the mobile phone always lit after the upgrade is started.

Please make sure you are within the Bluetooth connection range, and do not move away from the gateway. Perform the firmware upgrade from your mobile phone, phone calls during the process will interrupt the upgrade process.

Firmware upgrade interruptions do not cause the gateway to fail, restarting the firmware upgrade is sufficient.

6 Non-registered User (Installer)
6.12 Quickly check hardware running status

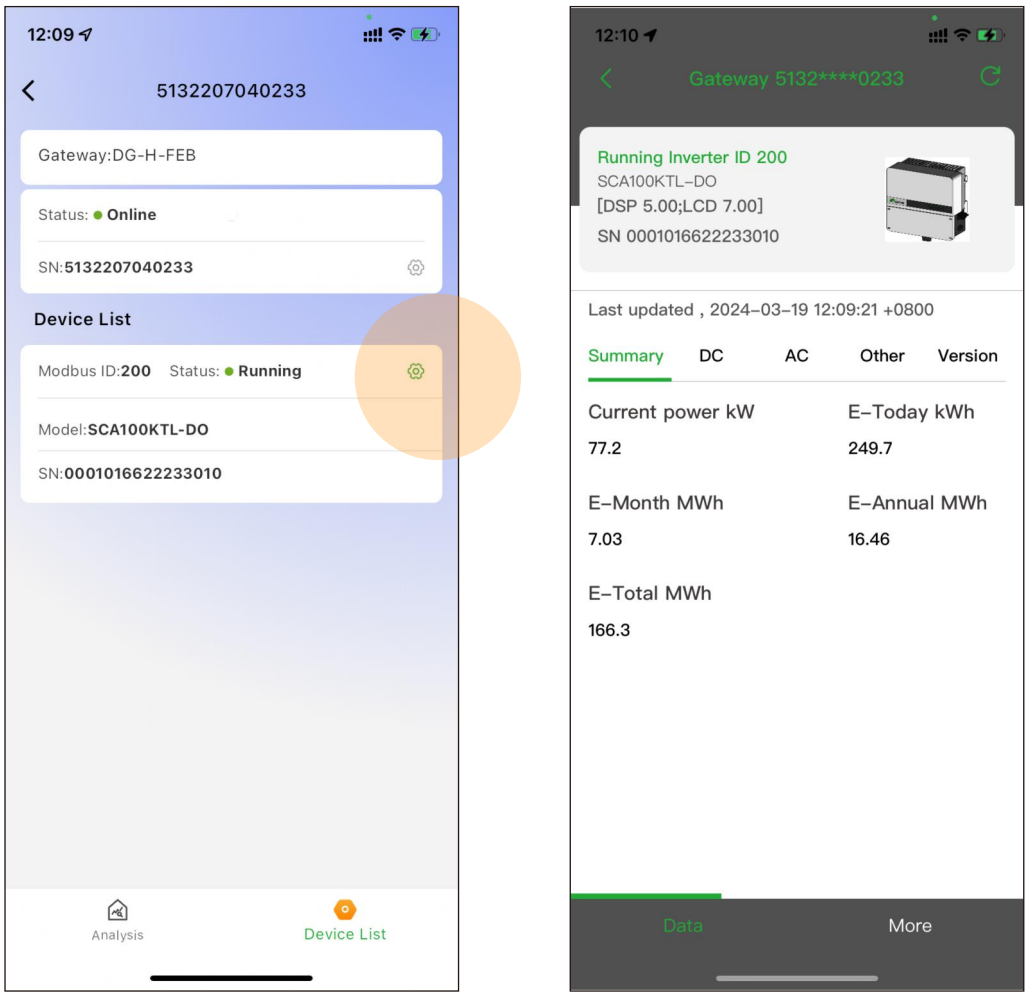




Without any account, the installer can click "Quick View" and scan the barcode of the gateway or enter the gateway SN.

The app will display the hardware's operating data.

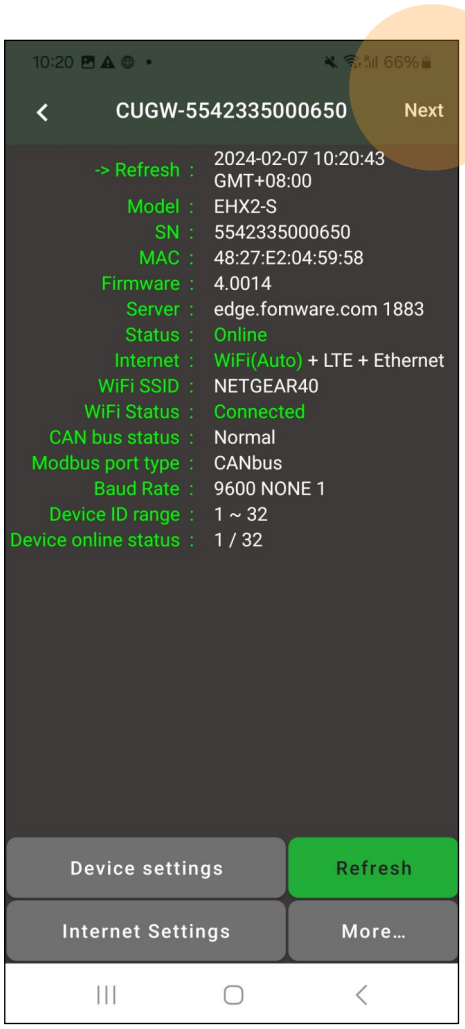
This is a very simple way for anyone to be able to check the operation of a site, at any place and time, knowing the gateway SN.

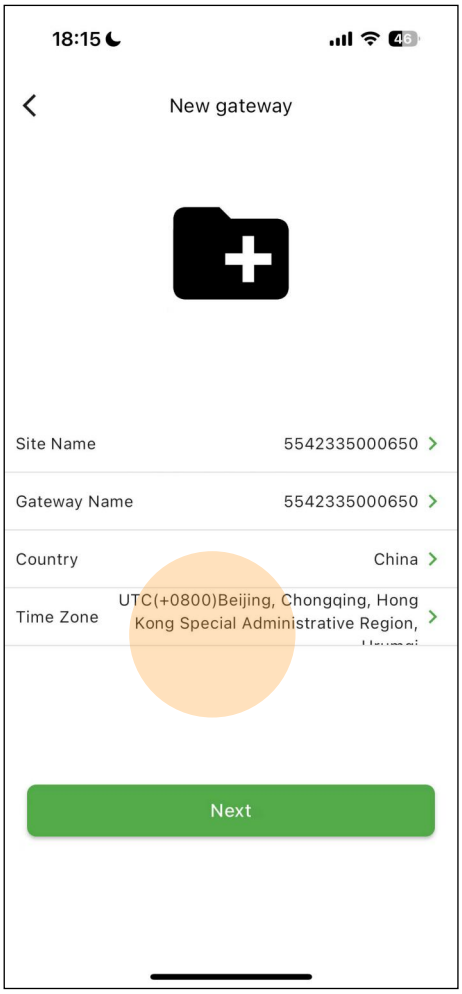


The interface displayed will be different for different gateways and inverters.

Users can only view the underlying data and cannot make any changes to the hardware.

6 Non-registered User (Installer)
6.13 Setting the site time zone



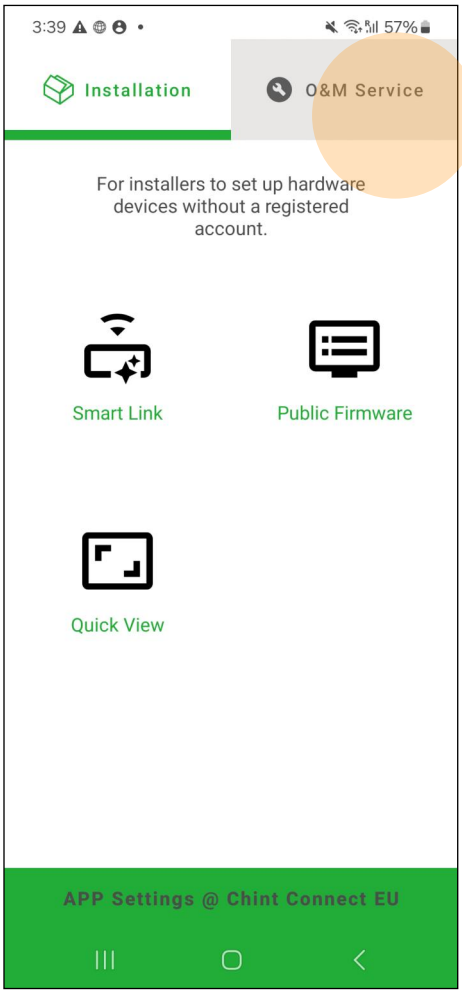


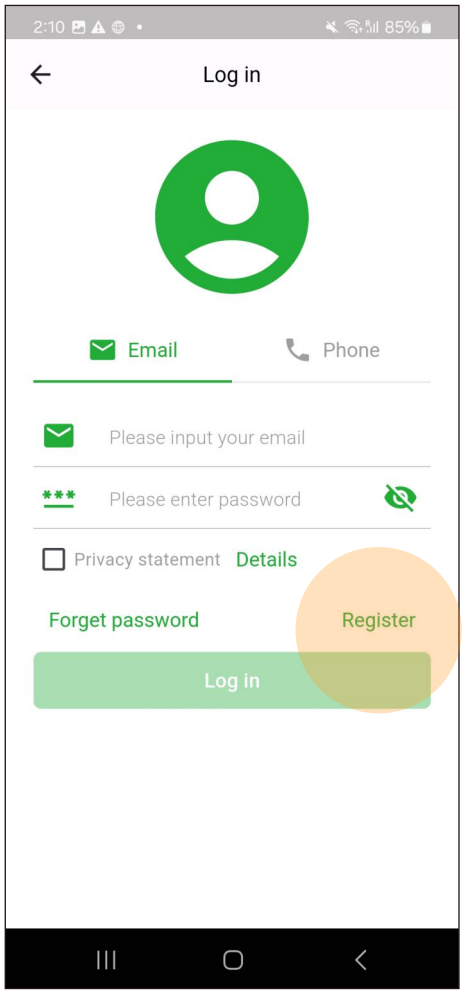
After confirming that the gateway is properly connected to the Internet, click "Next" to set the correct time zone.

Time zone is an important factor in the accuracy of site data.

7 Portfolio Owner (End User)

7.1 Self-registered “End User" account through the APP



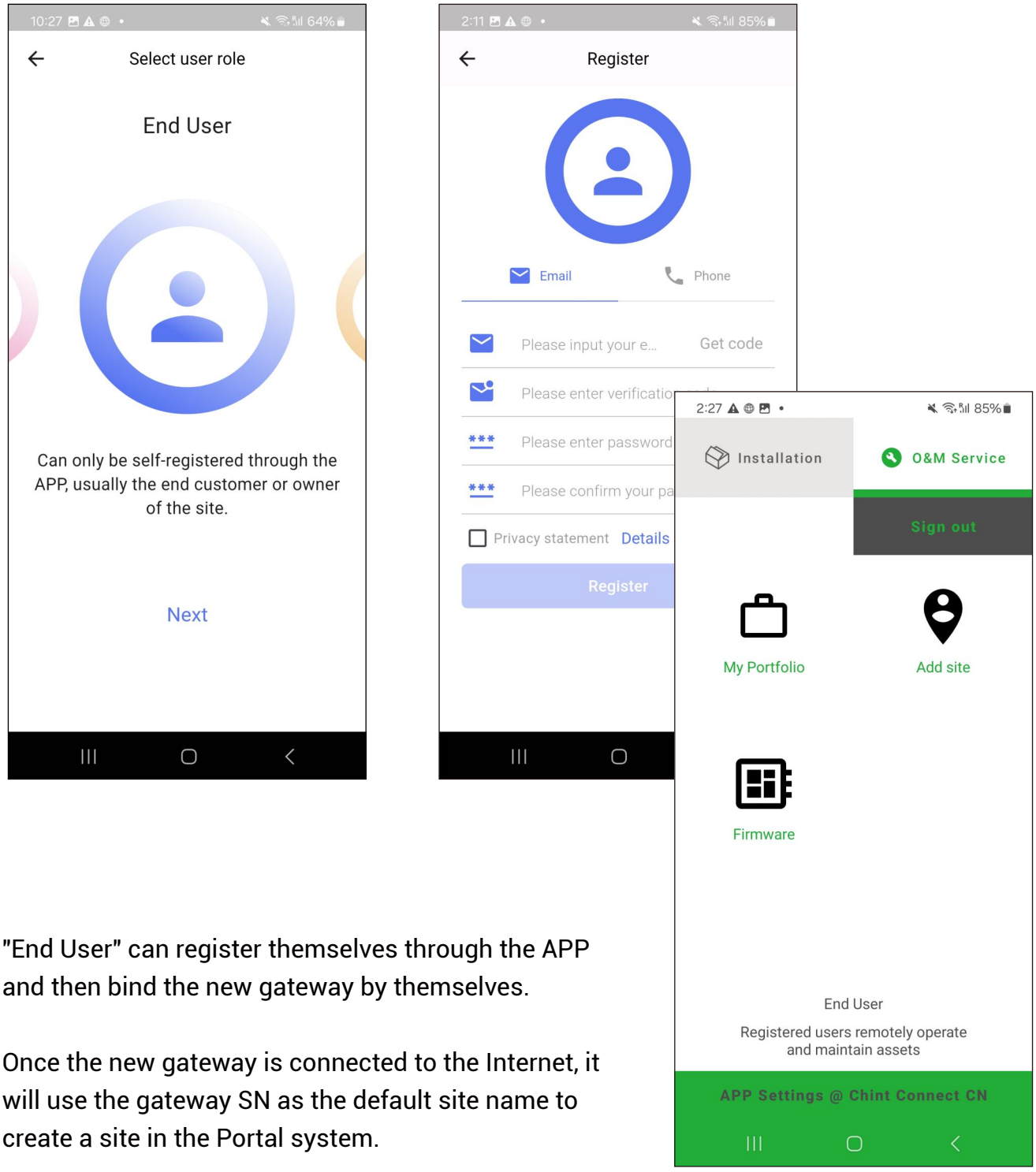


Click "O&M Service", APP prompts you to log in, click "Register" to self-register a new "End User" account.

Users can register for an account via email or cell phone number.

The system will send a verification code to verify the authenticity of the email or cell phone number to ensure that the user can receive product alerts and other notifications.

If a user registers an account with a cell phone number, the system automatically generates an account in the form of an email address "phone@superkwh.site" (with an initialized password of 123456) for the user to log in to the Web console.

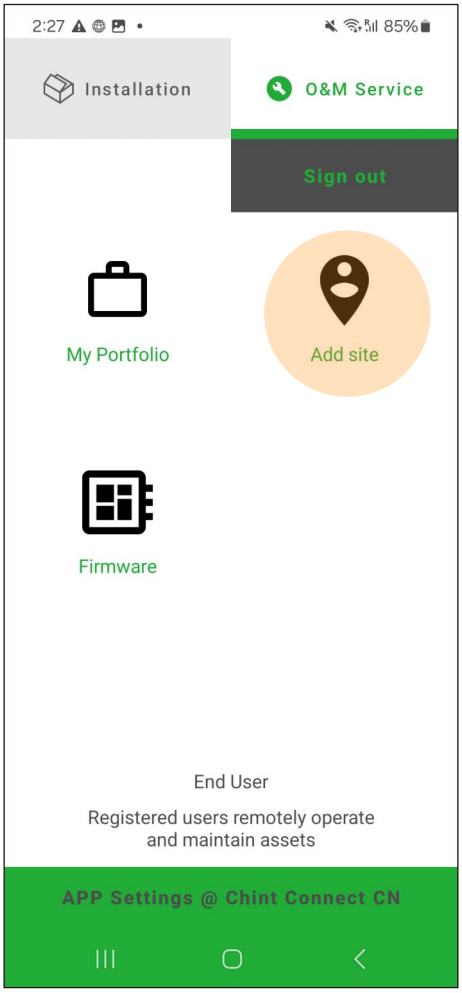


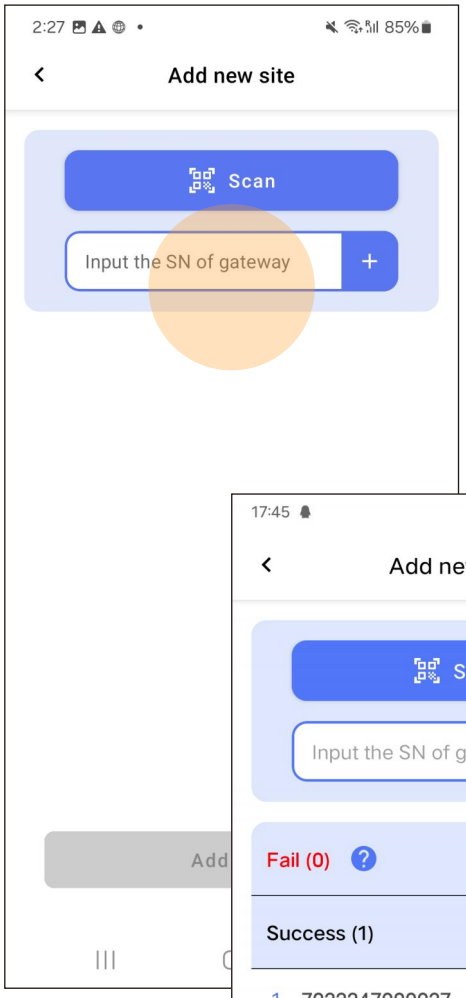
"End User" can register themselves through the APP and then bind the new gateway by themselves.

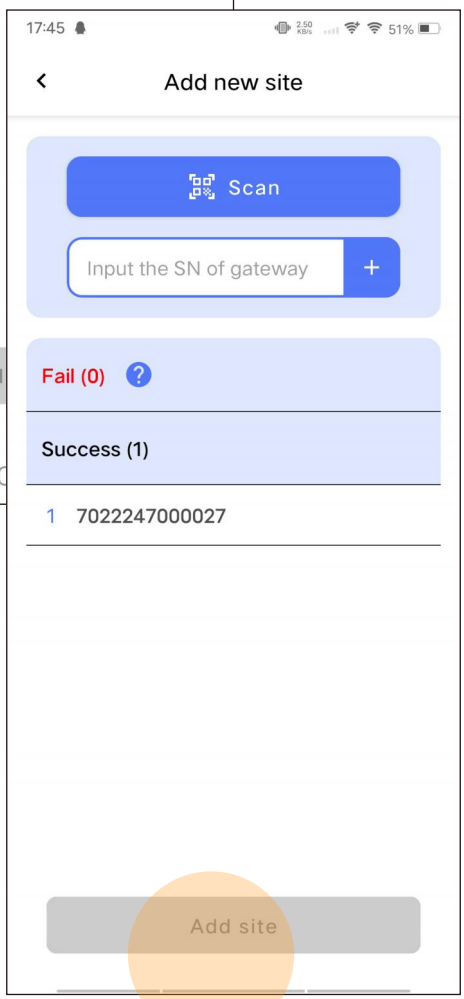
Once the new gateway is connected to the Internet, it will use the gateway SN as the default site name to create a site in the Portal system.

After binding the gateway by themselves, users can immediately view the site data via APP/Web.

7 Portfolio Owner (End User)
7.2 Bind site to account



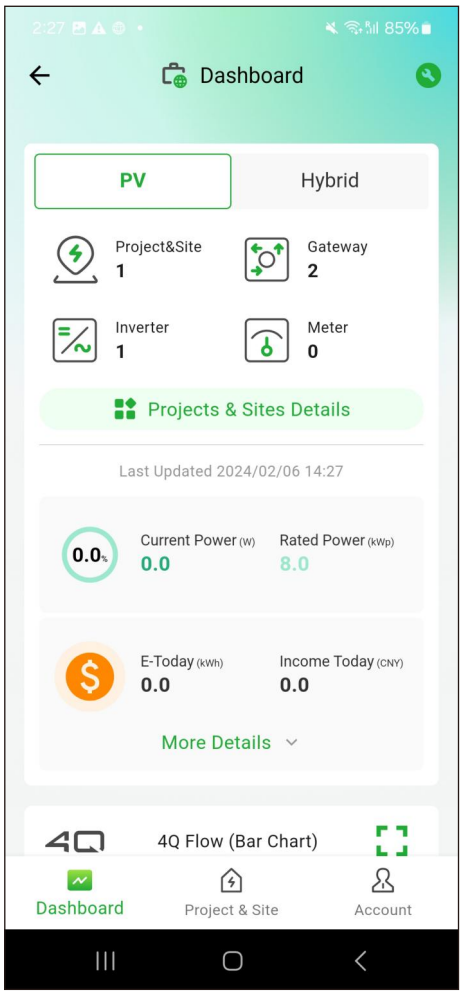


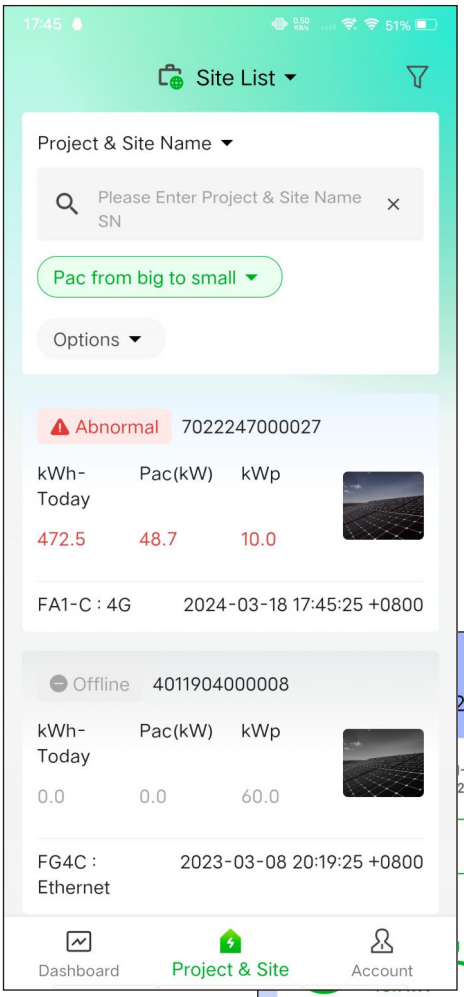


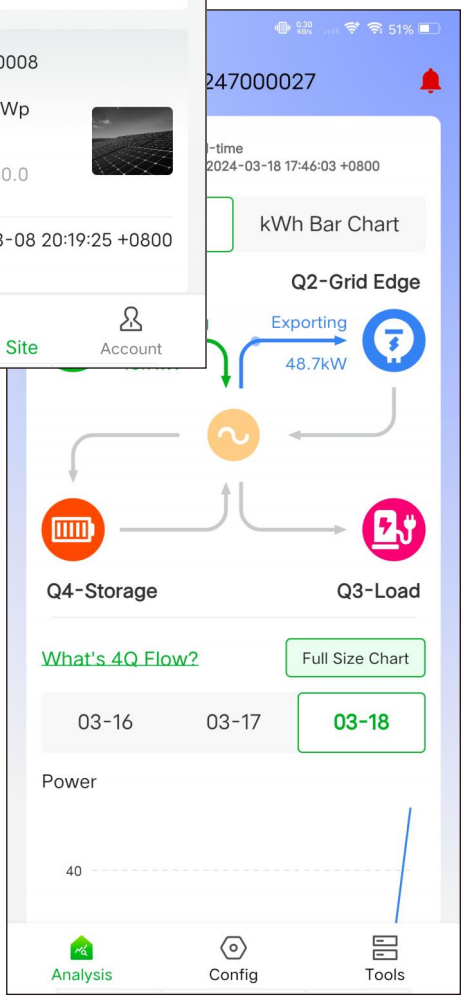
After logging in "End User", click "Add Site", and then output the gateway SN.

APP will prompt successful binding, or prompt that the current gateway has been bound by other users and other exceptions.

7 Portfolio Owner (End User)
7.3 Remote checking of hardware running status





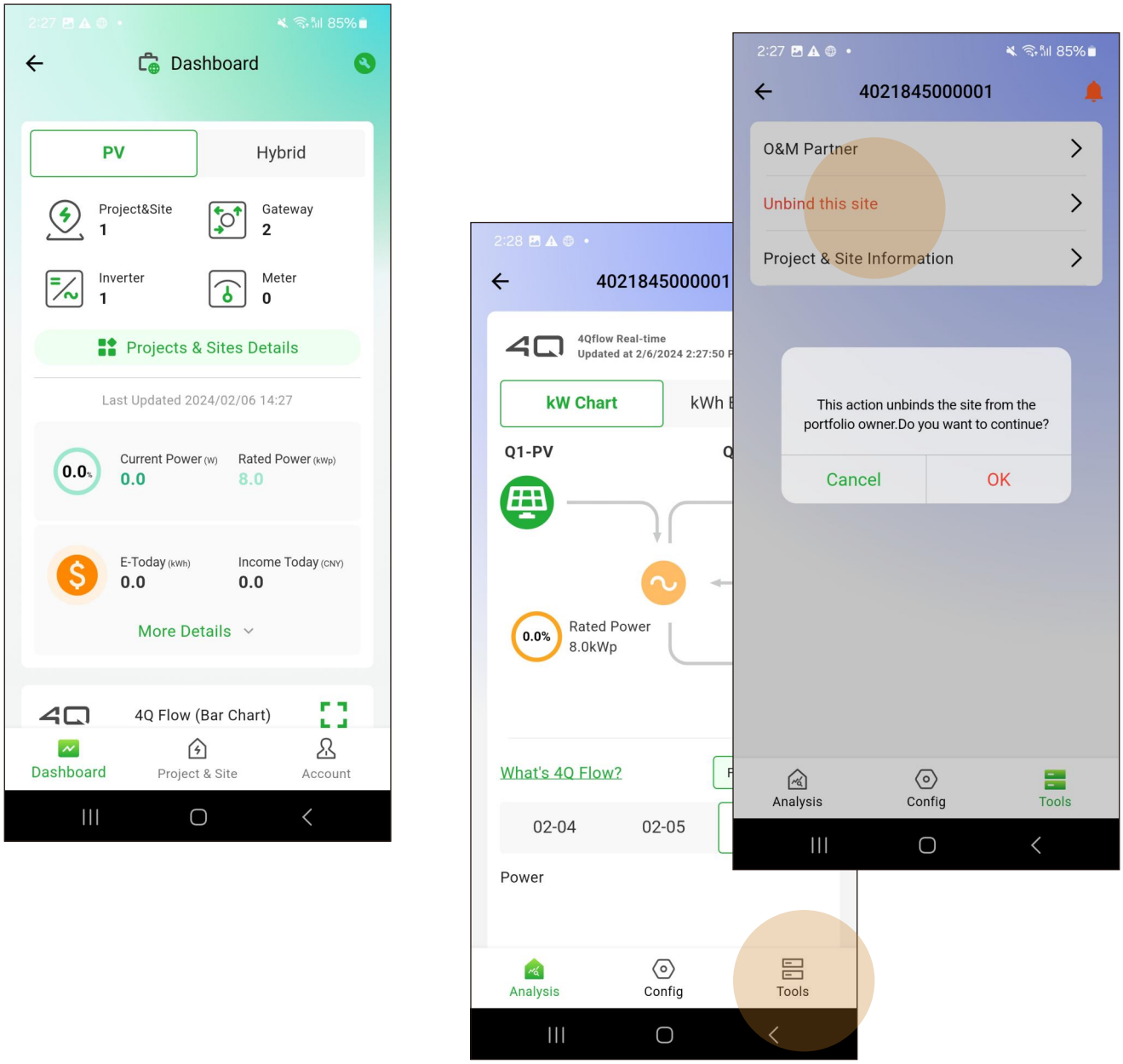


After logging in via the APP/Web, Portfolio Owner is able to view data for all sites in the account, as well as remotely modify hardware settings.

Different roles will be given different permissions, so the Portal system administrator will adjust the account permissions according to the contract.

Please check the product sales contract for details.

7 Portfolio Owner (End User)
7.4 Unbind site from account

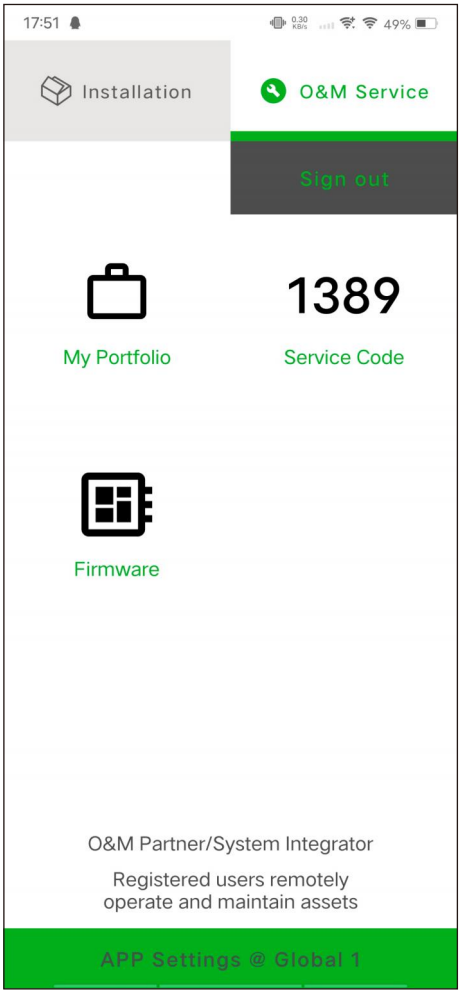


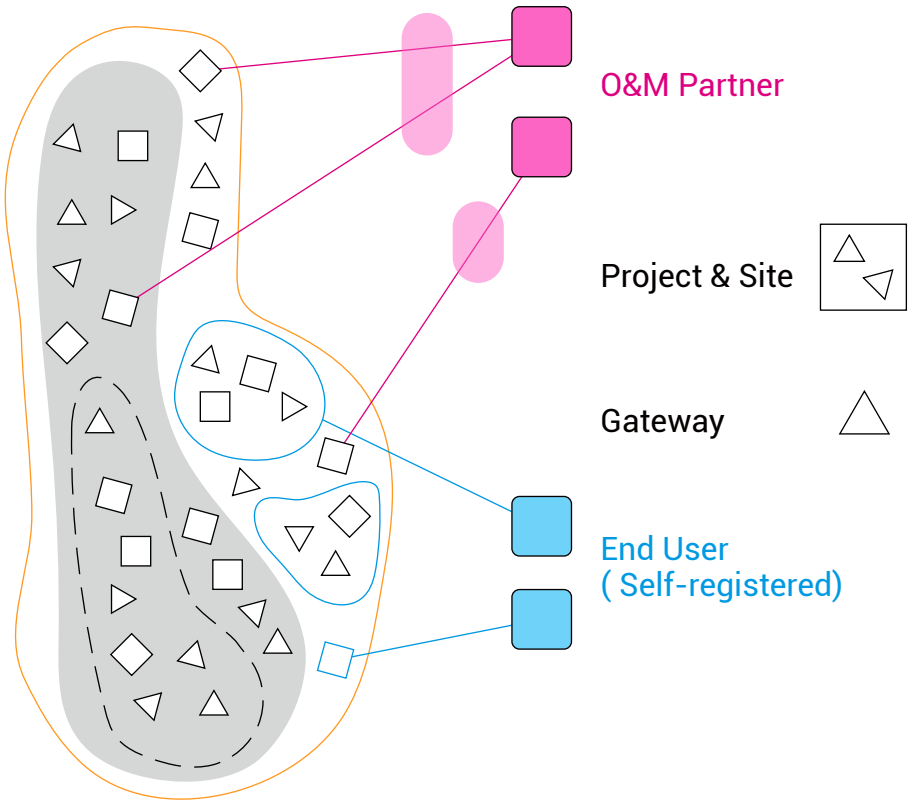
Users can enter a site from the site list, click on "Tools" and then select "Unbind this site".

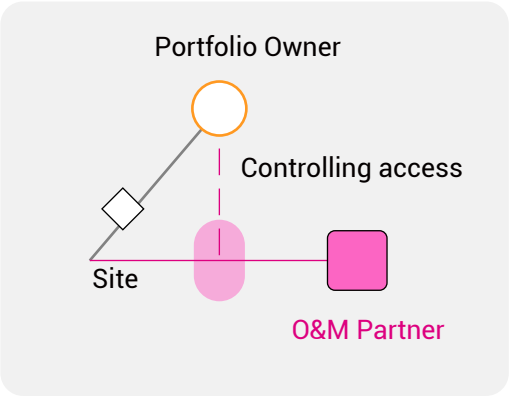
The site is unbound from the current account and the site and data are not deleted.

The Portal administrator is still able to manage the site, so in case of misuse, you can

7 Portfolio Owner (End User)
7.5 Authorize an O&M partner to control the site







The Portal Admin can send an "Invite-to-register" self-registration URL to the target user.

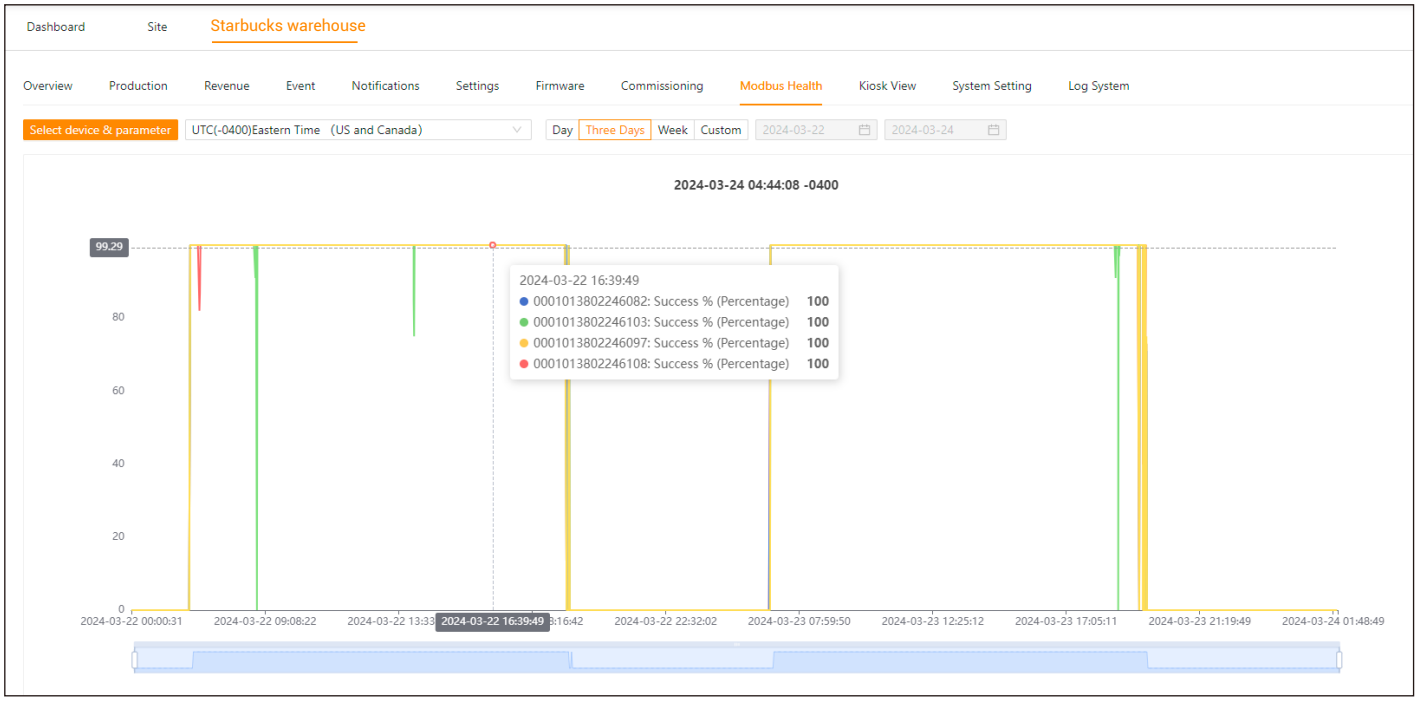
O&M Partner will receive a 4-digit "Service Code" after completing the account registration.

Both the "Service Code" and the O&M Partner account name can be used as elements of the Portfolio Owner's authorisation.

O&M Partner is a service or integrator account role with a cross-organizational perspective.

“Portfolio Owner" can turn on or off O&M Partner's access to sites in his account.

7 Portfolio Owner (End User)
7.6 Diagnose wiring communications at the site



80% of the problems with the first completed installation are wiring problems.
The gateway provides a detailed diagnosis of Daisy Chain's communications.

Each Modbus device should have a consistent communication success rate of 95% or more, otherwise there is a high probability of wiring problems or interference with the RS485 cable.
RS485 reversals and double masters are also very common.

For further support, please feel free to contact the after-sales service.

www.chintpower.com

+86 21 37791222 -866300
service.cps@chint.com