NANO EVA-07/22S-S

AC EV Charging Station
User Manual

Disclaimer

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Thank you for choosing ATESS

EVA series intelligent AC EV Charging station is a power supply device that uses professional and advanced technology to provide energy supply to electric vehicles, it also has versatile functions of control, billing, and communication. The charger can be connected to a back-office server to realize the functions of reservation and payment via Mobile phone APP. Diversified communication options, including wired Ethernet, WiFi, 4G is available for back-office server connection.

We sincerely hope that this product can meet your needs, and we welcome and value your feedback and suggestions on the performance and function of the product. We will continuously improve the quality of our products and services.

Contents

Safety precautions

This document contains important safety information about your AC EV charging station. Please keep this file for future reference.

Please read this document thoroughly before installing and using the ATESS AC EV charging station. Failure to follow safety instructions may result in electric shock, fire, serious injury or death.

|	
⚠️	Check the charger cable and case regularly for damage. If the product is defective or damaged, suspend use and contact Project EV for advice.
⚠️	Do not open, repair, tamper or modify the charger in any way without. authorization.
⚠️	We recommend that the charger installation, inspection, etc. be carried out by qualified electricians who have obtained relevant certificates, and the installation should comply with local wiring regulations to ensure safe use.
♨️	Ensure that the charger is in the working temperature. Do not touch the surface of the charger in high temperature environment to avoid burns.
⚠️	Do not expose any part of the equipment or cable to strong force, impact, or sharp objects.
⚡5min	There may be power left within 5 minutes after the charger is powered off. Please ensure that it is completely disconnected before operating.
⚠️	You can clean the surface of the charger with a soft, damp cloth without using solvents or abrasives. Power must be off before cleaning.
🗑️	This symbol on products and accompanying items indicates that used electrical appliances and other products should not be mixed with general domestic waste. For proper handling, recovery and recycling, please take this product to the designated collection point for disposal.

1 Product Description

1.1 Product summary
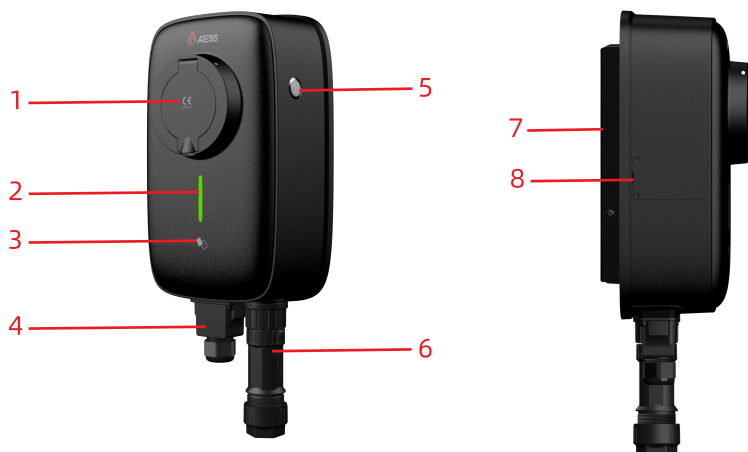
1. Socket outlet
2. Status indicator
3. RFID ready
4. Waterproof cable gland for communication wires
5. Start or stop button
6. Waterproof cable gland for AC input cables
7. Mounting bracket
8. 4G module(For 4G version)

LED Sequence:

Blue-Steady on (Standby)

Red -Steady on/flashing (Fault)

Green-Flashing (Charging in process)

Yellow-steady on (Schedule Charging)

2 Packaging List

| No.	Name	Qty	Remark
1	Charger	1	
2	User manual	1	
3	Quality certificate	1	
4	ST6.3X40 Stainless steel hex-head self-drilling screws	4-7	4 for socket version, 7 for cabled version (3 of the 7 screws is for cable hook fixing)
5	12X46 Plastic expansion plugs	4-7	4 for socket version, 7 for cabled version (3 of the 7 plugs is for cable hook fixing)
6	User card	1	RFID function will be equipped with user card
7	EVN6010 terminal block	3-5	3 for single-phase version use, 5 for three-phase version use.
8	Plug-in terminal block	1	For power input cable installation (single-phase/three-phase)
9	RJ 45 protective cover	1	For communication cable installation
10	PG 21 locking nut	1	For communication cable installation
11	PG 21 Three-hole claw washer	1	For communication cable installation

3 Installation and Wiring

3.1 Mount on a wall

3.1.1 Open the package and you will see a charger and the installation of related accessories. There is also an RFID card if the EV charger is RFID version.
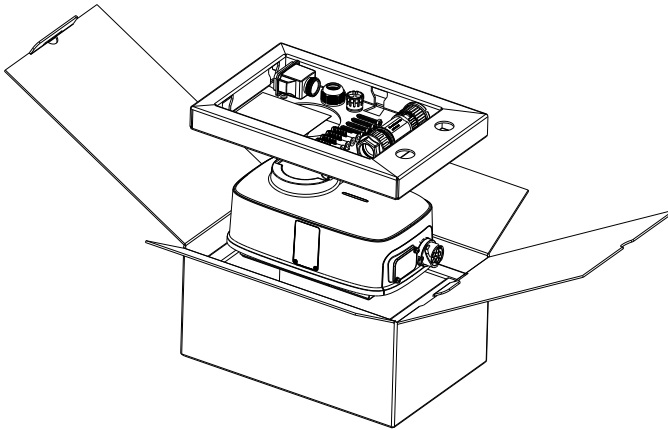

3.1.2 Take out the first layer of cardboard from the packaging carton to mark the positioning of the installation holes. Mark the positions of the holes according to the holes on the cardboard.
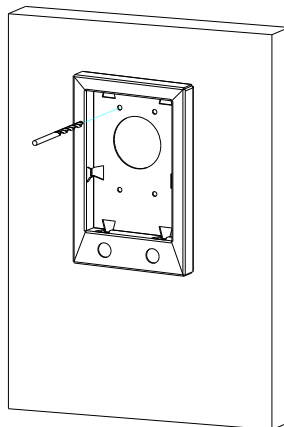
3.1.3 After drilling the hole, hammer the expansion bolts in the accessory package into the hole.
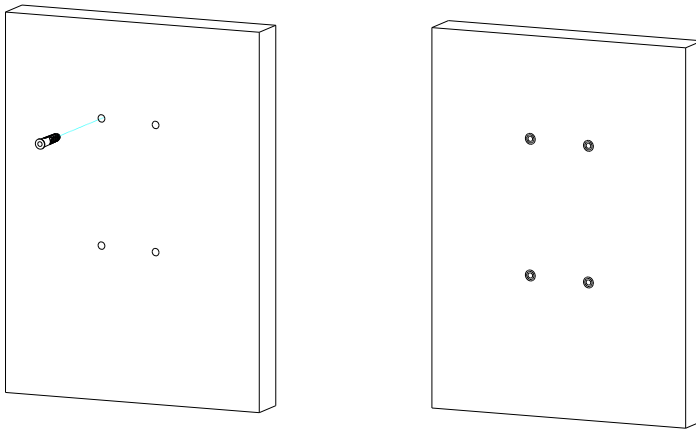
3.1.4 Use the T20 Tamper-Resistant Screwdriver to remove the mounting backplate bracket from the charger, then take out 4 * ST6.3X40 screws from the accessory bag and fix the mounting backplate bracket to the wall, locking it in place.
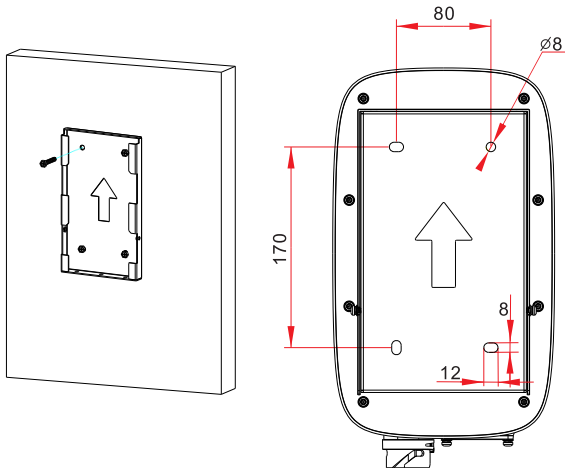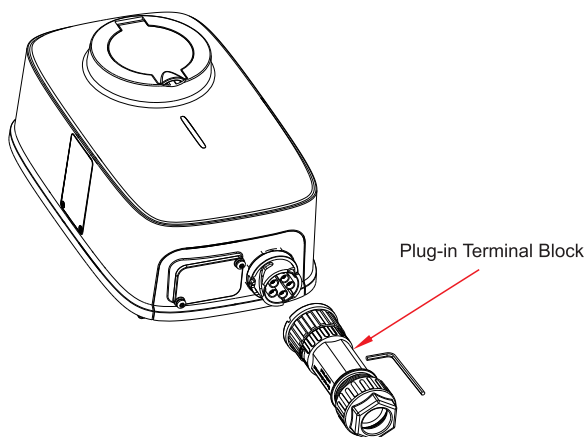
3.1.5 Fix the charger onto the mounting backplate bracket, and then use the previously removed T20 Security Screws to secure the left and right ends of the charger.
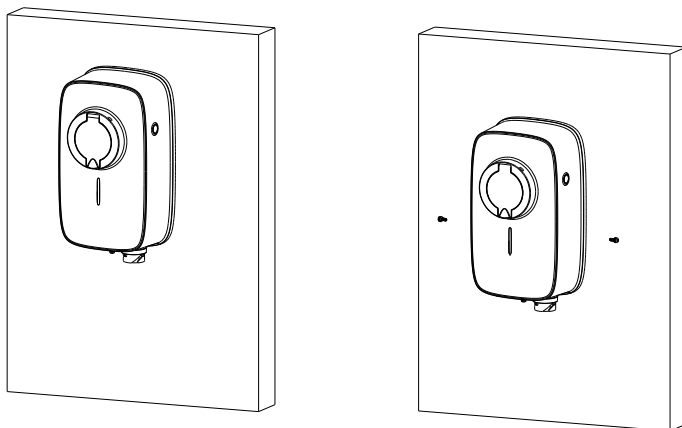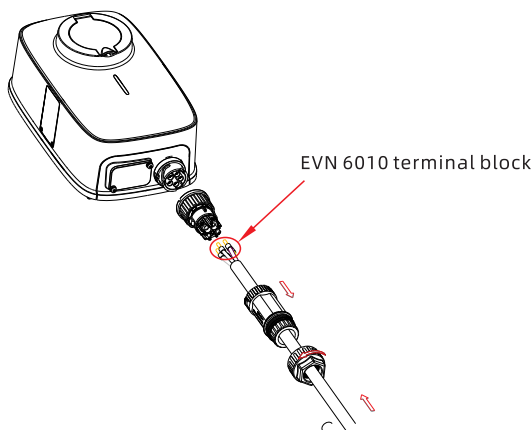

3.2 Wiring

3.2.1 Power input cable

(1) Take the wire Plug-in Terminal Block out of the accessory bag, and then use Allen Wrench to open it.

Plug-in Terminal Block

(2) Take out the EVN 6010 terminal blocks from the accessory bag and modify the input cable. Then, follow the sequence shown in the diagram below to pass the modified cable through the Plug-in Terminal Block one by one.

EVN 6010 terminal block

10 mm	AWG 8~10 (1P+N) AWG 6~8 (3P+N)	EVN 6010	2-2.5 N.m (1P+N) 3-3.5 N.m (3P+N)	2.5mm Allen Wrench (1P+N) 3.0mm Allen Wrench (3P+N)
0.4 in			17.70 - 22.13 lb·in(1P+N) 26.55 - 30.98 lb·in(3P+N)	

	L	N	PE
Terminal			
7K	≥ 6mm²	≥ 6mm²	≥ 6mm²
	≥ AWG 9	≥ AWG 9	≥ AWG 9
22K	≥ 6mm²	≥ 6mm²	≥ 6mm²
	≥ AWG 9	≥ AWG 9	≥ AWG 9

(3) Use Allen Wrench to secure the cable onto the Plug-in Terminal Block and tighten it.
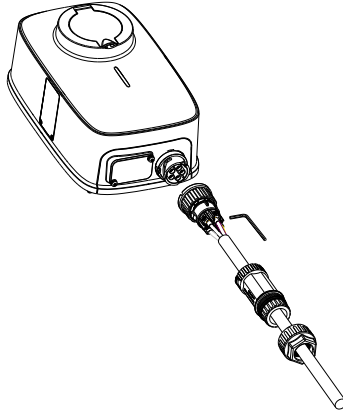
(4) Lock the nut of Plug-in Terminal Block, then insert the Plug-in Terminal Block with the connected power cable into the charger.

(a)   (b)
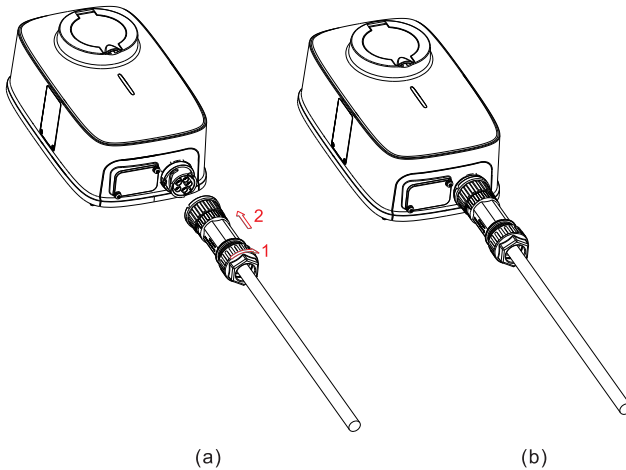
3.2.2 Communication cable

(1) Use the T20 Tamper-Resistant Screwdriver to remove the RJ 45 cover plate.

RJ 45 cover plate
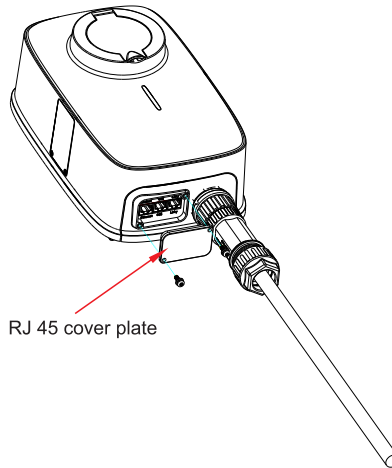
(2) Pass the communication cable through the PG 21 Locking Nut, Three-hole stopper, the PG 21 Three-Hole Claw Washer, and the RJ 45 Dust Cap in sequence.

CT/485 sampling	Linky/DRMs

8 7 6 5 4 3 2 1   8 7 6 5 4 3 2 1

5:Ib-	1:RS_485-A	5:GND	1:DRM 0
6:Ia-	2:RS_485-B	6:NC	2:DRM 1
7:Ic+	3:Ia+	7:TIC I2	3:DRM 2
8:Ic-	4:Ib+	8:TIC I1	4:DRM 3
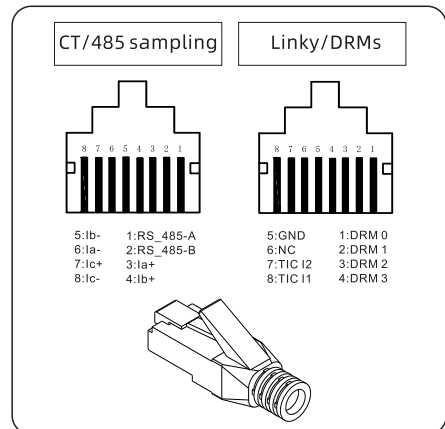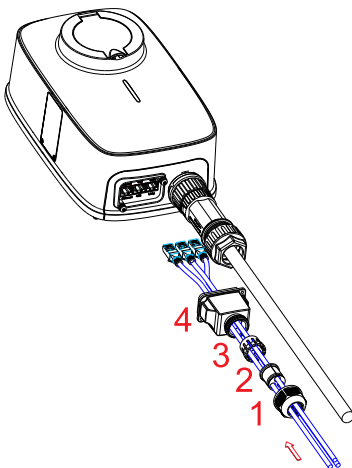
(3) Insert the communication cables into the corresponding positions correctly.
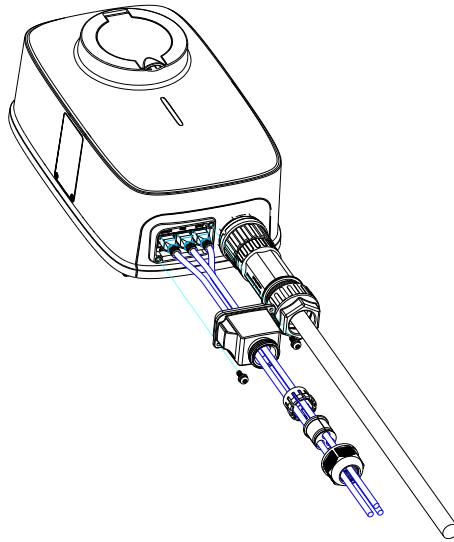
(4) Insert the Three-hole stopper back into the PG 21 Three-Hole Claw Washer, and then install it into the RJ 45 Dust Cap.
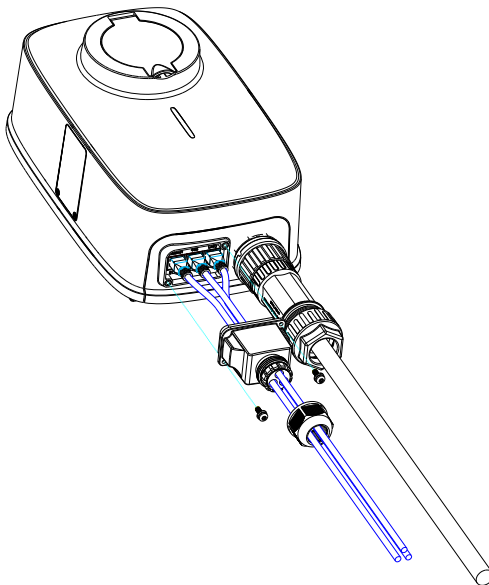
(5) Install the RJ45 Dust Cap onto the charger by locking it with the removed Security Screws. Then tighten the PG21 locking nut and the installation is complete.

(a)   (b)
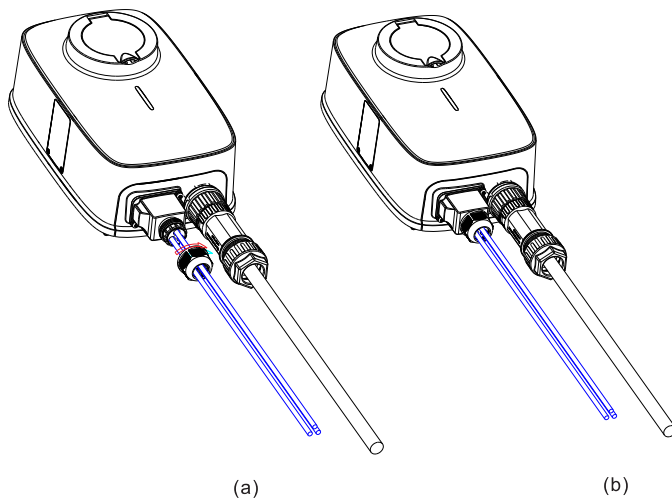
3.3 Installation of 4G module (For 4G version)

(1) Use the T10 tamper-resistant screwdriver to remove the screws of the 4G cover plate, then take off the 4G cover plate for installation.

(a)　　　　　　　　　　　　　　　　　　(b)

(c)
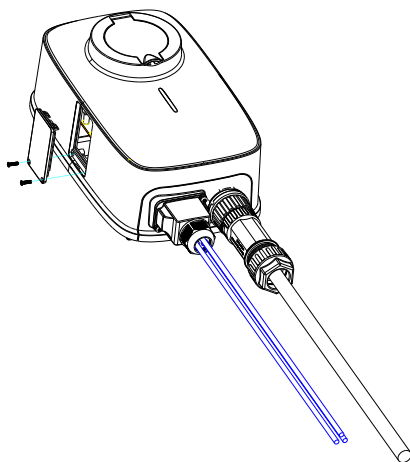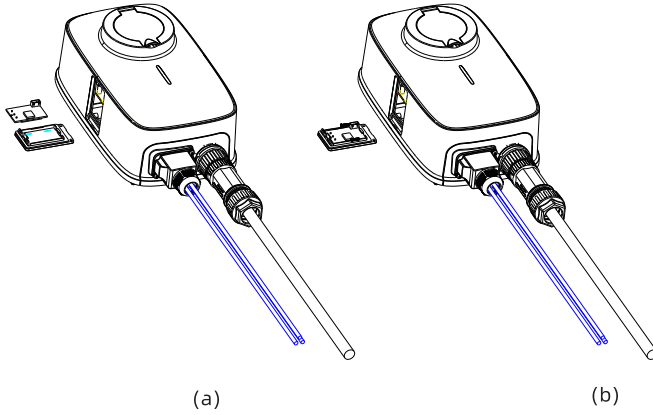
(2) Replace the cover plate with the 4G module installed back into the slot, then secure it with screws. Installation is complete.

(a)　　　　　　　　　　　　　　　　　　(b)
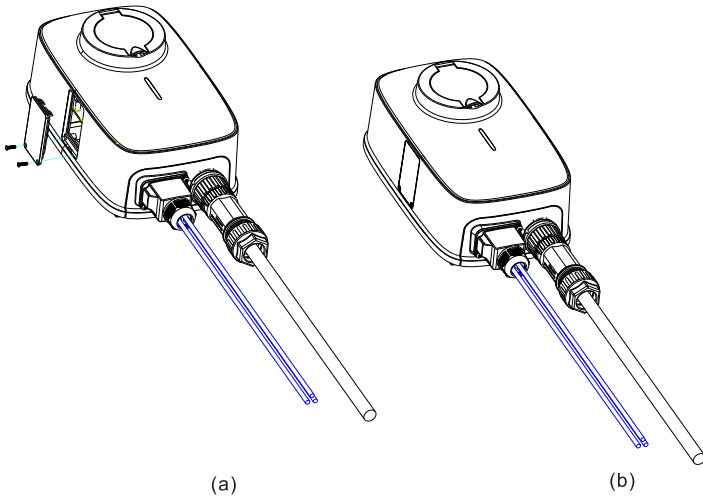
4 Parameter Setting

After the charger installation and wiring, connect the charger and PC via network cable for parameter setting. For specific actions, please refer to the following details.

4.1 Set the IP address of the PC

The Charger's default IP address is 192.168.1.5. To access the parameter setting interface, you need to first set the computer's IP to 192.168.1.x(x can be any value between 1 and 255 except for 5, e.g. 192.168.1.10).

To set a static IP on your computer:

1. Click Start Menu > Control Panel > Network and Sharing Center. (For Windows 8 and higher, search for and open Control Panel and select Network and Internet).

2. Click Change adapter settings.
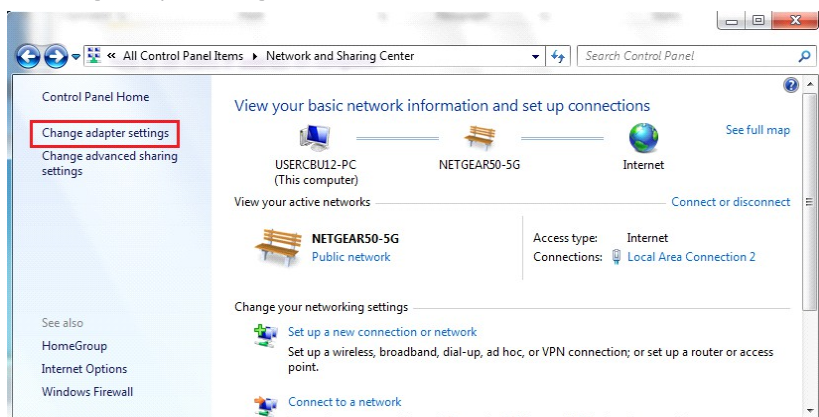
3. Right-click on Local Area Connection and click on Properties.
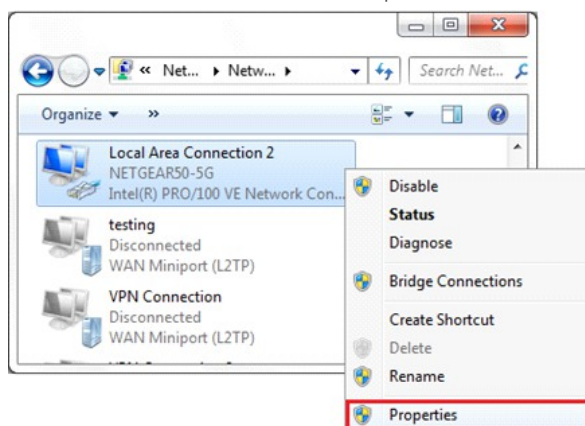
4. Select Internet Protocol Version 4 (TCP/IPv4) and click on Properties.
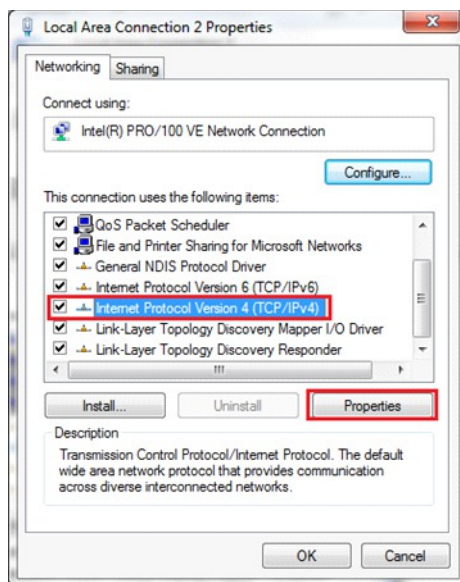
5. Select "Use the following IP address" and enter the IP address, Subnet Mask, Default Gateway. Click OK and close the Local Area Connection properties window.
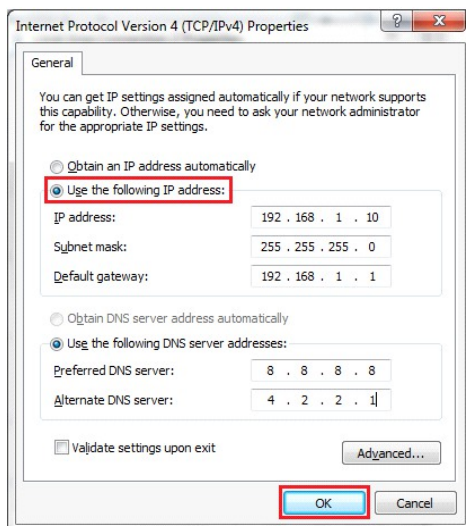
4.2 Configure parameters

Connect the charger to a computer via a network cable. Open the web browser and type in http://192.168.1.5:8080/ in the address field and click enter, then the parameter setting page of the charger will open up.

Parameter setting can only be done via web browser on a computer. It is suggested to use IE or Firefox, other browser might have compatibility problem.

Overview of Parameter setting page

Explanation of parameters

(1) Firmware version of the Charger. This item cannot be modified here on the setting page.

Firmware Version Num:	EVA-22S-VA1.2.2.0-NANO

<div align="center">Fig.1</div>

(2) Charger ID, this is the unique identification of the Charger. If the charger is to be connected to ATESS back-office server, this ID must be set as the serial number on the nameplate of the Charger. Otherwise the Charger cannot be registered on the server.

Charge ID(MaxLen 20):	BPEMINI07SEH

<div align="center">Fig.2</div>

(3) When this function is enabled, the EV charger will only start charging when the CP signal and the PP singal is normal.

PP Enable:	Disable

<div align="center">Fig.3</div>

(4) Charger IP. The default IP is 192.168.1.5. If you use a LAN cable to connect the Internet and use STATIC IP, the Charger IP must be changed to an available IP that matches the router. If you have changed the default IP and forgot the new IP, you can reset the charger to factory setting by long press the reset button(the reset button on control board, not the red emergency stop button) until the charger reboot. Then you can use the default 192.168.1.5 for access.
Please note: After restoring the charger to factory setting, you'll need to reset Charger IP and Gateway(LAN cable connet Internet) or WiFi name and WiFi password(use WiFi connect Internet), otherwise the charger won't be connected to the back-office server.

Charger IP:	192.168.1.5
Default Gateway:	192.168.1.1
Charger DNS:	8.8.8.8

<div align="center">Fig.4</div>

(5) Charger Subnet mask. The default value is 255.255.255.0. It is not suggested to change. If the subnet mask has been reset to other value and you have forgotten the new value, you can restore the charger to factory setting by long press the reset button.

DHCP Enable:	STATIC
Subnet Mask:	255.255.255.0

<div align="center">Fig.5</div>

(6) MAC address. This is the MAC address used for LAN cable connection. If the charger is connected to ATESS back-office server via LAN cable and the router has MAC access control, then you can put this MAC in the router to allow the charger to access server.

Net MAC Address:	50:88:35:78:19:4D

<div align="center">Fig.6</div>

(7) Enable the DHCP mode to automatically assign IP addresses to routers and Connect to charger via network cable under internet connection.

DHCP Enable:	STATIC

<div align="center">Fig.7</div>

(8) The secret key to connect to the OCPP server for authentication.

Authentication Key For OCPP:	12345678

<div align="center">Fig.8</div>

(9) WiFi SSID(wireless network name) and WiFi Key(WiFi password) is used for WiFi connection.

WIFI SSID(MaxLen 30,Not support ','):	WIFI_Default
WIFI Key(MaxLen 64,Not support ','):	******

<div align="center">Fig.9</div>

(10) Server URL is to set the domain name or IP address of the back office server to be connected.

The domain name of ATESS server is "ws://enerace-ws.atesspower.com/ocpp/ws";

IP address is "ws://8.212.21.1:80/ocpp/ws".

Heartbeat Interval is used for testing. No need change.

Server URL(MaxLen 250): ws://enerace-ws.atesspower.com/ocpp/ws

Hearbeat Interval(0~24*3600 Sec): 60

Fig.10

(11) Time of the charger. Set according to the local time. After the charger is connected to back-office server, the time will be synchronized with the server's time. If the charger has no server connection, then you'll have to reset the time every time you turn off and back on the charger.

Charger Time(YY-MM-DD HH:MM:SS): 2025-05-28 09:46:16

Time Zone: UTC+00:00

Fig.11

(12) The login password is used to set the login parameters for the web page. For the default password, please check the SN number on the charger nameplate. You can change your password after logging in.

Login Password: ••••••••

Fig.12

(13) Over temperature protection value, not suggested to change.

Max Temperature(Max 85): 80

Fig.13

(14) Interval for uploading metering data during charging, keep the default value.

MeterValue Interval(0~3600 Sec): 60

Fig.14

(15) 4G connection, when the 4G network cannot be connected, login SIM card APN and other information.

4G Account(Maxlen 30):

4G APN: Default

4G Password(Maxlen 30):

Fig.15

(16) DC residual current sampling value calibration. Enter 0 and press "Set and Reboot " to calibrate the DC RCD ring. Display real-time detection value of DC residual current. Keep the default RCD level.

TypeB RCD1(Enter 0 Calibration): 0.-116

Type B RCD Protection Level: 3

Fig.16

(17) To set the working mode of solar, the ECO mode requires setting the KWH of electricity obtained from the grid.

Solar Mode Charge: Disable

Grid Limit Charging Current(Solar: 6-50A): 6

Fig.17

(18) Load balancing, sets the total power input of the home grid to avoid tripping.

Power Distribution Charge: Disable

External Maxlimit Power: 45

Fig.18

(19) Set the load balancing or Solar function, sampling instrument type and address.

External Power Smpling Wiring:	PowerMeter
LoadBalance PowerMeter Type:	Eastron SDM630(Three)
LoadBalance PowerMeter Addr:	1

Fig.19

(20) For the charger with an integrated meter, set the meter model and address and keep the default value.

Meter Measure Enable:	Disable
Measure PowerMeter Type:	Eastron SDM72D MID(Three)
Measure PowerMeter Addr:	1

Fig.20

(21) Set low electricity prices for charging time to reduce costs.

Off Peak Time1(HH:MM-HH:MM):	11:00-16:00
Off Peak Time2:	22:00-08:00
Off Peak Time3:	00:00-00:00
Off Peak Time4:	00:00-00:00
Off Peak Time5:	00:00-00:00
Off Peak Current1(A):	32
Off Peak Current2:	32
Off Peak Current3:	32
Off Peak Current4:	32
Off Peak Current5:	32

Fig.21

(22) Relieve the power grid pressure, authorized charging, after the set time to start.

Rand Delay Charge Time(0~1800 Sec): 0

Fig.22

(23) The over voltage value range of a single-phase AC charger.

Volt OverLimit(260-280V): 260

Fig.23

(24) The undervoltage value range of a single-phase AC charger.

Volt UnderLimit(150-190V): 190

Fig.24

(25) DRM3=60% : The EV charger can obtain/output 60% of the maximum power of the charger from the power grid.DRM4=100% : The EV charger can output at its maximum power. It can be modified according to actual application.

DRM3(1~100%): 60
DRM4(1~100%): 100

Fig.25

(26) The time interval for the EV charger to send pings to the background server is used to check whether the EV charger is online. Keep the default value.

WebSocketPing Interval(0~24*3600 Sec): 50

Fig.26

(27) Set the display language of the charger .

Language Set:	English ⌄

Fig.27

(28) The charger model, can not be modified, factory default.

Machine Type:	EVA-22S-NANO ⌄

Fig.28

(29) Aging test just for US standard.

Aging Test(USA):	Disable ⌄

Fig.29

(30) Set the output current of the charger to limit the output power of the charger.

Max Output Current Set(6~50A):	32.0

Fig.30

(31) Charging mode setting. 1: APP/RFID mode; 2: RFID mode; 3: Plug&Charge mode.

Charge Mode:	Plug&Charge ⌄

Fig.31

(32) PIN of the charger, used to verify the PIN of user card. To use a RFID card with the charger, their PIN must be consistent. If the user card has a different PIN, then it cannot be used on this charger. The default PIN setting of the charger is 242007.

Card Pin(6 digits, E.g:123456):	242007

Fig.32

(33) Set the tariff for charging energy.

Charging Rate (Per KWh):	1.0000

Fig.33

(34) Set daylight saving time for the charger to switch automatically.

Daylight Saving Time(MM-DD):	00-00&00-00

Fig.34

(35) The time for automatic charging in Plug and charge mode.

Auto Charging Time(Plug&Charge):	00:00-00:00

Fig.35

(36) The communication interval between the charger and server,keep the default value.

Hearbeat Interval(0~24*3600 Sec):	60

Fig.36

(37) In any mode, after the authorized charger starts, wait for the time to connect the electric vehicle.

Wait For Plug Gun Time(Sec):	90

Fig.37

(38) RS 485 controls the timeout setting.

485 control timeout(10~600Sec):	60

Fig.38

(39) Calibrate the sampled input voltage, and the calibration value is the actual voltage measured.

VoltA Calibration:	0
VoltB Calibration:	0
VoltC Calibration:	0

Fig.39

(40) End Charge plug keep finish.

EndChargePlugKeepFinish: Disable

Fig.40

(41) After modifying any parameters, click "Set and Reboot" to take effect. Some parameters may cause the charger to automatically restart.

Set and Reboot
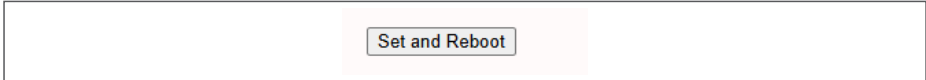
Fig.41

(42) Upgrade the firmware of the charger. After clicking upload, the charger will restart.

Firmware Updating

Choose File No file chosen   Upload

Fig.42

(43) Restore the charger to factory Settings.

Restore factory settings

Reset

Fig.43

(44) Clear charging records.

Clear Charge Record

Clear

Fig.44

(45) Quectel WiFi module updating.

Quectel Wifi Updating

Quectel Wifi OTA URL(MaxLen 128):

update
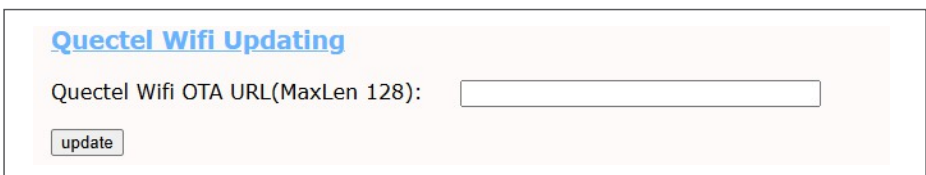
Fig.45

5 Operation Instruction

5.1 Charging mode and operation

APP/RFID mode:

Initiate or cease charging by scanning QR code using APP or by swiping RFID card. You can also use APP for reservation and payment provided that the back-office server supports such functions.
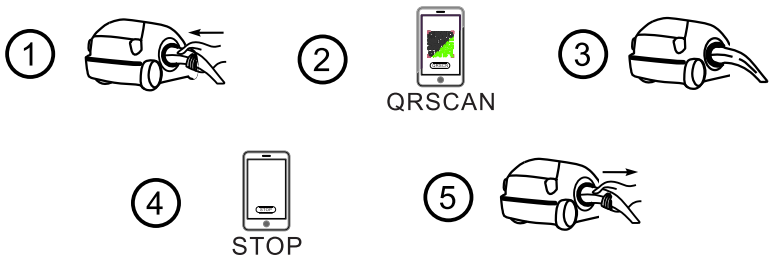
APP/RFID mode operation process flow

If you are using the Project EV APP, Charging can be started/stopped by pressing the " ⏻ / ‖ " button on the APP.
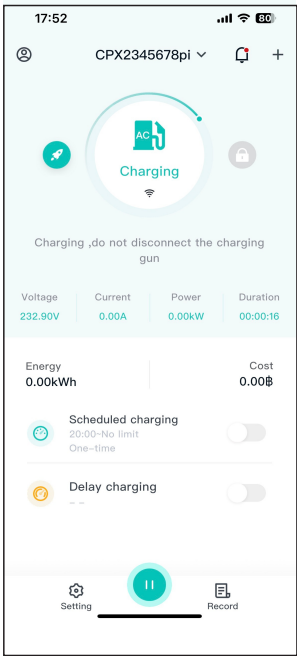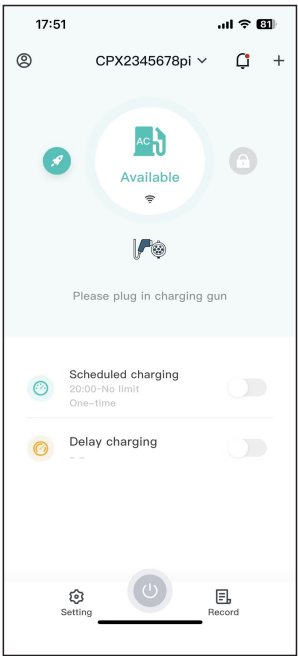
RFID mode:

Charging can only be initiated or ceased by swiping RFID card.
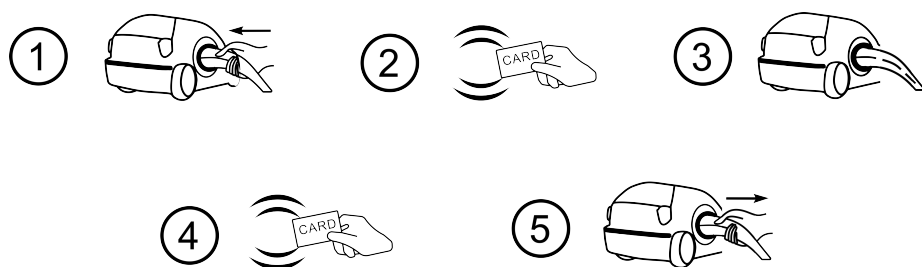
RFID mode operation process flow

Plug & Charge:

Connect the charger to the EV.The charger will start charging automatically.Once charging is complete, the charging station will automatically stop, and the user can safely remove the charging plug.If you wish to stop charging early,press the silver emergency stop button on the right, and the charger will halt output. Or stop charging by operating your electric vehicle.

Stop Button
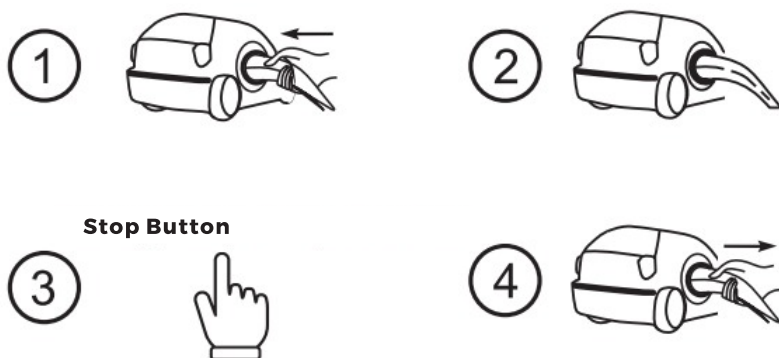
Plug & Charge mode operation process flow

6 Firmware Update

6.1 Update on parameter setting page

Using this method for update doesn't require any specific name for the firmware file.

1. Connect the charger to a computer with IP address set as 192.168.1.x(x can be any value between 1 and 255 except 5) via a network cable. Open web browser and type in the charger's default IP address–http://192.168.1.5:8080, click enter then you'll get into the parameter setting page.

2. Scroll down to the below field.

3. Click the "Browse" button and select the firmware file. Click "Upload", then update will start automatically.

During the update, the LED indicator will behave as below,

First flash red and goes out with a short beep sound, during this period the firmware file is transmitted to the charger's flash memory from the computer;

Then flash red again for some seconds and quickly change to green light flashing. During this period, the charger is updating the firmware to its micro controller.

When the green light goes out, there will be a long beep sound. That means the firmware is successfully updated.

The beep sound may not be audible with the front cover fixed on the charger.

If the update doesn't start after click "Upload", Turn off and back on the charge to try again.

4. You might see below content. If the charger is already successfully reboot after the firmware update, close the browser and open it again to check the current firmware version.
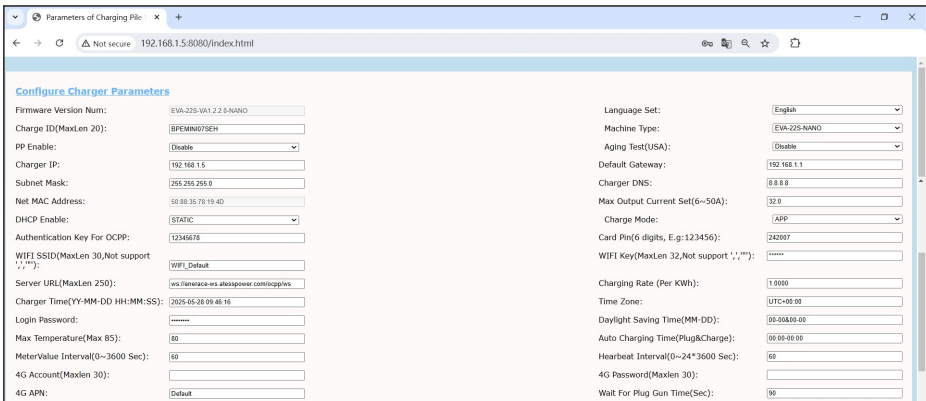
7 Troubleshooting

7.1 Troubleshoot by LED behavior

If fault occurs, users can check the fault information by the number of blinks of the LED indicator light. Each fault is indicated with a sequence of different numbers of LED blinking. A pause of 3 seconds between each sequence indicates the beginning or end of a sequence. If multiple faults happen at the same time, each sequence of blinking shows in chronological order at an interval of 3 seconds.

Please see the table below for detail information

No.	The frequency of flashes for the LED indicator light	Fault description
1	3	The silver emergency stop button is pressed or broken
2	1	Over voltage on phase L3
3	2	Under voltage on phase L3
4	1	Over voltage on phase L2
5	2	Under voltage on phase L2
6	1	Over voltage on phase L1
7	2	Under voltage on phase L1
8	2	Three phase are undervoltage
9	4	Over current
10	5	Over temperature
11	6	RCD leakage current fault
12	7	Rs485 communication fault
13	8	Lightning protection fault
14	9	Reserved
15	10	Relay fault
16	11	PE fault
17	12	Reserved
18	13	Out of service
19	14	Door opened

7.2 Firmware update fails

7.2.1 Firmware update failure with laptop:

Please try with IE browser. Or reboot the laptop to retry.

7.3 WiFi connection&APP issue
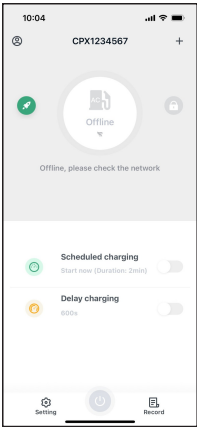
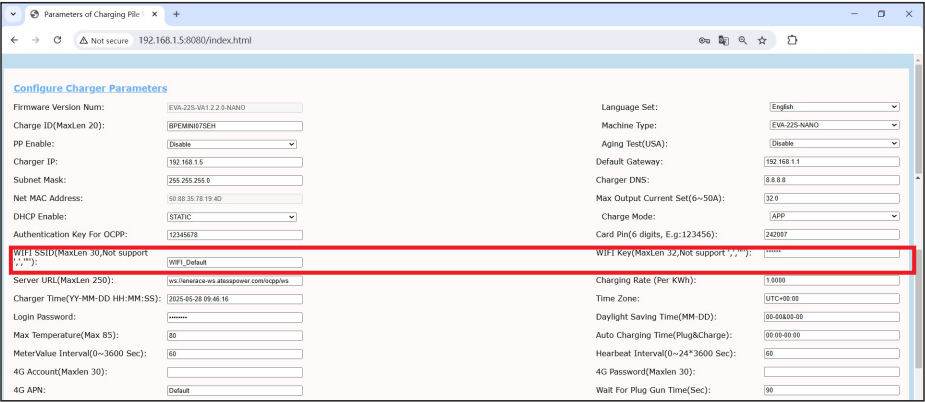a. Check WiFi signal strength:
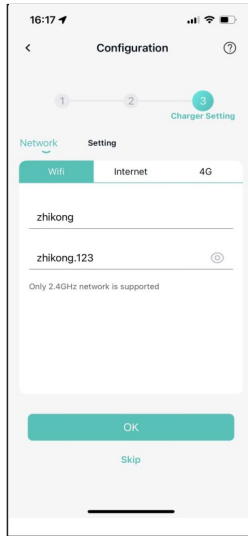
Signal strength on PC:

Signal strength on mobile:

b. Please check and input the correct WiFi SSID and password to retry;

If you check the WiFi setting on the APP, please turn off and back on the charger and connect your mobile to the WiFi emitted by the charger for checking and setting.

c. Check if there is access control in the router, e.g. MAC filtering, port blocking, etc.

To verify this, you can use your mobile phone to create a hotspot and try to connect the charger to this mobile hotspot. If charger can connect to the hotspot, but cannot connect to the router, there must be access control in the router, please check with the site owner for this.

Check if charger is connected on Device list of the hotspot setting page.

1. Some routers have 2 WiFi, one is 2.4GHz, the other is 5GHz. Most homes just use the 5GHz WiFi as their default WiFi. But the charger can only connect to the 2.4GHz WiFi. So if the charger can connect to your mobile phone hotspot, but cannot connect to the home WiFi. Please check with the home owner or check on their router to see if you are using the 5GHz WiFi. Please do use the 2.4GHz WiFi for charger connection.

2. When the WiFi signal strength is lower than - 75dbm, the charging point will not be able to connect with WiFi.

(1) Download the WiFi signal strength test tool from the app store to check whether the WiFi signal strength connected to the charging point is greater than-75dbm.

(2) If the WiFi signal strength is weak, it is recommended to use AP repeater to increase the signal strength, which can enlarge the WiFi signal range.

e. Check if the charger is still connected to the computer. Please unplug it from computer otherwise the charger won't connect to the back-office server.

f. Check if server address is correct in the "Server URL" field. The correct setting is : "ws://enerace-ws.atesspower.com/ocpp/ws" .

## 7.4 Cannot access parameter setting page

a. Check if you have connected the charger to your computer.

b. Check if you have change the computer's IP to 192.168.1.x(x can be any value between 1 and 255 except 5).

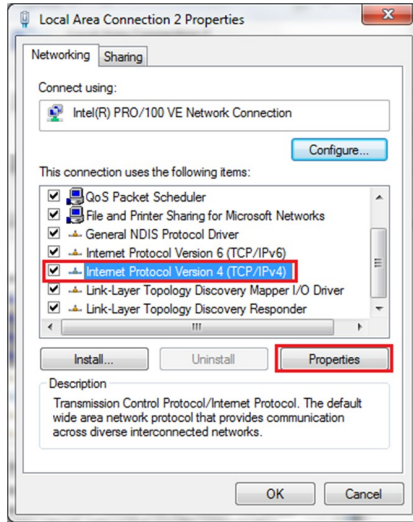To set a static IP on your Windows computer:

(1) Click Start Menu>Control Panel>Network and Sharing Center. (For Windows 8 and higher, search for and open Control Panel and select Network and Internet).
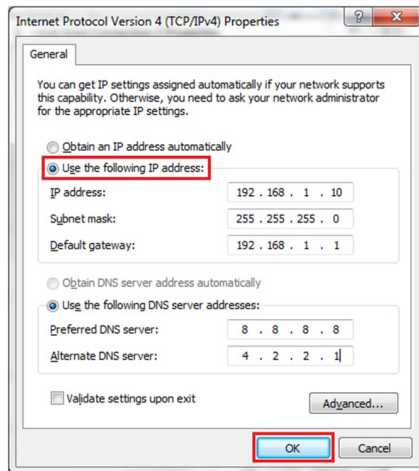
(2) Click Change adapter settings.
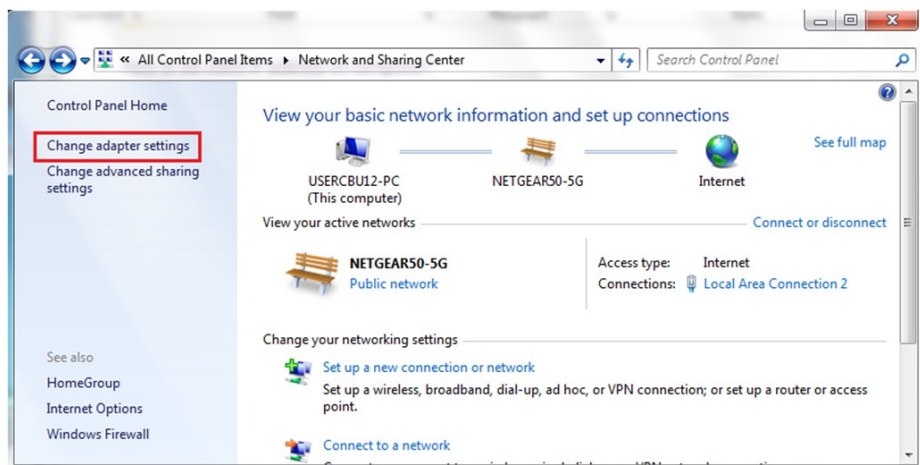
(3) Right-click on Local Area Connection and click on Properties.
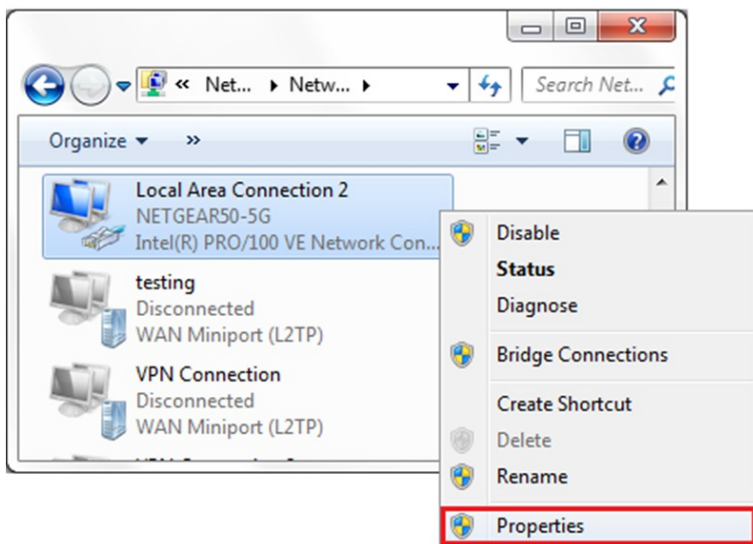
(4) Select Internet Protocol Version 4 (TCP/IPv4) and click on Properties.

(5) Select "Use the following IP address" and enter the IP address, Subnet Mask, Default Gateway. Click OK and close the Local Area Connection properties window.

c. Check what web browser is being used, it's suggested to use Firefox or IE, Chrome cannot be used to update firmware.

d. Check if you have input the complete content, which is http://192.168.1.5:8080, in the address field, do not leave out the http:// or the "8080".

e. Sometimes you may need to restart the charger to access its parameter setting page.

f. If you have changed the charger's IP to other value and cannot remember, you can restore the charger to factory setting by long press the reset button. Then you can access it using http://192.168.1.5:8080

Reset Button

<side window>
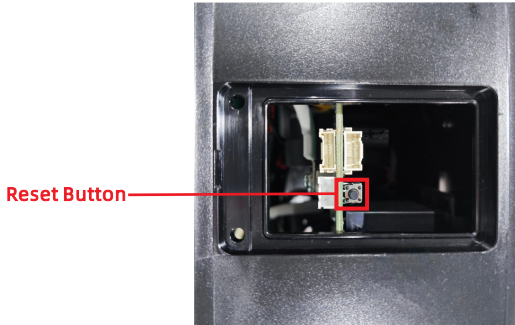
Please note: After restoring the charger to factory setting, you'll need to Charger IP and Gateway(LAN cable connet Internet) or WiFi name and WiFi password(use WiFi connect Internet), otherwise the charger won't be connected to the back-office server.

7.5 Charging issue

a. Check if the red emergency stop button is pressed.
b. Check what charge mode is being used.

APP: Charge can only be started/stopped by APP or RFID card, and the charger must be connected to the back office server already;

RFID: Charge can only be started/stopped by RFID card;

Plug and charge: Charge will start automatically when car is plugged in.

c. Check if off-peak charging is set and if charger's time is correct.

If off-peak charging is set, charge can only start within the charging allowed time period.

8 **Use Excess Solar Power to Charge Your Car**

The charge point can work with grid-tied solar system, to detect and use the residual solar power to charge your car that otherwise would be fed back to grid. This can help increase the self-usage rate of the solar system and reduce electricity bill for the household.

The charge point supports 3 charge modes with grid-tied PV system: FAST, ECO and ECO+.

8.1 Introduction to the 3 modes for solar charge

ECO+ Mode:

In this mode, the charging point only uses the electricity sent by the photovoltaic inverter to charge the electric vehicle. When the current sent by the inverter is less than 6A, the charging point will stop charging. Please choose this mode carefully.

FAST mode: Charge at the rated power, the car can be fully charged in the shortest time at this mode.

ECO mode:

（1）Solar function set the power p range: Pe stands for rated power, P1 stands for the power transmitted through photovoltaic grid connection.

　　　1. The power of three-phase charger belongs to (5.3kW-Pe)

　　　2. The power of single-phase charge belongs to (1.8kW-Pe)

（2）The condition of changing duty cycle of charger：P2

　　　1. The power of three-phase charger P2=1000W

　　　2. The power of single-phase charge P2=500W

（3）Operation mode：

　　　1. when Initial charging, Permissible output power of charger p3(P3=P)

　　　2. If P1 < P2，Permissible output power of charger P3.(Pe≥P3≥P)

　　　3. If P1≥P2，Charger will Increase Permissible Output Power， When detected during this process P1<P2 or P3=Pe. Charger will stop increasing allowable output power, now the allowable output power of charger P3. (Pe≥P3≥P)

8.2 Wiring

To monitor the real-time power import and export, the CT or meter is needed for this function to work properly.
If CT is used, the wiring will be as below.

8.2.1 If CT is used, the wiring will be as below.

(1) For single-phase charger, use one CT:
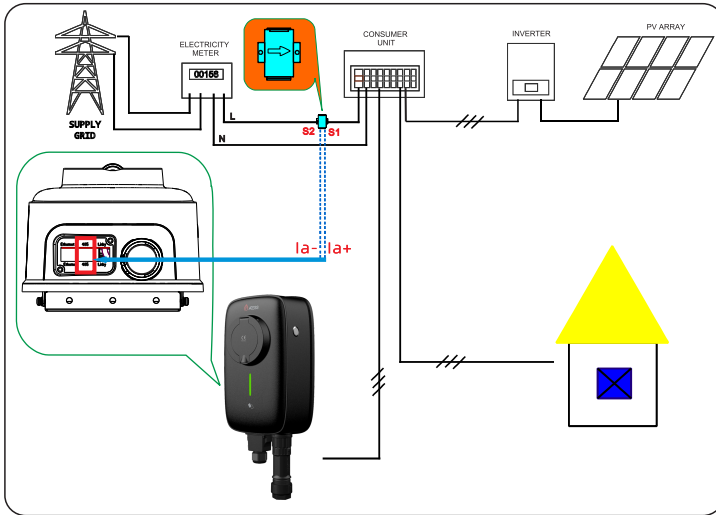
(2) For three-phase charger, use three CTs:

8.2.2 If meter is used, the wiring will be as below.

(1) For single phase charger, use single-phase electricity meter.

(2) For three-phase charger, use three-phase electricity meter.

8.3 Parameter configuration for this function

(1) Connect the charge point to a laptop with a network cable, access the parameter setting page on the web browser of the laptop.
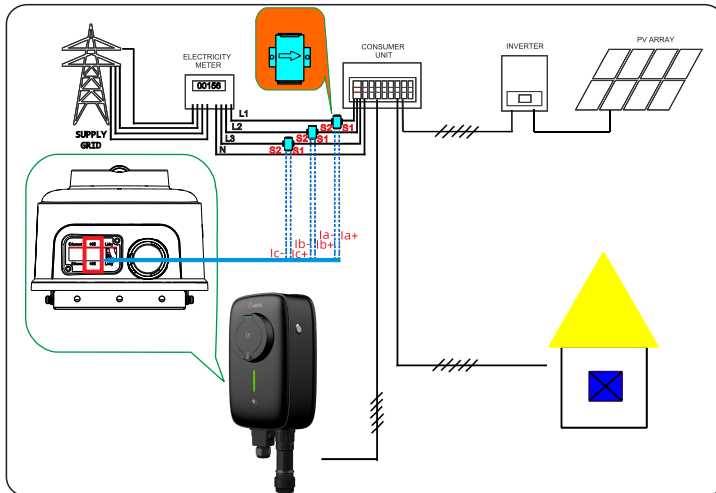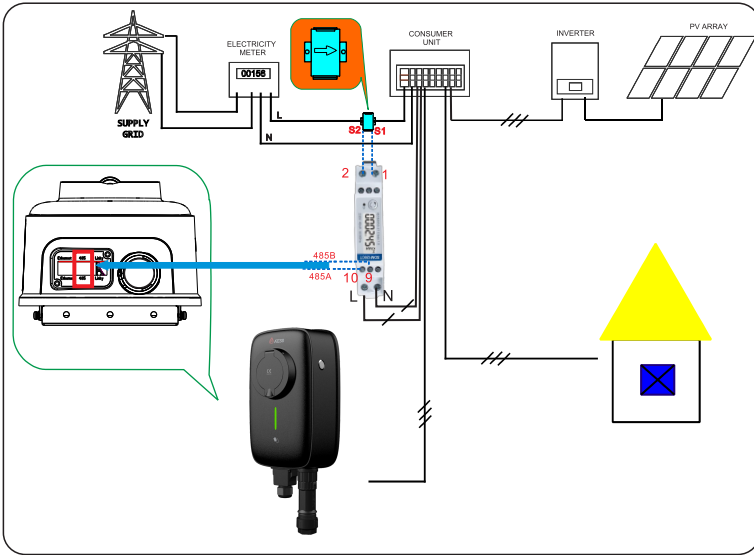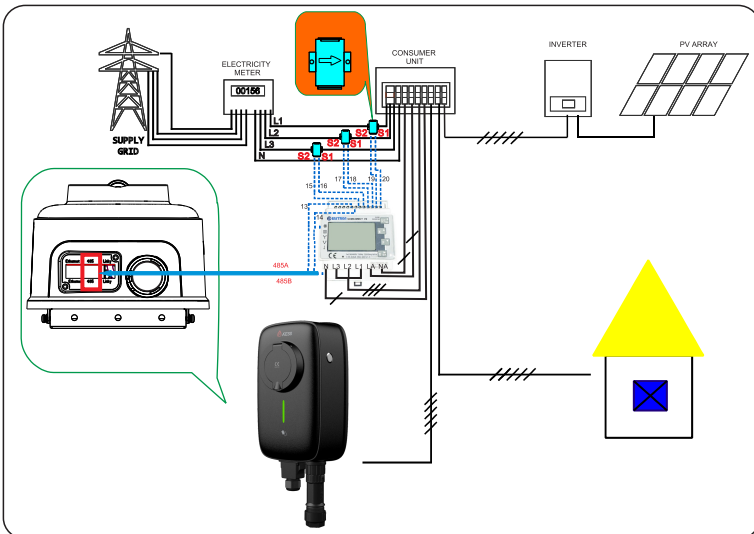
(2) Scroll down to find the following parameters: Solar Mode, FAST, ECO or ECO+.

Solar Mode
Charge(0:Disable,1:ECO,2:ECO+):   `0`

(3) Select CT or meter as sampling device of this solar charge function. Scroll down to find the option: External Power Sampling Wiring(0:CT2000:1 1:PowerMeter2: CT3000:1). If CT is used, please set it to 0; if meter will be used, please set it to 1.

External Power Smpling
Wiring(0:CT2000:1 1:PowerMeter
2:CT3000:1):   `0`

(4) If you choose the PowerMeter. Please choose PowerMeter Type, change PowerMeter Addr to the address shown on the meter.

External Maxlimit Power:	45	2:CT3000:1): Grid Off Peak Charge(Plug&Charge, 0:Disable 1:Enable):	0		
LoadBalance PowerMeter Type:	Eastron SDM230	LoadBalance PowerMeter Addr:	22		
Measure PowerMeter Type:	Null Acrel DDS1352 Acrel DTSD1352(Three) Eastron SDM230 Eastron SDM630(Three) Eastron SDM120 MID Eastron SDM72D MID(Three) Din-Rail DTSU666 MID(Three) Acrel AGF-AE SM-US-200	Measure PowerMeter Addr:	1		
Off Peak Charge(0:Disable,1:Enable):					
Off Peak Time1(HH:MM-HH:MM):		Off Peak Current1(A):	20		
Off Peak Time2:		Off Peak Current2:	15		
Off Peak Time3:	18:00-19:00	Off Peak Current3:	25		
Off Peak Time4:	20:00-22:00	Off Peak Current4:	23		
Off Peak Time5:	23:00-23:13	Off Peak Current5:	22		
Rand Delay Charge Time(Sec):	0				

Set and Reboot

Firmware Updating

9 Load Balancing

Introduction

The charge point can monitor the total power consumption of the household during charging. If the power consumption approaches the preset max value, the charge point will reduce charge power to avoid the situation of main breaker trip due to overload. It will adjust the charging power dynamically and in real-time thus the car can always be charged with the maximum allowable power.

9.1 Wiring

Similar with the solar charge function, the CT or meter is needed to detect the power import.

9.1.1 If CT is used, the wiring will be as below.

(1) For single-phase charger, use one CT:
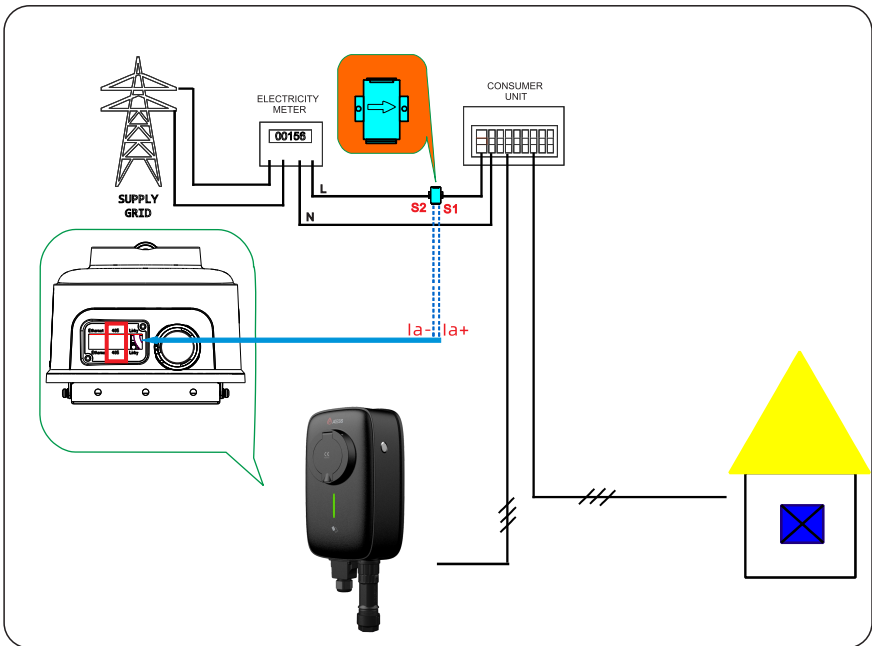
(2) For three-phase charger, use three CTs:

9.1.2 If meter is used, the wiring will be as below.
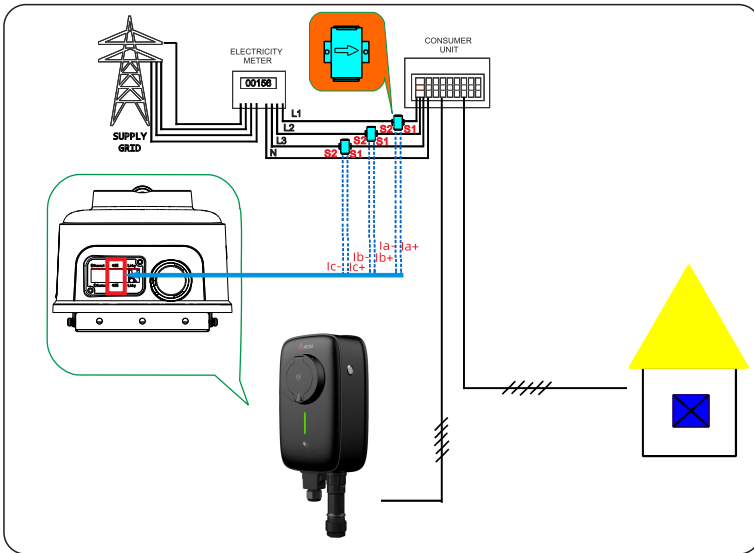
(1) For single phase charger, use single-phase electricity meter.
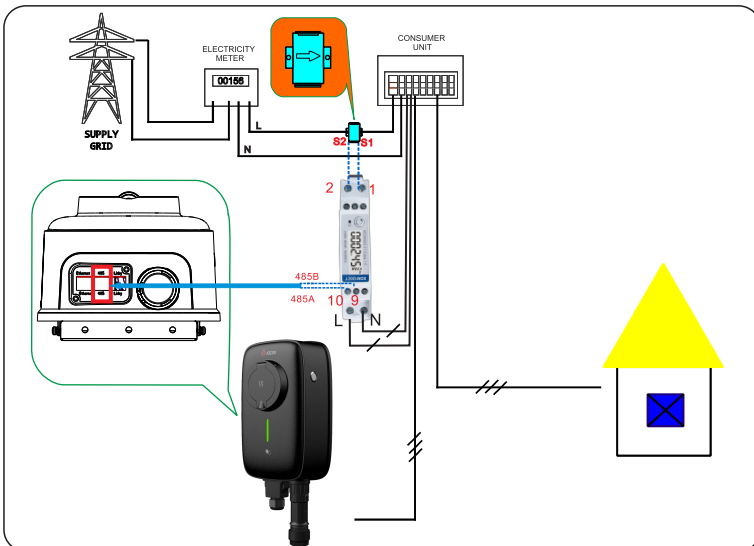
(2) For three-phase charger, use three-phase electricity meter.
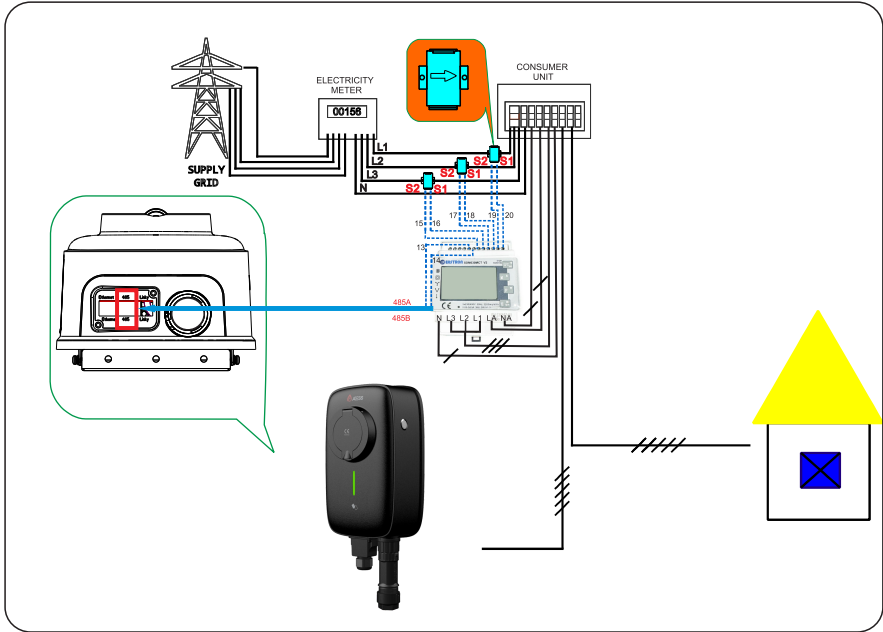
9.2 Parameter configuration for this function

(1) Connect the charge point to a laptop with a network cable, access the parameter setting page on the web browser of the laptop.

(2) Scroll down to find the following parameter: Power Distribution Enable(0:Disable, 1:Enable) and set it to 1 to activate the power modulation function.

(3) Select power sampling device in the field of the parameter: External Power Sampling Wiring(0: Inner CT 1: PowerMeter). 0 means CT while 1 stands for meter.

(4) Set the maximum power import value in the field of External Maxlimit Power(kW). To avoid nuisance tripping of the main breaker, it is suggested to set this parameter slightly lower than the max supply power of the property. e.g. the max supply power is 15kW, you can set the max power import to 13kW or 14kW.

(5) If you choose the PowerMeter. Plesae choose PowerMeter Type, change PowerMeter Addr to the address shown on the meter.

10 Specification

Model	NANO EVA-07/22S-S
Dimension(mm)	188/338/153mm(W/H/D)
Weight(kg)	<2.1
Casing Material	Engineering plastics& Tacrylic
Input	
Voltage	AC230V/AC 400V
Output	
Voltage	AC230V/AC 400V
Max current	32A
Ingress Protection	IP 55
Working environment temperature	-25℃~ +50℃
Relative humidity	5%~95%
Altitude	≤2000m
Frequency	50/60Hz
Communication	Ethernet/WIFI/4G (opt)
Charging mode	APP/RFID/Plug and charge
Standby power	<7.2W
Standard	IEC-62196-2;EN61851
Mounting	Pole/Wall
Certificate	CE/UKCA
Protection features	
Overvoltage	260V/450V
Undervoltage	190V/329V
Overcurrent	35.2A
Leakage protection	AC 30mA+DC 6mA
Lightning protection	Type II
Over load protection	Yes

11 App Set Up

11.1. APP Introduction

11.1.1 Description

EneRace is an app for controlling charger. It can help you quickly and easily charge your vehicle with a EV charger.

11.1.2 Main Function Of EneRace

(1) The APP can push the transfer information of the charger.
(2) The user can control the start and stop of the charger through the APP.
(3) The user can preset the charging scheme and scheduled charging.
(4) The user can modify the parameter settings of the charger.
(5) Users can authorize other users to use their own charger.
(6) The user can view the charging record and report to email.
(7) Users can manage and set up their own accounts.

11.1.3 Performance

APP has good ease of use and reliability, and guarantees the security and confidentiality of information.

11.2. Instructions

11.2.1 APP download and install

Users can install EneRace by scanning the below QR code or download it from the APP store(IOS) or GooglePlay(Andriod).

"EneRace " App Download QR Code:

<IOS>   <Andriod>

### 11.2.2 Registration and login

When the user first visits, the user registration is performed by the following steps: Click the desktop icon Login page Register. When the user has an account, you can directly enter the user name and password to log in. If you forget the password, you can click the login page, forget the password button, and follow the prompts to retrieve the password through the mailbox.
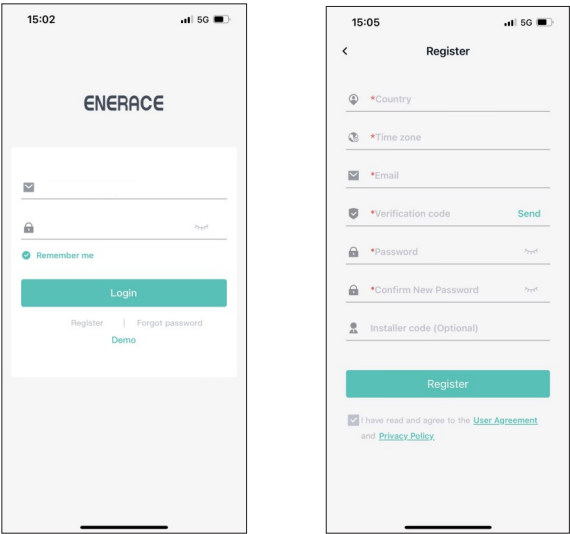
11.2.3 Add Charger

(1) IF you use ATESS APP Charge for the first time, you need to add charger in the APP to facilitate setting and controlling the charger. The process of adding a charger is as follows: Click "Add" to add a charger by scanning the QR code (nameplate)or entering the charger ID. You can check the OR code/Bar code on the side window nameplate.
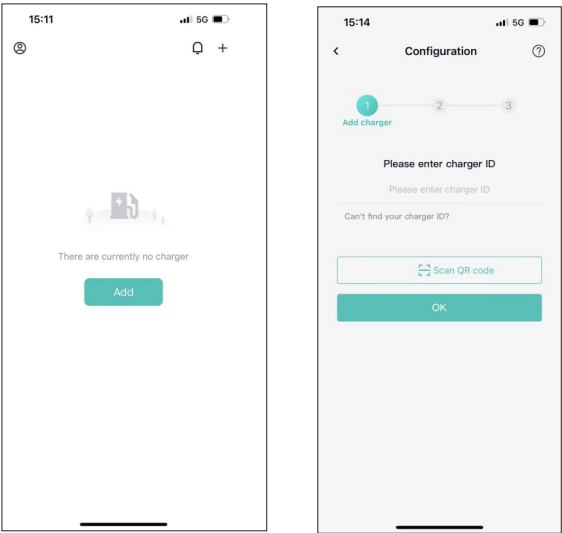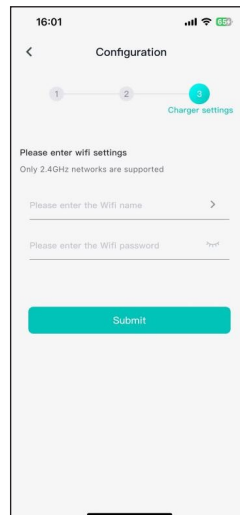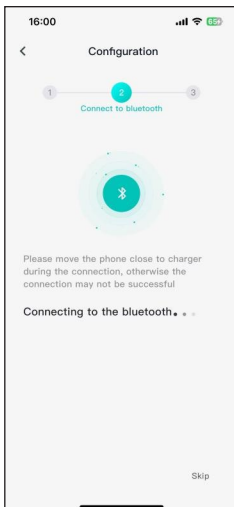
(2) Select the connection method

Select the connection method supported by the model. You can choose between Bluetooth and hotspot connection methods.
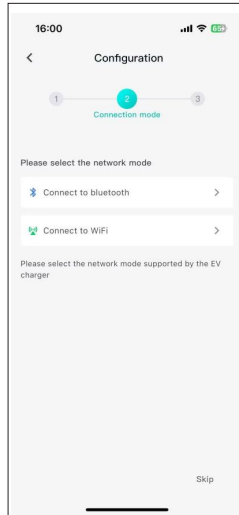

Bluetooth connection

After entering the Bluetooth connection interface, it will automatically match the terminal Bluetooth for connection. Once the connection is successful, the network can be configured.

WIFI connection

(1) After entering the WiFi connection interface, click the **"Connect automatic"** button. The App will automatically find the charger hotspot for connection. After a successful connection, you can click **"Next"** to enter the pile configuration page.

If the connection fails, you can reconnect or switch to manual connection.
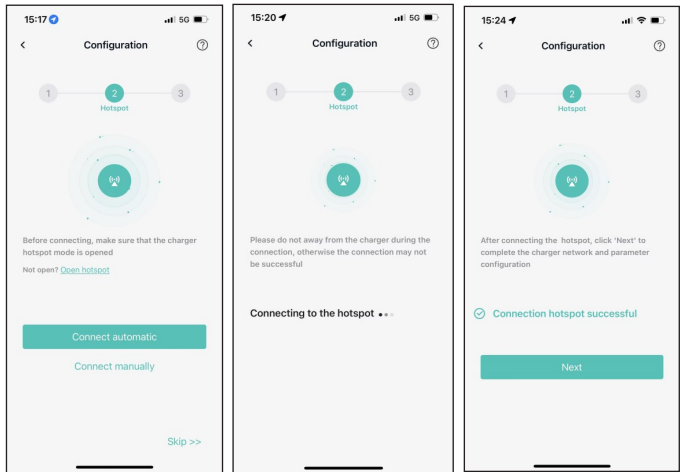
(2) Connect manually: Click **"Go to WLAN"** to jump to the mobile phone WLAN page. Find the hotspot named after the SN number of the charging pile and connect it (The default password is 12345678). After a successful connection, return to the App and click **"Next"** to enter the charger configuration page.
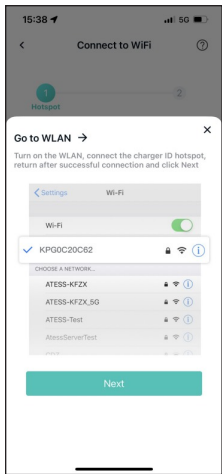
Charger setting

After successfully connecting to the hotspot, enter the charger Settings page, where you can set the charger network and parameters. The network distribution methods support three types: Wifi, Ethernet, and 4G. After the Settings are completed, click the "OK" button, and the charger will automatically configure a restart. If you do not need to set up the charger, you can click "Skip".

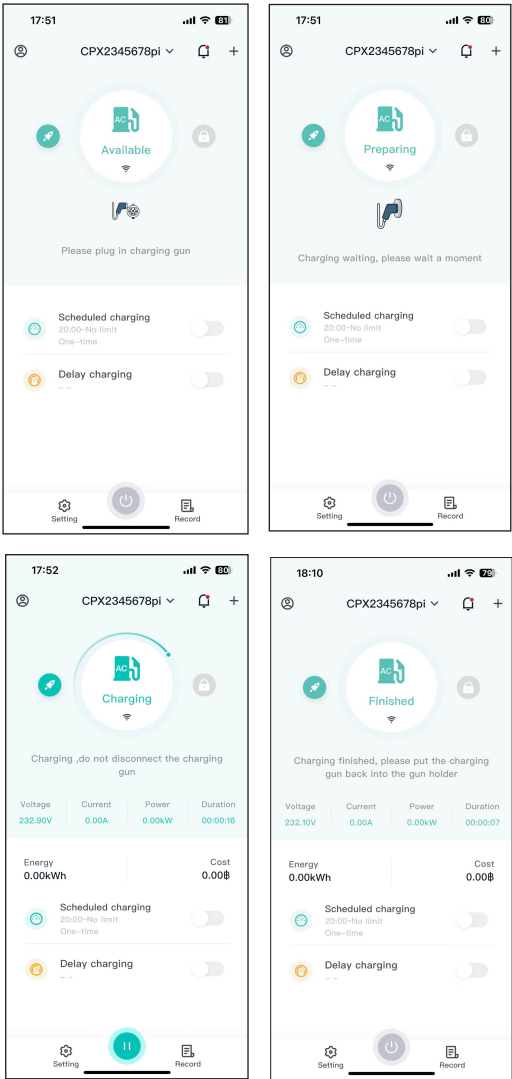Note: If the network or server address is not configured correctly, the charger cannot be used normally in the App.
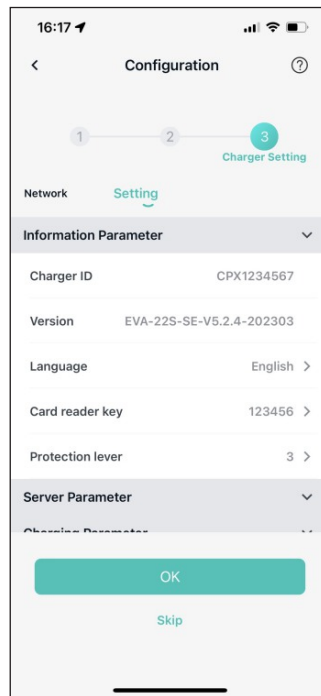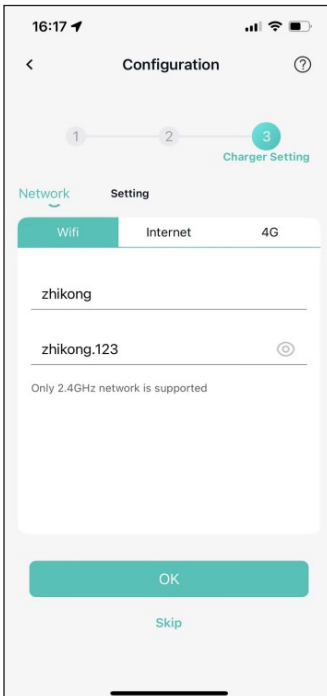
11.2.4 Charger status

Charging page

Start and stop control of charger.

Press " ⏻ / ⏸ " to turn on/off.

Note: When the charger is faulty, refuses charging or is offline, the charging button turns gray " ⏻ " and cannot be clicked.

Other states
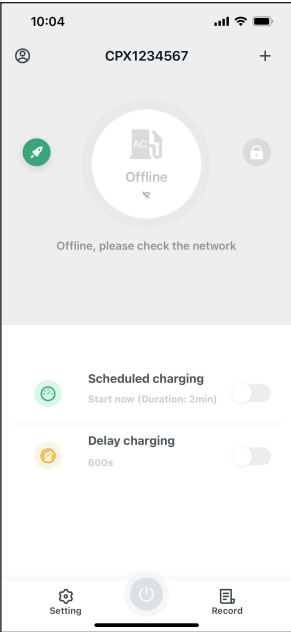
Charger offline
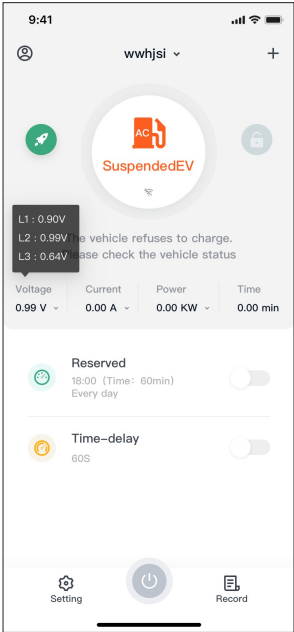
Charger refuses to charge
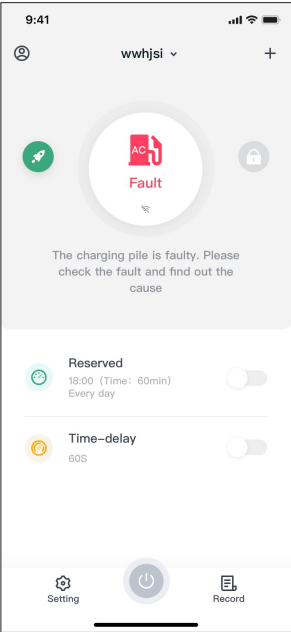
Fault

11.2.5 Charger switch and delete

Switch the charger: When multiple chargers are added, the chargers can be switched for operation.

Electronic lock: If the electronic unlock is operated during charging, the charging will stop (some chargers do not support this function).

Charging mode: There are three modes: Fast, ECO and ECO+, which can be used in combination with photovoltaic systems.

When you have multiple chargers, you can switch chargers by clicking the arrow. A list of chargers can be found in the account information, swipe left to delete.
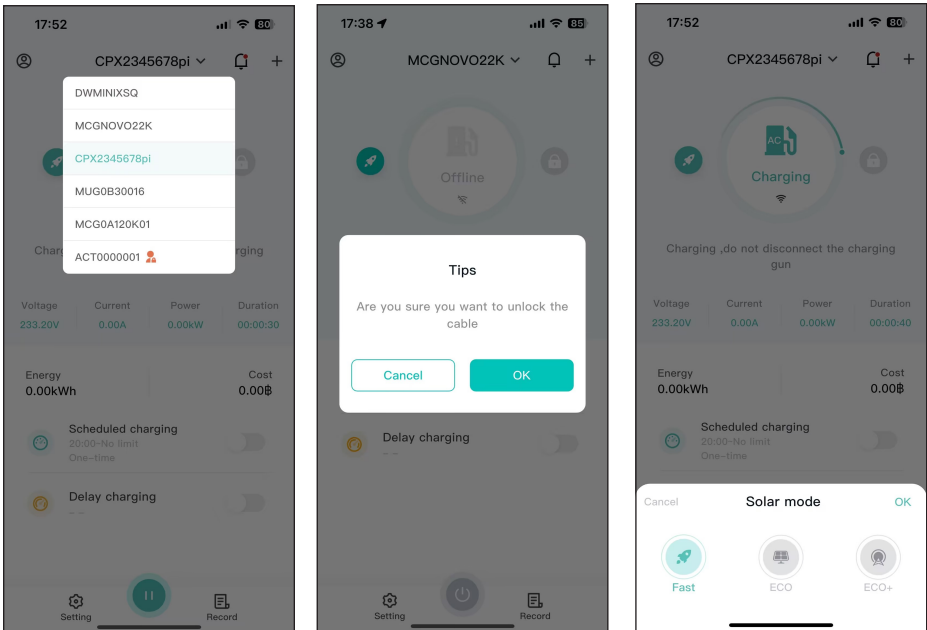
11.2.6 Scheduled charging

Multiple reservation plans can be preset in advance. Once activated, the charger will charge according to the reservation plan.

Start time: Set the time when charging begins;

End time: Set the time when charging ends;

Repeat: Set the repetition frequency of the reservation plan, which can be set as a single time or Monday to Sunday.

Note: Reservation for charging must be used in the App mode.

11.2.7 Delay charging

If a delay time is set, when charging starts, it will randomly delay within the set time range (immediate charging can be operated).
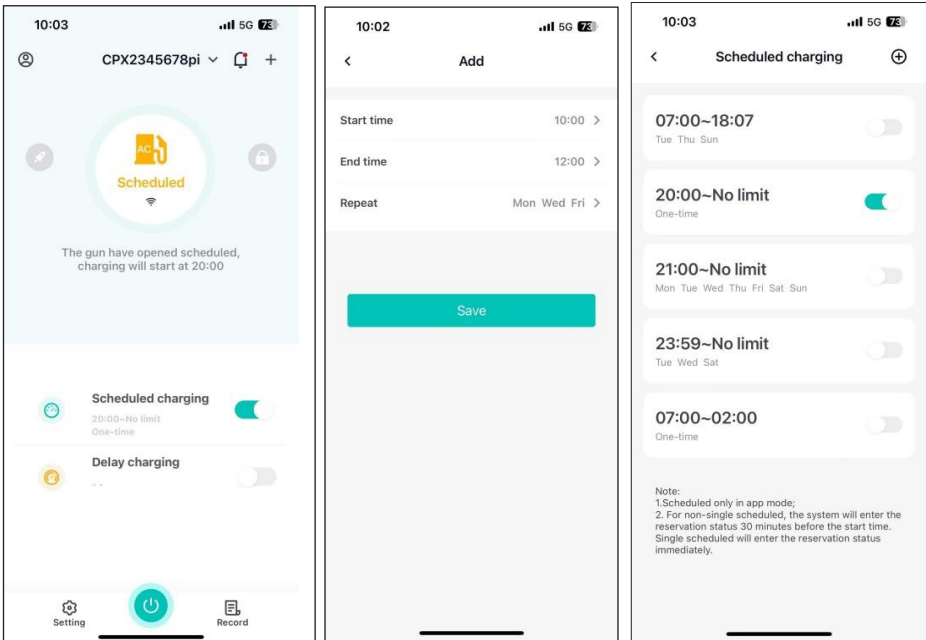
You can set it in two ways: **"default 600S"** and **"customize"**.

The **"customize"** delay range is 1 to 1800S;

Delay switch: After setting the value, it automatically turns on.

Clicking the off button will clear the set time and turn off the delay.
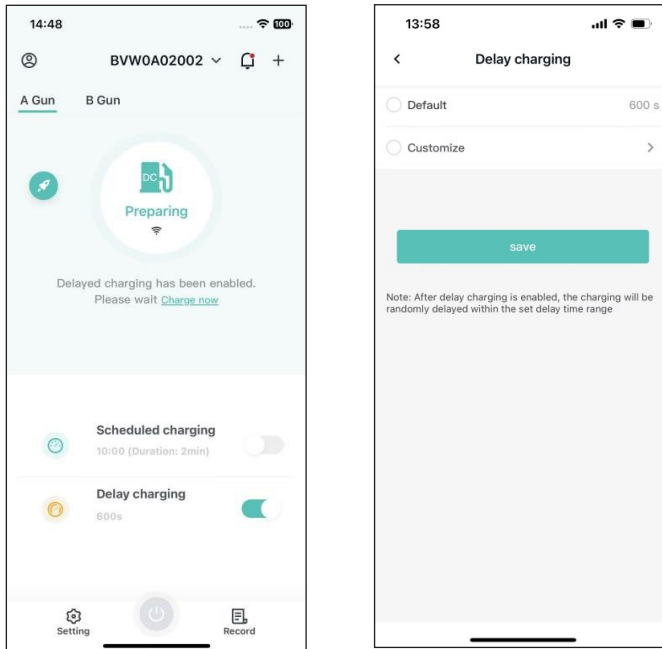
11.2.8 Setting

The functions of the Settings page include: "Basic Information" "Charger Settings" "Solar& Load Balancing" "Authorization Management" "Peak and Valley Settings" "Charging Rate" "Connection Method" "Firmware Upgrade"
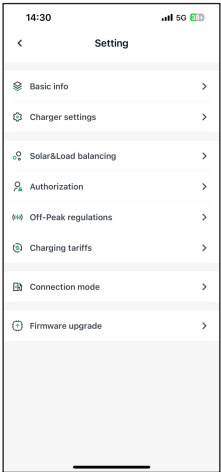
Basic info

Charger ID: The authentication code of the charger cannot be modified;

Version: Firmware version of the charger;

Charger Name: The name of the charger is taken as the SN number of the charger by default and can be modified.

Country: Set the current country so that the charger displays the correct time;

Time zone: Set the current time zone so that the charger displays the correct time.
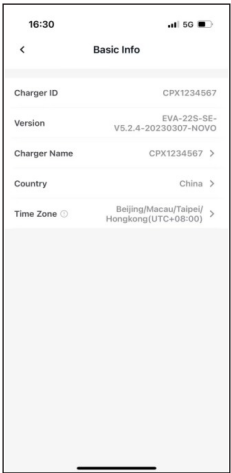
Charger Settings

Charger language: Set the language of the charger.

Charging mode: Three modes control the charging of the charger : APP, RFID and plug & charge.

Allow charging time: When the charging mode is Plug&Charge, it can be set to control the charging time allowed in the gun insertion mode (only supported by AC chargers).

**Electronic lock**: There are two modes: manual and automatic. When the manual mode is selected, the charging connector will lock. When the automatic mode is selected, it is locked during charging and will be automatically unlocked after charging is completed (only supported by AC chargers).

Maximum output current (power): Limit the output capacity of the charger.(for AC chargers, set the current; for DC chargers, set the power).

LCD close Enable: Control whether the LCD screen of the charger is turned off or not. When the button is turned on, the screen is turned off; when the button is turned off, the screen is turned on(only supported by AC chargers).

Warm-up function: Control whether the preheating function is enabled. Once enabled, the charger will continue to supply energy to the vehicle, which can be used to preheat the vehicle in extremely cold weather and reduce battery consumption. It can also prevent the situation where charging cannot be restarted when it is interrupted or paused.(only supported by AC chargers).
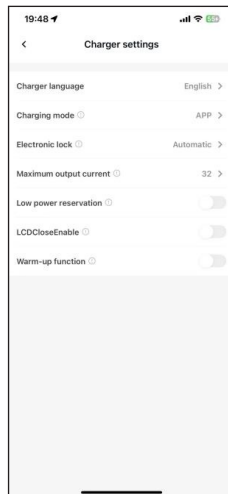
Solar & Load balancing

Sampling wiring: The load balancing function and the solar function detect the type of tool for fuse or gird power. CT2000,CT3000 and meter.

Meter type: The type of electricity meter is set, and the sampling method is displayed when the electricity meter is on.

Meter address: The address of the electricity meter is set, and the sampling method is displayed when the electricity meter is on.

Load balancing: When power distribution is enabled, the charger can dynamically adjust the output of the charger based on the power detected at the grid end and the maximum load power to avoid overload in household use.

**Solar mode**: In combination with the photovoltaic charging mode, the charger can dynamically adjust the output of the charger according to the power detected at the grid end, making more effective use of photovoltaic charging. When set to ECO mode, ECO power limit can be set to control the maximum power that is allowed to draw electricity from the power grid.

Note: Load balancing and Solar mode cannot take effect simultaneously.
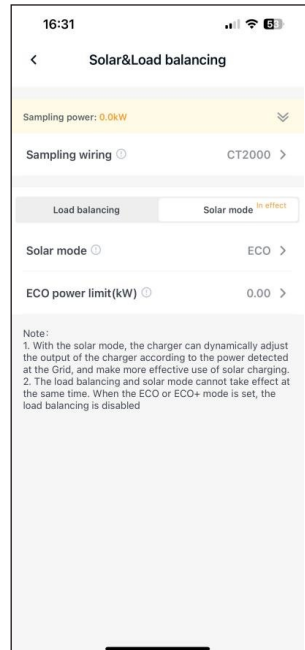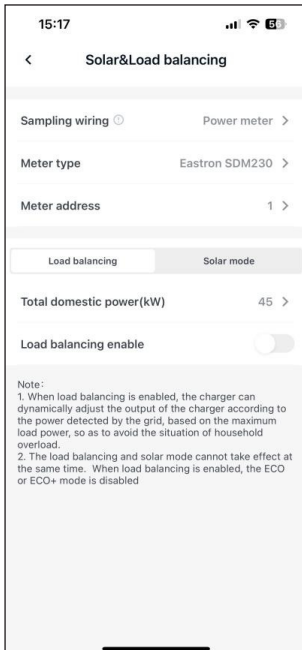
Demand response modes(DRMS)

After activating the charger's DRMs (Demand Response Management System) function the grid operator can temporarily reduce the charger's power consumption to below 4.2kW to avoid local grid overload. The minimum power will always be available, allowing the electric vehicle to continue charging at this reduced power level. The connection via Rj45 terminals and RRCR (Remote Reading and Control of Remote Metering Systems) is as follows:
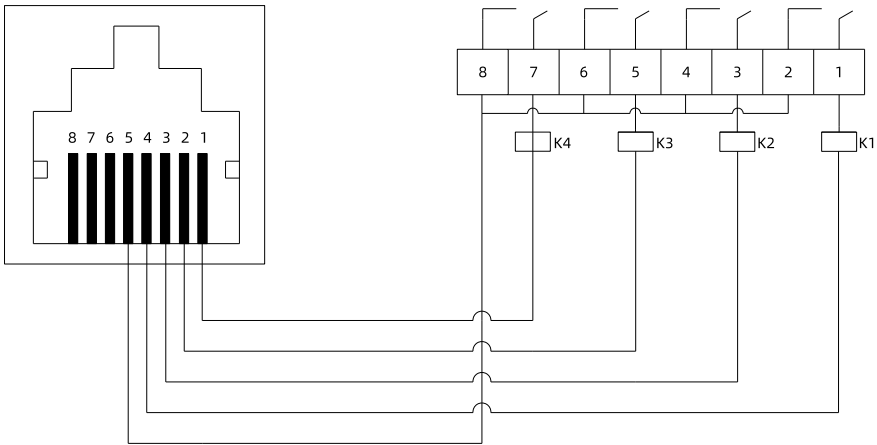
(1) Pin definition and description

| DRMs pin No.	Description	Connect to RRCR
1	Relay Contact 4 input	K4-Relay 4output
2	Relay Contact 3 input	K3-Relay 3output
3	Relay Contact 2 input	K2-Relay 2output
4	Relay Contact 1 input	K1-Relay 1output
5	GND	Relays common mode
6	Reserve	Reserve
7	Reserve	Reserve
8	Reserve	Reserve

(2) Charger output power limit level

Shorting the DRMs terminals 1/2/3/4 to GND5 controls the charger's output power. The control levels are as follows:

| DRMs 1	DRMs 2	DRMs 3	DRMs 4	Power
Short-circuit with Pin 5				Pause Charging
	Short-circuit with Pin 5			4.2kW
		Short-circuit with Pin 5		Default 60%, refer to chapter 11.2(32)
			Short-circuit with Pin 5	100%

Off-peak Regulations

According to the power price, set the output capacity of the charger in various time periods to save electricity costs. You can set a maximum of five time periods.

Each time period can be configured for three types: weekdays/weekends/daily. Older versions of chargers only support setting weekday time slots; an upgrade is required to use the additional options.
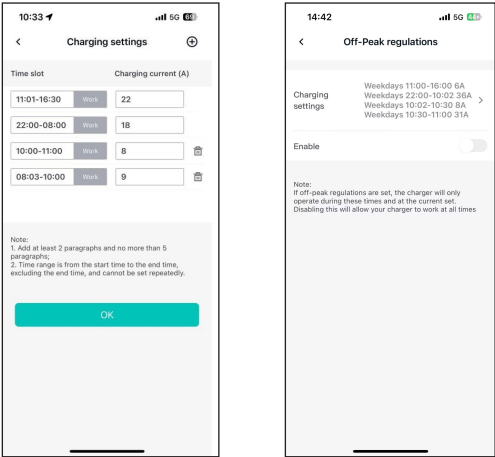
Connection mode

The charger can be connected via Bluetooth or a hotspot for network distribution or parameter setting. Please use it according to the actual connection method supported by the charger.
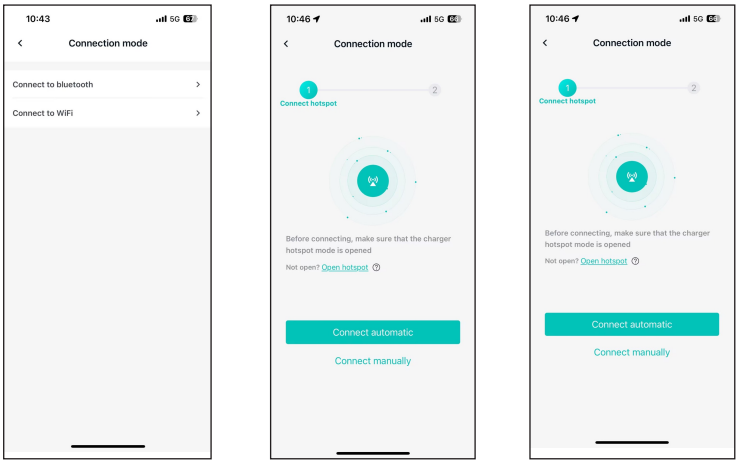
Charging rate

If a charging rate is set, the charging cost will be calculated by multiplying the unit price of the rate set within the charging period by the amount of electricity. For unset time periods, the rate is 0.The start time of the time period cannot be greater than the end time, and it cannot be set repeatedly. The maximum number of segments should not exceed 5.
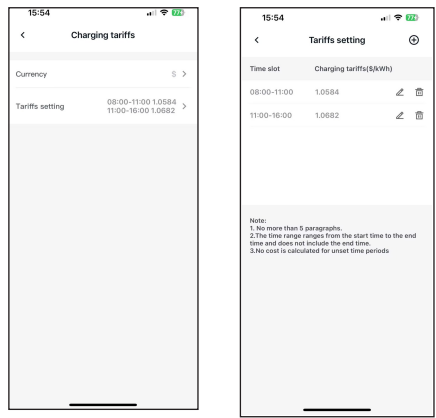

Authorization

Users can authorize other users to use the charging piles through authorization management. Enter the user's email account (registered) to authorize other users to use this charger. To manage authorized users, you can view the authorization time and email account on the authorization management interface. Swipe left to click "Delete". After deletion, the authorized user can no longer use the charger.

Note: Authorized users can only operate to start charging. Stopping charging/unlocking the electronic lock can only operate charging initiated by themselves.
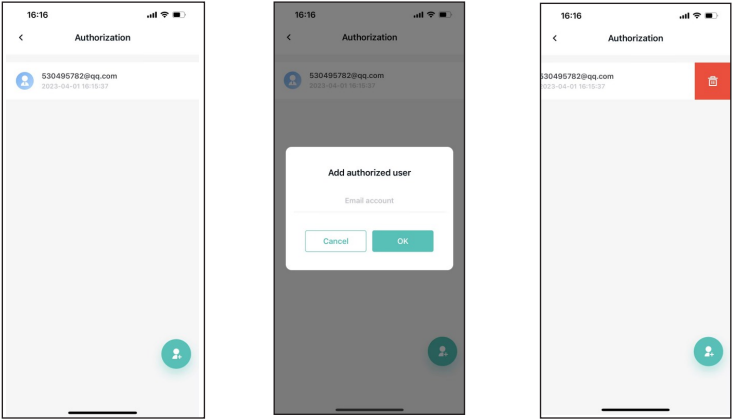
Firmware upgrade

When there is a new version of firmware available for Upgrade, an upgrade pop-up window will pop up. Click "Upgrade" to jump to the upgrade page, click "Later" to close the pop-up window, and you can enter it through the "Setting" entry. After a successful upgrade, the firmware version will become the new one. If the upgrade fails, you can perform the upgrade again.
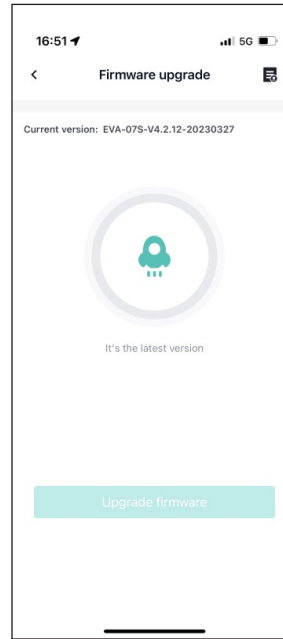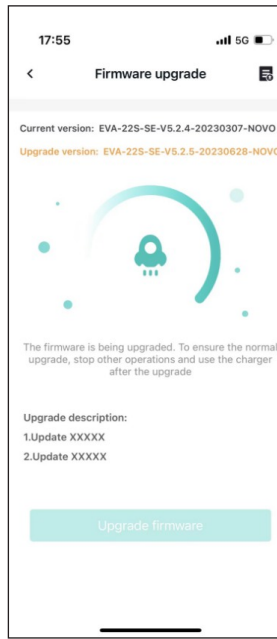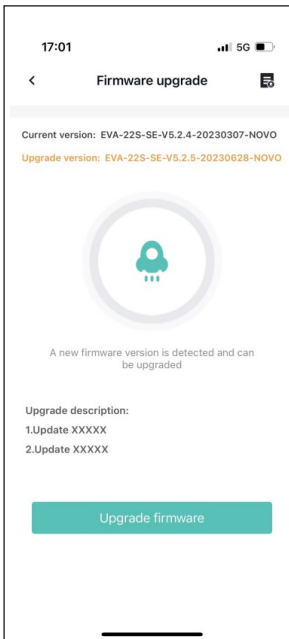
11.2.9 Charging record

Query the historical charging records of the charger and click to view the charging data.
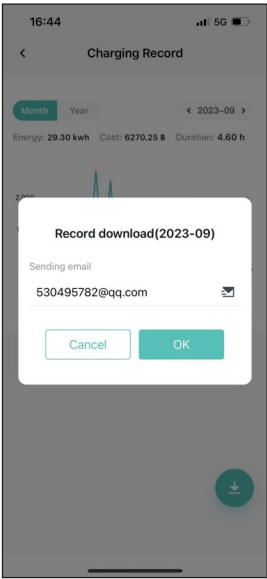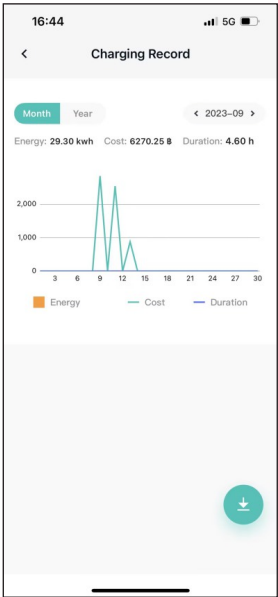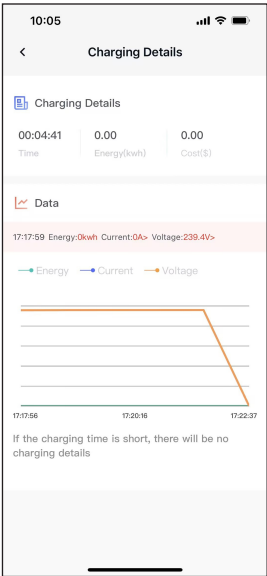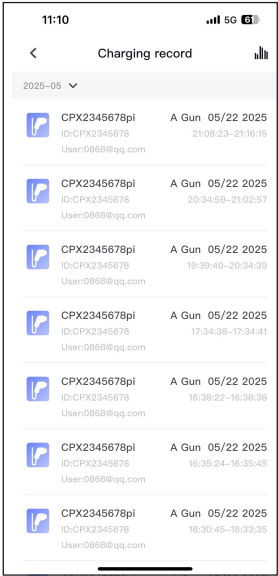
11.2.10 Account Management

Users can manage their accounts, set their avatars, change their passwords, and bind their mobile phone numbers and mailboxes.

Change password: You need to verify the original password, then enter and confirm the new password.

Modify the phone number: Follow the steps to verify the new phone number with a verification code.

Modify the mailbox: Follow the steps to verify the new mailbox by verification code.
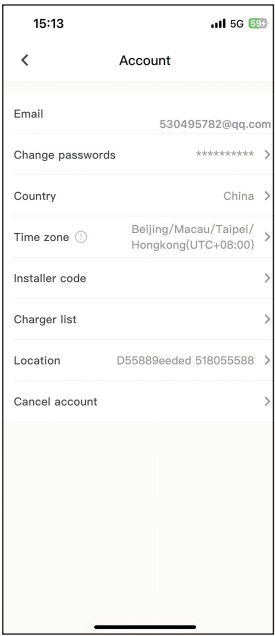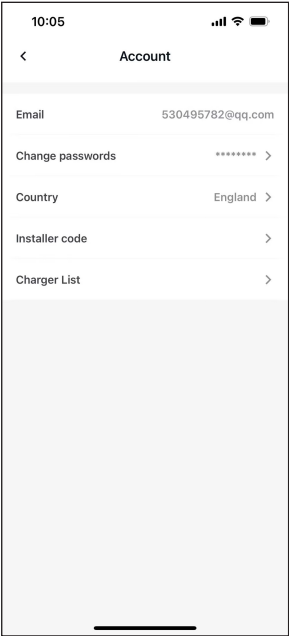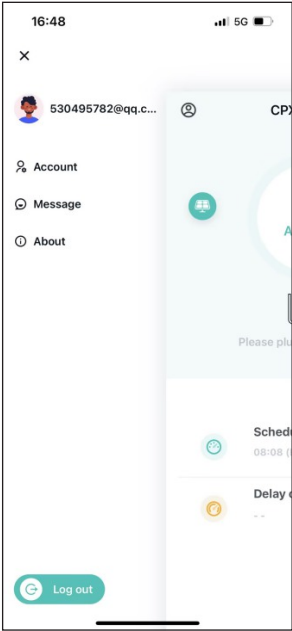
12 Warranty

Warranty

The warranty period of this product (Including hardware and software)is 2 years. If the contract stipulates otherwise, the contract shall prevail.

For warranty cases during the warranty period, the customer should present the invoice of the purchase of the product to our service team. At the same time, the nameplate on the product should be clearly visible, otherwise the warranty claim might not be accepted.

Warranty condition

We will repair or replace the product free of charge during the warranty period. The defective machine after replacement shall be owned by us, and the customer shall reserve a certain amount of time for us to repair the faulty machine.

Liability exemption

We reserves the right not to accept the warranty claim if the conditions below happen.

1.No trademark on the product.

2.Warranty period has expired.

3. Fault or damage caused by incorrect installation, by installing the device in a not allowed environment, by improper storage or usage, etc.(e.g. too high or too low temperature, moisture or too try environment, high altitude or unstable voltage/ current etc.

4.Failure or damage caused by the installation repair, modification or disassembly by unauthorized service personnel.

5.Failure or damage caused by using our non-genuine spare parts.

6.Damage or damage caused by accident or human cause (operational error, scratching, handling, bumping, access to inappropriate voltage, etc.), or transport damage.

7.Failure or damage caused by force majeure such as natural disasters (such as earthquakes, lightning strikes, fires, etc.)

8.Other failures or damages that are not caused by quality problem of the product or its components.

Statement of liability

The copyright of this manual belongs to our company. Any organization or individual may not extract or copy part or all of the contents of this manual without any written permission from us, and may not be reproduced and spread in any form (including materials and publications). We have the final right to interpret this manual. This manual is subject to change without prior notice. For more information, please contact support@atesspower.com.
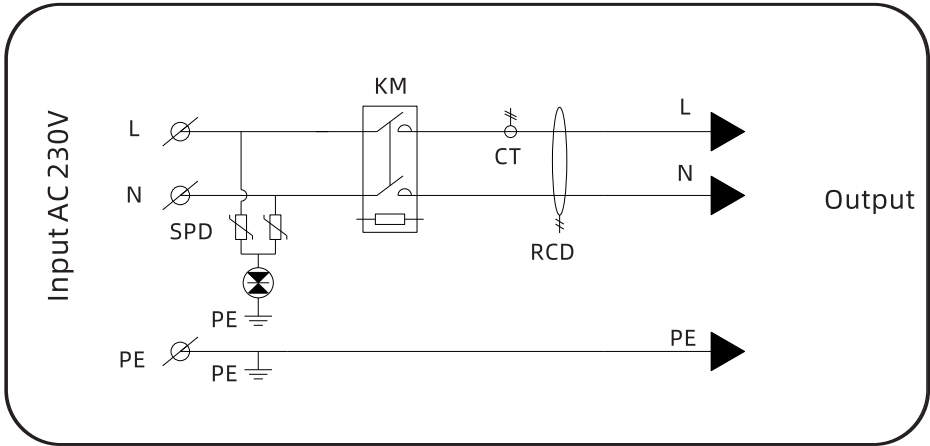
13 Electrical diagram

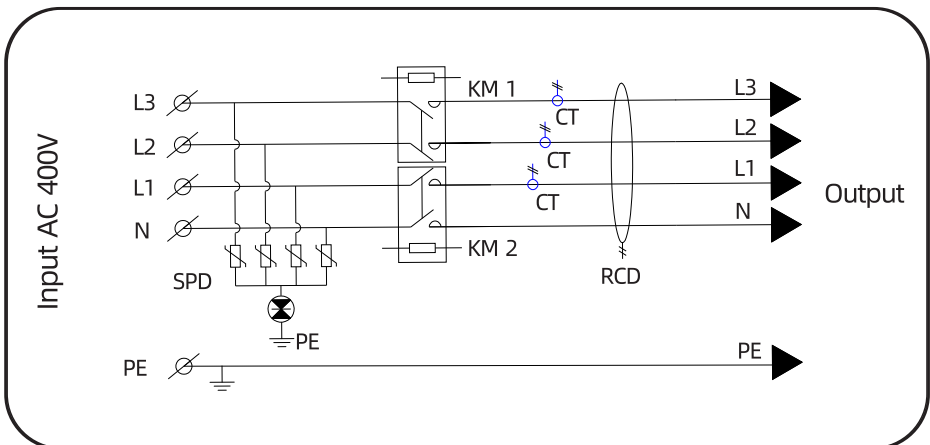Fig13-1. Single-phase charger Main circuit diagram

Fig13-2. Three-phase charger Main circuit diagram

14 EU Declaration of conformity

EU statement of compliance

This declaration is issued under the sole responsibility of the manufacturer Shenzhen ATESS Power Technology Co.,Ltd. This is to declare that the products listed below have been developed, constructed and manufactured according to the following EU directives:

• LVD directive 2014/35/EU& EMC directive 2014/30/EU

• The applied harmonized standards are shown in the following list

Product	Standard
NANO EVA-07S-S NANO EVA-22S-S	EN IEC 61851-1:2019 EN IEC 61851-21-2:2021

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