User's Manual

AC EV Charging Station

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Safety Caution (Please save these instructions)

1. Do not put inflammable, explosive or combustible materials, chemicals, combustible steam and other dangerous articles near the charging pile.
2. Keep vehicle connector clean and dry. If there is dirt, please use a clean dry cloth to wipe, do not touch the vehicle connector core when the power is on.
3. It is strictly forbidden to use the charging pile when the vehicle connector or charging cable has defects, cracks, wear, breakage or bare charging cable. If you find any defects, please contact the staff in time .
4. Do not attempt to disassemble, repair or modify the charging pile. If you need to repair or modify the charging pile, please contact the staff. Improper operation may cause equipment damage, water leakage, electricity leakage and other situations.
5. Press the emergency stop button immediately to cut off all input and output power in case of any abnormal situation during use.
6. In case of rain or thunder, please charge with caution .
7. Children are not allowed to get close to or use the charging pile during charging to avoid injury.
8. During the charging process, the vehicle is forbidden to run and can only be charged when it is stationary. Please turn off the hybrid electric car and then charge it.
9. During charging, the current cannot be adjusted. Only the charger is pulled out and set again. If you want to set the charging start time, please turn off the Auto-Start.
10. The maximum current of this vehicle connector is 32A and at least 40A breaker needs to be installed by a professional electrician.

Product Introduction

The product is a three-phase EV Charging Station, mainly used for AC charging. The product works by swiping card or Wi-Fi, and contains charging protection, etc. The equipment adopts the principle of industrial design, to ensure the safety of equipment operation. The protection grade of the whole machine reaches IP65, with good dust-proof and water-proof functions, and can be operated and maintained safely outdoors.

ProductAppearance

Fig 1 Appearance

Functional Block Diagram

Fig 2 Electrical schematic diagram

Product Features

Modular design : stable and reliable，the equipment adopts modular design principle, flexible configuration, convenient maintenance.

·**All- round protection:** safe operation: with overvoltage protection overcurrent protection, leakage protection, grounding protection, overtemperature protection, lightning protection, CP abnormal detection to ensure the safe and reliable operation of equipment, effectively prevent accidents.

·**Convenient use:** convenient installation and more convenient use.

·**High protection grade:** IP65 protection grade, supports the outdoor environment, but indoor using environment is recommended for a longer life span.

·**Low power consumption:** low standby power consumption to 5W, low energy consumption.

·**Compatibility:** The device is a simple home version that can be software- configured to operate in plug- and- play mode, requiring only software set-up and no hardware modification.

·**Appearance structure:** small space and light.

Main Parameters

Structure	Product Name	EV05
	Size	348*208*104 (mm)
	Output Cable Length	5m
	Input Cable Length	0.7m
Technical Specification	Net Weight	~6.2kg
	Input/Output Voltage	400VAC 50/60Hz 3Phase
	Input/Output Current	32A Max
	Output Power	22kW Max
	Standby Power	<5W
	RCD	TypeA+DC6mA
	Communication	Wi-Fi802.11b/g/n@2.4GHz
	Standards	EN 61851-1
	Charging Interface	EN 62196 Type 2
	User Interface	LED/RFID/Wi-Fi/4G
	Other Function	DLM/DLB
	Protocol	OCPP1.6J
Environmental Index	Operating Temperature	-30℃~+50℃
	Altitude	≤2000m
	IP Degree	IP65
	Cool mode	Natural cooling
	Humidity	Max.95%(non-regulating)
Safety Design	Overvoltage Protection,Undervoltage Protection Overcurrent Protection,Flame retardant protection. Over Temperature Protection,CP Protection Residual Current Protection	

Installation Instruction

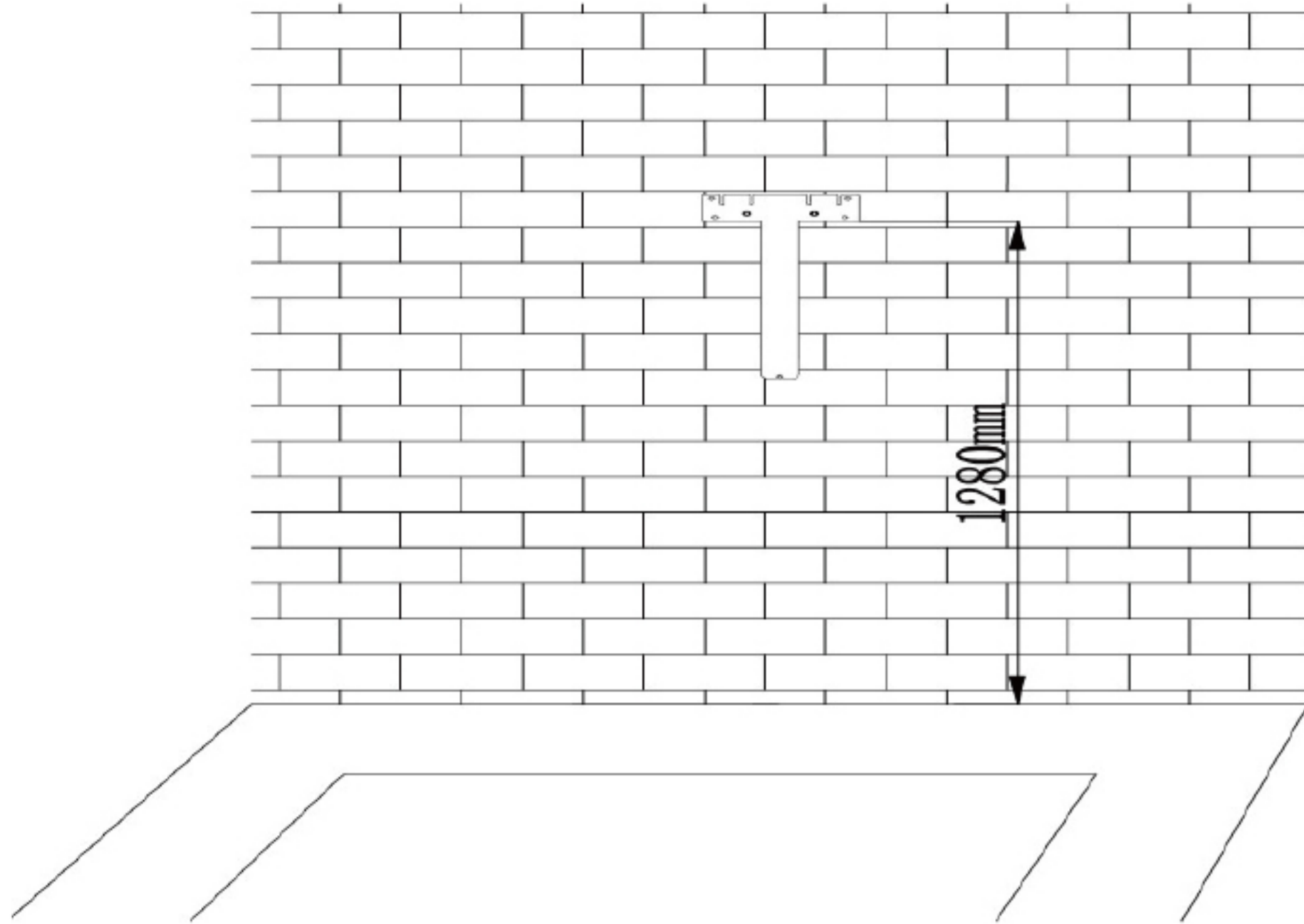1) Fix the wall bracket (included) on the wall and keep the height from the ground at about 1280mm.

Fig. 4

2) Wiring(Fig.5)
① Plug-in. Plug the cable in the socket and power the device.
② Hard wiring. A professional electrician is required to opreate hard wiring.

Fig. 5

3) Wall-mounted installation and fixation (Fig. 6).
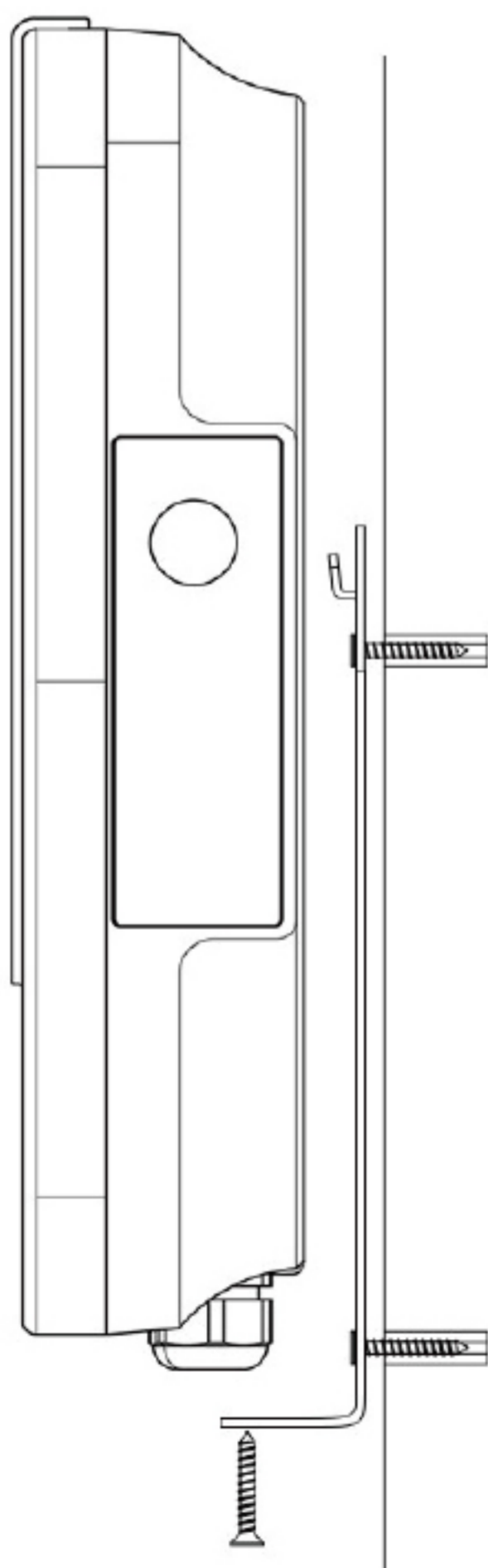Mount the rear mounting hole of the device from the front side to the wall fixing screw, and fix it.

Fig. 6

4) Mounting the charging holster under the equipment and keep the height from the ground at about 800mm.
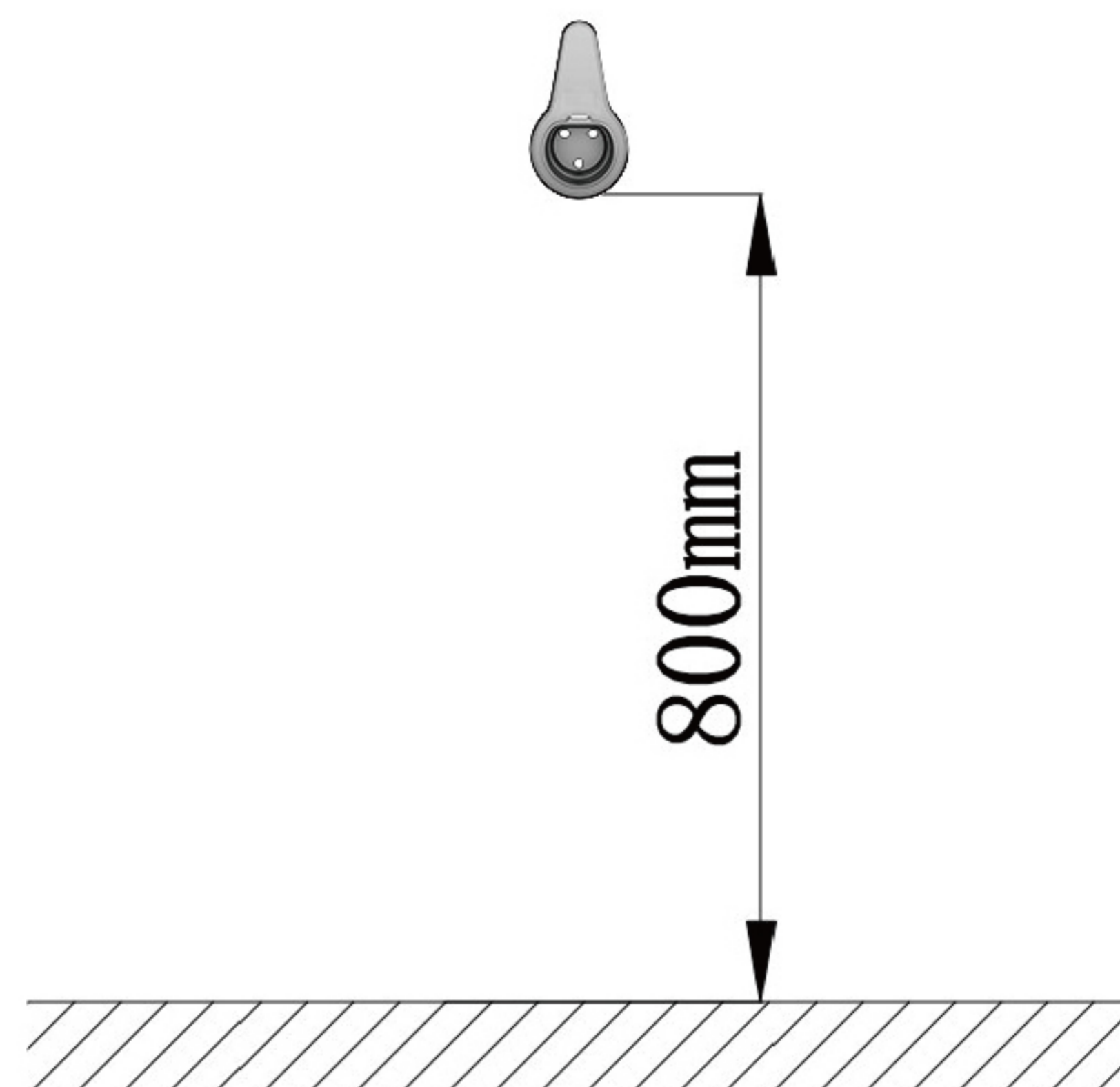
Fig. 7

5)After installation, the effect is as follows:
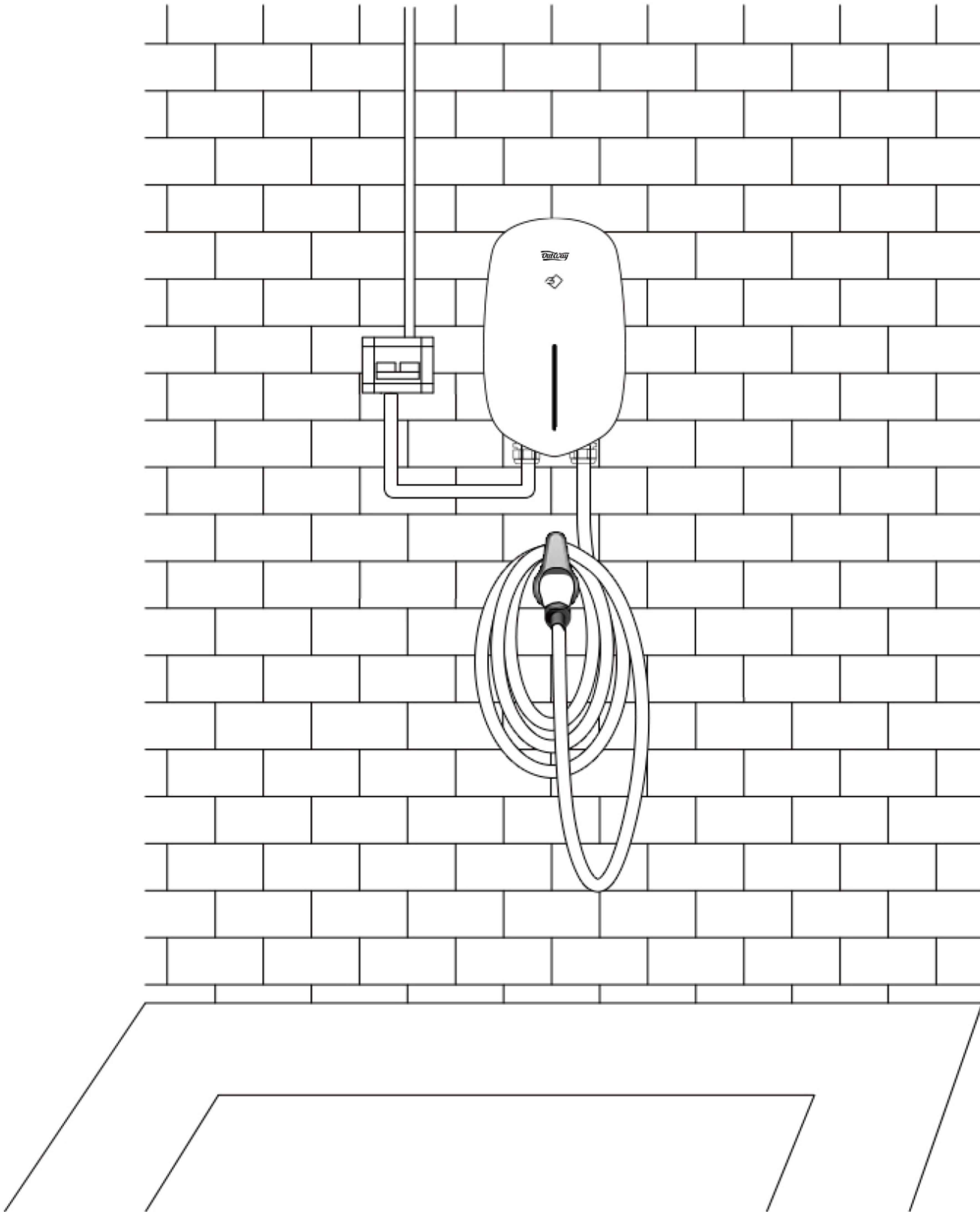
Check and Debug the Device

1. Pre- operation check Before running, please carefully check and ensure the following:

1) Ensure the EV charger is installed in a position to facilitate operation and maintenance.

2) Ensure the EV charger are connected to accessories properly and installed securely.

3) Ensure the selection of leakage protection switch of AC incoming line is reasonable.4) No external objects or parts are left on top of the EV charger.

4) No external objects or parts are left on top of the EV charger.

2.Power on the device

1) Confirm that the above pre- operation check items meet the requirements;

2) Close the power input leakage protection circuit breaker;

3) Power on, about 3 seconds startup self-check time, green indicator light flashes;

4) After the power-on self-test is complete, observe the LED indicator status and screen display.

Charging Operation

1) Charging Connection

After the EV is parked, pull the cap of the vehicle connector lightly and completely, then insert the vehicle connector's head into your vehicle's outlet. Ensure the vehicle connector's head is fully inserted until it's locked.

2) Charge control

Stay for about 3 seconds to charge the electric car, in the card swiping area on the device panel, and the distance between the card and the card swiping area should be less than 2 mm.

 * The device starts charging automatically, If "Auto-Start" is on (no small lock icon in the top right corner of the screen), charging starts automatically when the gun is inserted; If Auto-Start is switched off (there is a small lock icon in the top right corner of the screen), the phone needs to be connected to Wi-Fi for authorization to start charging.

3) Stop charging

When the charging pile is charging or completed,you can unlock the charging port in the vehicle's central control and pull out the connector, then close the protective cap of EV.

4) Use method of emergency stop button

Use emergency stop button: When you press the emergency stop button, the EV charger will stop working immediately.

How to restore: turn out the emergency stop button, and restart the EV charger with power off, and it will return to normal state.
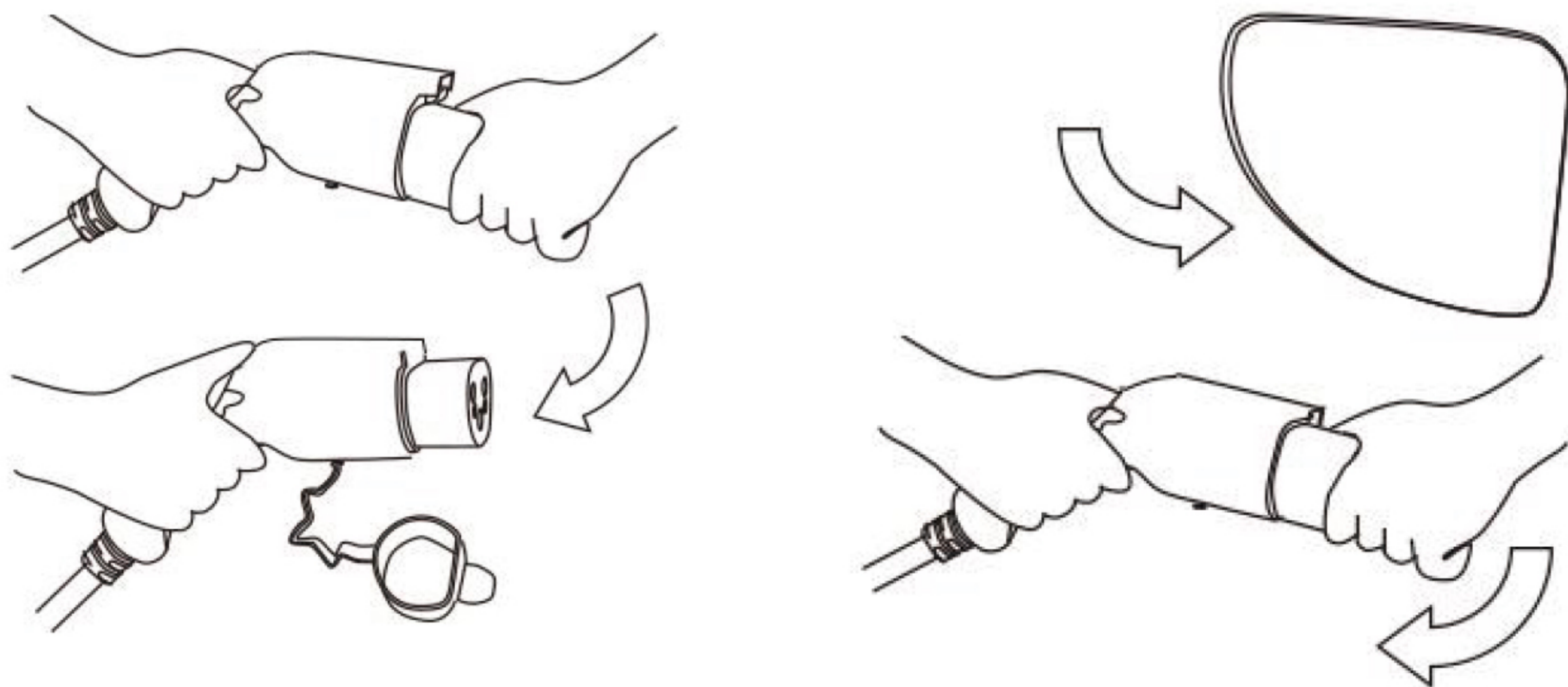
Wi-Fi Function Usage

1) Connect to Wi-Fi, turn on mobile Wi-Fi, search and connect to Wi-Fi name starting with RVD-, initial password: 12345678 (Note: the mobile phone cannot access the Internet after connecting to Wi-Fi).

⚠️ Note：If your phone prompts you that this network is not available, whether to use it or whether to switch, please choose to continue using it or not to allow switching.

2) Open the mobile browser (Mobile phone's own browser is recommended) and enter the IP address **192.168.4.1** in the URL bar of the browser or use the browser scan code to open the web page.
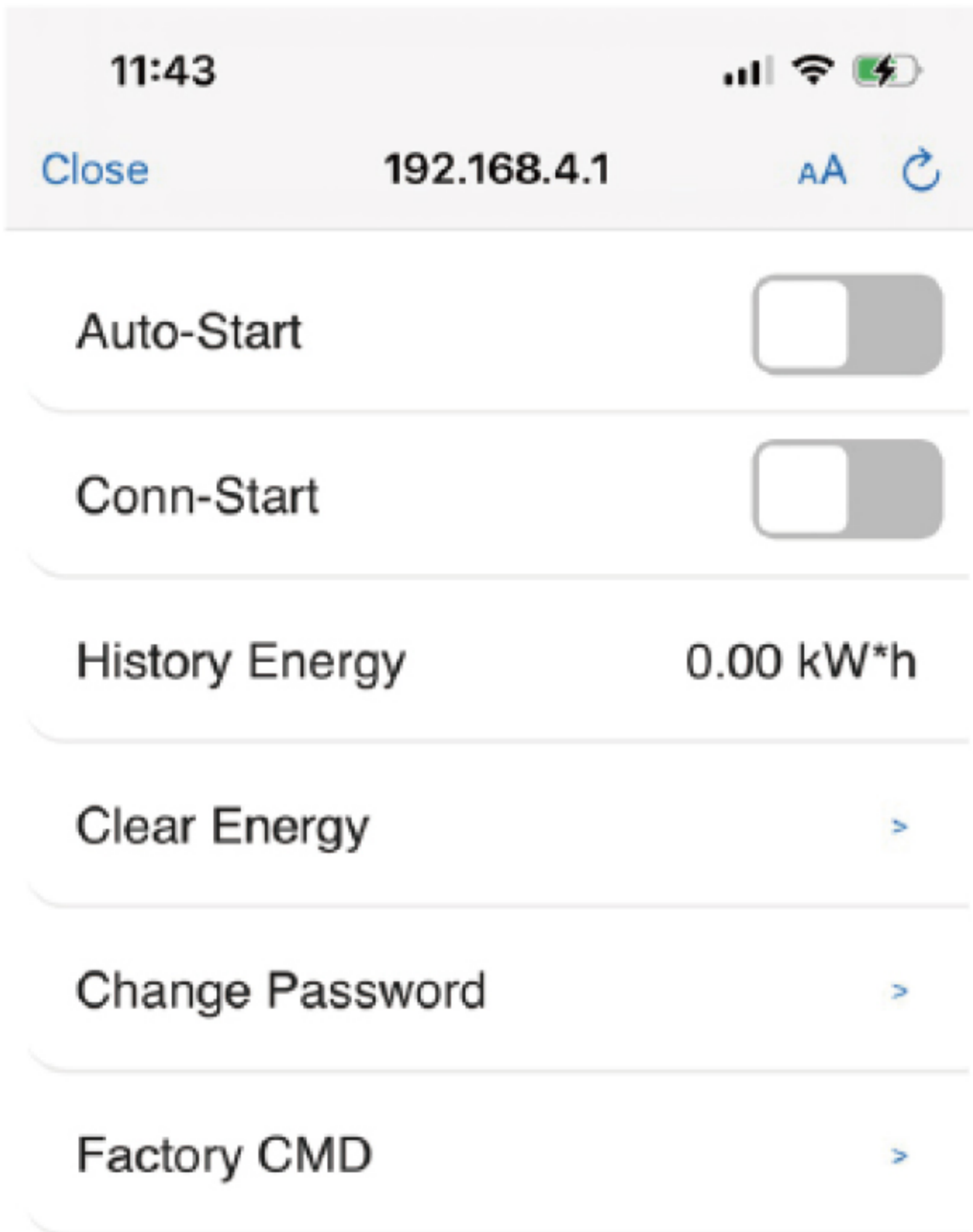
🔔 Tip: You can save this website as a bookmark, and next time you use it, open the browser after connecting to the charger Wi-Fi and click on the bookmark to open the web page;Some browsers also support adding bookmarks to the desktop. After connecting to the Charger Wi-Fi, we can simply click on the icon on the desktop to open the web page, just as convenient as using an APP.
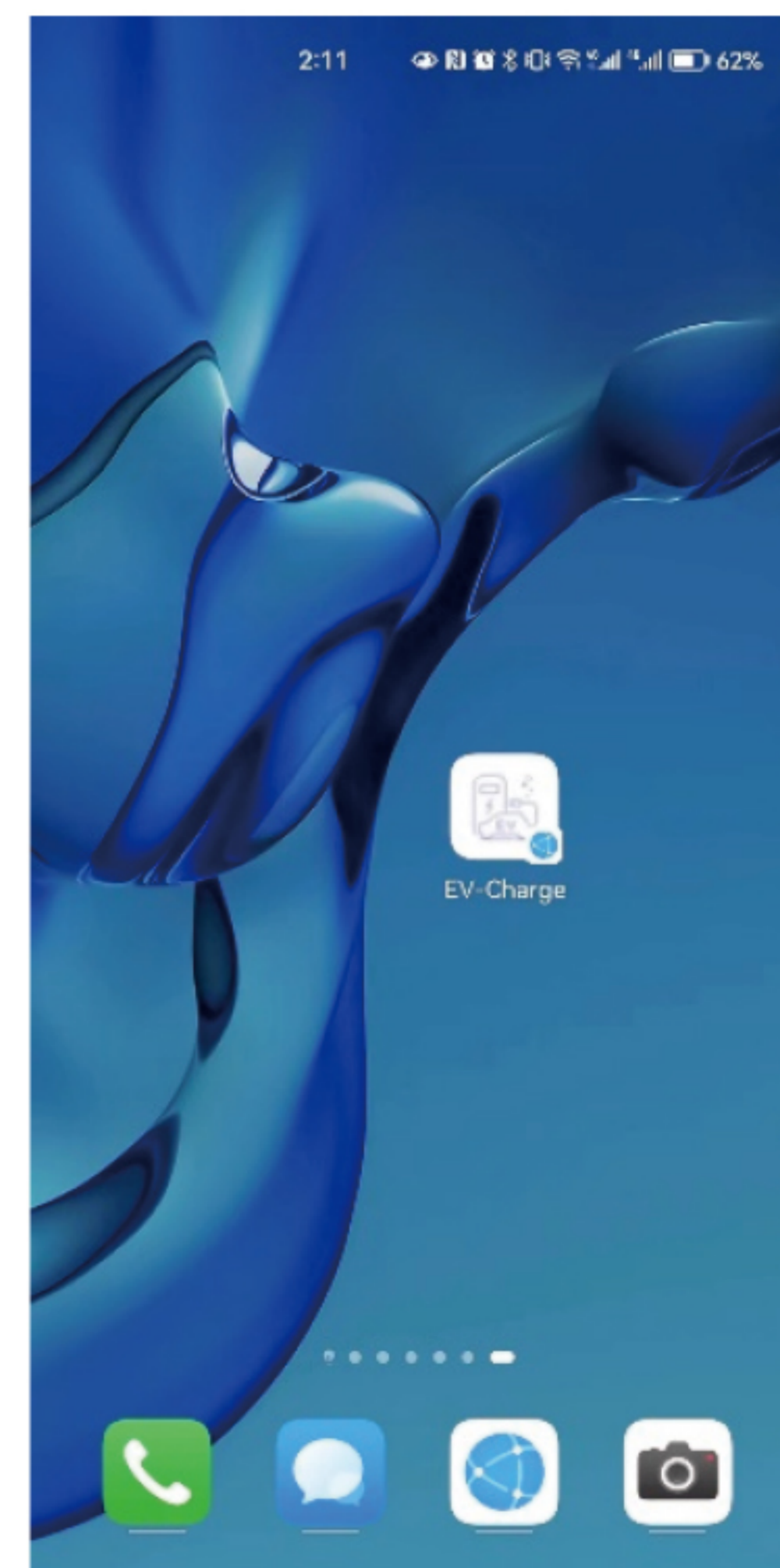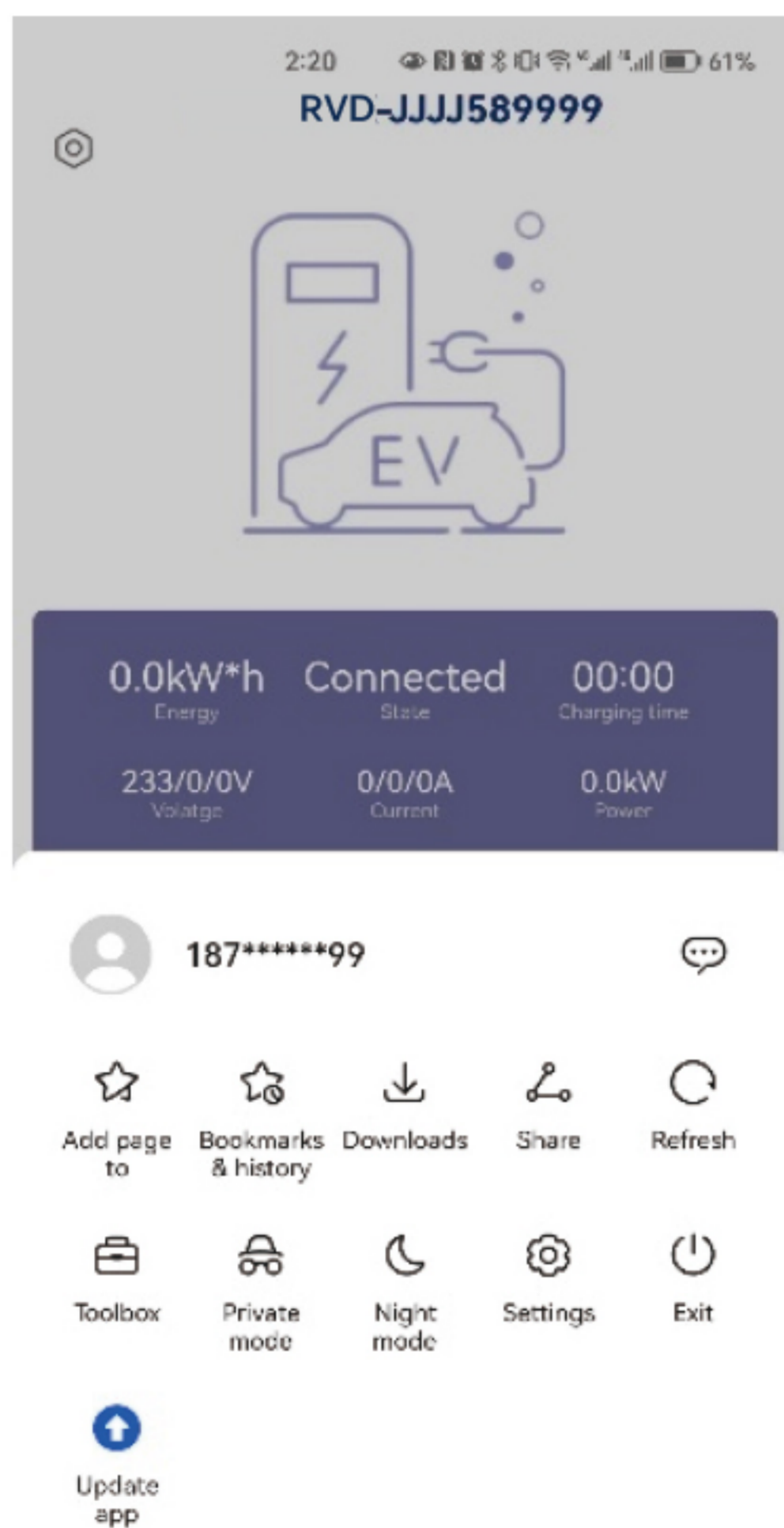
3) Setting

Click the setting icon in the upper left corner of the main page to enter the setting page, which can be set to charge, view/clear accumulated electricity, modify Wi-Fi connection password, etc.

11:43	.ull 🔆 🔋
Close	192.168.4.1	AA 🔄
Auto-Start	⚪
Conn-Start	⚪
History Energy	0.00 kW*h
Clear Energy	>
Change Password	>
Factory CMD	>

Auto-Start

①Turn on Auto-Start, you can plug and charge immediately.

②Set "Auto-start" off, the anti-theft charging function will be turned on. Then, plugging in the vehicle connector to start charging automatically is banned, you have to click the"Start" button in the web-control page to start charging.

Conn-start

When the Conn-Start is opened, the mobile phone is connected to the charger hotspot**(required)**, and the charging can be started automatically after inserting the charger.

| AUTO-START	CONN-START	CARD	FUNCTION
ON	OFF	OFF	No need to enter the web and no need to share the same Wi-Fi with the charger, just plug & go immediately.
OFF	OFF	OFF	Need to go to the web page and manually click "START" to turn on the charging.
OFF	ON	OFF	Share the same Wi-Fi with your charger, and you can charge without going to the web page.
OFF	OFF	ON	Swipe the card and start charging according to the parameters set in the previous charge.

4) Start charging with your phone:
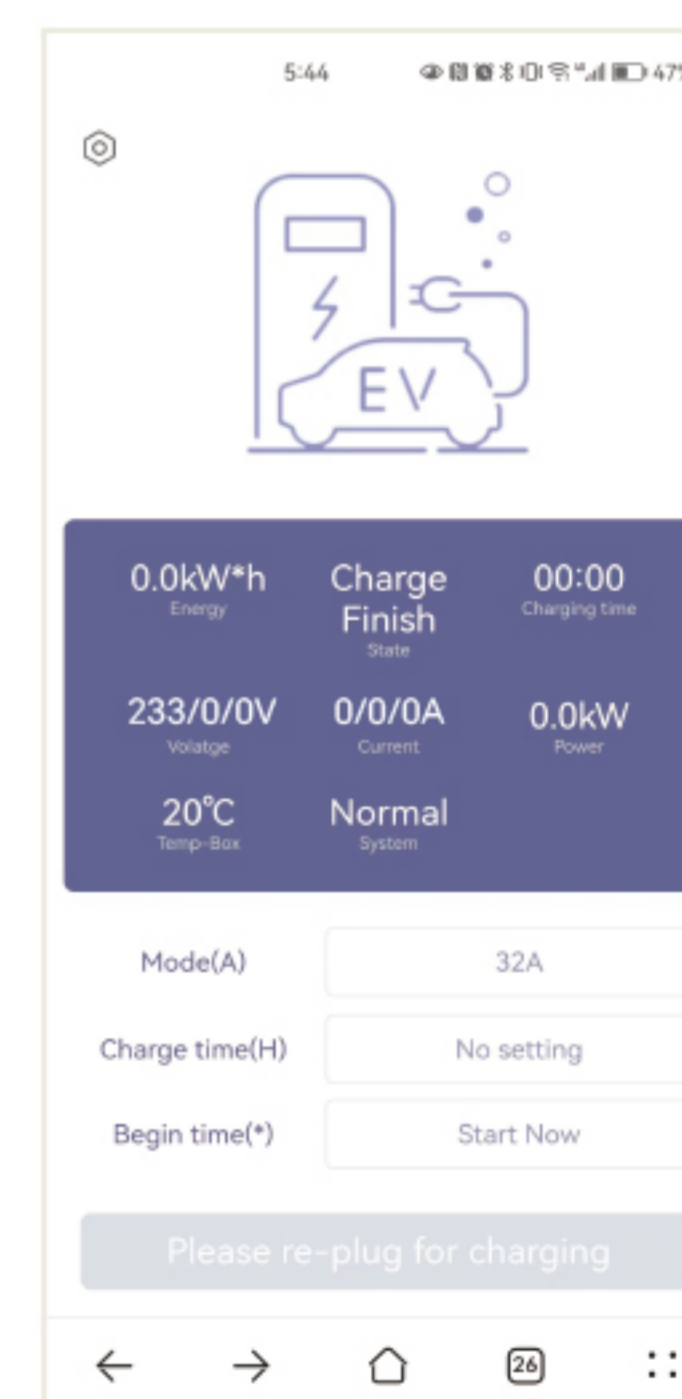

Home page
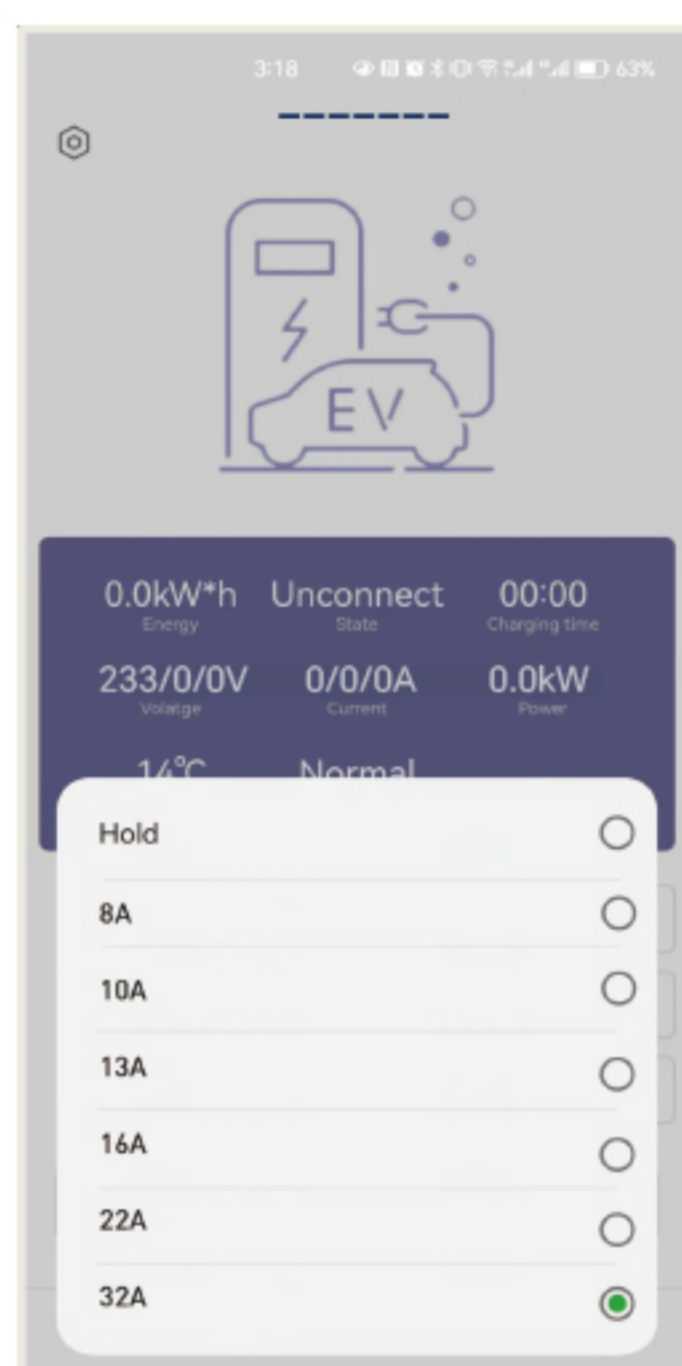
Current mode setting

Set the charging limit time

Start charging
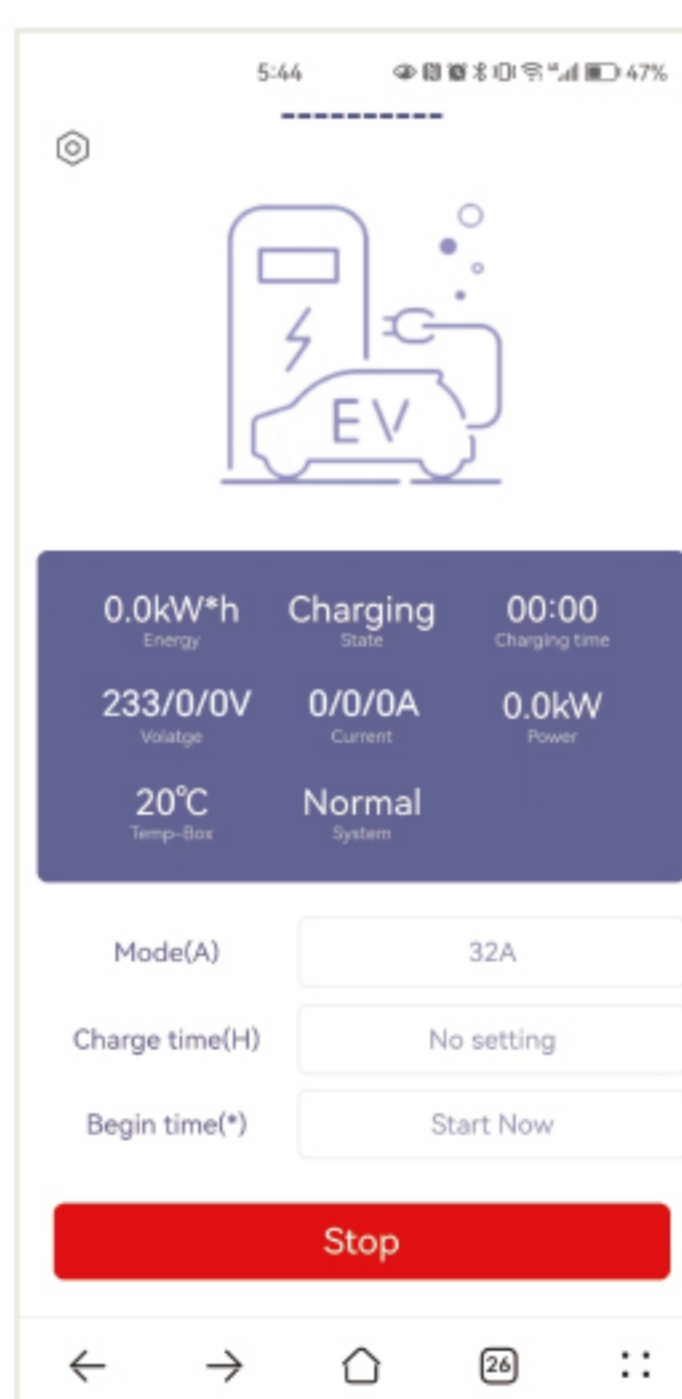
Charging

Stop charging

*Note: If you need to use your mobile phone to start or stop charging, please turn off "Auto-Start".

5) Reservation

You can realize the reservation function by setting the "Begin time". The setting steps are as follows:

①First insert the vehicle connector into the charging port.

②Then select the "Begin time" as required on the website.

③When the countdown appears, the reservation is successful.

*Note:

To use the reservation function, you need to turn off "Auto-Start" and "Conn-Start".

Some cars may not support the reservation function. If the reservation cannot be used normally, please set the "Begin time" to "Start Now".

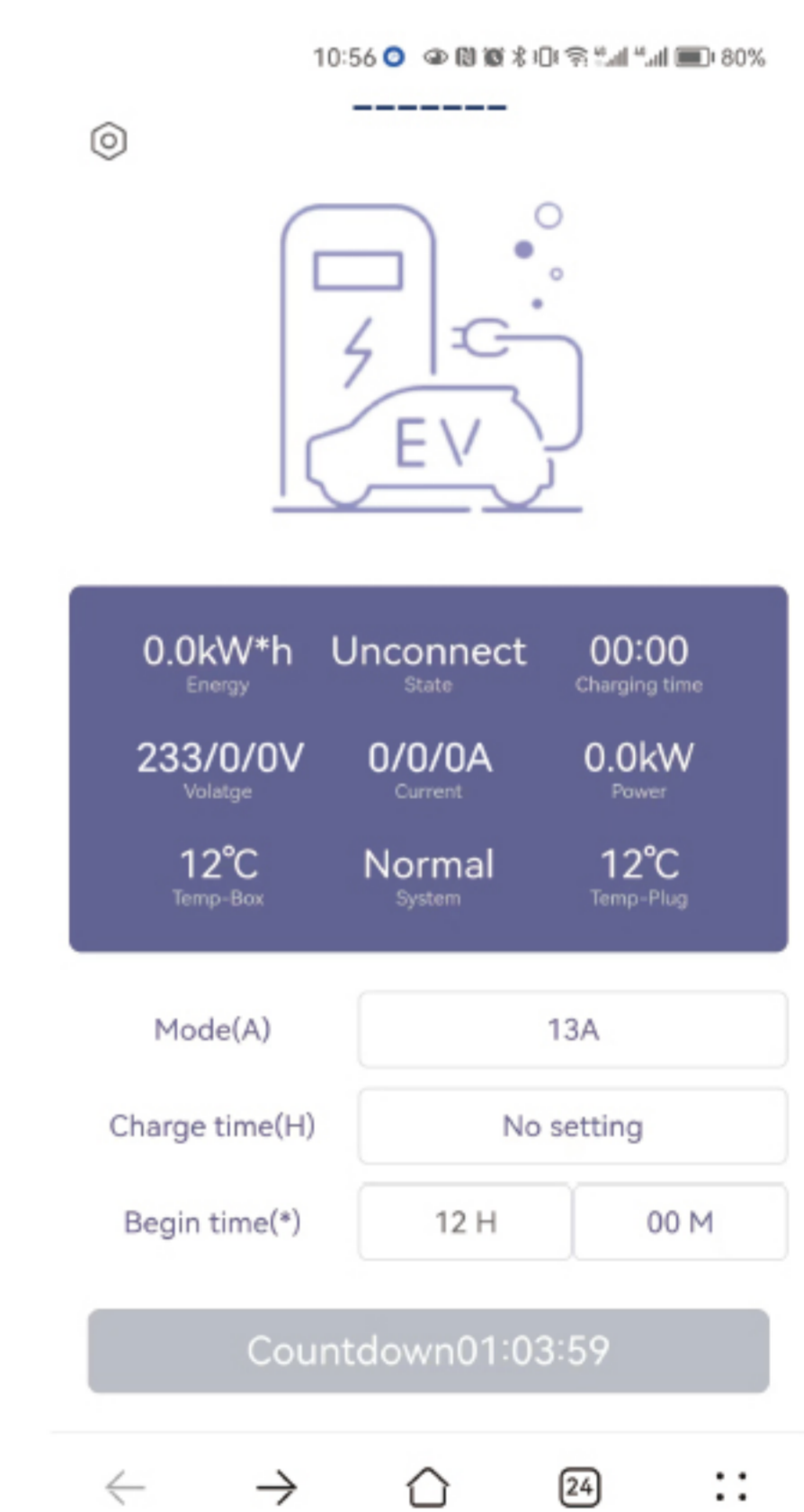There is no need to swipe the card after setting the reservation.

The setting is only valid for a single time. The device will record the setting time. If you need to charge at the same time next time, click "Start" on the web page.
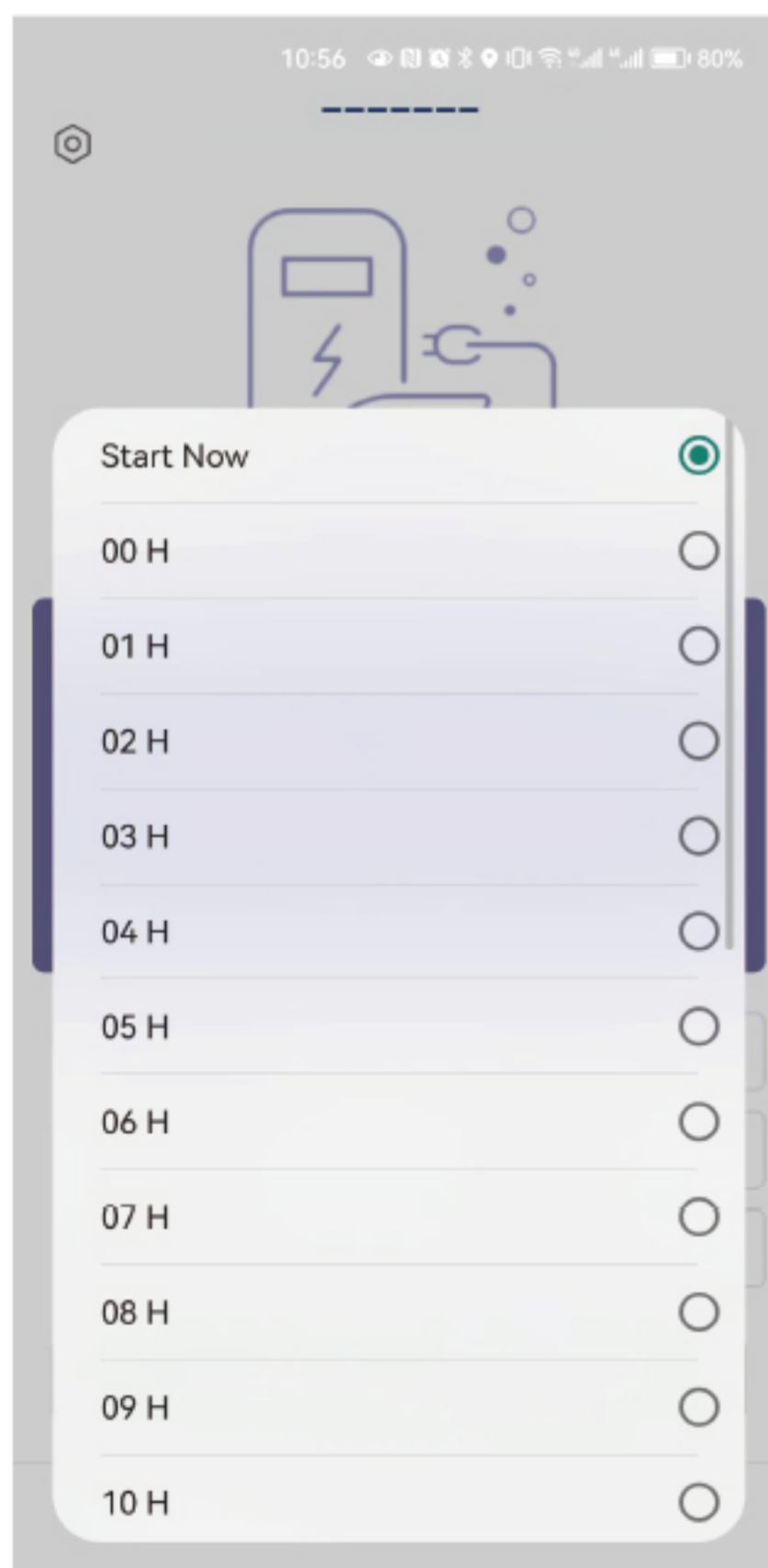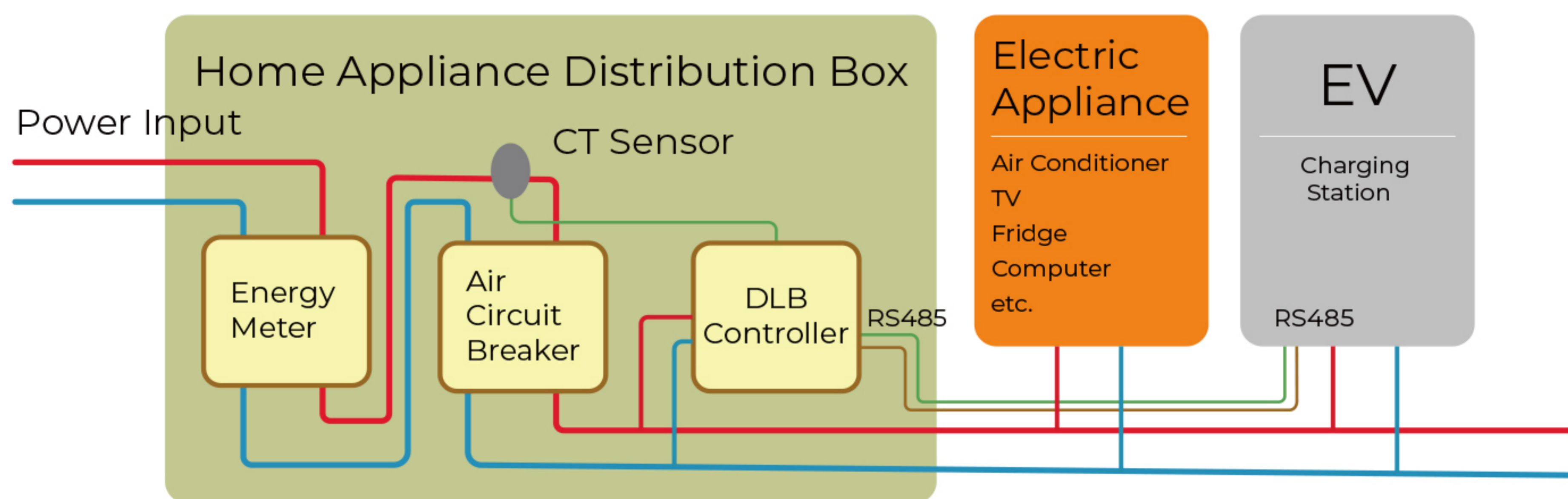

Set hours
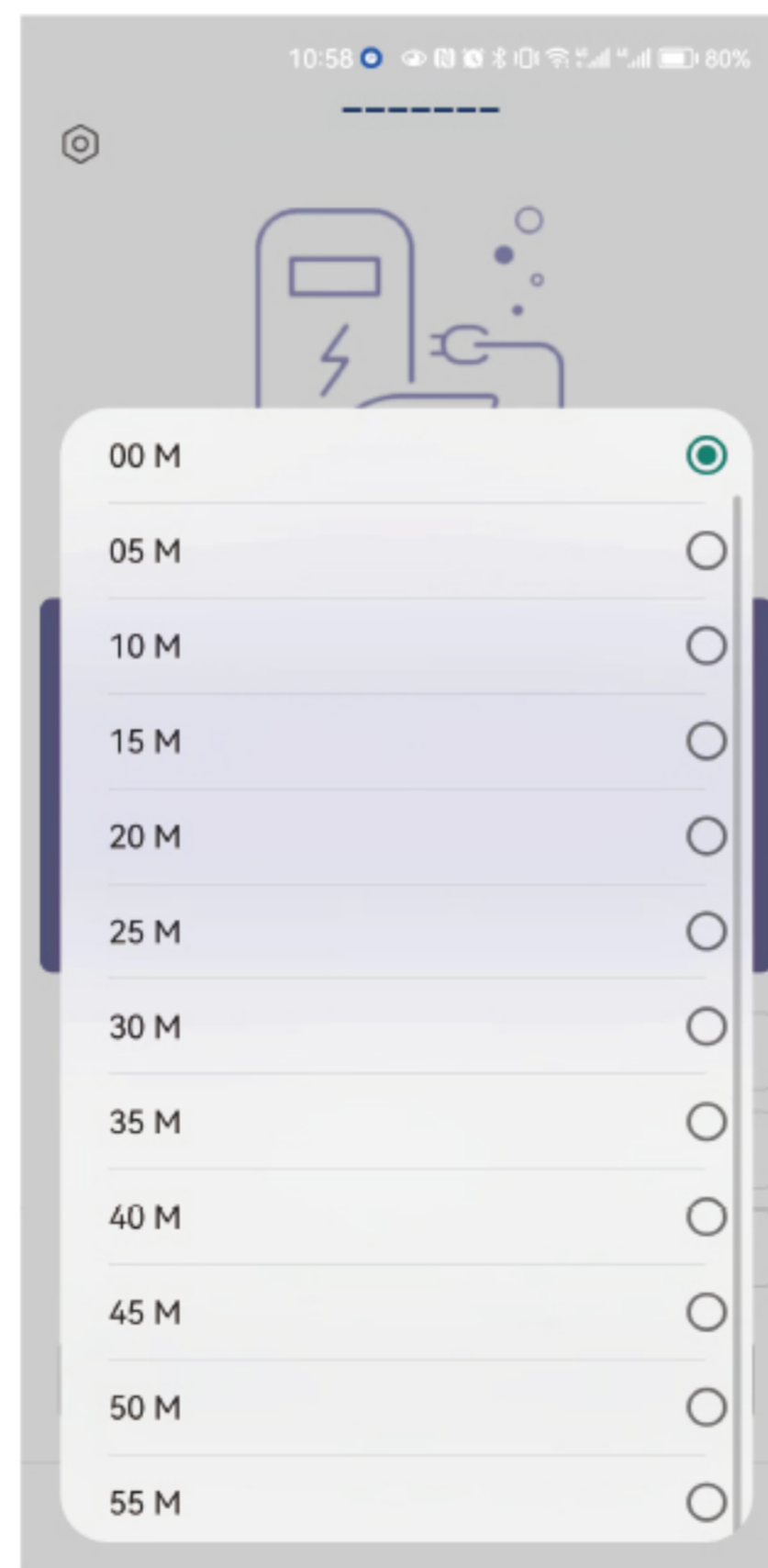
Set minutes

Reservation in progress

DLB / DLM Function

The DLB(Dynamic Load Balancing) /DLM(Dynamic Load Management) function can be used to adjust the household load current. The charging station detects the household bus current in real-time and dynamically adjusts the car charging current based on the set maximum allowable current of the bus. The main purpose is to prevent household overload caused by car charging, Maximize the utilization of available power within a safe range.

To use of this function requires the installation of a matching **DLB CONTROLER**, this device is used to collect the home bus current, installed in the home power grid into the location, if you use a single- phase AC Charging Station, you need to snap one CT(Current Transformer) clamps onto the live wire that supplies power to the charging station, If you are using a three- phase AC Charging Station, you need to snap three CT clamps onto each of the three live wires. The EV Charging Station is connected to the DLB CONTROLER via the RS485 bus (please use a twisted pair of wires to connect).

Home Appliance Distribution Box

Power Input

CT Sensor

Energy Meter

Air Circuit Breaker

DLB Controller

RS485

Electric Appliance

Air Conditioner
TV
Fridge
Computer
etc.

EV

Charging Station
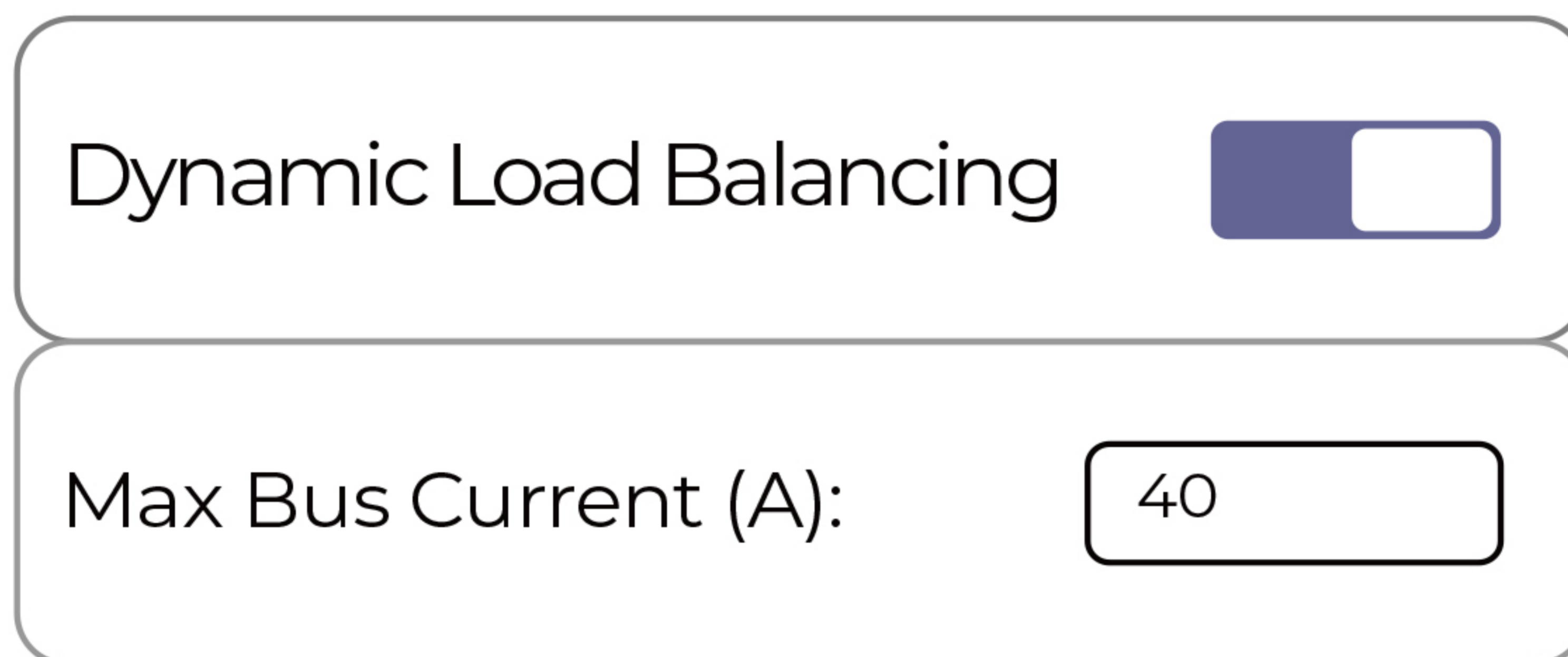
RS485

Connection definition :

RS485-A: Connect to the RS485-A of DLB CONTROLER

RS485-B: Connect to the RS485-B of DLB CONTROLER

Set the maximum allowable current of DLB/DLM:
Step1. Connect the charging station Wi-Fi hostpot.
Step2. Open the browser provided with the phone, and enter IP address **http://192.168.4.1** in the address bar. Click the setting icon in the upper left corner.Turn on the dynamic load balancing option, then enter the maximum current value allowed by the home bus, and click the enter key on the keyboard to confirm.

Dynamic Load Balancing

Max Bus Current (A):   40

OCPP Configuration
1.OCPP Web Page

1.1 Connect the charging station Wi-Fi hostpot.
1.2 Open the browser provided with the phone, and enter IP address 192.168.4.1/ocpp in the address bar, then you will open the OCPP Configuration webpage.

2.OCPP Configuration

The Charge Point supports OCPP 1.6 JSON and Support TLS, and can be connected to any open OCPP server through parameter configuration.

Parameter Description:

Parameter	Explain
SSID	Home WiFi hotspot name (Note: only 2.4G band is supported), The Charge Point can connect to the Internet after connecting to this network
Password	Home WiFi hotspot password
OCPP Enable	Whether to use OCPP function
SSL	Whether the communication is encrypted. If it is enabled, The websocket for OCPP server so is wss: //. Otherwise is ws: //
CS Host	The host address of the central system, which can be the primary domain name or IP address, eg:baal.tyyacn.com or 161.117.183.142
CS Port	The port of the central system,eg:9000
Path	The path of the central system, Null if there is no path under the primary domain name, eg:/steve/websocket/CentralSystem Service
Identity	The Charge Point's unique identifier, The operator may need to apply to the cooperative OCPP service platform
HTTP Base Authentication	Whether to use HTTP base authentication, According to the requirements of the server side, If yes, you need to enter the user name and password
HTTP Username	Auathorization Username
HTTP Password	Authorization Password

Parameters configured in the figure above ,The Central System's OCPP-J endpoint URL is wss: //galaxygw.iot2cn.com: 9000/ zabwzoffslwsuseb / 26b3202d958e9d513edpk

After entering the information, click the Connect button and wait. the page will prompt that the connection is successful when connecting to the server.

Charging Status & Indicators

Serial	Charging state	Green	Blue	Red
1	UNCONNECT	OFF	NORMALLY ON	OFF
2	SWIPE CARD	NORMALLY ON	OFF	OFF
3	CARD PASS	NORMALLY ON	OFF	OFF
4	CHARGING	BREATHING	OFF	OFF
5	EV STOP	NORMALLY ON	OFF	OFF
6	FINISHED	NORMALLY ON	OFF	OFF
7	CP	OFF	OFF	NORMALLY ON
8	OV	OFF	OFF	NORMALLY ON
9	UV	OFF	OFF	NORMALLY ON
10	LEAK	OFF	OFF	NORMALLY ON
11	OC	OFF	OFF	NORMALLY ON
12	OT	OFF	OFF	NORMALLY ON

Troubleshooting

Error Codes	Reasons	Recommendation
CP	CP connection of vehicle connector is abnormal	1. Check whether the vehicle connector is connected correctly and reliably. 2. Power on the device again. 3. If the fault persists, contact us.

Troubleshooting

Error Codes	Reasons	Recommendation
OV	The AC input voltage is too high	1. Please ask the electrician to test the input voltage. 2. If the input voltage is over 270±3VAC , wait for the voltage to drop below 270±3VAC.
UV	The AC input voltage is too low	1. Please ask the electrician to test the input voltage. 2. If the input voltage is below 90±3VAC , wait for the voltage to rise above 90±3VAC.
OC	The AC input current is too large	1. Immediately cut off the input power supply 2. Keep the vehicle connector disconnected from the vehicle. 3. Power on the charger again.
OT	The internal temperature is greater than 85℃	1. Check the installation environment of AC piles. Check whether there are heating devices or devices nearby. Ensure that the ambient temperature is below 50℃. 2. If the fault cannot be rectified, please contact us.

Make The Car Charging Safer