EG-DC-120kW

Separate Charger Unit
User Manual

CONTENTS

1.1 Safety Notice

1 Charging operations should be carried out in accordance with the operating instructions provided by our company;

2 Non professionals are strictly prohibited from opening the charging station cabinet at will; Do not disassemble or assemble without authorization;

3 When stopping midway, manually click the button to stop the machine first, and then unplug the charging gun;

4 It is strictly prohibited to directly plug and unplug the charging gun head during the charging process, otherwise it will burn out the charging gun head and charging station;

5 During the charging process, any operation unrelated to charging is prohibited. The charging station button must be clicked to stop the machine and other operations can only be carried out when the charging gun head is disconnected from the car;

6 Avoid open flames near the charging station and pay attention to ventilation;

7 Fuses must be replaced with products of the same model and cannot be replaced with copper or iron wire;

8 There is high voltage inside the charging station. If there is a malfunction, it should be repaired by professional personnel to avoid danger;

9 The higher-level circuit breakers and distribution components of the charging station must be selected, installed, and operated by professional electrical personnel;

10 In severe weather conditions such as thunderstorms, it is recommended to disconnect the power supply. If there is water accumulation at the charging station, contact the manufacturer's personnel to handle it before continuing to use it.

11 The unit weight of the charging gun cable is relatively large, and long wires are prone to dragging and being subjected to forces during actual charging, which is not conducive to releasing twisting forces and increases the risk of cable twisting and bulging, affecting the product's service life. Therefore, it is prohibited to forcefully pull or twist the charging cable. When charging, the charging gun cable must be straightened and not twisted to put force on the charging gun holder during use.

12 When inserting and removing the charging gun, it is strictly prohibited to shake it left or right. It must be inserted and removed vertically with force.

13 If the following situations occur, please turn off the power in a timely manner and notify professional personnel for repair:

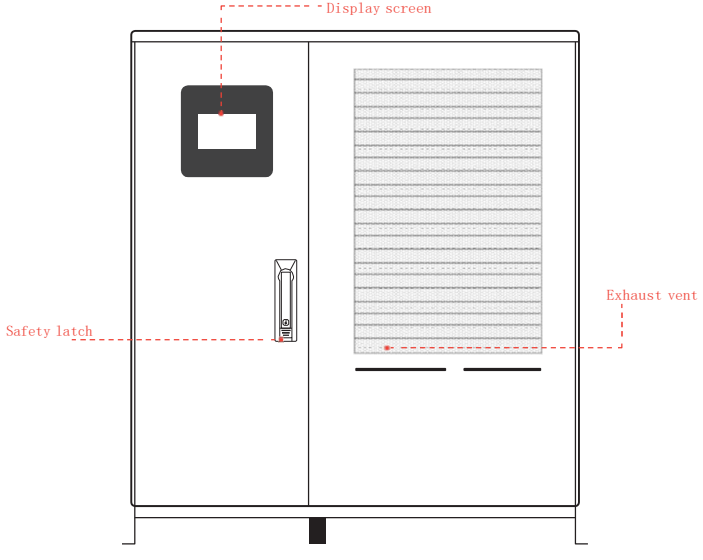
- There is abnormal noise inside the charging station;
- There is an odor or smoke inside the charging station;
- The charging station display screen has no display or response;
- An irreparable fault alarm occurs at the charging station;

Attention: Before powering on, please ensure that the equipment casing is effectively connected to the ground, otherwise there is a risk of electric shock!

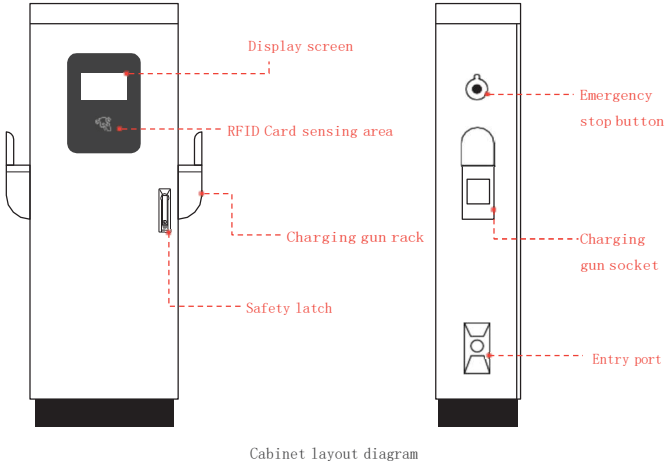
Symbol	Meaning
	Warning sign: Indicates the presence of danger. Attention should be paid to the possibility of personal injury caused by improper operation steps, methods, or execution errors; Subsequent operations can only be carried out after fully understanding and meeting the conditions indicated by the "warning" sign.
	Attention sign: Indicates the presence of danger. Please operate with caution to avoid product damage or malfunction caused by improper use; Subsequent operations can only be carried out after fully understanding and meeting the conditions specified by the "Attention" sign.
	Tip symbol: Indicates operational skills or useful information. The content marked with "tips" is technical or practical information, and does not involve warning instructions for dangerous or harmful characteristics.
	The "non recyclable" label indicates that the electronic and electrical equipment and accessories should be treated separately from ordinary household waste. When scrapped, it must be disposed of as industrial waste, otherwise it may cause accidents.

Our company is committed to continuous improvement and updates of our products, with hardware and software constantly being upgraded. Related changes will not be notified separately, please refer to the latest version.

1.2 Product Appearance



Host cabinet schematic diagram



Cabinet layout diagram

1.3 Specifications and Parameters

Model	EG-DC-120kW
System input voltage	380V AC
Output voltage	200-1000V DC
Power grid standard	3P+N+PE
Single-circuit output current	0-250A
Output port	4 gun
Frequency	50~60Hz
Working temperature	-40℃~75℃ （Reduce frequency above 55℃）
Humidity	5%~95%RH（No condensation）
Altitude	≤2000m
IP level	IP54
Standard	GB/T
Shell size(mm)	1600*1100*700（Host machine）& 1500*500*250（Extension）
Length of the incoming line	0m（customization is acceptable）
Length of the gun barrel	5m（customization is acceptable）
Charging Protocol	GBT27930 / CHADEMO 2.0 / DIN 70121 OCPP 1.6(JSON) / ISO 15118
Touchscreen size	7 inch
Charging mode	Card swiping, APP, OCPP, Load balancing (optional function)
Network connection	Standard configuration: CAN/485/Ethernet; Optional configuration: GPRS/4G

*The product is constantly being innovated. If there are any changes in specifications, no further notice will be given. Please refer to the actual situation. The data in this table is for reference only.

1.4 Installation Diagram

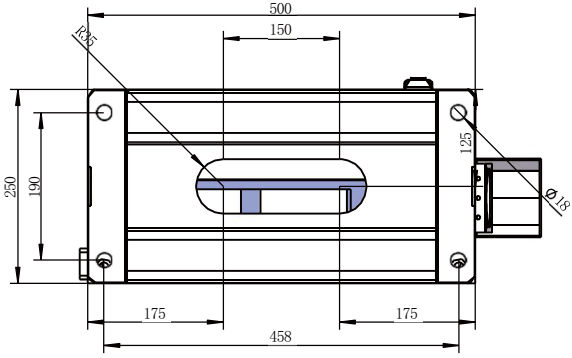
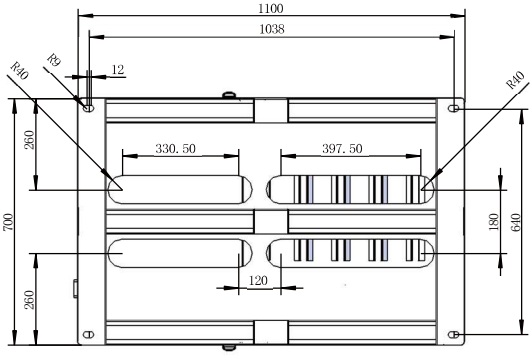


Diagram of the installation of the extension unit base



Installation diagram of the main unit base

Note:

1. Pre installation of the pipeline should be carried out in advance (the pipeline can be made of PVC or SC material, and the diameter can refer to the legend size).

When wiring, three wires should be laid, namely the red live wire, the blue neutral wire, and the yellow/green ground wire.

3. The neutral and live wires should be connected to the output terminal of the equipment leakage protection switch, while the ground wire should be connected to the grounding port.

If the installation location is on a sturdy concrete ground, there is no need to excavate the ground and pour concrete, and expansion screws can be used directly for fixation.

1.5 Installation Inspection

1. Installation instructions

Charging equipment has high voltage and high current inside. To ensure personal safety, relevant regulations should be followed at all times:

(1) Only personnel who have received training on charging equipment and fully mastered the knowledge of DC chargers can install this device. During the installation process, safety precautions and local safety regulations should always be followed;

(2) Do not operate or maintain the charger inside during thunderstorms or humid weather to prevent electric shock;

(3) If operating inside the charger, ensure that the equipment is not electrified;

(4) The cabinet of the charger is equipped with a door lock, and the key is kept by the person in charge of the charger;

2. Installation preparation

(1) Open box inspection

When inspecting the goods, open the packaging, check the packing list, verify the correctness and completeness of the equipment against the packing list, and check whether the items are damaged.

NO.	Name	Number	Note
1	Split type DC charging pile	Host 1 & Extension 4	The contents listed in this list refer to the equipment and materials included in the packaging box Some models do not come with IC cards and keys, please refer to the actual situation.
2	Factory report (certificate of conformity)	1	
3	user's manual	1	
4	IC card	8 (If have)	
5	Key	5 (If have)	
6	Expansion bolt	4/an	

(2) Prepare cables

The selection of cables should comply with relevant regulations in the electrical industry. It is recommended to use YJV type cables for incoming cables, which should have a temperature resistance level of at least -40 ℃~90 ℃.

Please refer to the table below to determine the cable. The cable selection in the table is a wall mounted single gun DC GB/T charging pile. Please refer to the professional construction qualification unit for specific judgment.

Model	Input Current	Incoming Circuit Breaker	Specification Of Incoming Cable
120kW	about 205A	NXMLE-400H 4P/315A	≥3*95+2*50mm²

(3) Prepare tools

The tools required for installing the charger are listed in the table below. Insulation and anti-static treatment should be done before using the tools.

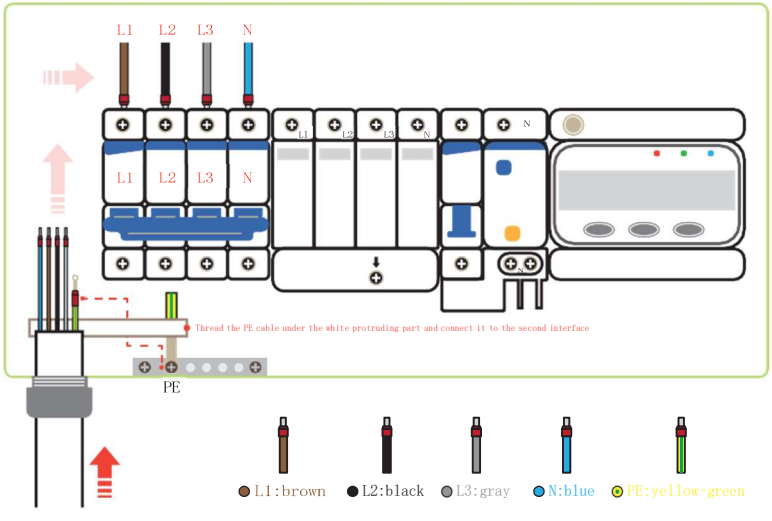
Adjustable wrench	sleeve
steel tape measure	Screwdriver (cross, straight)
Electrician's knife	Elastic pad, flat pad
Cable cutting pliers	Hydraulic crimping pliers
Power socket strip	Multimeter
Percussion drill	Expansion screw

3 Electrical installation

(1) Connect grounding and input cables

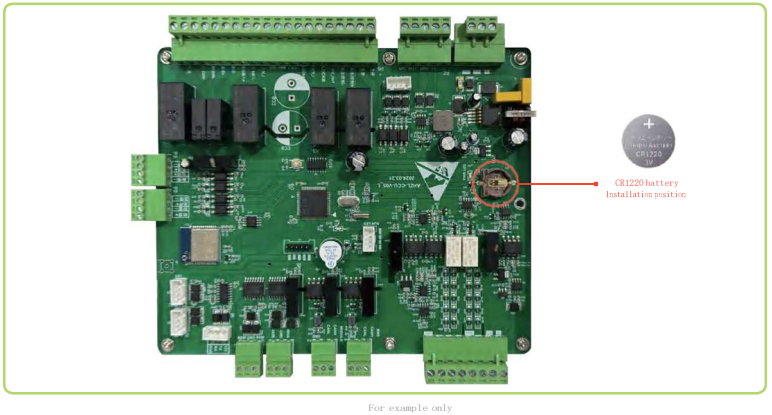
Open the cabinet door; Thread the grounding cable through the protective sleeve on the cabinet bottom plate and securely connect one end of the grounding cable to the grounding copper bar.

Connect the input cables and place all switches in the disconnected position before electrical connection. The installation of input cables can only be carried out by qualified personnel. Please note that it is strictly prohibited to reverse the input (N) and (PE), otherwise it may damage the charging device.



4 Battery installation

A single gun DC charging station with CR1220 battery needs to be purchased by oneself, and the installation location is shown in the following figure:



For example only

5 Installation inspection

After the installation of the charger is completed, the following installation checks need to be carried out:

(1) External visual examination

• Check whether the cabinet installation is horizontal, vertical, and stable;

• Check if all bolts are tightened (especially pay attention to electrical connections), if flat and spring washers are complete, and if they are installed in reverse;

• Check if there are any unnecessary materials inside the equipment and remove all excess materials;

• Check whether the cabinet is damaged or has paint peeling. If there is paint peeling, the peeling part needs to be immediately repaired with anti rust paint to prevent corrosion;

• Clean the cabinet;

• Check whether the cabinet door opens and closes flexibly, and whether the door lock is normal;

• Check if the charging gun head can be easily plugged in and out;

• Check if the lower air inlet filters on both sides inside the cabinet are functioning properly

(2) Electrical inspection

• Check whether all air switches and cable models and specifications of the charger are correct;

• Check whether all cable connections are firm and reliable;

• Check the introduction and distribution of communication: Check whether the color of the communication wires is standardized, whether the original wiring of the equipment is fastened, and whether the safety signs of the communication distribution part are complete;

• Check whether the air switch of the lightning arrester is reliably closed and whether the other switches are in the off position.

• Check whether the wiring is neat and whether the cable binding complies with the process specifications.

21 Charging station operation

Before running, please carefully check and ensure the following items:

- The installation location of the charging station is convenient for operation and maintenance;
- Connect the charging station and accessories correctly and install them firmly;
- The phase sequence of the incoming communication line is correctly and firmly connected to the charging station circuit breaker;
- Reasonable selection and installation of leakage protection circuit breakers for communication incoming lines;
- The accessories related to the charging station are complete, and the charging gun is in a suspended state.

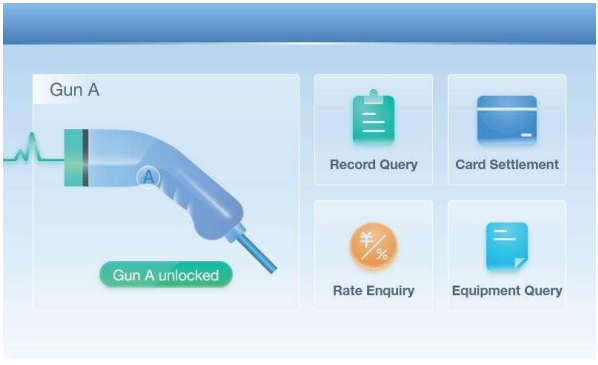
22 Power on the equipment

After all pre operation inspection items meet the requirements, close the power supply incoming leakage protection circuit breaker. After power on is completed, observe the status of the LED indicator light:

- Normal standby: The green light is always on;
- Insertion status: Green light is always on;
- Charging status: Blue light flashing;
- Equipment malfunction: The red light is constantly on.

3.1 Main Interface

On the left side of the main screen of the single gun DC charging station, there is a charging gun and gun lock button, and on the right side, there are four functional menu buttons: "Record Query", "Card Settlement", "Rate Query", and "Equipment Query".



3.1.1 Record Inquiry

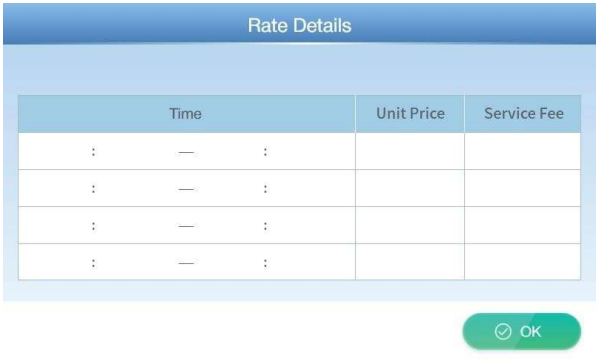
Click on 'Record Query' to enter the record information interface, where you can view the charging records, including battery SOC, card balance, status, transaction number, battery level, reason for stopping, card number, charging mode, interface number, cost, vehicle identification code, and other information. Click on the 'Next Ten', 'Previous Ten', 'Next Page', and 'Previous Page' buttons to flip through and view the records.

3.1.2 Card Settlement

Click on 【Card Settlement】 to enter the Electricity Card Settlement and Inquiry interface. Then, enter the card swiping interface. Place the charging card in the swiping slot, and the card number, card balance, and settlement status of the charging card will be read and displayed. When the charging is completed but the settlement has not been made yet, please place the card in the swiping slot and click the bottom right corner "Card Settlement". A prompt will appear saying "Swipe card settlement successful!" 。

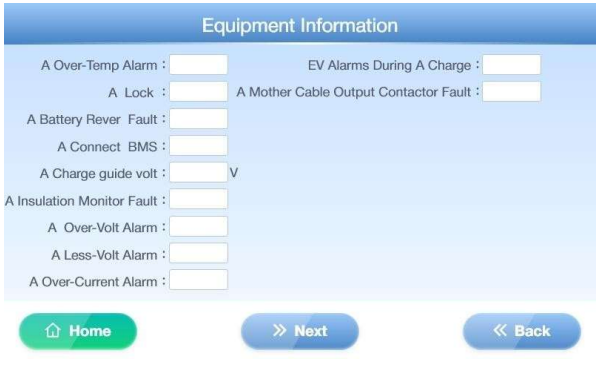
3.1.3 Rate Enquiry

Click on "Rate Enquiry", then enter the "Rate Details" interface to view the unit prices and service fees for each period when charging by card in the "Stand-alone" mode. After charging is completed, make the payment by swiping the card. The amount of the charging card will be deducted according to the corresponding period and rate. Parameters can be set in the "Rate Setting" section of the system.



3.1.4 Equipment Query

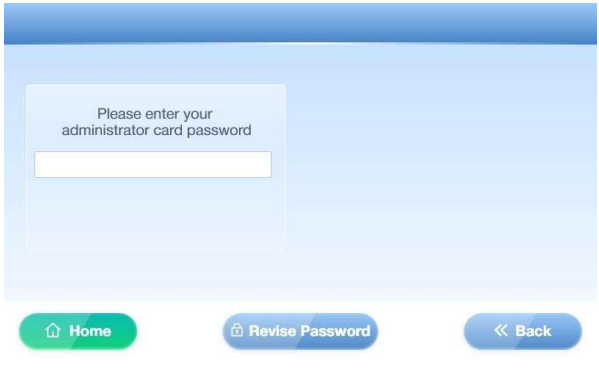
Click on 【Equipment Query】 to enter the Equipment Information interface. Here you can check the operating status of the charging piles, which is convenient for quickly locating any operational faults of the charging piles. The third page contains information about the charging module, including Module Addr, Module Temp, Status, AB Line Volt, etc.



3.2 System Settings Interface

3.2.1 Administrator Entrance

In the upper right corner of the main screen, click three times consecutively to enter the administrator access. Enter the administrator password, then click to enter the system settings interface. Click [Revise Password] to modify the administrator password.



3.2.2 System Settings Introduction

At the administrator entrance, enter the password to access the system settings interface, where you can view and configure all the functions of the charging piles. The function menu includes "Mode Switching", "System Configuration", "Card Management", "Rate Setting", "System Upgrade", "Hardware Test", "Network Settings", and "Help".

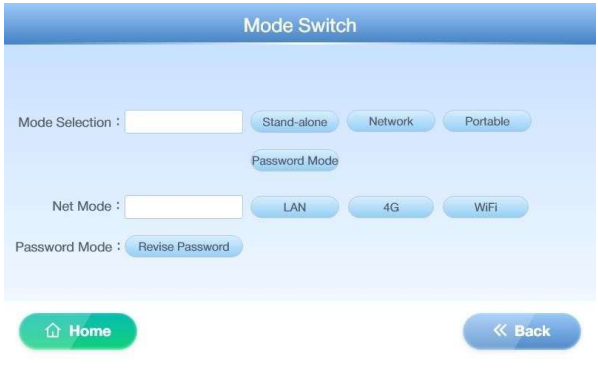
3.2.2.1 Mode switching

Click on the "Mode Switching" function menu to enter the "Mode Switch" interface and view, modify the relevant parameters:

Mode Selection: Based on the application scenario, select different charging modes. Currently, there are four charging modes: Stand-alone, Network (select this mode when connecting to the OCPP platform and with optional functions), Portable, and Password Mode;

Net Mode: LAN, 4G, WiFi (select Network, then choose according to the way of connecting to the OCPP platform);

Password Mode: Modify the password for charging in the password mode.



3222 System Configuration

Click on the 'System Configuration' function menu to enter the system configuration interface:

1) On the first page of system configuration, view and modify relevant parameters:

Set QR code: Some OCPP platforms generate an identification code for this charging gun when the device is successfully connected. When the identification code is filled in here, the main interface QR code is not only the identification code information, but also used for APP scanning and charging;

Pile Number: Fill in the sub pile number (when connecting to OCPP, relevant information such as sub pile ID needs to be added on the OCPP platform before it can be used effectively);

Rated output voltage: Fill in according to the voltage of the charging station module, with a default value of 1010V;

Rated output current: Fill in according to the current of the charging station module or the rated current of the gun line;

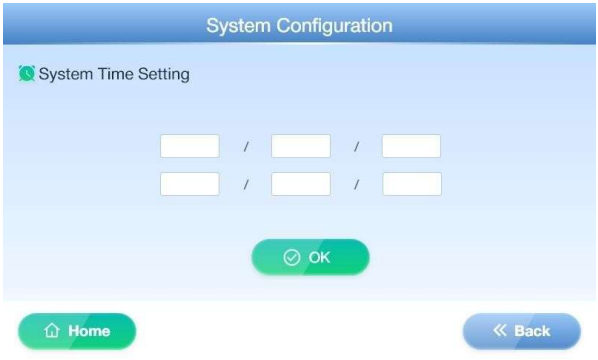
Rated output power: Fill in the maximum output power value as needed, with the default value being the rated power of the charging station;

SOC threshold: default to 100%, with the SOC of electric vehicles, taking the minimum value of the two as the upper limit of SOC;

Load balancing: default value of 1000;

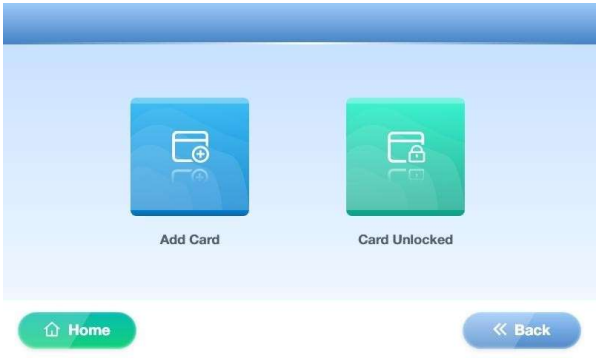
Sub pile number: The sequential number of sub piles.

2) Click the "Next" button to proceed to the second page of System Configuration. Modify the system time. The top row shows the year, month, and day, while the bottom row shows the hour, minute, and second. Fill in the correct time in the input boxes, then click the "OK" button to save the time settings.



323 Card Management

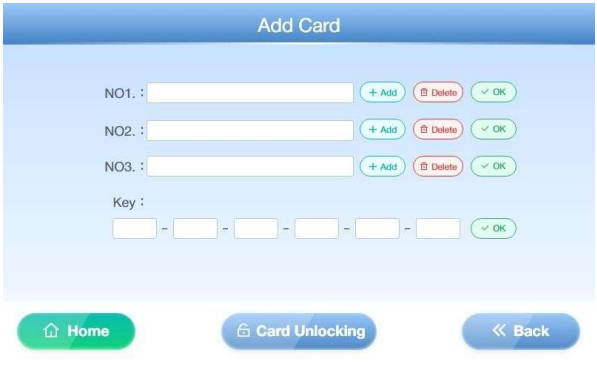
Click on the "Card Management" function menu to enter the Card Management interface. The main functions include "Add Card" and "Card Unlocked".



1.Click the "Add Card" function button to enter the Add Card interface and view, modify the relevant parameters.

No. 1: Place the charging card in the card slot, click the " +Add" button on the right, and the card number of this card will be displayed on the left. Click the "OK" button, then the card binding is successful (you can bind up to three charging cards). This card binding only takes effect in the Stand-alone charging mode. If the card is already bound, only the bound charging cards can be used for cardless charging.

Key: The default is 17 (all 6 input boxes are 17), the same as the Key of the provided charging card. If you need to modify the Key (the charging card needs to be changed to the same Key, and the Key can be changed through a professional card-making tool), after modification, click the "OK" button and restart the charging station. When there is no bound card, charging cards with the same Key in Stand-alone mode can be used for cardless charging.



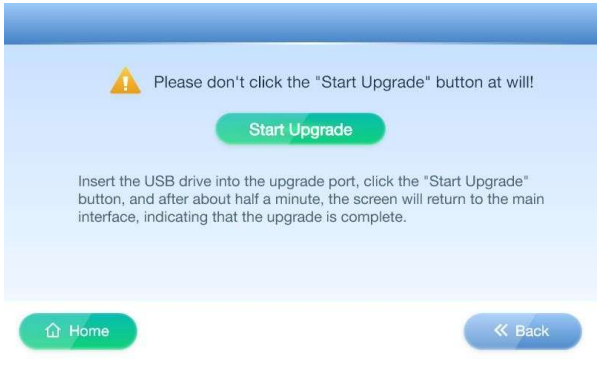
3.2.4 Rate Setting

Click on the "Rate Setting" function menu to enter the Rate Setting interface.

1) Modify "Monetary Unit" (enter the standard currency code in uppercase letters and restart the charging station power supply), "Time", "Unit Price", "Service Fee", click the "OK" button to save (if both "Unit Price" and "Service Fee" are 0, then charging is free).

3.2.5 System Upgrade

Click on the "System upgrade" function menu to enter the System upgrade interface. Save the motherboard program to the USB drive, then insert the USB drive into the USB interface of the charging station motherboard. Click the "Start upgrade" button. The upgrade process will be completed in approximately 30 seconds. Restart the charging station and check all the parameters of the charging station.



3.2.6 Hardware Test

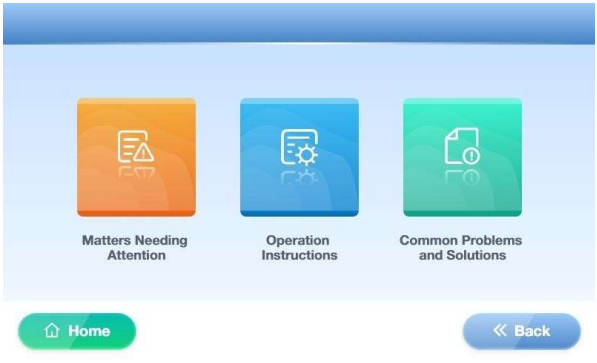
Click on the "Hardware Test" function menu to enter the "Hardware Status Test" interface. In the unloaded state, click "Start Testing". If all the hardware statuses are marked as "1", it indicates that everything is normal.

3.2.7 Network Settings

In the network mode, click the "Network Settings" function menu to enter the communication data configuration interface. View and modify parameters such as WiFi, URL, APN, etc. Connect to the OCPP platform. On this page, you need to enter the URL in the format of ws://... or wss://... It cannot end with "/" or "pavilion number".

3.2.8 Help

Click on the "Help" function menu to enter the Help interface. The main functions include "Matters Needing Attention", "Operation Instructions", "Common Problems and Solutions". Click on the corresponding function button to display the relevant main content.

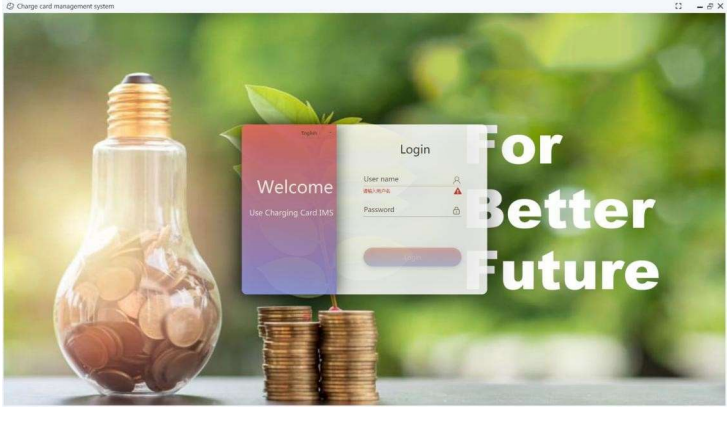


3.3 Regarding card production

Our company has professional card-making software and card readers. You can view and set the recharge card through the card-making tool. The function menu of the card-making software includes Card key, Make card, Card issuance, Top up, User management, Card issuance record, Recharge record, etc.

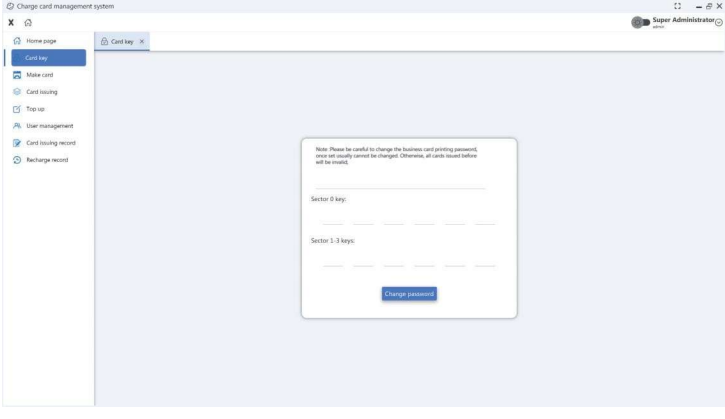
1. Login interface

Enter the correct username and password to log in to the card-making software.



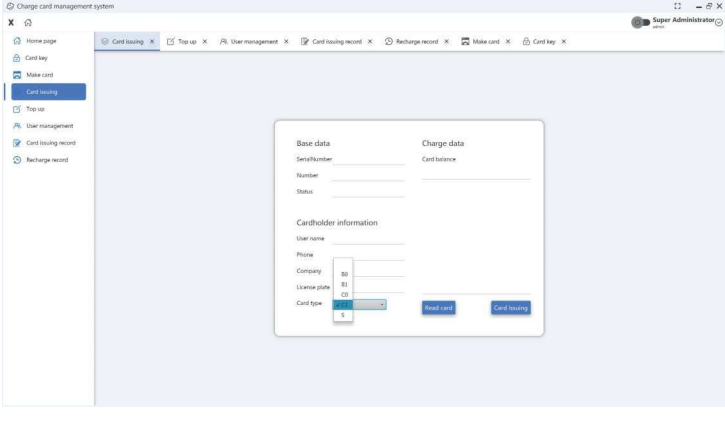
Card key

The key for the charging card and the charging port must be the same. If you need to change it, you will need a card-making tool to modify the key of the charging card.



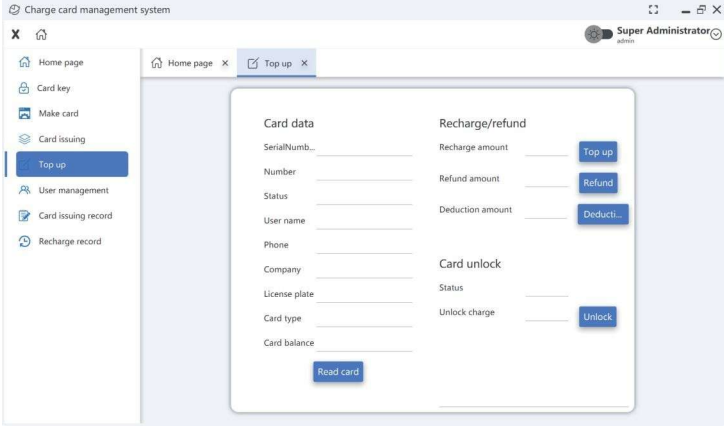
Card issuing

Place the recharge card on the reader, click the "Read card" button, to read the Base data of the new card. Fill in the Cardholder information according to the actual situation. The Card type is usually selected as C1 (the charging card is of type C, the free card is of type B, and the one for adjusting rates is of type S).



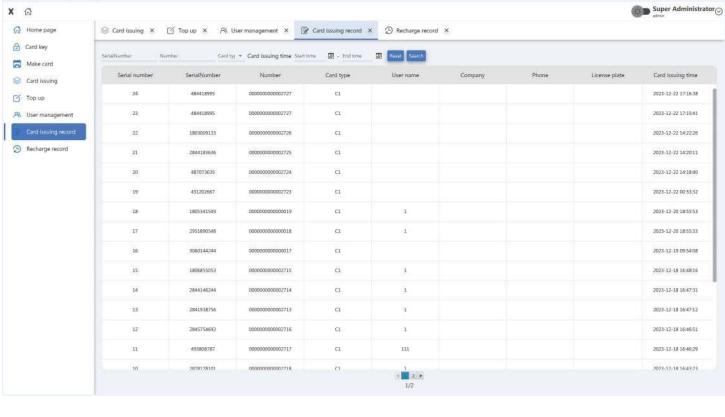
1. Top up

New card can be topped up or refunded, card unlocked, etc. on this interface.



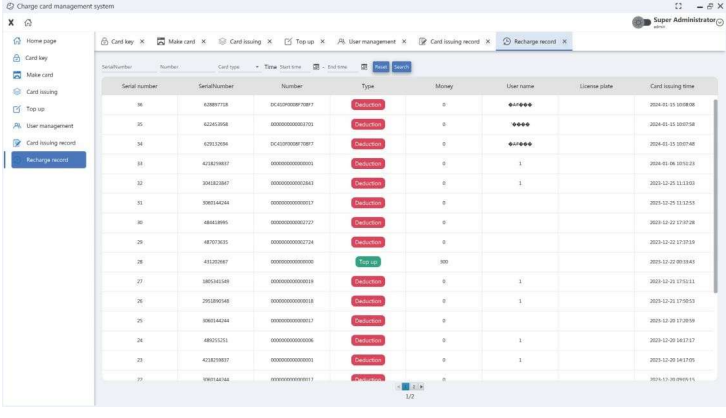
2. Card issuing record

Query the card issuance records on this page.



F. Recharge record

View your recharge history on this page.



1) Card Reader

After installing the card-making software on the computer, the card reader is connected to the computer via a USB cable.

2) Card Unlocked

Place the locked charging card of this charging station in the card slot, and click on "Card Unlocked" in the card management interface to unlock the charging card.

3.4 Charging logic

This device is an intelligent power distribution type DC charging system. A total power cabinet supplies power to multiple charging stations, and the main control unit can dynamically and intelligently allocate the total power based on the battery requirements of each sub station charging gun connected to the vehicle in real time.

Single gun charging: When only one gun is charged, the gun can call the maximum output power of the charging pile (limited by vehicle demand and the rated current of the charging gun).

Multiple guns charging simultaneously: The main control unit system uses a "first come, first served" or "evenly distributed" control strategy for current limiting charging to ensure that the total output is not overloaded.

After the charging of any vehicle is completed, the released power will be automatically redistributed to other vehicles that are currently charging.

3.5 Charging related configurations

Click on the top right corner of the main screen three times in a row to enter the administrator entrance. Enter the administrator password and enter the system settings interface. Click on "Mode Switching" to enter the mode switching interface. There are four charging modes: standalone mode, network mode (optional function), portable mode, and password mode. The specific operation of the charging mode is as follows:

Attention: The charging card used in the network charging mode must be added to the network platform as an authenticated card.

The charging card used in the standalone charging mode must be bound or have the same Key in the added card. Charging will prioritize binding the card. When there is no binding card, charging cards with the same Key can be swiped for charging.

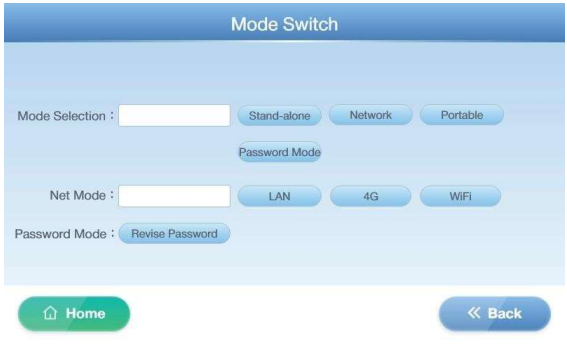
4.1 Network mode

4.1.1 LAN

First, on the Mode Switch interface, configure the following parameters. Then, in the Network Settings interface, enter the network platform address in the URL field, and restart the charging station (modifying the charging mode requires restarting the device). Check if this charging station is online on the network platform, or after plugging in the charging gun, a QR code will appear on the main interface, indicating that it has successfully connected to the OCPP platform and charging can begin.

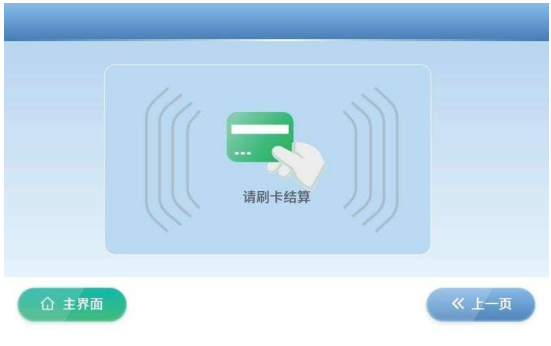
Mode selection: Network

Network mode: LAN, 4G, WiFi (select Network, and then choose according to the method of connecting to the OCPP platform);



(1) Start charging

1. The charging gun head must be securely connected to the charging interface of the electric vehicle, in the correct position and in the plugged-in state. Click on the main interface to jump to the card-swiping interface. Please swipe the card (a charging card that has been authorized by the OCPP platform), or control the start of charging through the network platform.



2) After the charging is initiated, the charging station automatically detects for several seconds and then starts charging. The network charging interface displays information such as Battery SOC, Charging Current, Charge V, Charging Time, Power Charged, and Charging Power.

3. Click on the left side of the network charging interface in the above picture, and it will redirect you to another charging interface where you can view information such as battery SOC, charging time, card balance, charging current, charging power, and charging voltage.

4. Click on the "More" button in the above picture to view the request data sent by the charging vehicles. This includes the remaining time of the electric vehicle, the maximum voltage of the BMS, the highest voltage of the BMS, the cost, as well as information about the maximum output voltage, maximum output current, maximum output power, SOC threshold, and load balancing of the system settings.

In the network charging mode, stopping the charging process can be done in the following ways:

· Start charging by swiping the card, and then stop charging by swiping the card again and complete the settlement; otherwise, the card will be locked;

· Stop charging through the network platform;

· Stop charging when fully charged.

· Press the emergency stop button to stop (for non-emergency faults, do not touch).

After charging is completed, a settlement interface will appear, showing information such as charging time, charging power, and the amount on the card. Click the OK button to return to the main interface.

412 4G mode

This mode is configured in the same way as the LAN mode. Please select 4G (using SIM card to connect to the network) in the Net mode on the Mode switch interface, then enter the network platform address in the URL on the Network Settings interface, fill in the APN-related parameters (edit and fill in according to the information provided by the operator), restart the charging station (modifying the charging mode requires restarting the device), and then start charging (the charging process is the same as in the LAN mode, including starting and stopping charging).

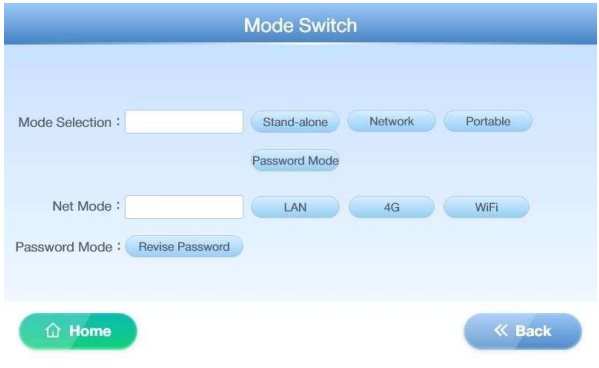
42 Stand-alone

421 Mode configuration

First, on the mode switching interface, configure the following parameters, then restart the charging station (restarting the device is necessary to change the charging mode), and start charging.

Mode selection: Independent;

Network mode: Not selectable;



(1) Start charging

The charging gun head must be securely connected to the charging interface of the electric vehicle. The connection should be in place. When the gun is inserted, click on the main interface to jump to the card-swiping interface. Please swipe the charging card to start charging.

(2) Stop Charging

In the single-device charging mode, stopping the charging process can be done in the following ways:

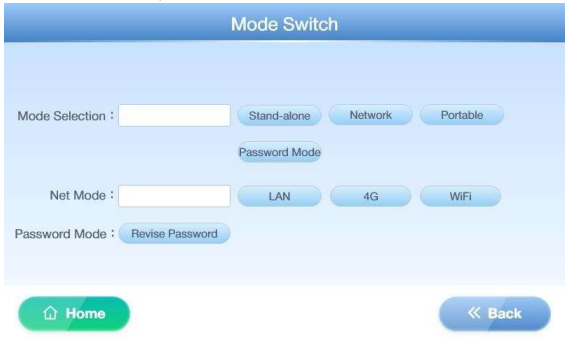
- Click the stop button on the charging interface and swipe the card again to stop charging;
- Stop charging when fully charged (please swipe the card for settlement);
- Press the emergency stop button to stop (in case of an emergency, do not touch it)

4.3 Portable

First, on the mode switching interface, configure the following parameters, then restart the charging station (restarting the device is necessary to change the charging mode), and start charging.

Mode selection: Portable (no magnetic card used, no charge);

Network mode: Not selectable;



(1) Start charging

The charging gun head must be securely connected to the charging interface of the electric vehicle, and the connection must be in place. When the charging gun is inserted, click the charging gun on the main interface, then click the "Start Charging" button. The charging station will automatically detect for a few seconds and then start charging.

(2) Stop Charging

In the portable charging mode, to stop charging, there are the following methods:

- Click the "Stop" button on the charging interface to stop charging;
- Stop when fully charged;
- Press the emergency stop button to stop (in case of an emergency, do not touch).

44 Revise Password

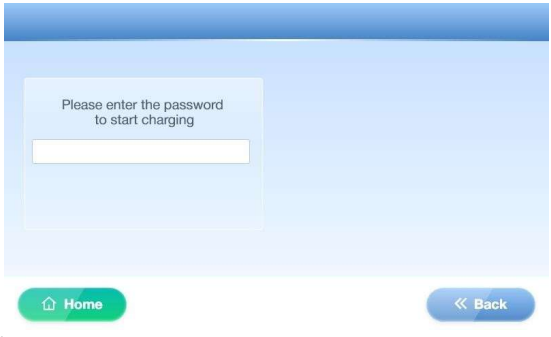
Firstly, on the mode switching interface, configure the following parameters and restart the charging station (changing the charging mode requires restarting the device) to start charging.

Mode selection: Change password

Network mode: not selectable;

(1) Start charging

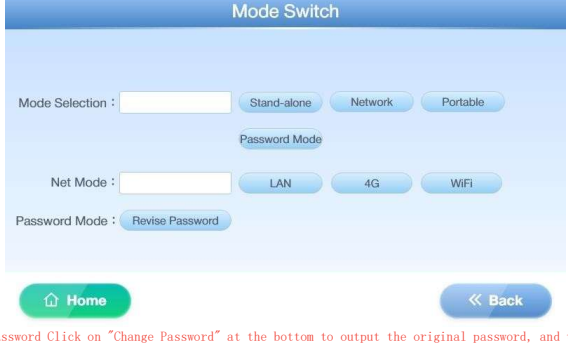
The charging gun head and the charging interface of the electric vehicle must be reliably connected and properly docked. When the gun is plugged in, click on the main interface to charge the gun and jump to the password input to start the charging interface. After entering the start password, the charging station will automatically detect for a few seconds and start charging.



(2) Stop charging

There are several ways to stop charging in password charging mode:

- Click the stop button on the charging interface to stop charging;
- Full and stop;
- Press the emergency stop button to stop (do not touch unless it is an emergency).



(*) Change Password Click on "Change Password" at the bottom to output the original password, and then enter the same password twice to complete the password change.

• When charging, please connect the charging gun first, then start the charging process.

• The main reason for the slow charging speed might be insufficient power of the charging station, the current limit of the vehicle's charging, or insufficient power supply at the parking spot. Please choose a charging station with higher power, check the vehicle settings to adjust the charging parameters, or choose another parking spot or report the power supply issue to the relevant department.

• Sometimes, when using the charging station, you may encounter a situation where charging fails and cannot be carried out normally. This might be due to a faulty charging connector, a faulty charging station, or a problem with the charging card. Please check if the connector is intact and ensure that the plug is securely inserted. Contact the charging station management unit for repair or replacement. Report the fault and carry out the repair or replacement. The charging card might have poor contact or be damaged, causing the charging failure. If there is a problem, please replace the charging card or contact the charging card issuing institution to solve the problem.

• When charging with a card, do not use the same charging card to charge other charging stations to avoid being locked out.

• When the charging station system changes the charging mode, restart the power supply and check if the mode change is successful. Then you can use it.

• During charging, do not forcibly pull out the charging connector. Forcing to pull out the charging connector may cause sparking at the connector, resulting in an accident.

• When charging is in progress, entering the system configuration interface will cause the charging to stop.

• If charging is completed or abnormal charging ends without settlement, please swipe the card for settlement.

• When starting or ending charging with the card, swipe the same card.

• When installing the charging station, the grounding line should be reliable, without any abnormalities or ungrounded. Otherwise, charging cannot be performed.

• If you need to stop charging in advance, swipe the card to stop normally.

• If an accident occurs during charging, such as abnormal sounds, wire short circuit, etc., press the emergency stop button on the panel, disconnect all power sources, and immediately contact the on-site management personnel.

• The display screen is not lit up. Restart the charging station or contact a professional technician for maintenance.

• The charging cable is damaged, the power supply is damaged, or the interface is damaged. Contact a professional technician for maintenance and replacement, and regularly check.

• The gun head is damaged, there is an object in the gun needle hole, etc. Check and clean. Disconnect the power source for one or two months and restart the equipment.

• The card does not respond. Restart the equipment, replace the card, and call the customer service hotline for consultation.

• If the equipment is not used for a long time, pull the switch to cut off the power supply.

• Do not touch the emergency stop button in non-emergency situations.