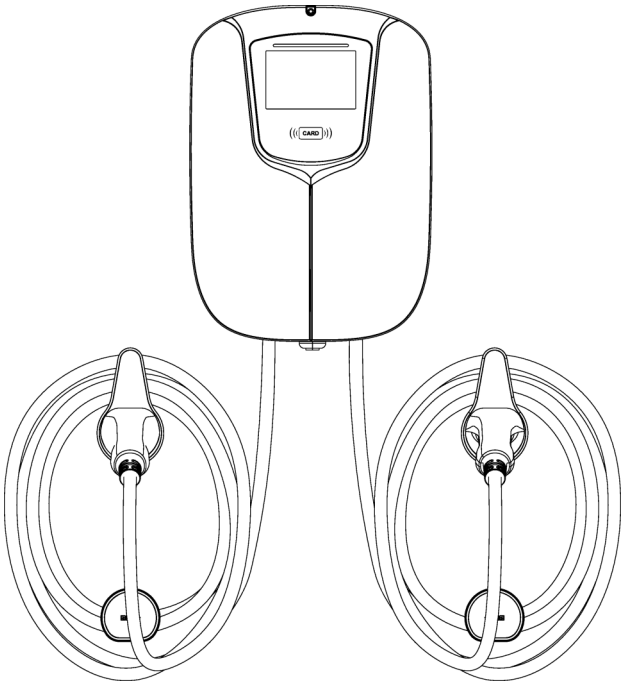
Commercial Use EV Wallbox

User manual



CONTENT

Introductions

EV Wallbox AC charging pile- It is an economical AC charging pile widely used in private parking Spaces, electric vehicle manufacturing enterprises and real estate development enterprises

RFID reader, 4.3-inch LCD/touch screen, 4G/WiFi/ Ethernet Communication module, level 1.0 embedded metering/level 1.0 energy meter are modular design, convenient for users to flexibly select

Built-in type A leakage +DC6ma protection, which can reliably protect AC leakage and DC leakage; Built-in PE grounding detection, real-time Test the reliability of PE wiring, protect the safety of equipment electricity; Built-in temperature sensor, controller through downflow or disconnect Charging guarantees spontaneous combustion and other accidents caused by overtemperature during the charging process.

The shell is injection molded with ABS+PC mixed material with good weather resistance and excellent flame retardant performance. The shape fully reflects the minimalist design idea, makes full use of organic surface elements, and has a strong overall sense, which is safe and reliable for industrial products and reflects a strong sense of science and technology

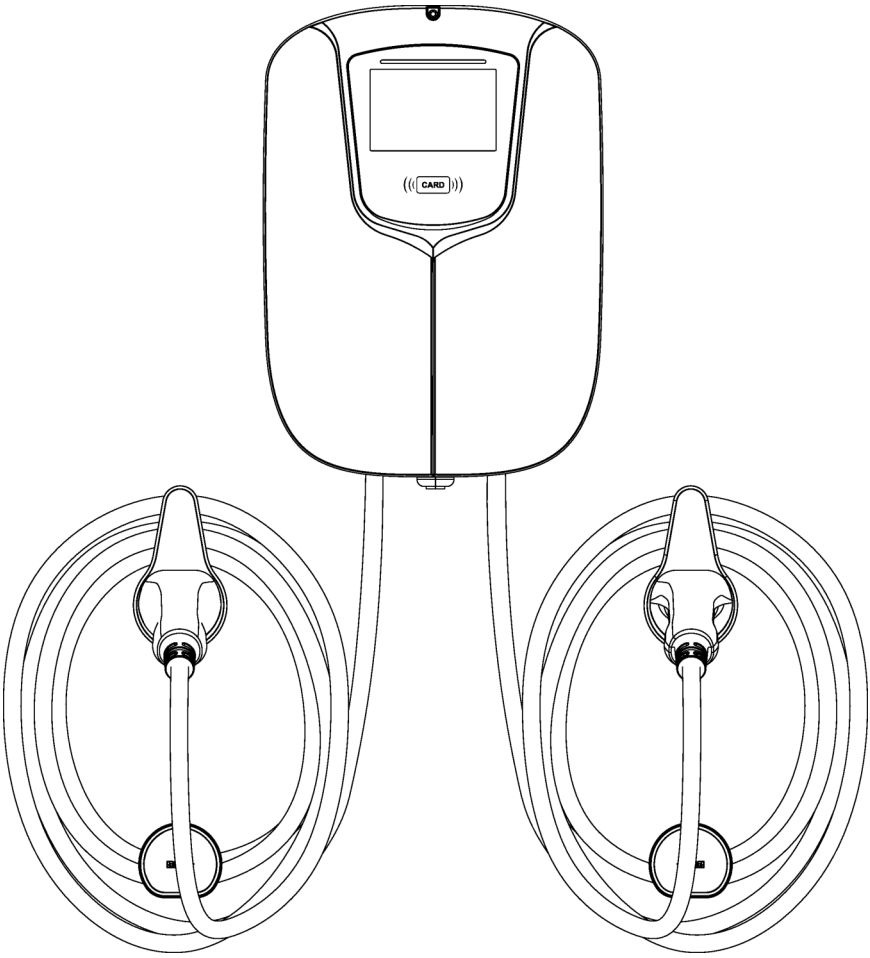
Features

- High performance 32-bit industrial-grade processor to improve the stability of the control system
- Class 1.0 high precision onboard metering module to ensure accurate and reliable charging data
- The non-contact card reader that supports the M1 card is used for quick charging. Support plug and charge/swipe card charging, convenient for users to use in non-operation scenarios; outdoor settings making the unit more stable and highly reliable.
- Support mobile phone scanning code charging, remote real-time monitoring of charging status and booking charging;
- The product has Ethernet /WIFI/4G and other communication methods to communicate with the background system in real time;
- The OCPP1.6J protocol supports TLS encrypted data transmission Supports remote upgrade and remote diagnosis, facilitating O&M personnel to locate and analyze devices
- With self-check function, fault information can be directly displayed on the OCPP platform

Applications

- Public and private parking areas
- Community parking areas
- Parking areas of hotels, supermarkets and shopping malls
- Workplace parking areas
- Charging stations
- Highway rest are

Basic User Interface



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1. Specification

1.1 Product Technical Specifications

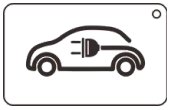
Model	ZECO14K-H1	ZECO22K-H2	ZECO44K-H3
Technical features			
Charging capacity	Up to 14KW	Up to 22KW	Up to 44KW
Input/ Output power	230VAC±20%-50/60Hz-32A-1phase	400VAC±20%-50/60Hz-16A-3phase	400VAC±20%-50/60Hz-32A-3phase
RCD	30Ma RCD Type A and DC 6Ma RCD function or Type B(optional)		
Standby power	< 3W		
Measuring accuracy	1%		
Energy Meter	On-board electric meter chip metering		
OCPP	OCPP1.6 Json(OCPP2.0 optional)		
Communication	WIFI/Ethernet/4G(Optional)		
User interface	LED/LCD(4.3") / RFID(mifare iso& IEC 14443A)		
Certificate	CE / EN/IEC 61851-1:2017, EN/IEC 61851-21-2:2018		
Charging Interface	Type 2 5M Cable		
Special Protection	Over current protection, Residual current protection, Ground protection, Surge protection, Over/Under voltage protection, Over/Under frequency protection, Over/Under temperature protection		
Physical properties			
Warranty	2 years		
Protection	Ip54, Ik08		
Enclosure	Plastic PC		
Front Panel	Temper glass		
Installation	Wall-mount/Pole-mount		
Cooling	Natural cooling		
Operating temperature	-30℃ to +55℃		
Humidity	Max.95%(non-regulating)		
Product Dimensions	402*290*135mm (L*W*H)mm		
Package Dimension	500*350*300 (L*W*H)mm		
Net Weight	8.2Kg	8.5Kg	9.2Kg
Gross Weight	9Kg	9. 5Kg	10Kg

1.2 External Structure

1.2 Package Contents

Unpack the product. Please check and verify following items after receiving the charger

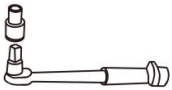
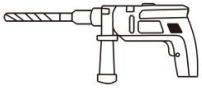
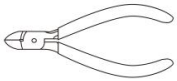
- Visual inspection on charger's external appearance. If there is any breakage or other damage, please notify the seller immediately
- Check type and quantity of all accessories as follows. If there is a shortage in the quantity of any item or if any items are missing, please contact the seller at once.

			
	User Manual (x1)	ϕ 6 Expansion Pipe (x6)	M4*40 Screw (x6)
			
DC Charger	RFID CARD (x2)	Key (x4)	SD card(x1)

2 Operation Instruction

3.1 Installation Preparation

1) Tools required

Tool Name	Photo	Function
Multimeter		Check electrical connection and electrical parameter
Cross Screwdriver (PH2x150mm, PH3x250mm)		Tighten the screws
Insulated Torque Wrench		Tighten the bolts
Electric drill		Hole on the wall
Diagonal Pliers		Cut cables

2) Cables & Materials

Name	Specification	Quantity
Power supply cable	Single-phase or three-phase power supply cable	Depend on actual requirement

2.1 Installation Preparation

1) Installation Notice

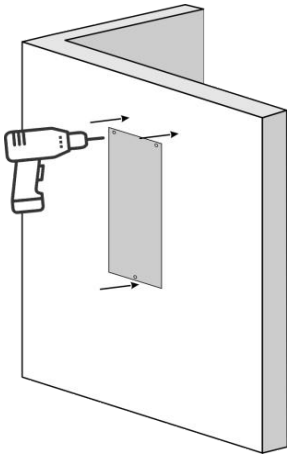
- Electrical devices should only be installed, operated, and maintained by qualified personnel. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this device. A qualified person is one who has certified skills and knowledge related to the construction, installation and operation of this type of electrical device and who has received safety training to recognize and avoid the hazards involved.
- All applicable local, regional, and national regulations must be applied when installing, repairing and maintaining this device.
- RCD of the charger is intergrated 6mA DC, please install a Type A breaker outside.

2) Checks before starting the Installation Process

- Ensure the charger's location allows good operational access for normal use and repair & maintenance.
- The AC input components within the premise's power supply are correctly fitted with required protection items prior to installation of the charger.

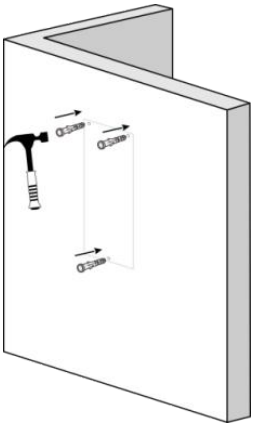
3) Installation Procedure

1. Please use a percussion drill to drill holes according to the cardboard positioning



7KW

2. Install expansion bolts(3*M6*60MM)

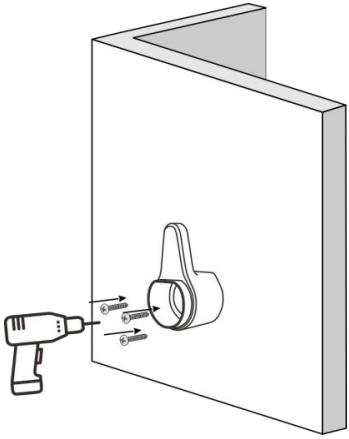


3. Open the cover with the key,fix the charging station with self=tapping screws(3*M5*50mm)

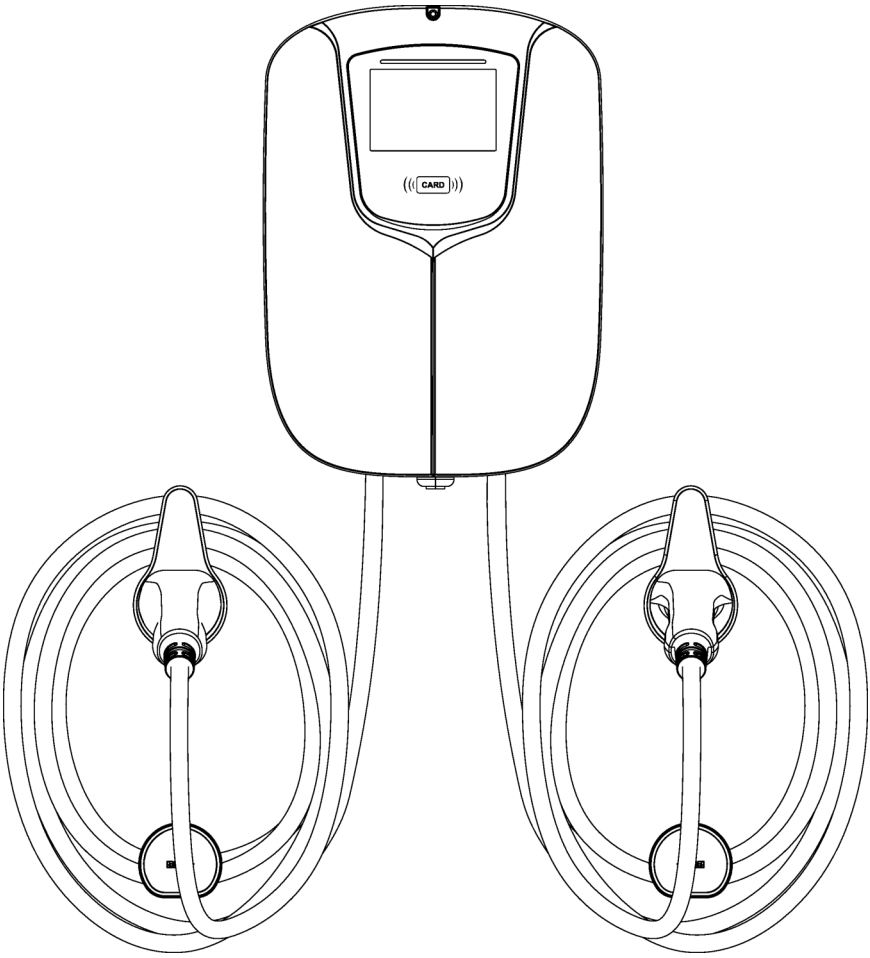
4. Use a cable with a size of 3*6mm²(7KW) to connect to the input terminal of the charging station, from left to right,R S T N and GND wire, and then tighten the screw with a screwdriver.

5. Use a cable with a size of 5*4mm²(11KW)or 5*6mm²(22KW) to connect to the input terminal of the charging station, from left to right,R S T N and GND wire, and then tighten the screw with a screwdriver.

6. Fix the hook on the wall with screws (3*M5*50mm)



7. Lock the cover and start to test and charge



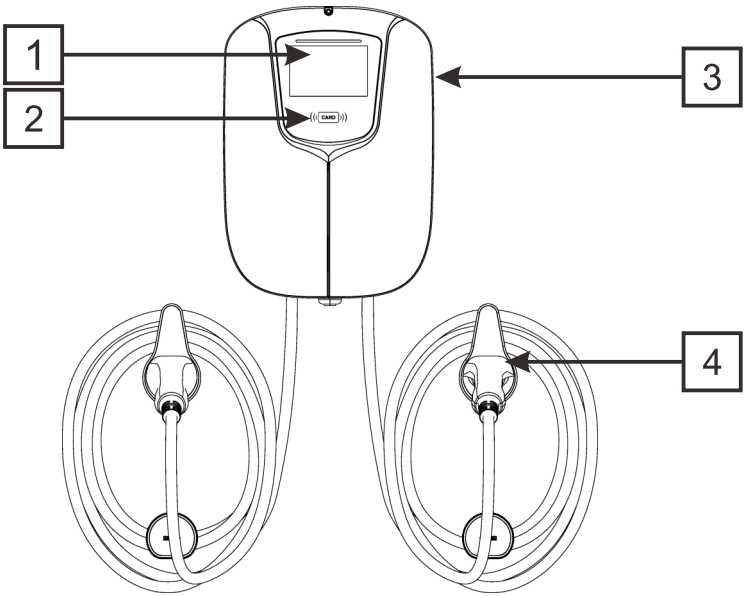
3 OPERATION

3.1 Power on

After the charging station has been installed and installation has been confirmed, the charging station switches to standby state, The display is shown in fig. 4-1.

Human-Machine Interface Overview

As shown in Fig. 4-1, the EMN series product is configured with multiple human- machine interfaces



1. LED
2. LCD screen
3. Emergency stop
4. RFID reader

Fig. 4-1 HMI ofAC EV Charging Station

3. 2 RGB LED indicators

Charger status	LED performance
Standby	yellow
plug in	Green
swipe/punch a card	Green
charging	Light green breath
Fault status	Red

3.2 LCD indicators

The charger config a 4.3 inch Touch LCD screen, which is mainly used to display various status information of the charging station, shown as Fig. 4-2.

- **Icons or instructions in each display area**

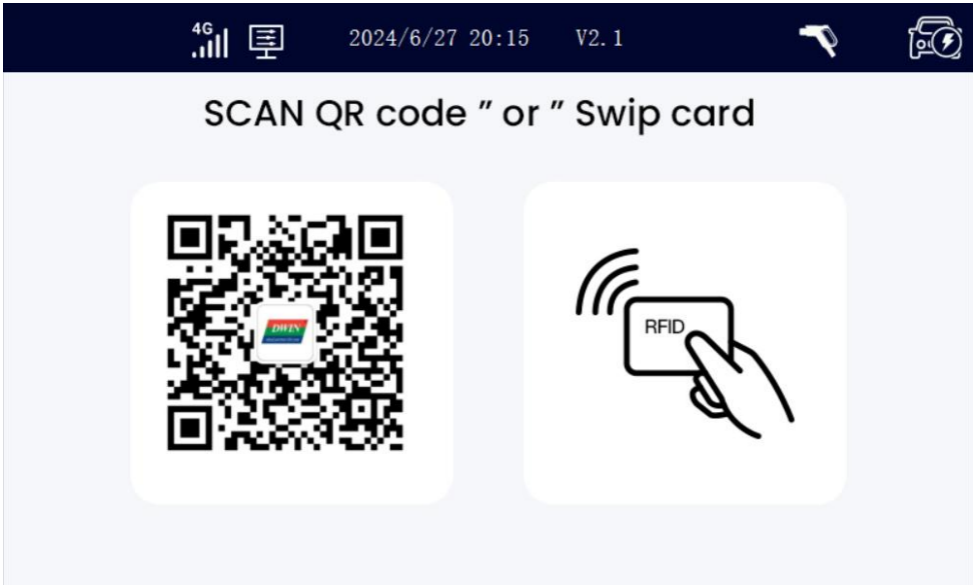


Fig. 3-2 Display of icons and instructions

In Fig. 3-2, there are three areas to display icons or instructions, with the specific meanings as follows:

No.	Icon	Description
Area①		
1		Connected a network through 4G cellular
2		Connected a network through WIFI
3		Connected a network through Ethernet
4	2024/6/27 20:21	Time show
5	V2.1	Software version
6		Plug in or out
Area②		
7	QR code Rfid	Serial number of ZECONEX Swipe Rfid

- **As shown in Fig. 4-3,4-4,4-5, the LCD screen displays 3 types picture in normal state.**

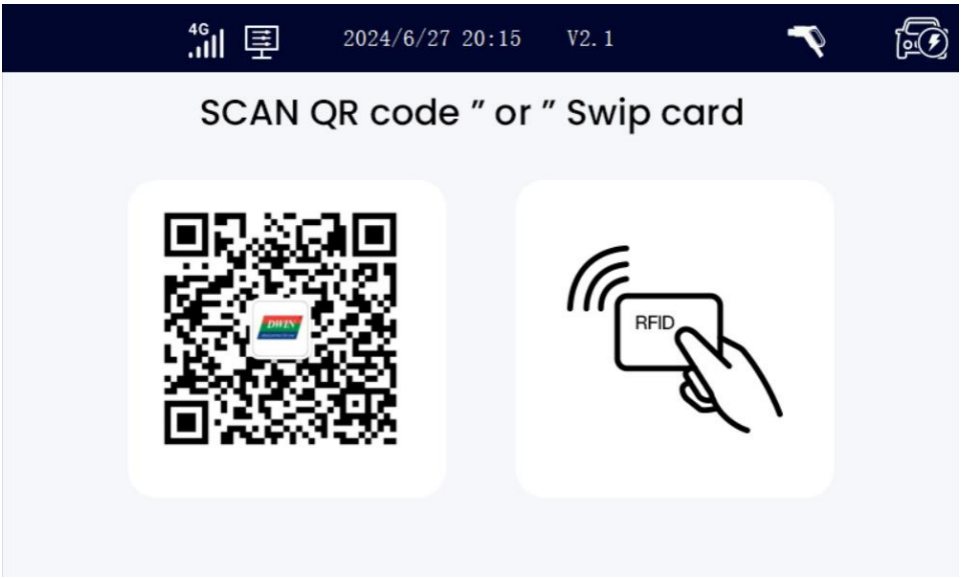


Fig. 3-3 Display of Available

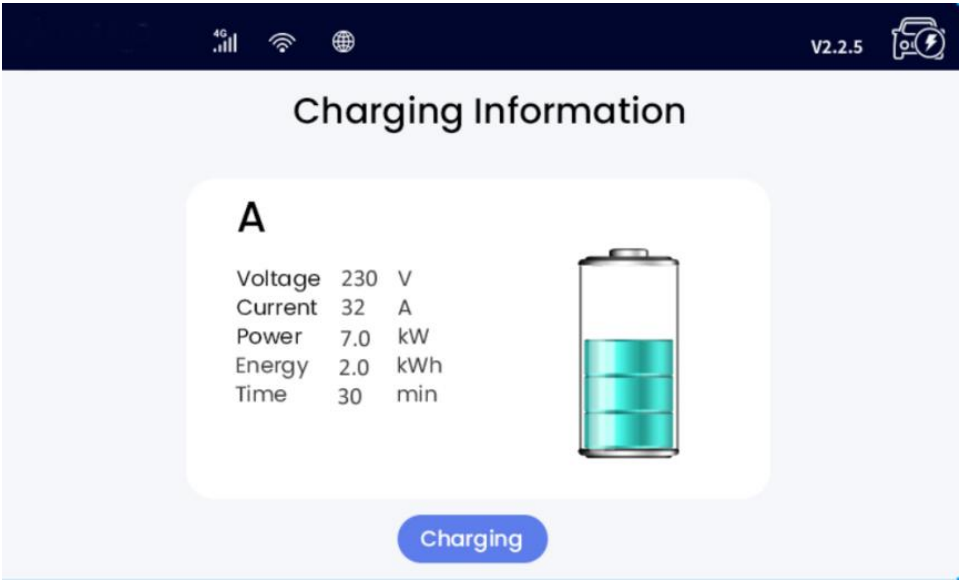


Fig. 3-4 Display of Charging

3.6 Configure parameters on the screen

3.6.1 Model and meter Settings

(1) Machine the type of the configuration machine can be set according to the actual accessories 7kw ,11kw ,22kw

(2) Measure meter Can be set

(3) Measure meter address Can be set

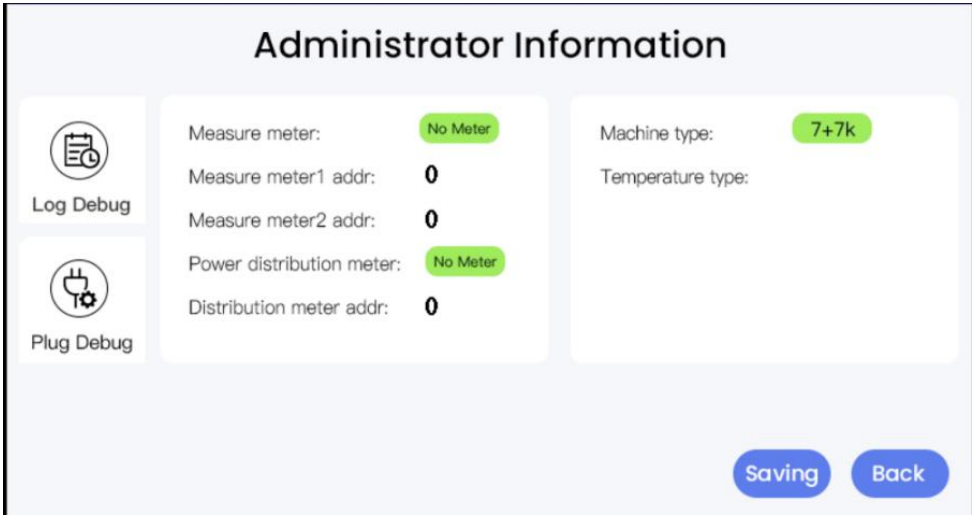


Fig. 3-7

3.4 RFID reader

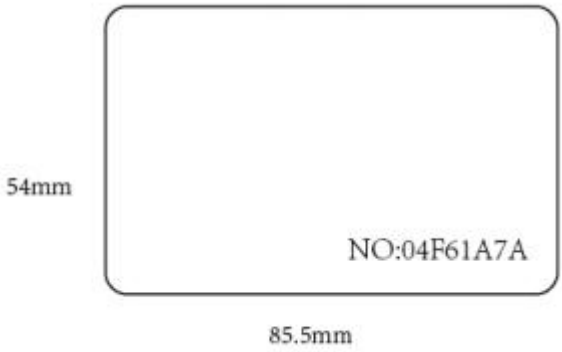


Fig.3-6 RFID card

In general, the charging station is equipped with RFID card reader as standard, and the charging process can be started and stopped by using the RFID card (shown as Fig. 3-6) configured with the host.The special customized card swiping function is not separately described here

3.5 Emergency stop button

The button can stop or start charging after the device is configured to allow the button to start, The user can configure whether the function is enabled. See the 4.6 Configure parameters for details AC EV charging station configure a type 2 charging connector. When the charging station is in standby state, please plug the charging connector into the empty socket in order to protect the charging connector.

3.. 6.1 Model and meter Settings

(1)Machine the type of the configuration machine can be set according to the actual accessories 7kw ,11kw ,22kw

(2) Measure meter Can be set

(3) Measure meter address Can be set

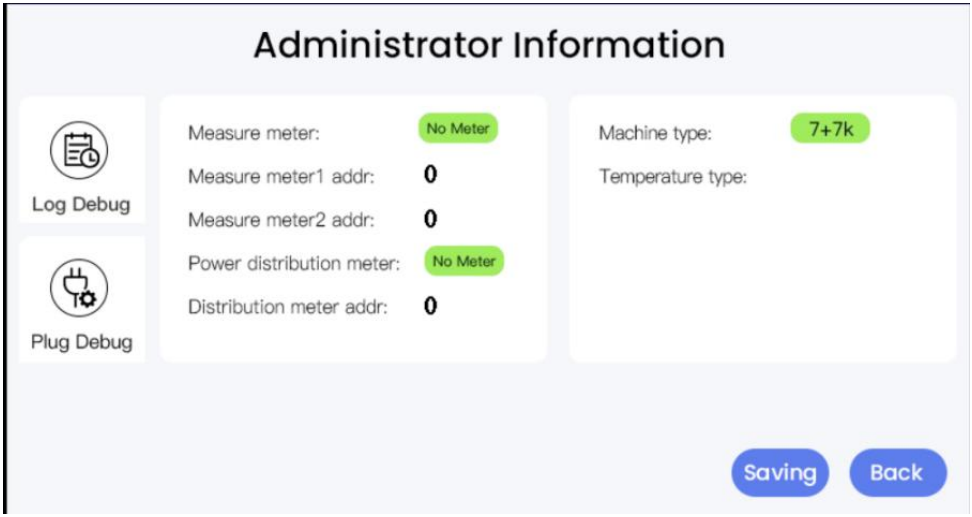


Fig. 3-7

3.6.2 Set network（4G,WIFI,LAN） parameters

(1) Set severURL1 as the platform address.

(2) Set ChargeID to the peg number on the System interface.

(3) WIFI connection: Install the WIFI module on the WIFI cable, then enter the WIFI account in WIFISSID, and enter the WIFI password in WIFIKEY.

(4) 4G connection: Install the 4G module and insert the SIM card, and install the antenna.

(5) LAN connection: Insert a network cable and set EnableDHCP to 1.

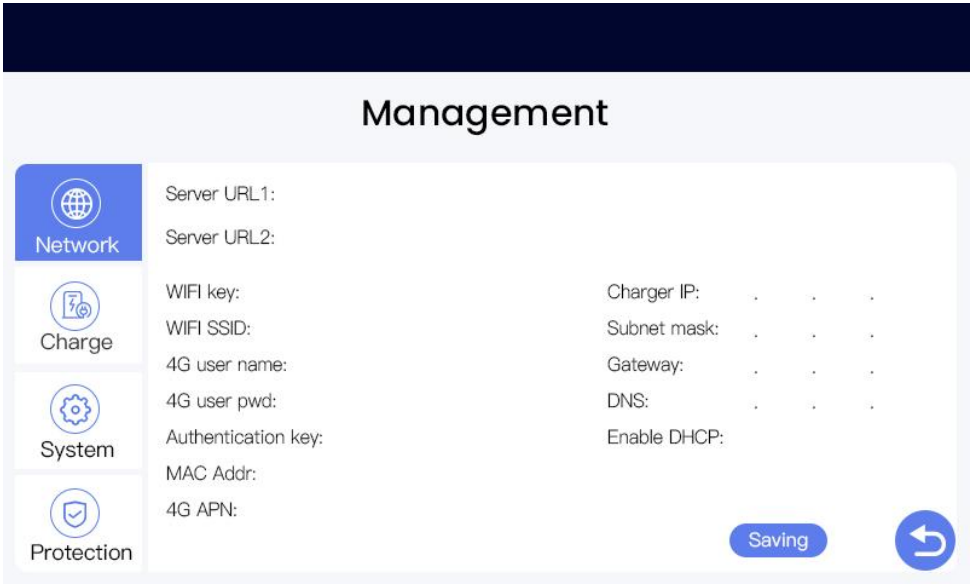


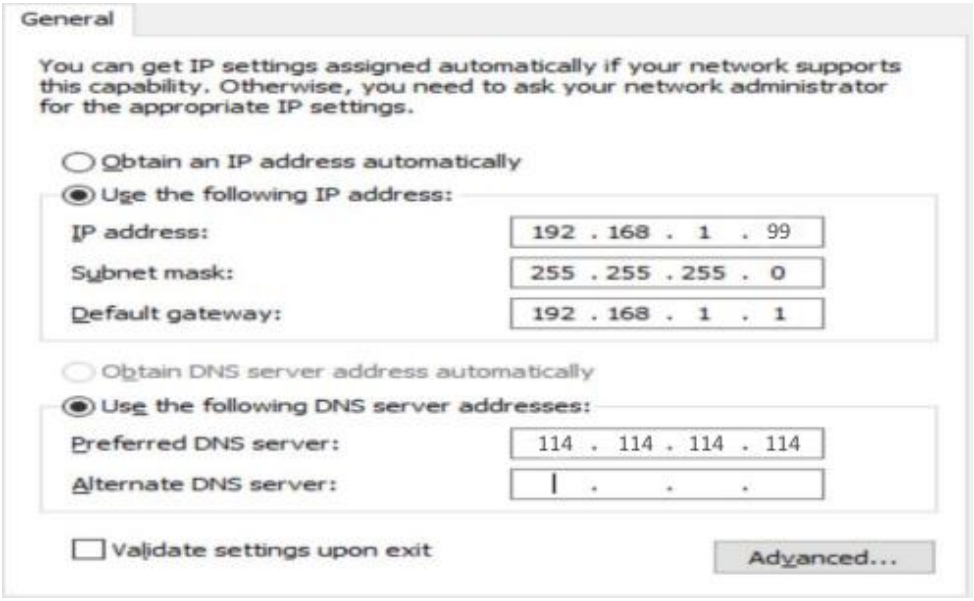
Fig. 3-8

3.6.2 Set parameters on the web page

4.7.1 Configure parameters(Direct network connection)

Taking the configuration of charging station parameters by laptop as an example, it is introduced as follows (the method of setting parameters by mobile phone is similar and will not be repeated):

- **Step 1: Connect to ZECONEX with RJ45 line.**
- **Step 2: Keep your laptop in a state where it LAN use static IP 192.168.1.99, default gateway 192.168.1.1, network mask 255.255.255.0. Connect to the ZECONEX with RJ45 line.**
- **Step 3: By this setting the ZECONEX use a static IP 192.168.1.99. Now you can use:http://192.168.1.99 to login to the manage web**



4.7.2 Configure parameters(wifi web)

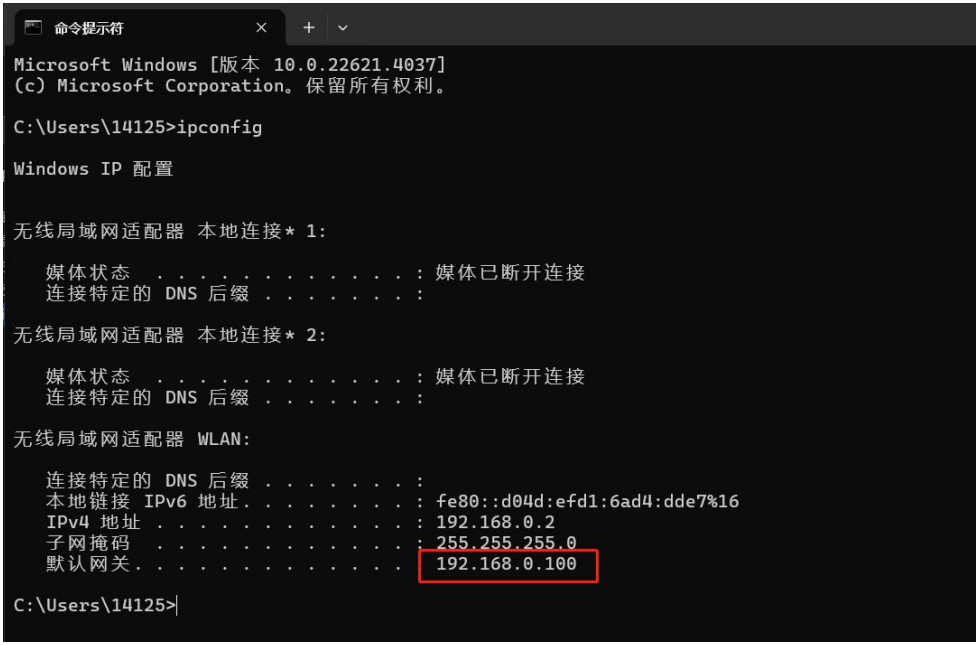
How to configure onboard WI-FI hotspots

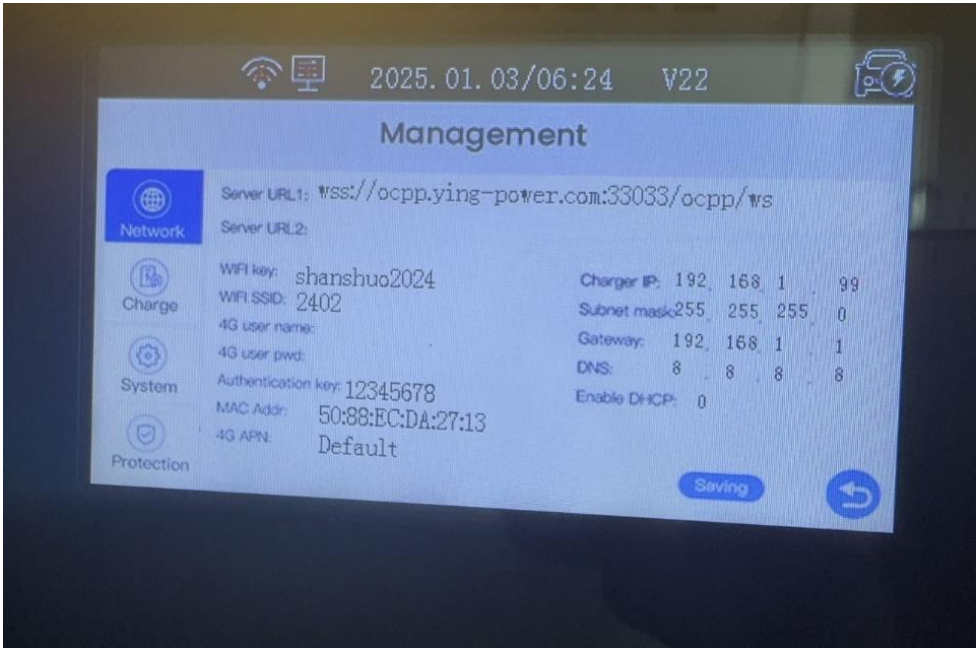
(1) It is required that after 8 seconds of continuous pressing the emergency stop button 5, the buzzer will ring 1, and it will enter the wifi configuration mode

(2) When the lamp turns yellow, it means that it has entered the wifi configuration mode

(3) Charging pile will generate a wifi hotspot, hotspot name: charging pile serial number, default password: 12345678 Use your phone or computer to connect to this hotspot, as shown in the picture

(4) After the connection is successful, open the browser and enter: 192.168.1.99:8080, this address is the default address, if the user has changed the IP address, please view the screen to modify or use the DOS command to view the address (valid when connecting to the hotspot), the input information becomes: 192.168.0.100:8080, as shown in the figure:


命令提示符
Microsoft Windows [版本 10.0.22621.4037]
(c) Microsoft Corporation。保留所有权利。
C:\Users\14125>ipconfig
Windows IP 配置
无线局域网适配器 本地连接* 1:
媒体状态 . . . . . : 媒体已断开连接
连接特定的 DNS 后缀 . . . . . :
无线局域网适配器 本地连接* 2:
媒体状态 . . . . . : 媒体已断开连接
连接特定的 DNS 后缀 . . . . . :
无线局域网适配器 WLAN:
连接特定的 DNS 后缀 . . . . . :
本地链接 IPv6 地址. . . . . : fe80::d04d:efd1:6ad4:dde7%16
IPv4 地址 . . . . . : 192.168.0.2
子网掩码 . . . . . : 255.255.255.0
默认网关. . . . . : 192.168.0.100
C:\Users\14125>


2025.01.03/06:24
V22
Management
Network
Server URL1: wss://ocpp.ying-power.com:33033/ocpp/ws
Server URL2:
Charge
WiFi key: shanshuo2024
WiFi SSID: 2402
4G user name:
4G user pwd:
System
Authentication key: 12345678
MAC Addr: 50:88:EC:DA:27:13
Protection
4G APN: Default
Charger IP: 192 168 1 99
Subnet mask: 255 255 255 0
Gateway: 192 168 1 1
DNS: 8 8 8 8
Enable DHCP: 0
Saving

Enter the charger IP address in the image above in the viewer, followed by :8080

- **4.7.3: Login to the web interface**

The account is admin and password is 123456789

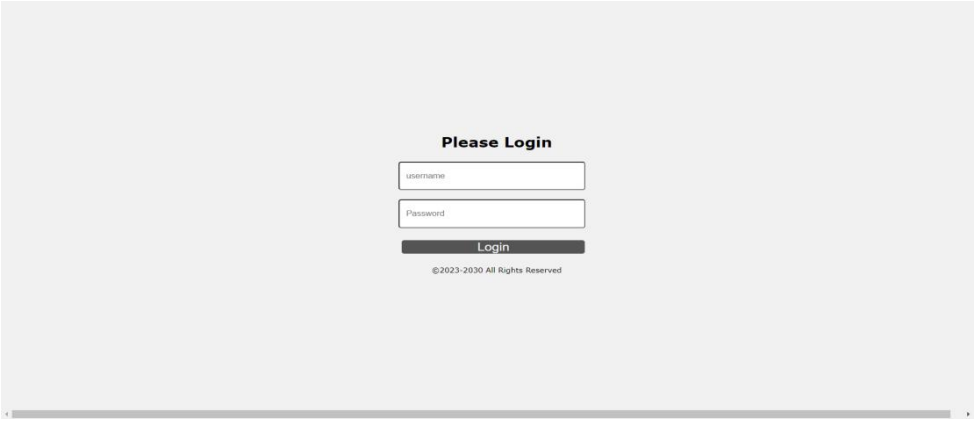


Fig. 4-11

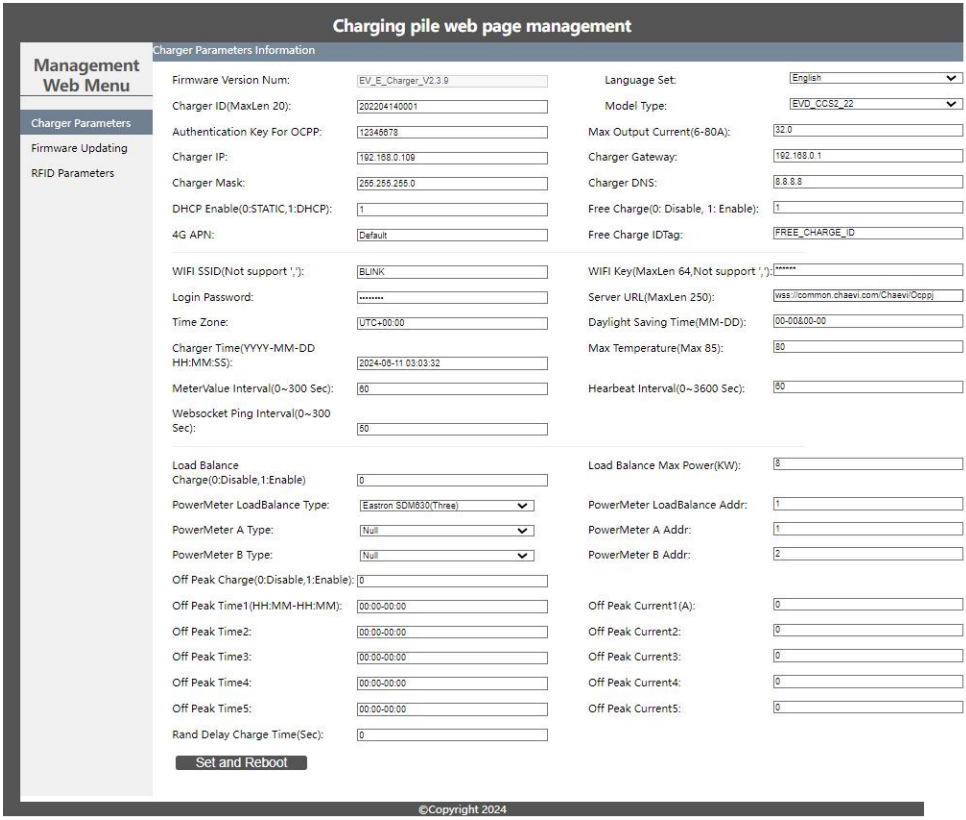

Charging pile web page management
Management Web Menu
Charger Parameters
Firmware Updating
RFID Parameters
Charger Parameters Information
Firmware Version Num:
EV_E_Charger_V2.3.9
Language Set:
English
Charger ID(MaxLen 20):
202204140001
Model Type:
EVD_CCS2_22
Authentication Key For OCPP:
12345678
Max Output Current(6-80A):
32.0
Charger IP:
192.168.0.109
Charger Gateway:
192.168.0.1
Charger Mask:
255.255.255.0
Charger DNS:
8.8.8.8
DHCP Enable(0:STATIC,1:DHCP):
1
Free Charge(0: Disable, 1: Enable):
1
4G APN:
Default
Free Charge IDTag:
FREE_CHARGE_ID
WIFI SSID(Not support ','):
BLINK
WIFI Key(MaxLen 64,Not support ','):
Login Password:
Server URL(MaxLen 250):
wss://common.chaevi.com/Chaevi/Ocpp
Time Zone:
UTC+00:00
Daylight Saving Time(MM-DD):
00-00&00-00
Charger Time(YYYY-MM-DD HH:MM:SS):
2024-06-11 03:03:32
Max Temperature(Max 85):
80
MeterValue Interval(0~300 Sec):
60
Hearbeat Interval(0~3600 Sec):
60
Websocket Ping Interval(0~300 Sec):
50
Load Balance Charge(0:Disable,1:Enable)
0
Load Balance Max Power(KW):
8
PowerMeter LoadBalance Type:
Eastron SDM630(Three)
PowerMeter LoadBalance Addr:
1
PowerMeter A Type:
Null
PowerMeter A Addr:
1
PowerMeter B Type:
Null
PowerMeter B Addr:
2
Off Peak Charge(0:Disable,1:Enable):
0
Off Peak Time1(HH:MM-HH:MM):
00:00-00:00
Off Peak Current1(A):
0
Off Peak Time2:
00:00-00:00
Off Peak Current2:
0
Off Peak Time3:
00:00-00:00
Off Peak Current3:
0
Off Peak Time4:
00:00-00:00
Off Peak Current4:
0
Off Peak Time5:
00:00-00:00
Off Peak Current5:
0
Rand Delay Charge Time(Sec):
0
Set and Reboot
©Copyright 2024

Fig. 4-12

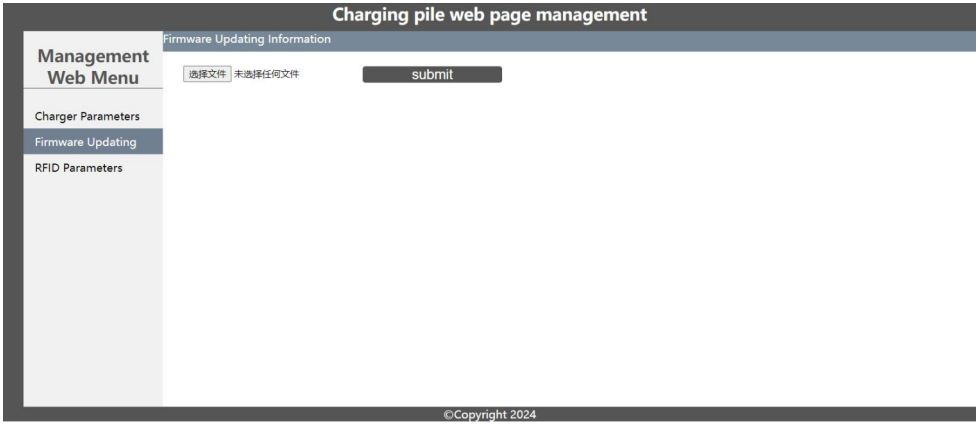


Fig. 4-13

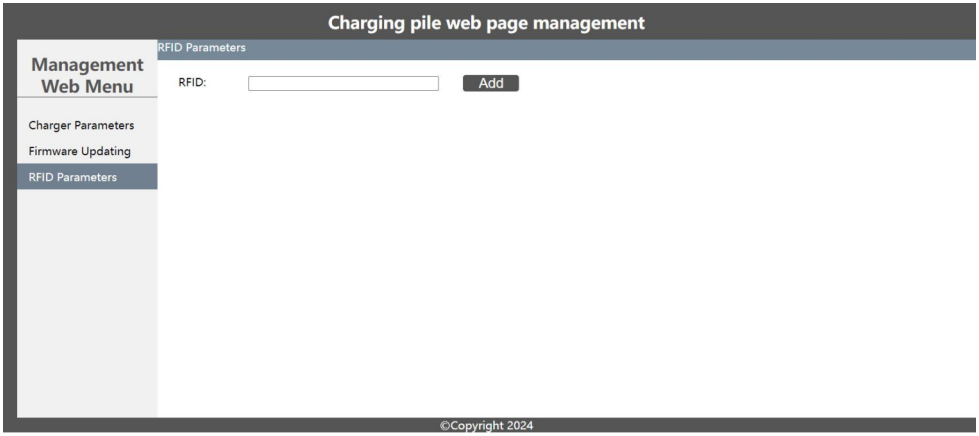


Fig. 4-14

(1) Select Wi-Fi Module Select Wi-Fi modes and fill in SSID and Password according to your application, if not required, just keep default.

(2) Version number, charging station number Server address can be changed&set;

(3) Set the number and type of charging stations, Module type and number. temperature. Meter etc can be changed also;

(4) Firmware Updating: Select an upgrade file to perform the upgrade

(5) RFID Parameters

Select the RFID file to import the binding card function

4.8 Start Charging

Note: The vehicle to be charged must be parked, switched off and the parking brake engaged.

a) Park your EV into place, turn off, and put the EV under braking.

b) For tethered (cable) version: Remove the Type 2 cable from the plug holder of the ZECONEX on the right side by pushing the button on the holder. For untethered (socket) version: Plug in the Type 2 plug of the charging cable into the ZECONEX socket on the right side.

c) As shown in Fig. 6-13, plug the charging connector into the AC charging socket of the EV, and the LED of the charging station lights yellow.

d) For the mode of "Plug and play" charging station, the charging process will start automatically after plug in

Fig. 6-13 Plug into EV

e) For the mode of “swipe card” or “scan QR code” charging station, follow the instructions on the LCD screen after charging connector plug in, you can start charging process by swipe RFID card or scan QR code.

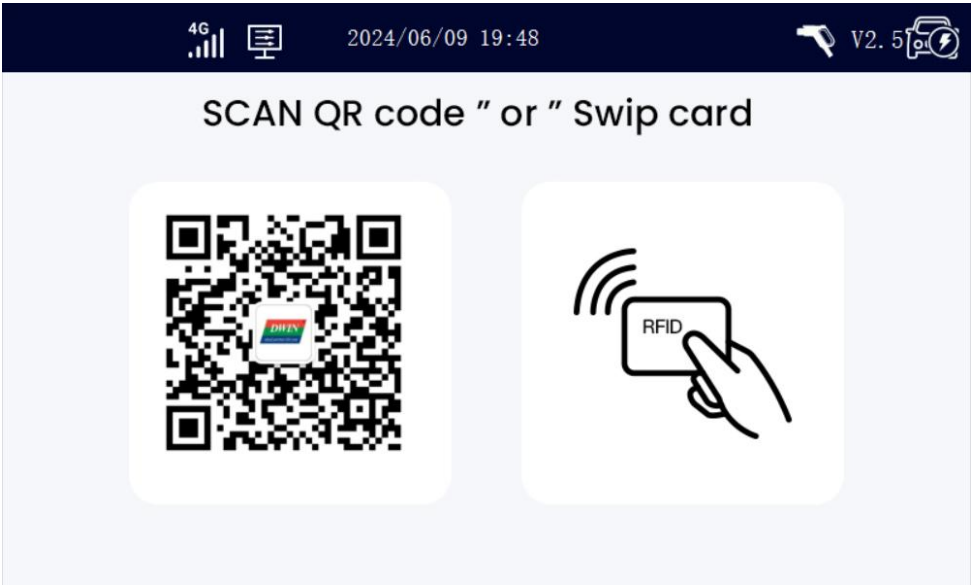


Fig. 4-9 Display of LCD screen after plug in

4.10 Normally stop charging

a) The charging station will automatically stop when the electric vehicle is fully charged.

b) For the mode of “plug-and-charge” charging station, you can manually stop charging as follow: press the unlock button of the remote key of the EV, the vehicle will stop charging (requires the support of the EV); if the charging does not stop, you may try to unplug the charging connector directly. When “Charging” indicator turns off, the charging process is end. For the mode of “swipe card” charging station, swipe your RFID card again when “Charging” indicator turns off, the charging process is end.

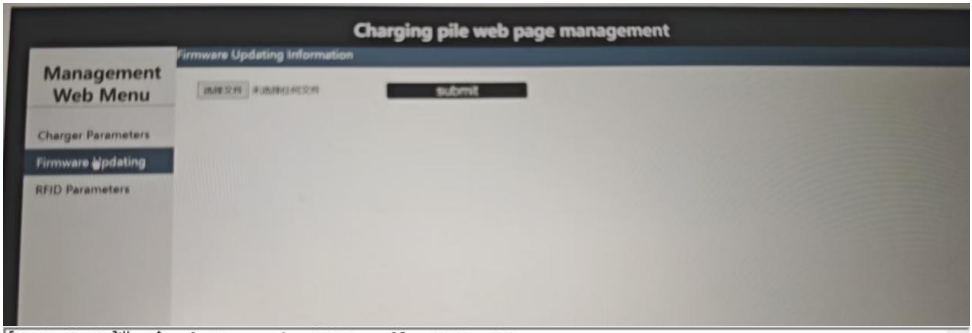
c) For the mode of “Scan QR code” charging station, click the stop button on your APP, the charging will stop

d) When the charging is end, please unplug the charging connector and plug back to the empty socket of charging station.

5 Firmware update

5.1 Web update

Select the rbl file that you want to upgrade and click submit




```
[10:37:50.862]收←◆pack:33,recv_size:50535, packlen:1460   12%
[10:37:50.973]收←◆pack:34,recv_size:51995, packlen:1460   12%
[10:37:51.183]收←◆pack:35,recv_size:53455, packlen:1460   13%
[10:37:51.214]收←◆Gun A, head over temperature
[10:37:51.277]收←◆pack:36,recv_size:54915, packlen:1460   13%
[10:37:51.390]收←◆pack:37,recv_size:56375, packlen:1460   13%
[10:37:51.598]收←◆pack:38,recv_size:57835, packlen:1460   14%
[10:37:51.723]收←◆pack:39,recv_size:59295, packlen:1460   14%
Gun A, head over temperature
[10:37:51.819]收←◆pack:40,recv_size:60755, packlen:1460   14%
[10:37:52.027]收←◆pack:41,recv_size:62215, packlen:1460   15%
[10:37:52.139]收←◆pack:42,recv_size:63675, packlen:1460   15%
[10:37:52.218]收←◆Gun A, head over temperature
[10:37:52.346]收←◆pack:43,recv_size:65723, packlen:2048   16%
[10:37:52.443]收←◆pack:44,recv_size:67183, packlen:1460   16%
[10:37:52.554]收←◆pack:45,recv_size:68643, packlen:1460   16%
[10:37:52.714]收←◆Gun A, head over temperature
[10:37:52.762]收←◆pack:46,recv_size:70103, packlen:1460   17%
[10:37:52.874]收←◆pack:47,recv_size:71563, packlen:1460   17%
[10:37:52.970]收←◆pack:48,recv_size:73023, packlen:1460   17%
```

Upgrade process

Upgrade successfully

You can see that the version number has changed

5.2 SD Card update

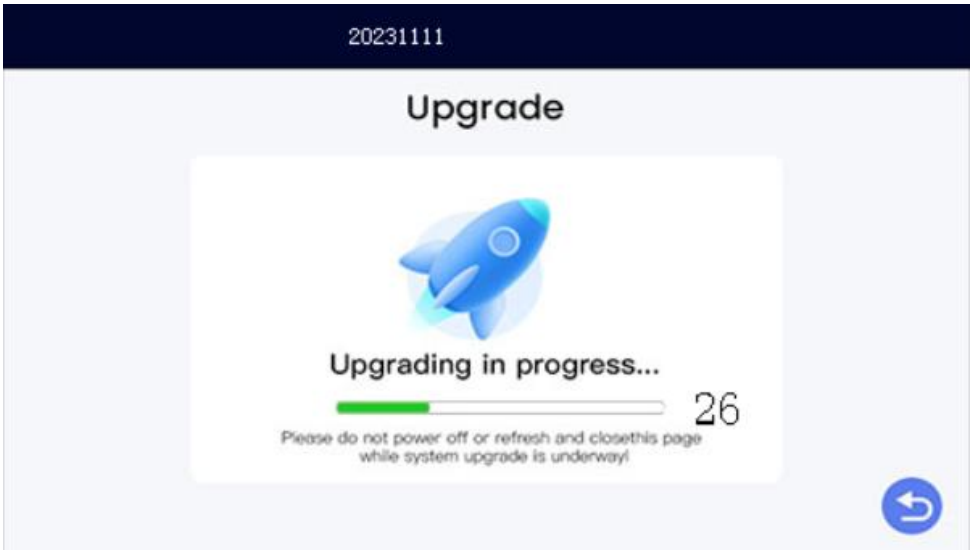
ac_firmare.rbl	2024/10/28 18:49	RBL 文件	527 KB

SD card less than 8G, and formatted as Fat32 system

(1) Insert ac_firmare.rbl into the SD card and insert it into the mainboard

(2) When the device is powered off and restarted, the motherboard will automatically update. During the update process, the buzzer will keep ringing and the running light will blink quickly. After the update, check the version number to determine

5.3 Remote update（OTA）



The upgrade file is uploaded to the server, and the server sends the upgrade command

6 Maintenance and troubleshooting

6.1 troubleshooting

The charging station is automatically protected in the event of the fault. The fault information and handling methods are as follows.

Fault information	LCD Show	Handling method
LCD is off	• None	• Check whether the power supply and distribution are normal; • Check whether the branch breaker is tripped, and close the breaker after troubleshooting; • Check whether the connection is correct, if the cable comes off, should be properly connected to tighten the cable.
CP failure	• EV Communication Error	• Check that the adapter is properly connected to the electric vehicle, pull and plug the adapter and try charging again
Emergency stop	• E-stop	• Check if ZECONEX is working properly and release emergency stop button by turning it around.
Fault information	**LCD Show**	**Handling method**
Under voltage fault	• Under Voltage	• Check that the input cable is reliably connected, that the parent grid is properly connected, and that the grid voltage is abnormal.
Over voltage fault	• Over Voltage	• Check whether the input cable is connected correctly; Whether the grid voltage is abnormal.
Over temperature fault	• High Temperature	• Check whether the charging station is covered or installed in a high temperature environment.
Meter failure	• Power Meter Failure	• Power off and restart the device
Leakage fault	• Over DC 6MA	• Check whether the charging adapter and its cable are damaged or wet. Recover after pulling out the adapter

Fault information	LCD Show	Handling method
Over current fault	• Over Current Failure	• Check whether the charging adapter is correctly connected to the car, and check whether the on-board charger is normal
Over voltage fault	• Over Voltage	• Check whether the input cable is connected correctly; Whether the grid voltage is abnormal.
Over temperature fault	• High Temperature	• Check whether the charging station is covered or installed in a high temperature environment.
Meter failure	• Power Meter Failure	• Power off and restart the device
Leakage fault	• Over DC 6MA	• Check whether the charging adapter and its cable are damaged or wet. Recover after pulling out the adapter
Over current fault	• Over Current Failure	• Check whether the charging adapter is correctly connected to the car, and check whether the on-board charger is normal
No diode at vehicle end Relay sticking fault	• EV Communication Error • Power Switch Failure	• This car is not up to standard and cannot be recharged • The device is damaged and needs to be returned to the factory for repair
Ground fault	• Ground Failure	• The charging pile is not grounded, so the circuit needs to be tested

6.2 Maintenance

To ensure the long-term stable operation of the equipment, please maintain the equipment regularly (usually every month) according to the operating environment.

a) The equipment is maintained by professionals.

b) Check whether the equipment is well grounded and safe.

c) Check whether there are potential safety hazards around the charging station, such as whether there are high temperature, corrosion or inflammable and explosive articles close to the charging station.

d) Check whether the join point of the input terminal is in good contact and whether there is any abnormality. Check whether other terminal points are loose.

Warranty

ZECONEX warrants that EV charging stations supplied to customer pursuant to this Agreement/ Contract shall be of merchantable quality and shall meet all applicable safety standards and free from any defect of design, material and workmanship within the warranty period.

The warranty period is Twenty-four (24) months since from the delivery date. ZECONEX warranty does not cover damages resulting from inappropriate storage, incorrect installation, improper operation or bad environment beyond environmental requirement.

Customer gives notice in writing within a period of ten (10) days after customer has discovered that some or all EV chargers do not comply with the warranty as set out in this warranty. Customer shall provide necessary assistance to ZECONEX for failure detection. ZECONEX gives response within a reasonable time of 48 hours. ZECONEX shall analyze the fault reason and provide technical instruction for customer to repair EV charging stations.

Customer repairs EV chargers and applies for free spare parts from ZECONEX in case replacements are required. A written claim report about fault description, serial number of EV chargers, photos of EV charging stations and applied spare parts must be sent to ZECONEX for verification. ZECONEX shall not accept the claim if modifications or reworking have been performed to EV chargers without ZECONEX consent. Spare parts are offered for free within the warranty period. Beyond warranty period, spare parts are offered at customer’ s cost.

Faulted parts replaced by customer shall be well stored and packaged with markings of fault description for further disposal by ZECONEX. The faulted parts after repair and test can be treated as spare part to customer.

Local services are not provided free of charge unless agreed with both parties prior to the provision of local services.

Except as set forth herein, ZECONEX provides no other warranty, whether express or implied. The warranty applies only to EV charging stations which are supplied by ZECONEX and are used out of Mainland China.

Safety and Warnin

Save these instructions. Read all instruction before installing or using the charger.

1. Keep the charger away from explosive or flammable materials, chemicals, vapors and other hazard objects.
2. Keep the charger socket clean and dry. If it gets dirty, please wipe it with clean dry cloth.
3. Touching the socket core is strictly forbidden when power on.
4. Do not use the charger in case of any device defects, crack, abrasion, bare leakage and so on. Please contact the professional personnel if any of these conditions occurs.
5. Do not attempt to dissemble, repair, refit the charger. If necessary, please contact the professional personnel. Improper operation will result in device damage, electric leakage, etc.
6. In case any abnormal condition happens, please cutoff all input and output power supplies immediately.
7. Please protect charging carefully from rain and lightening.
8. Keep children away from the charger.
9. During charging, do not drive the EV Charge only when the EV is stationary,for hybrid cars, charge only when the engine is switched off.
10. Our packaging materials are environmentally friendly and can be recycled. Please put the packaging in applicable containers to recycle it. Do not dispose of this device with the household waste. It should be taken to a suitable facility for recycling of electrical and electronic devices. For more detailed information about recycling of this device, please contact your local city/town council office or your household waste disposal service.

Warning

The input and output voltages of this device are high voltage, which threaten human life safety. Please strictly observe all warnings on the device and user manual. Unauthorized and non-professional service personnel are forbidden to remove the cover of this device.