Electric Vehicle AC Charging Station

7kW 11kW 22kW

Instruction Manual

Please read this manual carefully before using the product, thank you for using the charging station of this series!

Contents

Chapter 1 Product Overview 3
Chapter 2 Scope of Application 3
Chapter 3 Working Environments 3
Chapter 4 Features 3
Chapter 5 Product Parameters 4
Chapter 6 Installation Method and Drawing of Equipment 5
6.1 Dimensions of the Equipment 5
6.2 Installation of Equipment 6
6.2.1 Packing List 6
6.2.2 Installation Environment Requirements 6
6.2.3 Installation Method 7
6.3 Cable Access 9
Chapter 7 Operation Instructions 9
7.1 Indicator Status Description 9
7.2 Dynamic Load Management (DLB) 10
7.3 Operating Instructions 11
Chapter 8 Storage and Transportation 13
8.1 Storage and Transportation of Equipment 13
Chapter 9 Common Faults Of Charging Station And Solutions 13
10.1 Maintenance 14
Chapter 11 Warranty Card 15

Chapter 1 Product Overview

The arrival of the large-scale industrialization of electric vehicle charging stations has opened a new era in the era of new energy and energy saving. To adapt to the development and demand of the country's new energy electric vehicle charging stations, our company took the lead in developing a series of new products supporting electric vehicle charging stations. This AC charging station is based on the relevant requirements of IEC 61851-1: 2017 " Electric vehicle conductive charging system - Part 1: General requirements" and ICE 62196-2: 2016 " Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 2: Dimensional compatibility and interchangeability requirements for a. c. pin and contact-tube accessories", and refer to "Electric Vehicle Charging Facilities Part of the function of "Typical Design" is designed. Design according to the functions of: 2014/35/EL (The Low Voltage Directive), EN 17186:2019, EN IEC 62196-1:2022, EN IEC 62196-2:2022, EN IEC 61851-1:2019 EN IEC 61851-21-2:2021, EN IEC 61000-6-1:2019, EN IEC 61000-6-3:2021, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A1:2019+A2:2021, EN ISO 15118-1...-5.

Chapter 2 Scope of Application

The AC charging Station provides AC 50/60HZ and rated voltage 220V AC power supply for charging electric vehicles with on-board chargers. It is mainly suitable for the following places：

- Charging stations for large, medium and small electric vehicles;
- Various public places with parking spaces for electric vehicles, such as urban residential quarters, shopping plazas, power business places, etc.;
- Transportation hub areas such as high-speed service areas, stations and wharfs;
- Needs for real estate and project construction acceptance.

Chapter 3 Working Environments

- Ambient air temperature during operation: -35℃～+55℃, 24h daily average temperature: ≤35℃; (excessively high or low temperature will affect the life of the product);
- Average relative humidity: ≤90% (25℃), no condensation on the surface;
- Air pressure: 80kpa～110kpa;
- Installation vertical inclination: ≤5%;
- The experimental level of vibration and shock in the use place is less than or equal to I;
- The induction intensity of the external magnetic field in any direction is less than or equal to 1.55mT;
- Housing material: UV resistant thermoplastic, flame retardant grade UL94 V-0;
- There should be no explosive dangerous medium in the use place, and the surrounding medium does not contain harmful gases and conductive media that corrode metals and destroy insulation, and it is not allowed to be filled with water vapor and more serious mold bacteria;
- The place of use should be protected from direct sunlight. When installing outdoors, it is recommended to add shading facilities to the charging Station to extend the service life of the equipment;
- When users have special requirements, they can be resolved through consultation with our company.

Chapter 4 Features

- Provide two installation methods: wall-mounted and floor-standed;
- Adopt AC220V AC input;
- The main control board adopts a single-chip microcomputer with an embedded operating system. The charging mode is automatic charging, can select charging time, charging amount, and charging

energy; RS-485 networking communication interface can be reserved, and optional GPRS, 4G and other networking methods are provided;

- Using a 5-inch display, the charging mode can be set (the display is only available in the operation version);
- Use an electric energy meter for electricity measurement and communicate with the main control board through the RS-485 interface;
- Using non-contact WeChat scan code, reading QR code related information, communicating with the main control board through the RS-485 interface, and the main control board background program for charging person identification, user information recording, charging fee calculation, etc.; The line switch adopts the switch with the function of flood protection, and is equipped with an emergency stop button (the scanning function is only provided for the scanning version and the operating version);
- The shape adopts plastic structure.

Chapter 5 Product Parameters

Charging Station Parameter Table

Product Name		**AC Charging Station (Metal Type)**		
Model		AF-AC-007-B-A-O-1/2/3/4/5-RZ-P	AF-AC-011-B-A-O-1/2/3/4/5-RZ-P	AF-AC-022-B-A-O-1/2/3/4/5-RZ-P
Specifications	Rated Power	7kW	11kW	22kW
Charging Device	Installation Method	Wall mounted, Floor-Standed		
	Route	Bottom in and bottom out		
	Equipment Size	400*280*120 (mm)		
	Gross Weight	11 kgs		
	Cable Length	5m		
Electrical Indicators	Input Voltage	AC220V±20%		
	Input Frequency	50/60Hz		
	Output Voltage	AC220V±20%		
	Output Current	Type2: 32 A/1P	Type2: 16 A/3P	Type2: 32 A/3P
	Current Limit Protection Value	≥110%		
	Metering Accuracy	1.0 Level		
	RCD	Type A 30mA + 6mA DC		
	DLB	Support		
Functional Design	HMI	5-inch LCD screen + LED indicator bar		
	Authentication Methods And Payment Methods	Free Charge, RFID, Plug&Charge (ISO 15188) and Auto Charge (DIN 70121), APP, NFC	Free Charge, RFID, Plug&Charge (ISO 15188) and Auto Charge (DIN 70121), APP, NFC	Free Charge, RFID, Plug&Charge (ISO 15188) and Auto Charge (DIN 70121), APP, NFC
	Charging Method	NFC (Swipe to charge), scan QR code to charge, App (optional)	NFC (Swipe to charge), scan QR code to charge, App (optional)	NFC (Swipe to charge), scan QR code to charge, App (optional)

	Network Interface	Ethernet, 4G, Wi-Fi (option), Bluetooth	Ethernet, 4G, Wi-Fi (option), Bluetooth	Ethernet, 4G, Wi-Fi (option), Bluetooth
Protocol	EVSE to EV	Control point, ISO 15188, DIN 70121		
	EVSE to Backend	OCPP1.6J	OCPP1.6J	OCPP1.6J
Safety Design	Security Function	Charge gun temperature detection, over-voltage protection, under-voltage protection, overload protection, short circuit protection, grounding protection, over temperature protection, low temperature protection, lightning protection, emergency stop protection, leakage protection		
	Executive Standard	2014/35/EL (The Low Voltage Directive), EN 17186:2019, EN IEC 62196-1:2022, EN IEC 62196-2:2022, EN IEC 61851-1:2019 EN IEC 61851-21-2:2021, EN IEC 61000-6-1:2019, EN IEC 61000-6-3:2021, EN IEC 61000-3-2:2019+A1:2021, EN 61000-3-3:2013+A1:2019+A2:2021, EN ISO 15118-1...-5		
Environmental Indicators	Operating Temperature	-35℃~+55℃		
	Working Humidity	5%～95% non-condensing frost		
	Working Altitude	<2000m		
	Protection Level	IP54		
	Cooling Method	Natural air cooling		
	Noise Control	≤40dB		
	MTBF	17520 Hours		

Chapter 6 Installation Method and Drawing of Equipment

6.1 Dimensions of the Equipment

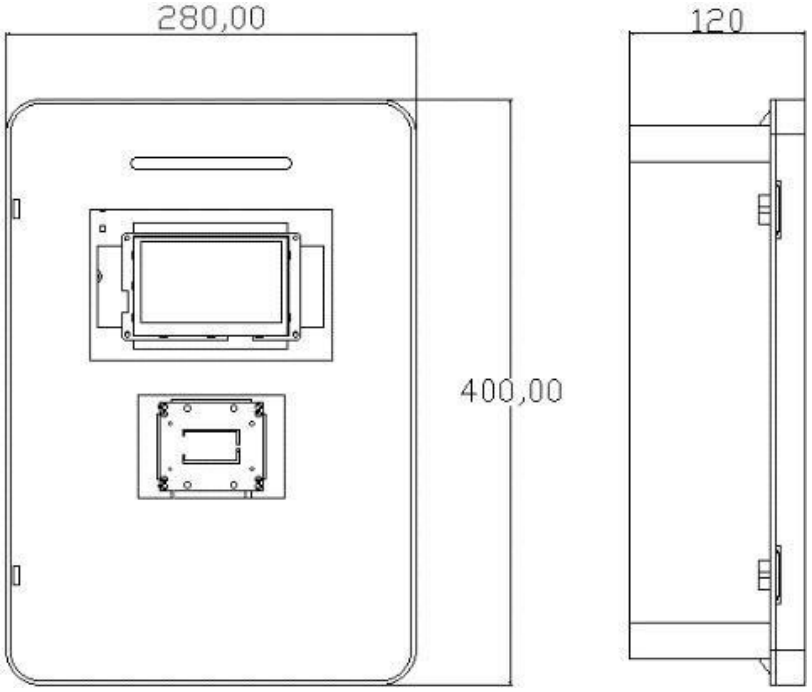


Figure 6-1-1 Dimensions of Wall-Mounting Equipment

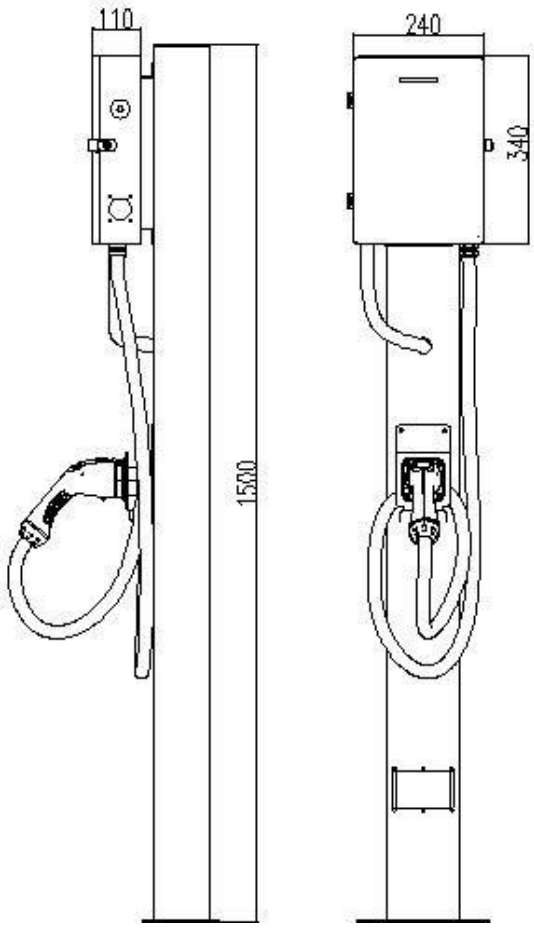


Figure 6-1-2 Dimensions of Floor-Standed Equipment

6.2 Installation of Equipment

6.2.1 Packing List

Check the packing box for the following items before installation (subject to the packing list)

1. Wall mounted AC charging Station (1 set)
2. Installation manual (1 set)
3. Certificate of quality (1 piece)
4. Install expansion screws (1 Bag)
5. Install panel and AC gun stock (each 1 piece)
6. Key (2 piece)

6.2.2 Installation Environment Requirements

1. Product meet the IP54 protection level.
2. Please ensure that the ambient temperature is between -35°C ~ +55°C

6.2.3 Installation Method

1. This series of AC charging stations can be wall-mounted according to requirements.

1.1. Wall-mounted installation method;

1.1.1. Wall mounting bracket

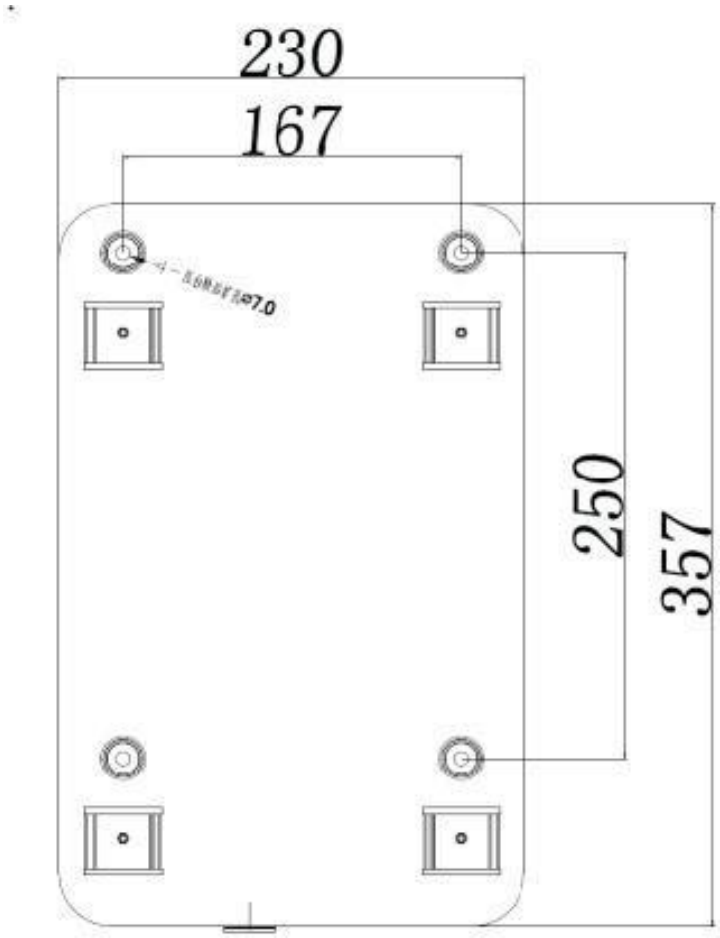


Figure 6-2-1 Wall hanging diagram

1.2. Floor-standed installation method

Use aφ12.0 impact drill bit to drill four 80-90mm deep holes in the ground according to the size of the mounting holes at the bottom of the column. Position the bottom of the column and the hole positions, and fix them with M10*80 expansion bolts, as shown in the Figure 6-2-2below:

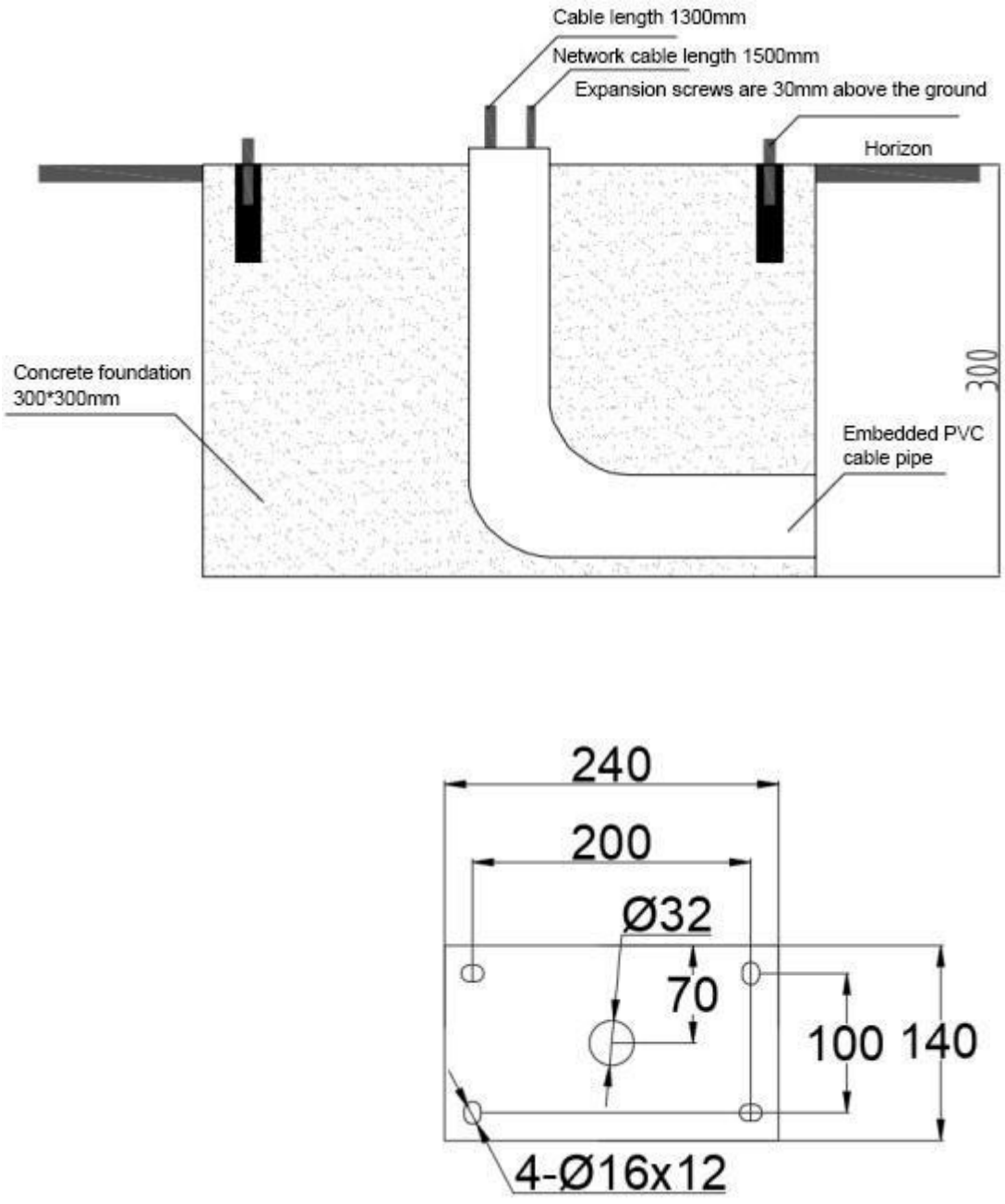


Figure 6-2-2 Installation of columns and ground

6.3 Cable Access

Connect the AC charging station input cable to the main box wiring terminals;

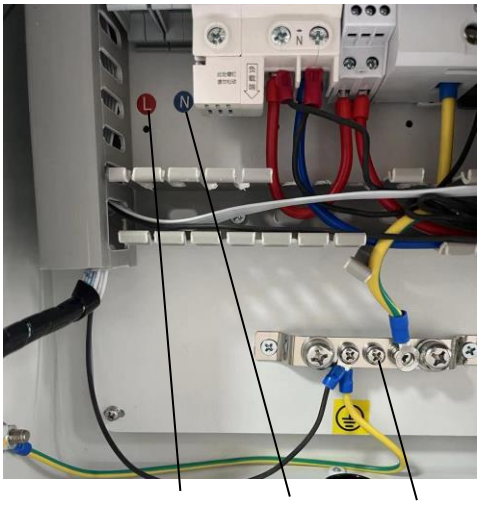


Figure 6-3-1 Wiring diagram

Chapter 7 Operation Instructions

NOTE: If your product is home using type, please skip this section and use the product directly

Plug in the charging gun, swipe the card to start charging, swipe the card again to end charging, and pull out the gun

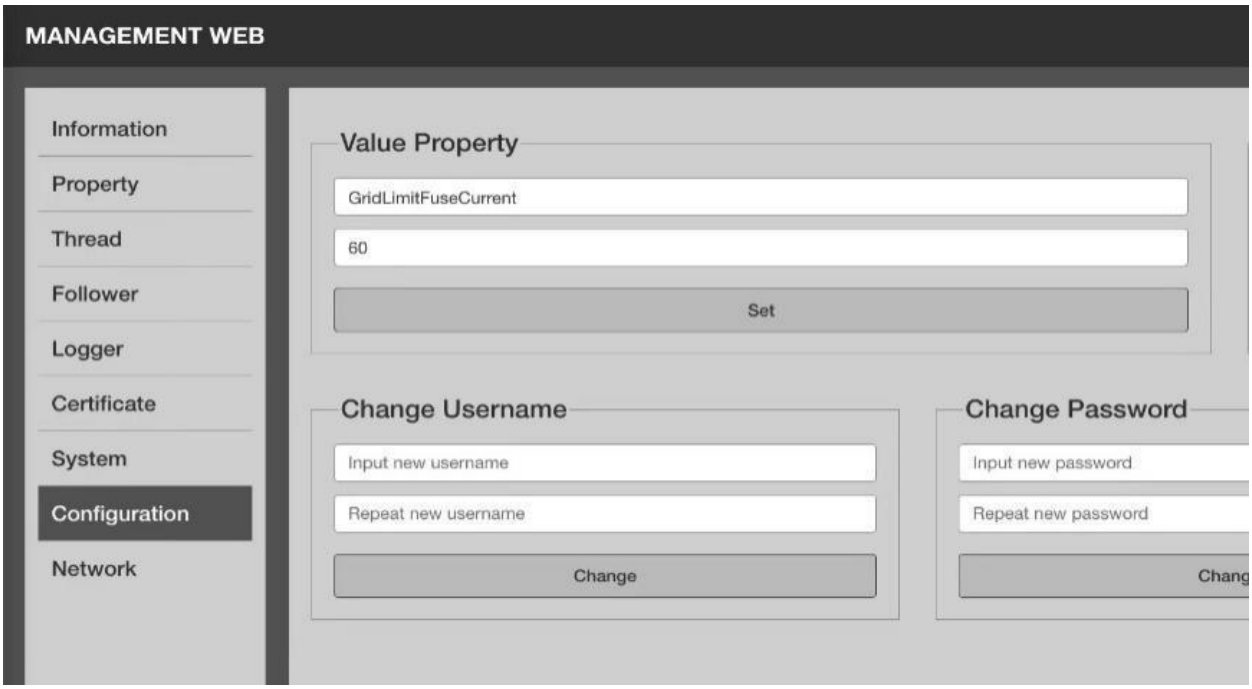
7.1 Indicator Status Description

No.	State		Led Color	Indicator Dynamics
1	Preparing		Yellow	On
2	Available	Connected	Blue	On
		Not connected	Blue	Blink
3	Charging		Green	On
4	Finished		Green	On
5	Faulted		Red	Fast Blink
6	Unavailable		Blue	On
7	Reserved		White	On

7.2 Dynamic Load Management (DLB)

Function description: Dynamic load balancing constantly monitors changes in your home's energy use and automatically allocates available capacity to your charging station. In response to changes in electricity load, it instantly adjusts the power output for charging an EV. As a result, you'll never exceed your home's maximum power consumption.

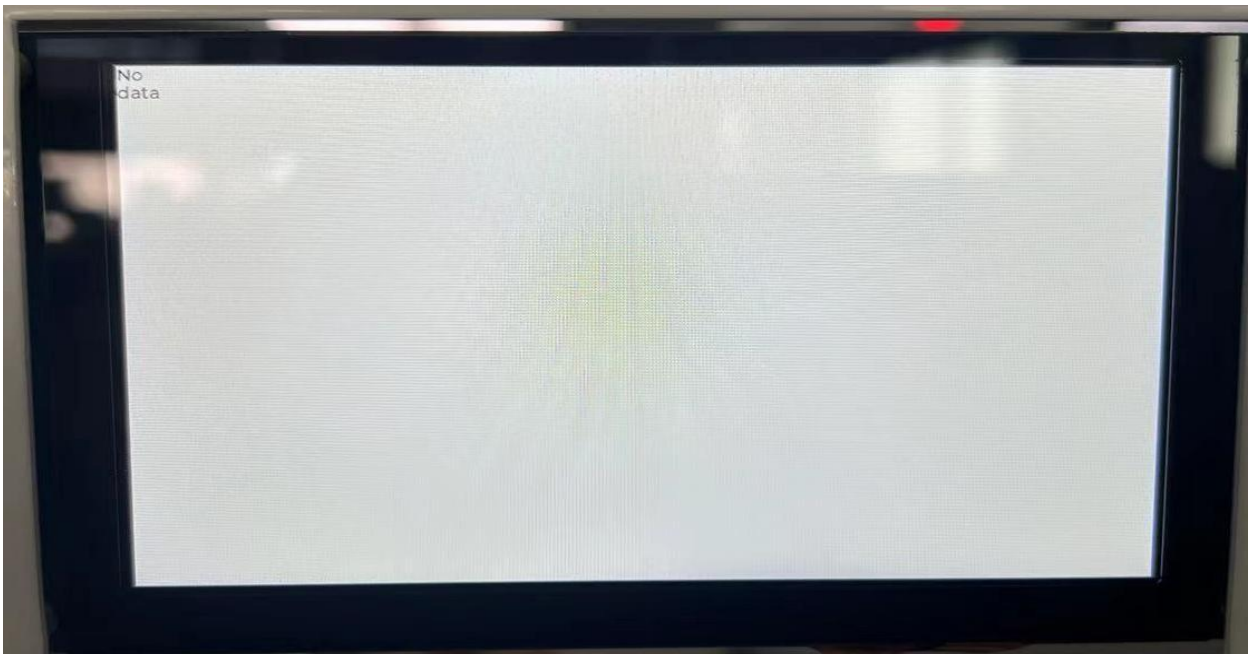
Installation operation: Install the open and close transformer in L line of the household accessory box; The current limiting condition can be set on the WEB. The available current of the self-reset condition is greater than 1A to trigger the adjustment. The default action time is 60S (configurable).



7.3 Operating Instructions

NOTE: If your product is home using type, please skip this section and use the product directly

1. Connect the power to open the car charging station, and the boot interface appears on the screen



2. After the gun is connected to the electric vehicle, the card interface appears, and the charge is opened in the induction area. Please swipe the card in the induction area to start charging

3. Wait for the server to respond after swiping the card. After swiping the card to start charging, screen displays the charging amount, current voltage and current, end the charging card again, display the charging amount and prompt the gun to pull back.

Charging Interface

End Interface

Chapter 8 Storage and Transportation

8.1 Storage and Transportation of Equipment

Corresponding tightening measures must be taken during transportation to avoid strong vibration and bumps from damaging the outer packaging of the equipment. Check whether there is any damage after arrival. If there is any transportation damage, please negotiate with the transporter and our company. After opening the box, check whether the contents of the box are consistent with the packing list.

The packaged equipment should be stored in a room where the relative humidity is ≤80% and the surrounding air temperature is -10℃～+40℃. The storage place should be dry, clean, ventilated, and prevent the intrusion of various harmful gases. It is strictly forbidden to store it in the same place with corrosive items.

Note: Non-professionals are strictly prohibited from disassembling equipment components.

Chapter 9 Common Faults Of Charging Station And Solutions

Serial No.	Common Malfunctions	Method Of Exclusion
1	When the gun is inserted, the interface does not show the connection or the information of "Please start charging by swiping your card"	Please check whether the charging gun is reliably connected to the vehicle and whether the gun lock is locked.
2	Swiping the card to start charging, after a while, it stops by itself	Generally, it is a communication problem, so when you finish swiping the card, record it yourself and try again with a different gun. If it happens repeatedly, report it to the manufacturer in time.
3	Locking phenomenon	At the end of charging, remember to swipe the card for settlement. If the card is locked, please swipe the card at the machine that was charged last time, and you can unlock it after the last charging fee is settled.
4	Jumping gun phenomenon	When swiping the card, confirm that the IC card balance is sufficient. If the balance is insufficient during the charging process, the charging will be automatically terminated.
5	After charging, the gun is locked and cannot be pulled out	Restart the charging process and wait for the gun to jump after the power is off. If this method is still unplugged, immediately contact the manufacturer for maintenance.
6	Start charging, the ammeter does not display the working current	Please check whether the phase line and neutral line of the electric energy meter is connected reversely or wrongly.
7	After power on, the display does not light up	If the indicator light is on and the display is not on, replace the display.
8	Not grounded	Under normal grounding conditions: 1. When the gun is not inserted, the auxiliary voltage 12V lights up blue; 2. When the gun is inserted, the auxiliary voltage 6V lights up green.

Chapter 10 Maintenance Of Charging Station

10.1 Maintenance

Shade light and rainproof measures should be taken for the charging Station. It is recommended to install a rain shed outdoors.

Regularly check whether all the bolts in the charging Station are tight, whether the connecting wire is loose, and the connection is not firm. Check whether there is a short circuit.

Pay attention to lightning protection and ensure the effective shielding and reliable grounding of the charging Station.

When in use, try to control the output voltage and current of the charging Station within the nominal range to ensure that the charging Station works with maximum efficiency.

When the body is out of use, the charging output should be stopped first, and then the cable should be wound and returned to its original position.

Note: During the transportation of the charging Station, pack the charging Station firmly and mark the direction of loading and unloading. It is forbidden to store and transport the charging Station upside down; corresponding tightening measures must be taken to avoid strong vibration and bumps from damaging the outer packaging of the device.

Note: non-professional personnel are strictly prohibited from installing the Live EV charger.

Chapter 11 Warranty Card

Warranty Regulations

1. The warranty period of this product is 2 year

2. During the warranty period, the faults (as determined by the official staff of the company) arising from normal use according to the instructions for use will be repaired free of charge.

3. Except for the following problems, charging equipment can enjoy the above related warranty term:

3.1 Not able to provide this guarantee and valid proof of purchase;

3.2 Exceeding the warranty period specified by the manufacturer;

3.3 If there is no warranty certificate and valid invoice, or the content on the warranty certificate does not match the physical identification of the repaired product or is altered;

3.4 Failure to comply with the requirements of the product instruction manual for use, maintenance, and customs declaration resulting in damage;

3.5 Damage or malfunction caused by foreign matter entering;

3.6 Failure caused by products not manufactured by the company;

3.7 Repairers disassembled causing damage;

3.8 Damage caused by force majeure (such as lightning, excessive voltage, earthquake, fire, flood and other natural disasters);

3.9 Failure and damage caused by other unavoidable external factors;

3.10 Improper use causes damage caused by water or other solutions in the equipment;

3.11 Use a power supply other than specified, damage caused by voltage.

4. The Company shall not be liable for any occasional or indirect damages, whether in contract, civil negligence, or otherwise, for any warranty of any express or implied nature of the above, including marketability, reasonableness and adaptability to a particular application, etc.

For Customer

Product name： _____Serial number:_____

Product type：_____

Date of manufacture：_____ (Subject to commissioning and acceptance)

Stamp of Manufacturer：

Customer name：_____Tel：_____

Customer signature：_____

Customer ADD：_____

1. Warranty content：_____After-sales service：_____

Customer signature：_____

2. Warranty content：_____After-sales service：_____

Customer signature：_____

3. Warranty content：_____After-sales service：_____

Customer signature：_____

Assembly and testing of the equipment are carried out by DOBRATEH, d.o.o. under the supervision of WENZHOU ANFU ELECTRICAL CO., LTD.

(date_____).

Specialist responsible for assembly and control_____