DARK HORSE SERIES
Dual-gun EV Charging station
Commercial AC EV Charger
Installation and User Manual V1.0

DARK HORSE SERIES AC EV Charger
Installation and User Manual V1.0

Objective

This manual is designed for the safe and intelligent AC EV charger developed and produced by our company
Used for GB/T, USA, and EU standards for plug-in (PHEV) and pure electric (BEV) new energy vehicles, providing comprehensive guidance for new energy vehicle users to use and maintain this charging equipment.

Manua using guide

Before using this product, please read this user manual carefully and follow the steps in the manual to operate. Any malfunctions and losses caused by non-compliance with the precautions specified in this manual are not covered by the manufacturer's warranty, and the manufacturer does not assume any related responsibility. Please do not disassemble the product. Improper disassembly may cause product damage, leakage, and ineffective waterproof function.
The content and images, logos, symbols, etc. used in the manual belong to our company. No content may be disclosed without written authorization.
The manual content will be continuously updated and revised, and users should refer to the actual product purchased.

Content

Safety instructions
Safety warnings

The DARK HORSE series AC EV chargers are strictly designed and tested in accordance with relevant national and international safety standards. However, the safety of electronic devices is not only affected by the quality of the equipment itself, but also highly related to handling, installation, trial operation, operation, maintenance, dismantling, and other operations. Incorrect use or misoperation can lead to the following risks:

- Risk of electric shock, short circuit, fire, explosion, and severe burns;
- Causing harm to the life and personal safety of operators or third parties;
- Damaging the charging station, or causing other property damage or destruction at the same time.

To avoid safety accidents, the following safety precautions need to be strictly followed during installation and maintenance.

- Before installation, preparation, installation, movement, maintenance, and disassembly must be completed by professional technical personnel, and unauthorized loading and unloading is not allowed;
- Professional technical personnel are qualified and have received training and/or demonstrated skills and knowledge related to the structure and operation of charging stations;
- Have read this manual thoroughly and master the safety precautions related to operation

	**Warning** **If the charging gun or charging cable is damaged:** · Do not use, stop using immediately · Contact the charging operation staff immediately
	**Warning** **If an emergency occurs:** · Turn off the power input switch of the charging station · Contact the charging operation staff immediately · Take action based on emergency measures taken by the owner or charging operator
	**Warning** **If operating after injury, accident, typhoon, accident or disaster, please observe:** · Are there any flames or smoke inside, outside, and near the charger · Has the charger been soaked in water, and are there any other liquids or traces · Is the charger damaged due to other reasons If any of the above situations occur, please stop charging immediately and contact the charging operator
	**Warning** **Charging gun lock** During the charging process, the charging gun will be locked onto the socket of the charging vehicle. It cannot be pulled out before the charging stops, and forced pulling is prohibited. Using force exceeding 1000N may damage the locking mechanism and pose a risk of arcing
	**Caution** **Plug in and plug out of charging guns:** · Be careful when removing and inserting the gun, do not fall or collide · Carefully pull out the gun and return the charging cable and gun to their original position

Safety instructions
Emergency handling

Charging gun leakage, electric shock to charging operator

In the event of an emergency situation where the operator is electrocuted due to the leakage of the charging gun, other personnel on site should quickly cut off the input power switch of the charging pile to cut off the power output of the charging pile to the car, and then rescue the electrocuted person. After the danger is resolved, professional technical personnel should be notified as soon as possible to complete the maintenance of the charging gun.

Charging station internal overheating and fire

When there is a fire hazard inside the charging pile, the power supply of the charging pile should be immediately cut off, and dry powder fire extinguishers should be used for firefighting operations. After the fire is eliminated, professional technical personnel should be notified immediately for maintenance of the charging pile to prevent personnel from electric shock accidents.

The charging station is submerged or submerged in water

When the charging station is flooded or submerged, the power supply to the charging station should be immediately cut off, and our company should be notified as soon as possible. Professional technical personnel should come to the station for maintenance. Professional technical personnel should ensure that the power supply is disconnected before visiting, and users are prohibited from engaging in unauthorized power on operations.

Earthquake disaster

When an earthquake disaster occurs, the power supply of the charging pile should be cut off in a timely manner to avoid leakage accidents caused by pile damage during the earthquake. If the charging station is damaged during an earthquake, it should be promptly notified to the technical personnel for on-site treatment after the earthquake, and users are prohibited from engaging in unauthorized power on operations.

Lightning disaster

During the thunderstorm season, it is not advisable to conduct vehicle charging operations with lightning flashes and thunder. It is recommended to disconnect the power supply of the charging station. If the charging station is struck by lightning during the charging process, the power supply to the charging station should be quickly disconnected and handled by professional technical personnel. Users are prohibited from performing any operations before the arrival of professional personnel to avoid personal electric shock accidents.

The charging gun cable is pulled and broken by external force

When the charging gun is pulled by external force and causes the charging cable to break, the power supply to the charging station should be immediately cut off. At the same time, before the power supply of the charging station is disconnected, a dedicated person should be arranged to guard at a distance of 5-8 meters from the breaking point to prevent personnel from entering the radius of 5 meters around the breaking point of the charging line and causing electric shock danger. And ensure that the power supply remains disconnected until professional maintenance personnel arrive.

Safety instructions
Statement of Responsibility

Machine owner responsibility
Requirements for machine owners and on-site operators:

· Operate the charging station under the premise of fully implementing protective measures, and ensure the correct installation and regular maintenance of protective facilities
· Prepare emergency plans and instruct people on how to handle emergencies
· Prepare the installation site of the charging station according to the requirements described in this manual
· Ensure that the charging station has sufficient passage and maintenance space
· Assign a person responsible for safety operations and overall coordination

Disclaimers
The product equipment needs to be used normally within a certain range of conditions. Our company will not be responsible for any accidents or damages caused by one of the following circumstances.

· All human factors damage and use in abnormal working environments
· Failures and damages caused by not following the instructions or using the environment according to the instructions
· Damage caused by poor transportation after delivery
· Normal wear, tear, breakage, and staining
· Products that do not belong to our company (such as counterfeit goods)
· Unauthorized disassembly, repair, or modification of products without the consent of our company
· Damage caused by other uncontrollable forces (such as floods, fires, lightning strikes, typhoons, earthquakes, abnormal voltages)

Product diagram

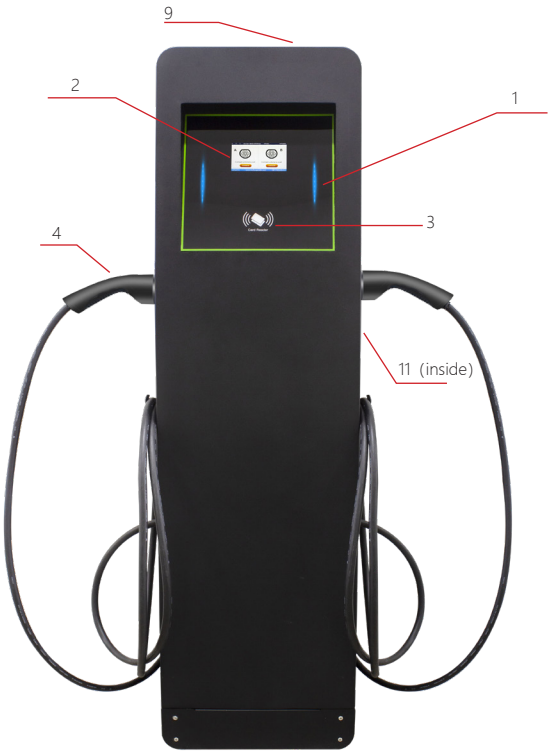
Product Structure Diagram – Charging cable type

1.LED Light	2.LCD Screen	3.Rfid	4.Charging cable	9.4G/WIFI Antenna	11.LAN port

Product Structure Diagram – Type2 socket type

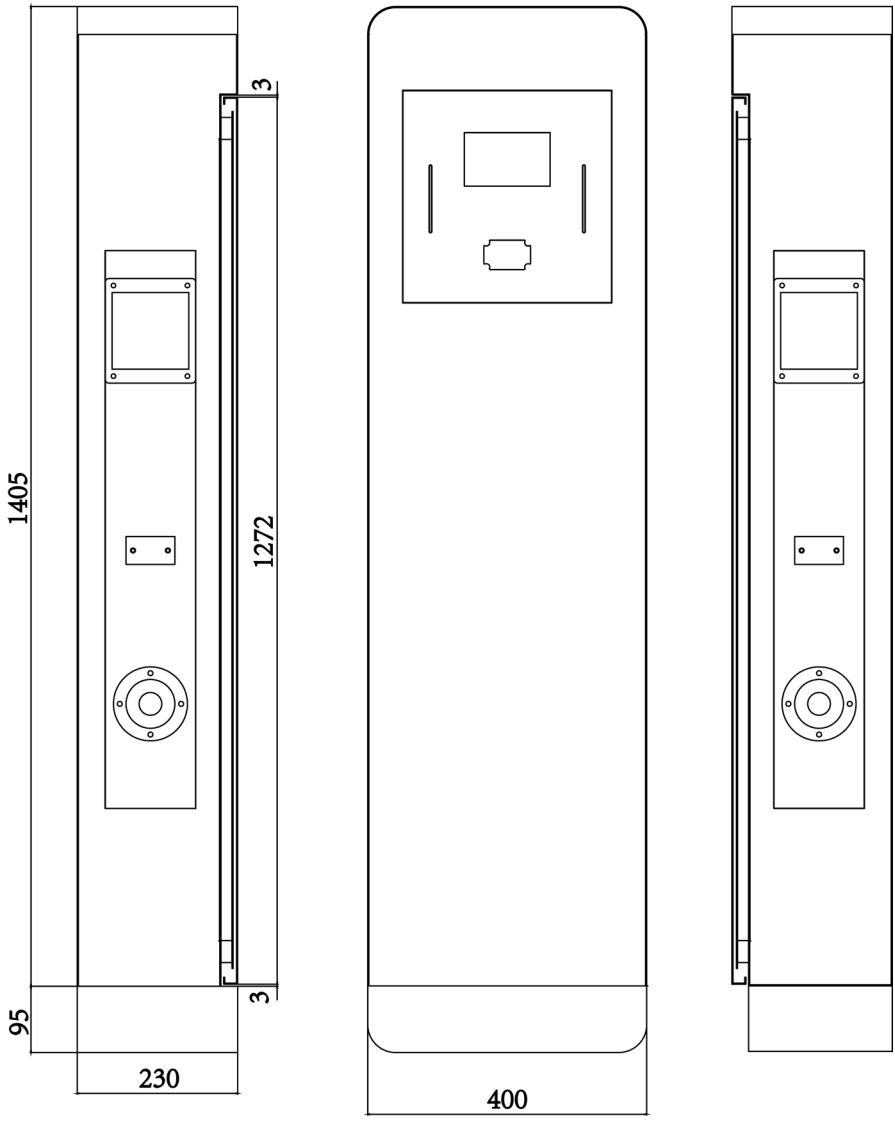
5.LCD Screen	6.Rfid	7.LED Light	8.Type2 Socket	10.4G/WIFI Antenna	12.LAN port

Charging cable type

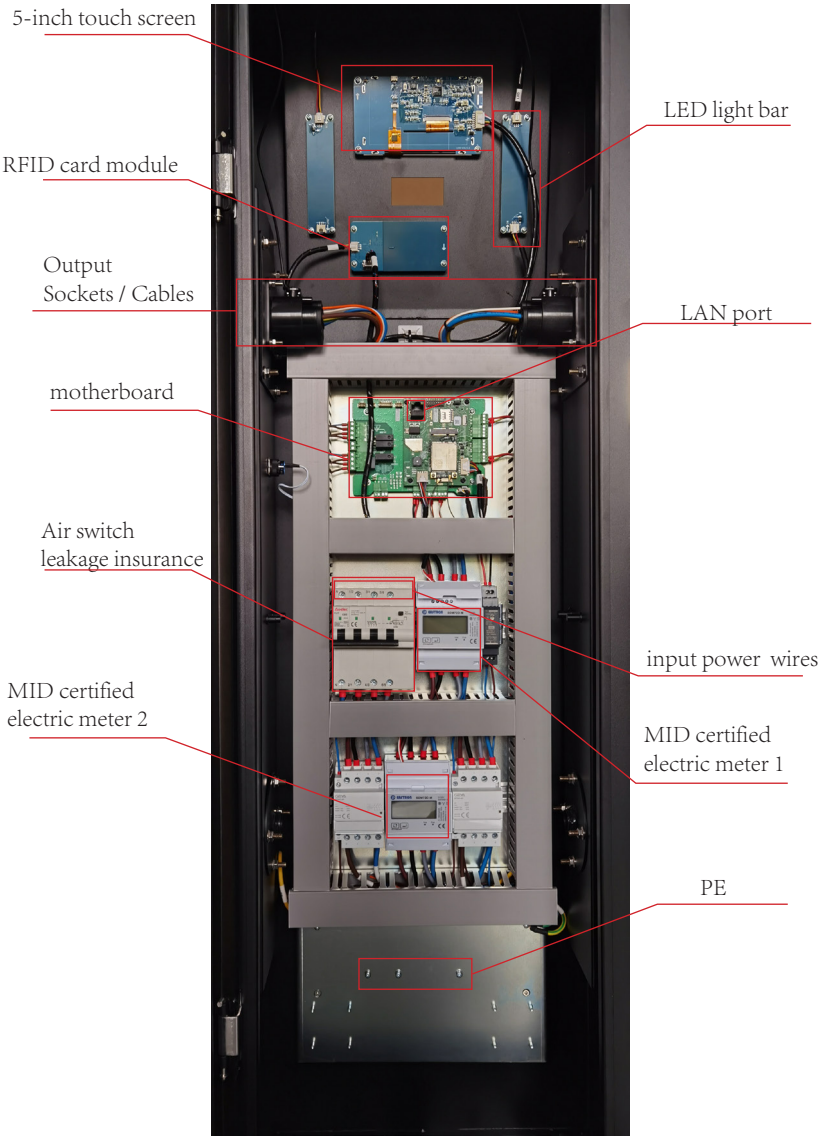


Type2 socket type

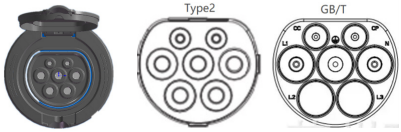
Product diagram



Product diagram



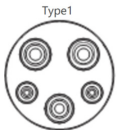
Product Parameter



Technical parameters (GBT, Type 2)

Product Series	Commercial-DOUBLE GUN	Commercial-DOUBLE SOCKET
Charging interface	IEC 61851、GB/T 20234、GB/T 18487-2015, GB/T 20234-2015	IEC 61851
Input Voltage Range	220VA ± 20% (1-phase) / 380VA ± 20%(3-phase)	
Output Voltage Range	220VA ± 20% (1-phase) / 380VA ± 20%(3-phase)	
Rated output current	16A/32A	
Rated power	7kW+7KW / 11KW+11KW / 22KW+22KW	
Working Frequency	45/65 Hz	
Networking method	4G/WIFI/LAN	
Bluetooth	NA	
Control mode	OCPP1.6 J (QR code / RFID)	
IP grade	⩾ IP55	
Working Temperature	-40℃ ~ +60℃	
Working Humidity	5%-95% Non-condensing	
Special Protection	UV resistance	
Working altitude	⩽ 2000m	
Operating instructions	On-screen display / Buzzer	
Status indication	On-screen display /LED breathing light	
Application Scenario	Outdoor indoor parking and charging	
Weight	<46.3kg	<40.7kg
Dimension	1500(H)mm x 400(W)mm x 230(D)mm	

Product diagram



Technical parameters (Type 1)

Product Series	Commercial-DOUBLE GUN
Charging interface	SAE J1772
Input Voltage Range	120VA ± 20% (LEVEL 1) / 240VA ± 20%(LEVEL 2)
Output Voltage Range	120VA ± 20% (LEVEL 1) / 240VA ± 20%(LEVEL 2)
Rated output current	16A/32A/50A
Rated power	7.6kW+7.6KW / 12KW+12KW
Working Frequency	45/65 Hz
Networking method	4G/WIFI/LAN
Bluetooth	NA
Control mode	OCPP1.6 J (QR code / RFID)
IP grade	⩾ IP55
Working Temperature	-40℃ ~ +60℃
Working Humidity	5%-95% Non-condensing
Special Protection	UV resistance
Working altitude	⩽ 2000m
Operating instructions	On-screen display / Buzzer
Status indication	On-screen display /LED breathing light
Application Scenario	Outdoor indoor parking and charging
Weight	<46.3 kg
Dimension	1500(H)mm x 400(W)mm x 230(D)mm

List of products and accessories

S/N	Name	Specification / Material	Quantity	Remarks
1	EV Charging station	EV Charger body	1	
2	Installation manual		1	
3	Expansion screw	M10X80	4	For installation of EV Charing station and ground
4	Charging card	RFID Card	2	

Preparation for Installation

Safety Precautions and Warnings

Read all instructions carefully before installation. Pay special attention to the following matters:

- As the installation process of this charging station involves electrical construction, it is necessary to be installed by professional technicians according to the instructions to ensure safety. If the charging station is damaged during installation or if the improper installation results in improper use of the charging station at a later stage, it will not be eligible for our warranty service.
- If the site to be installed is under construction, please do not install it immediately. Construction materials, dust, paint, etc. can cause damage to the charging station. It is recommended to install the EV charger after the construction is completed.
- The EV charger should use a special power supply or interface, must be well grounded, fire zero wiring is strictly prohibited to reverse. Before wiring, please switch off the power supply and take reasonable measures to prevent the power switch from closing automatically.
- When installing, please wear protective gloves to prevent the metal parts of the EV charger from hurting your hands.

Unpacking Inspection

The EV charger is shipped with a packing list. After unpacking, refer to the packing list and check whether each part of the components are complete. If there are any defects, please contact us in time.

Installation Tools

S/N	Name	Quantity	Remarks
1	Electric impact drill	1	
2	impact drill bit	1	Φ12
3	marking pen	1	
4	Level ruler	1	
5	Scale (5m)	1	
6	Electrician Gloves	1	
7	Cross Screwdriver	1	

Note, the above installation tools are recommended to be prepared by the installer in advance.

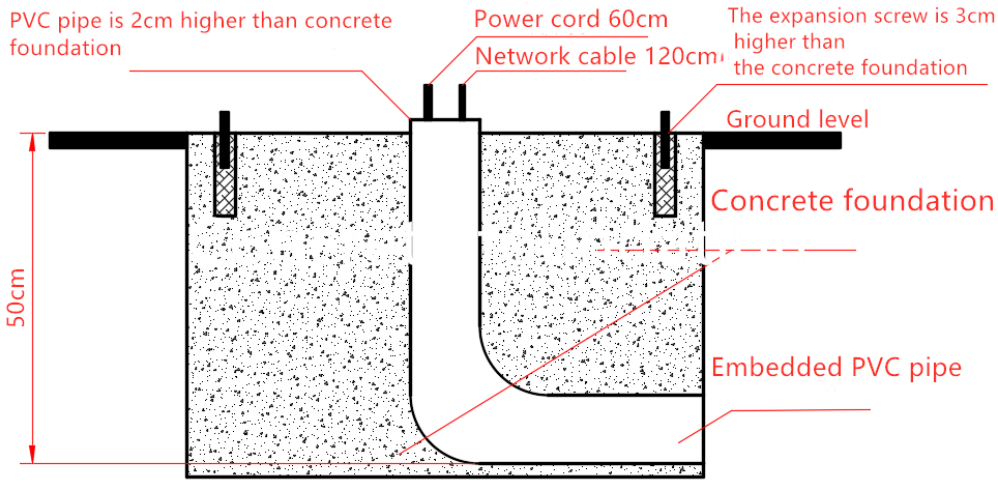
Installation Steps

Before installation, you need to prepare the corresponding fastening screws, the recommended parameters are as follows:

Screw type	Quantity to be used (pcs)	Description (use)
Expansion screws,stainless steel M8X10	4	fixed to the ground

Step 1

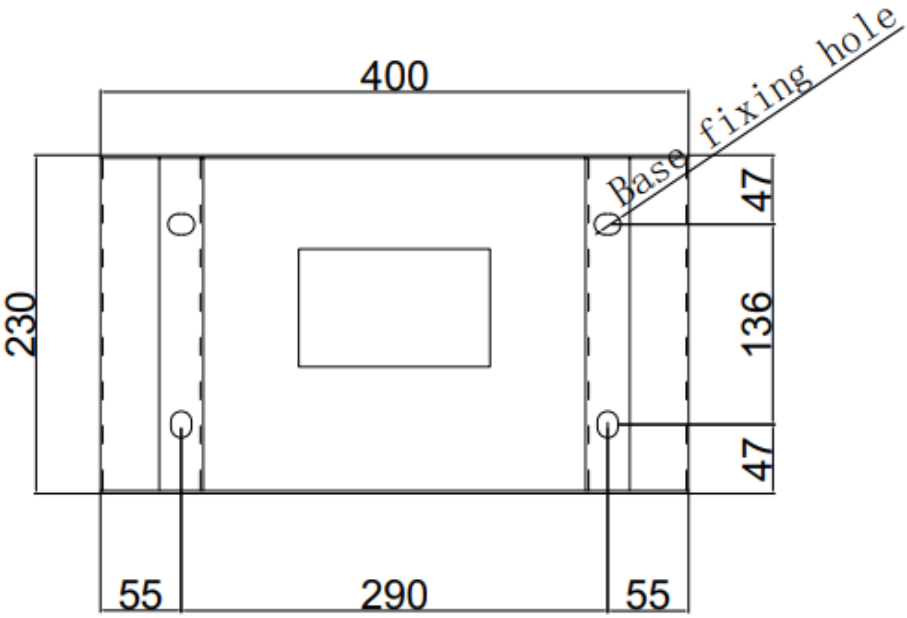
Please confirm the installation location of the EV Charging station, reserve the location of the network cable/power cable, and keep the reserved PVC pipe above the ground.



Installation Steps

Step 2

Confirm the position of the base fixing hole, and use an impact drill and a Φ12 drill bit to make a hole in the ground.

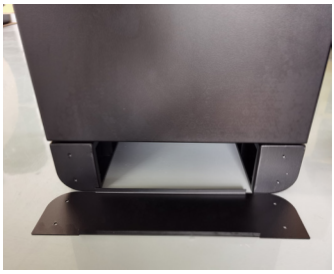


Installation Steps

Step 3

Open the back panel under the EV charging station.





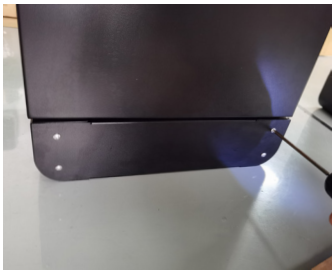
Step 4

After the expansion screws are driven into the ground holes, align the holes of the EV charging station to the installation position, and screw the gaskets and nuts into the bottom installation position.



Step 5

After the expansion screws are installed, reinstall the back panel under the EV charging station .

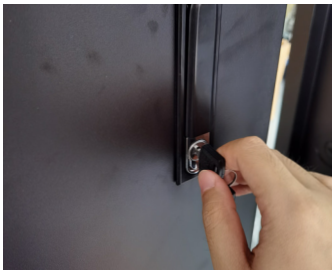



Installation Steps

Step 6

Open the door behind the EV charging station.





Insert the key and turn counterclockwise



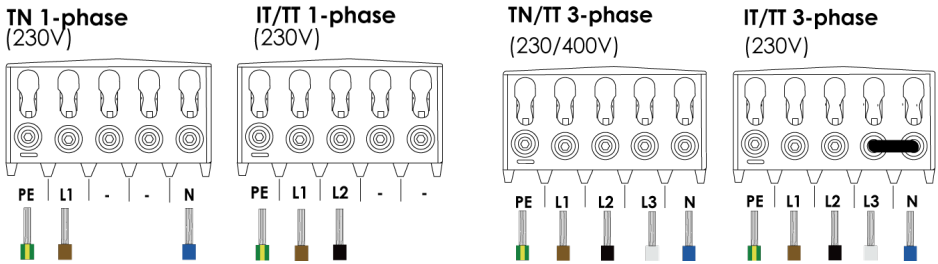
Press down hard on the key, pop out the door handle, and turn the handle clockwise

The door is open and network cables can be connected and Wiring.

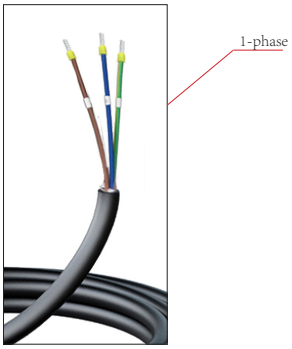
Installation Steps

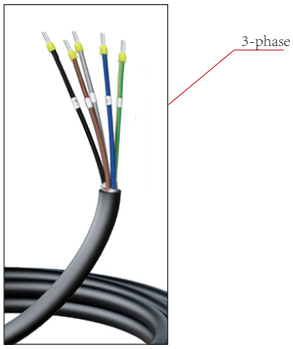
Step 7

Wiring needs to meet the following requirements:
1.The charging station should have an independent power distribution circuit and should not be shared with other electrical products.
2. 2.2.5mm2 cable is required at the input end of the 3.5KW/11KW station, 6mm2 cable is required at the input end of the 7KW/22KW station, and crimp terminals are required at the input end.
3.In order to prevent electric shock, make sure the input ground is firmly grounded, install according to the installation instructions, and prohibit the use of two-pronged or three-pronged plugs at the front end of the charging station, for which the Division will not be responsible for any consequences.



Note that in a three-phase 230V power supply environment without N wire, please short the blue N wire and the gray L3 wire
L1 brown, L2 black, L3 gray, N blue, PE yellow-green two-color





Installation Steps

Installation Steps
Web page configuration

Step 8

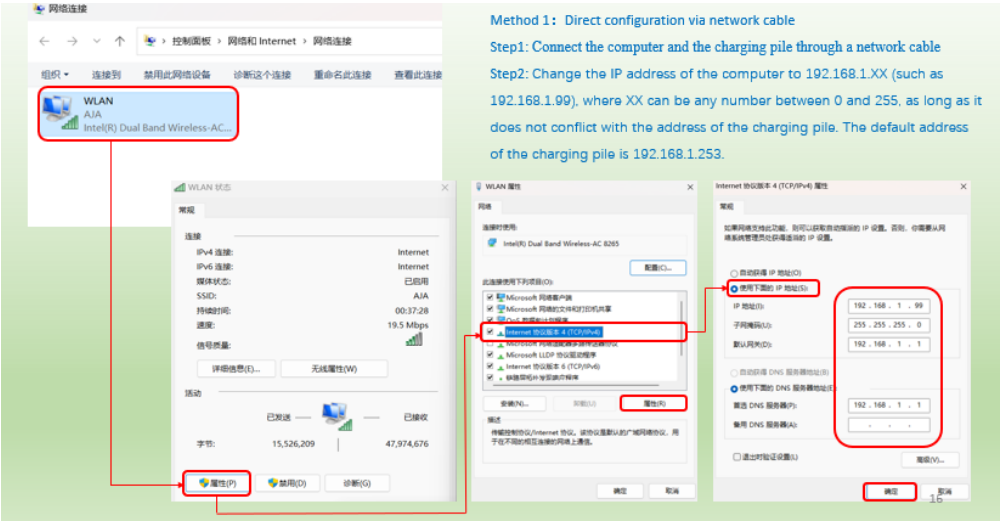
After the wiring is completed, turn on the power, connect to the LAN port, and enter the Web terminal to configure the EV charging station settings.

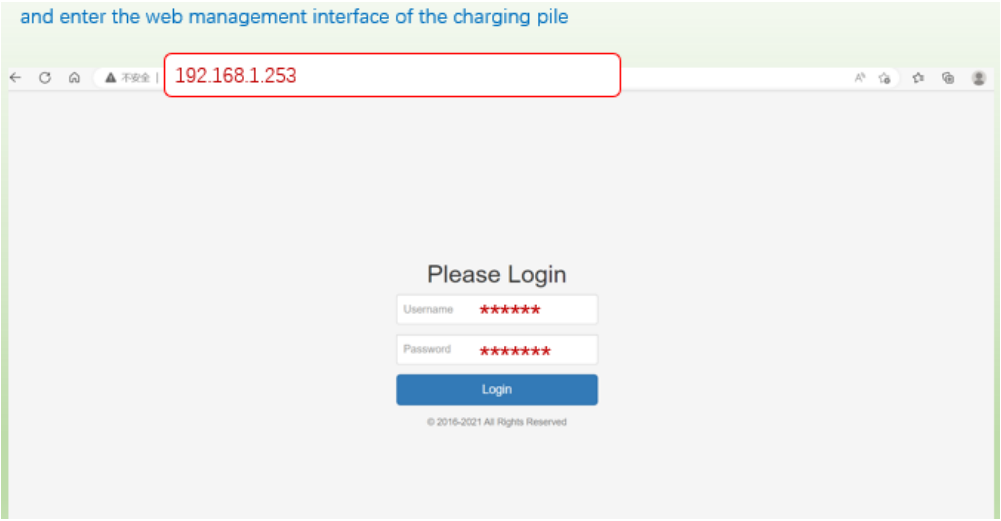
Method 1: Directly connect the computer and EV charging station through network cable for configuration. P21-22

Method 2: Connect the EV charging station to the router through a network cable, and then use a computer to connect to the same router through wired or wireless connections for configuration. P23

Web page configuration
Entry method-1

Computer static IP address setting tutorial

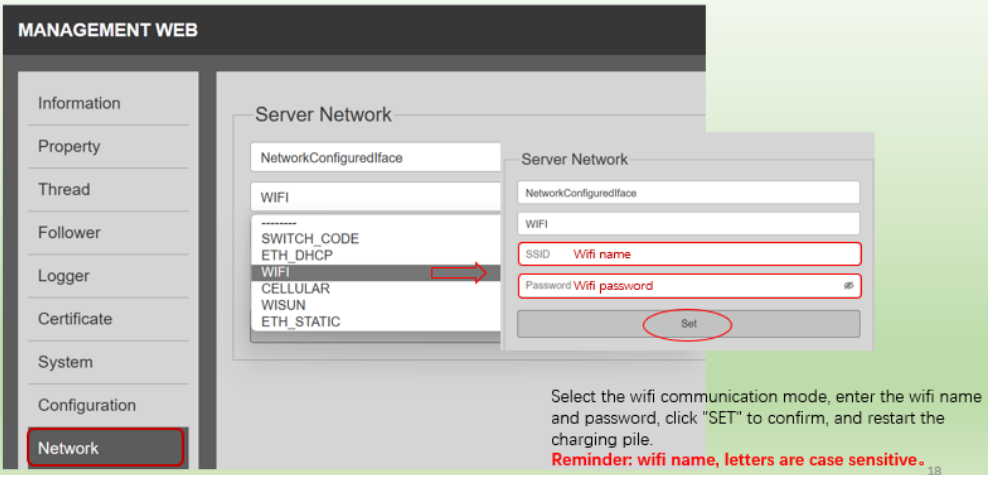




Web page configuration
Entry method-1

WIFI Configuration Tutorial

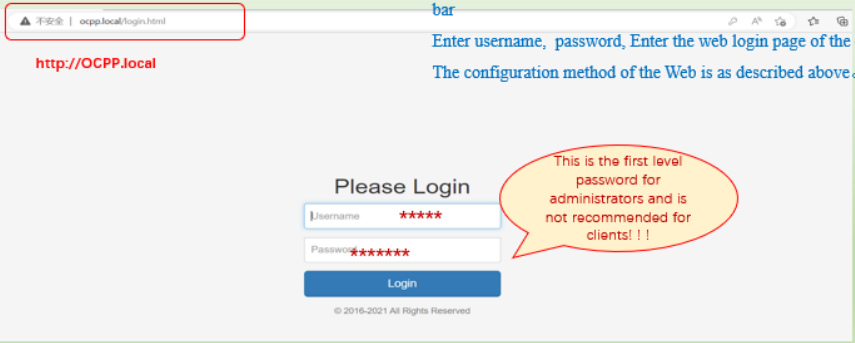
Step4: Select the desired communication mode, such as wifi, enter the Wifi name and Wifi password, and click Settings。



Web page configuration
Entry method-2

Tutorial of configuring charging piles through a router (single charger)

If only one charging pile is connected to the router, directly enter "ocpp.com" to access。



Method：Configuration via router

Step1: Connect the charging pile to the router through the network cable, and connect the computer to the same router through wired or wireless;

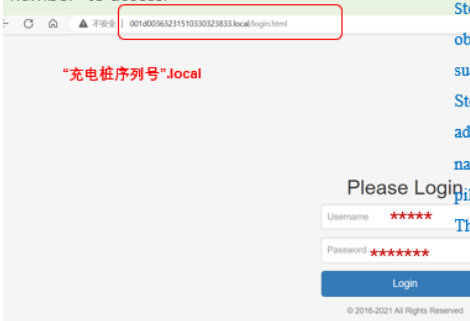
Step2:Open the computer's browser and enter http://ocpp.local in the address bar

Enter username, password, Enter the web login page of the charging pile。

The configuration method of the Web is as described above。

Tutorial of configuring charging piles through routers (multiple charger)

If more charging piles are connected to the router, you need to enter the "pile number" to access.



Method 2：Configuration via router

Step1: Connect the charging pile to the router through the network cable, and connect the computer to the same router through wired or wireless;

Step2:Use your mobile phone to scan the QR code of the charging pile to obtain the serial number information of the charging pile (a string of numbers such as :001D00363231510330323833）

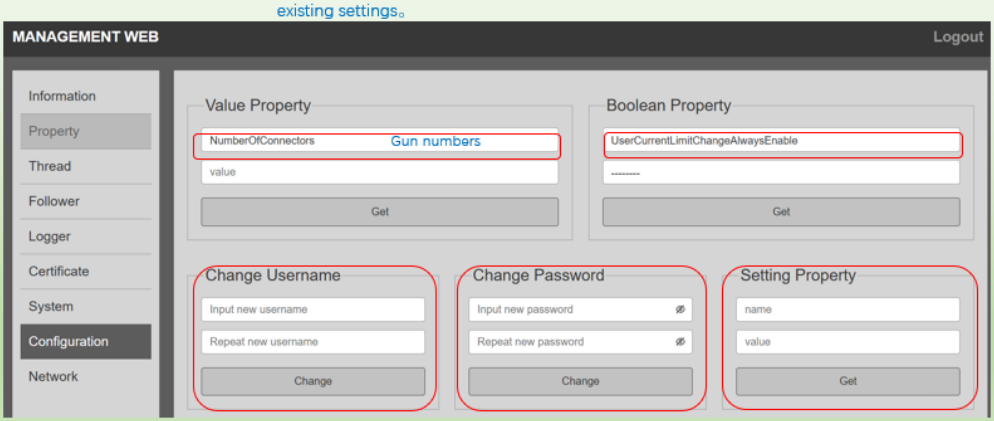
Step3:Open the computer's browser and enter "serial number.local" in the address bar（such as 001D00363231510330323833.local），Enter your user name：username, Password ******, Enter the web login page of the charging pile。

The configuration method of the Web is as described above。

Web page configuration
Function configuration

EV Charging station web configuration page

1. Select the option to be set, directly enter the set value, click Set, and the reset will take effect。
2. Select the option you want to set, click Settings, you can view the existing settings。

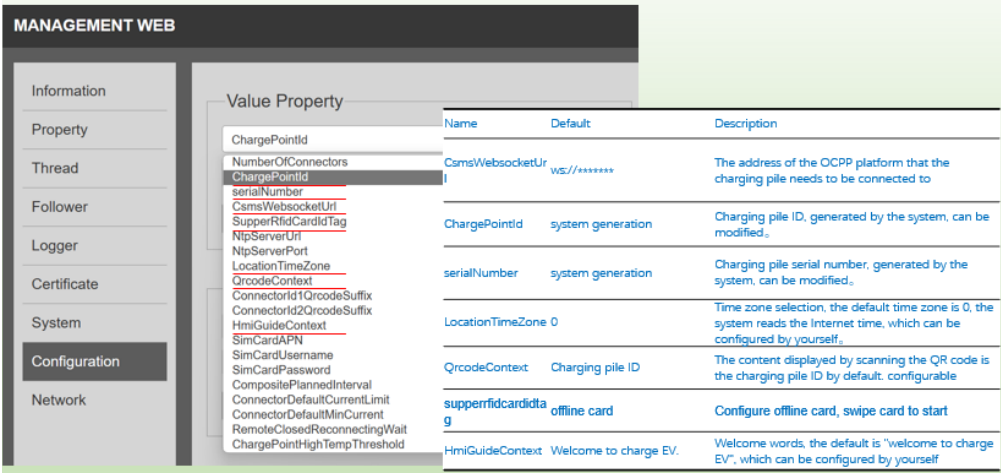


Change the charging station's Web login username

Change the charging station's Password for web login

Advanced customization features

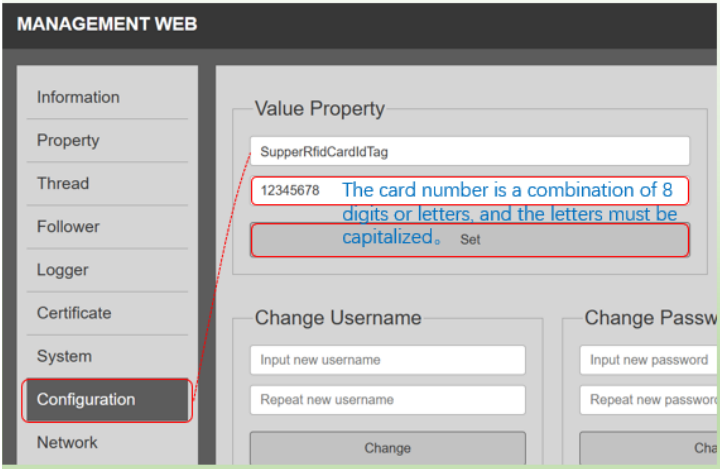
EV Charging station web common configuration tutorial



Name	Default	Description
CsmsWebsocketUrl	ws://********	The address of the OCPP platform that the charging pile needs to be connected to
ChargePointId	system generation	Charging pile ID, generated by the system, can be modified。
serialNumber	system generation	Charging pile serial number, generated by the system, can be modified。
LocationTimeZone	0	Time zone selection, the default time zone is 0, the system reads the Internet time, which can be configured by yourself。
QrcodeContext	Charging pile ID	The content displayed by scanning the QR code is the charging pile ID by default. configurable
supperrfidcardidtag	offline card	Configure offline card, swipe card to start
HmiGuideContext	Welcome to charge EV.	Welcome words, the default is "welcome to charge EV", which can be configured by yourself

Web page configuration
Function configuration

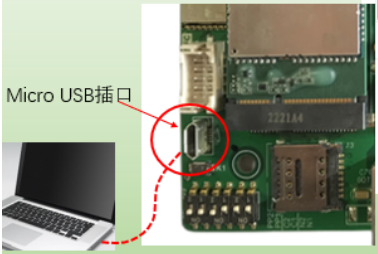
Offline swipe card start tutorial (swipe card charging)



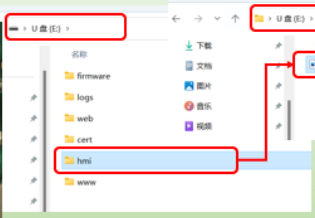
Note: Use the card reader to read the card number, not the serial number written on the card.

Boot interface logo replacement tutorial

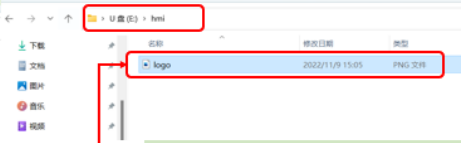
Step1：Use a data cable with a micro usb interface on one end and a usb interface on the other end. Plug one end of the data cable into the micro usb interface, and the other end into the PC. Make sure the mainboard has normal power supply status.



Step2：Open the computer file browser, the system prompts that there is a new U disk (E:), enter the HMI folder。



Step3：Copy the logo image to this folder and rename it "logo.png". Image resolution is 800*400, PNG format。



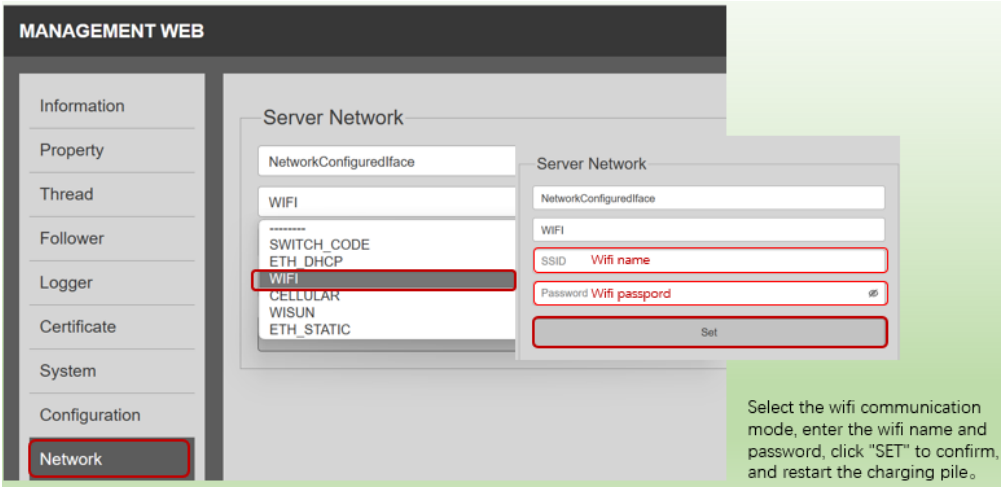
logo

800*400 pixel

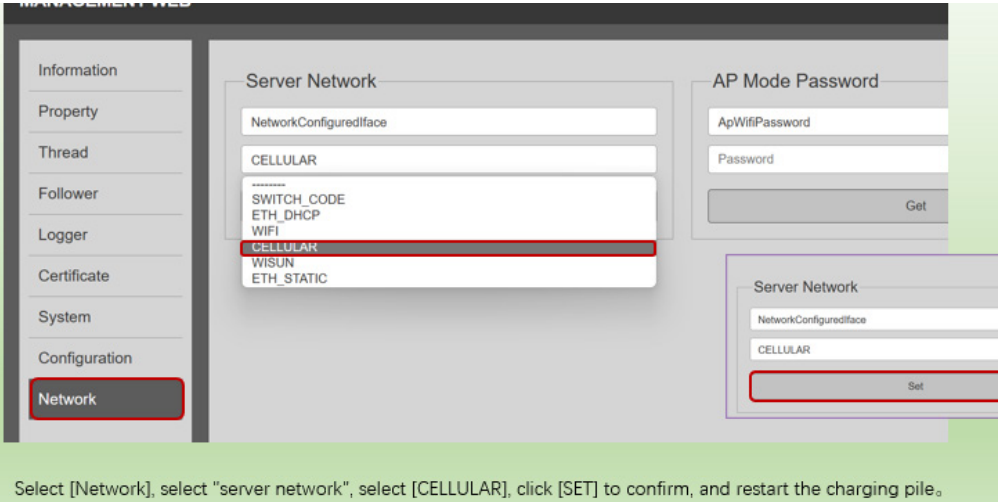
Step4：When the device is powered off and on again, the system automatically loads the new boot logo, and the change is complete。

Web page configuration
Function configuration

EV Charging station network mode switching - Wifi configuration tutorial

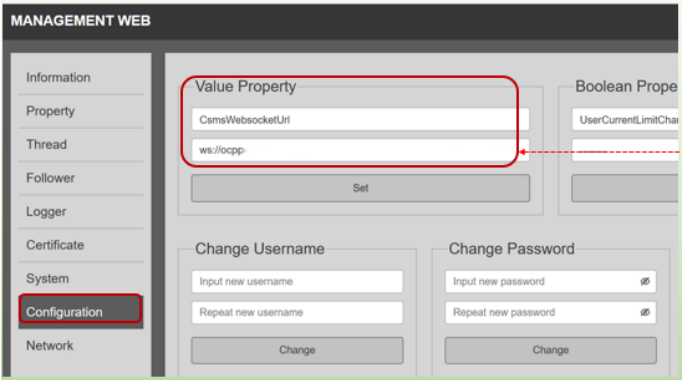


EV Charging station network mode switching - 4G configuration tutorial



Web page configuration
Function configuration

OCPP platform URL configuration tutorial



Customers configure the OCPP platform address by themselves. It should be noted that the input of English characters and numbers does not support Chinese input and illegal characters。

The correct example is as follows:
ws://ocpp.***.com

Maintenance

- Always ensure that the charging gun is inserted back into the charging gun holder of the EV charger after charging.
- Check the EV charger and the charging cable regularly for damage. If damage is found, please contact us.

- This EV charger does not contain user-serviceable components. If the unit is not functioning properly, contact us.
- Wipe the exterior of the EV charger, the charging cable, and the EV charger end of the charging cable with a clean, dry cloth to remove dirt and dust build-up.

During the warranty period, the warranty and related rights will be forfeited if any of the following conditions apply
- Damage to the charging equipment or associated equipment caused by changes in the power supply environment.
- Damage caused by improper transport by the user after sale.
- Damage caused by improper use or man-made reasons.
- The user disassembles, repairs or modifies the product without our consent.

Abnormal Handling

S/N	Abnormal phenomenon	Possible Causes	Solution
1	LED light does not light up	power wire incorrect	Check the power line again by the installer
		LED light not connected	Installer to recheck light wiring
		Air switch tripped	Reset the switch
2	Red light is always on	Fault occurs	Check screen for faults, contact us
3	No response to card swipe	RFID card not close to swipe position	Remove the card, and then close to the swipe area, do not move the card up and down, left and right
		Magnetic card not working or damaged	Please contact the customer service centre to replace the card (man-made damages need to be paid to replace the card)
4	Charging failure	Charging gun is not plugged	Re-plug and reconnect the charging gun to ensure that the gun is connected in place; check whether there is any error light in the EV charger ; check whether the buttons on the top of the charging gun are in a natural state; try to restart the EV charger by disconnecting the power.
		Problems with the vehicle itself	Go to Car shop to investigate the vehicle's own problem.

End-of-life Disposal

When a product reaches the end of its useful life, or is damaged beyond use for any reason and needs to be scrapped, the product must be sent to a qualified

Inspection List

S/N	Inspection items	Acceptance criteria	results
1	Interior appearance	The wiring is correct, the screws are fastened.	OK
2	Overall appearance	Visually free of appearance defects, fully identified	OK
3	Electrical inspection	General on check, short-circuit check, ground check	OK
4	Safety Check	Insulation resistance and dielectric strength	OK
5	Function check	Power-on light with on-board charging	OK
6	Charging connector	Meet interoperability requirements	OK
7	Accessories package	Complete materials, no omissions	OK
8	Packing inspection	Complete material, no visual defects	OK