

Atlas Euro-standard All-in-One DC Charger Maintenance Manual



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1. About This Document

1.1 Purpose

This document is only applicable to Atlas series DC charger.

This document provides the following information of Atlas series DC charger.

- Description
- Safety instructions
- Product description
- Installation instructions
- Operation instructions
- Maintenance instructions
- Troubleshooting
- After-sale services

1.2 Statement

- EV Charging Clean Energy Technology Co., Ltd. is not responsible for any damage, loss, cost or expense arising from the improper use of Atlas series DC chargers, in particular any damage, loss, cost or expense arising from non-compliance with this maintenance manual and relevant standards and laws and regulations.
- The pictures provided in this maintenance manual are for reference only, and subject to the actual product.

1.3 Target group

This user manual is intended for:

- Qualified installation engineer
- Users of EV charger
- Qualified maintenance personnel

1.4 Revision history

Version	Time	Description
V1.0	2025-01	First issue

1.5 Figures

The figures do not fully show the configuration of the Atlas series DC charger, and only provide the guidance and description of the typical configuration.




1.6 Measuring unit

The International System of Units (metric) are used. If necessary, this document shows other units between parentheses “()” or in separate columns in tables.

1.7 How to use this Document

1. Make sure that you know the structure and contents of this document.
2. Read the safety chapter and make sure that you know all the instructions.
3. Do the steps in the procedures fully and in the correct sequence.
4. Keep the document in a safe place that you can easily access. This document is a part of the EV charger.

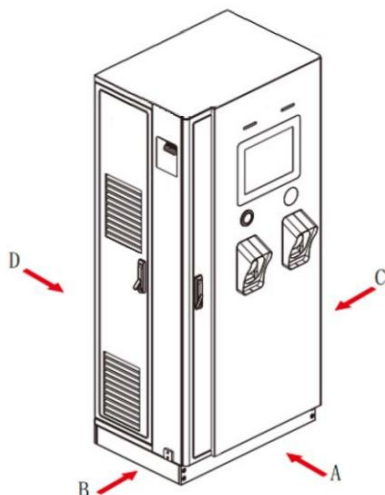
1.8 General symbols and signal words

Figure	Description
	DANGER: It indicates that the operation must be based on the instructions. In case of failure to follow the instructions, it is possible to cause serious consequences, including but not limited to equipment damage, cost and property loss, injury or even death.
	WARNING: It indicates that the operation must be based on the instructions. In case of failure to follow the instructions, it is possible to cause serious consequences, including but not limited to equipment damage, cost and property loss, and injury.
	NOTE: It indicates the supplementary instruction provided for the preceding text.

1.9 Abbreviations

AC	Alternating Current
DC	Direct Current
PE	Protective Earth
RFID	Radio Frequency Identification
OCPP	Open Charge Point Protocol

1.10 Orientation agreements



Location	Direction
A	Front side
B	Left side
C	Right side
D	Rear side

2. Safety instructions

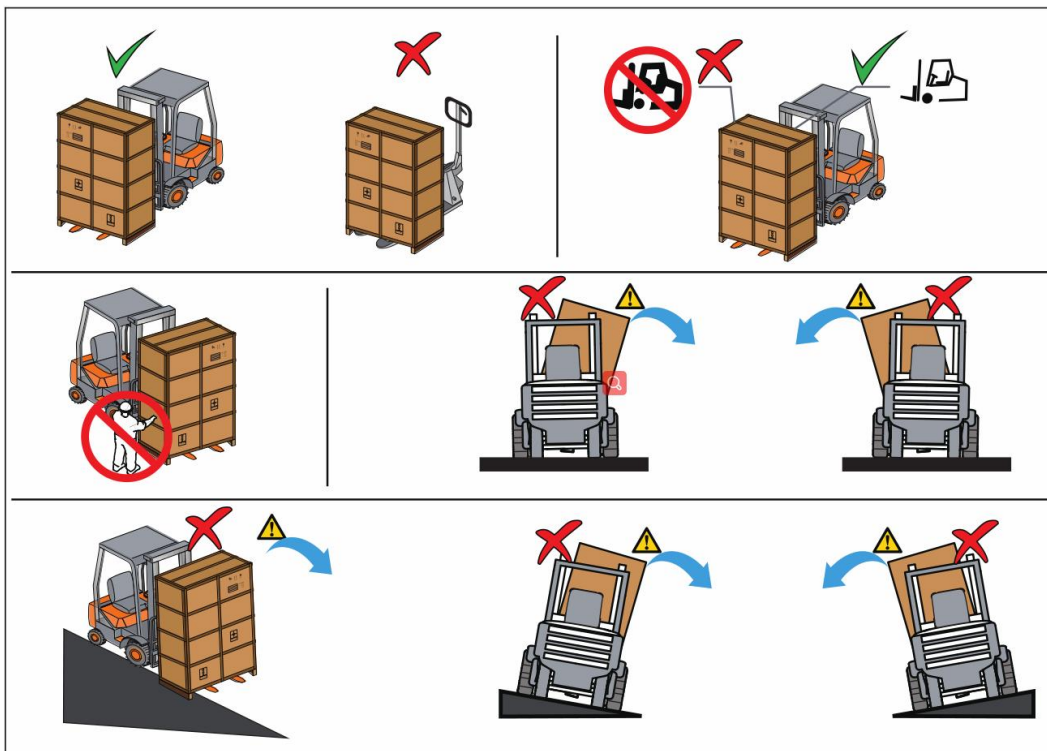


Before handling, installing, using and maintaining Atlas series DC charger, please read this user manual carefully and strictly follow the safety instructions.

This maintenance manual provides the safety instructions which should be followed during handling, installing, using and maintaining Atlas series DC charger. Please handle, install, use and maintain Atlas series DC charger strictly as instructed by this maintenance manual.

2.1 Handling

1. The charger is only handled by qualified and authorized personnel.
2. The handling personnel must wear appropriate personal protective equipment and comply with all health and safety requirements applicable to the work area.
3. Do not handle in rain or bad weather conditions. If impossible, take necessary protection measures.
4. The charger is integrated, and must not be disassembled during handling or installation. In case of modification without our authorization, the fault caused thereon will be excluded from the warranty.
5. Always pay attention to the center of gravity mark on the packing! Since the center of gravity is not the mechanical center of the product, please always pay attention to the tipping indicator on the outer packing during transportation (see Section 5.2.1 Detecting Anti-tilt Sensor for details) to ensure the balance and stability of the charger.
6. Before moving the charger, make sure that the handling equipment can support the weight of the charger, check whether the pallet is in good condition, and ensure that the forklift can fully lift the pallet.
7. Ensure that all moving parts of the charger are fixed before handling.
8. Before handling, check whether the work site is safe (such as space of unloading area, bearing capacity of ground, and road safety meet the requirements).
9. Tilt angle shall be $< 5^\circ$. If the tilt angle is too large, the charger may tip over due to its large size.
10. During handling, keep a safe distance from the charger to prevent crushing injury caused by tipping or collision.



2.2 Installation

1. Do not install the charger in an environment with flammable or explosive gas or smoke.
2. The charger must be installed and used through a permanent wiring system or device.
3. The charger must be installed by the personnel who are trained and qualified to operate the electrical system. Other personnel are keep from safe distance during installation.
4. Before installing the charger, ensure that the installation position has sufficient space for the moving parts and ventilation and heat dissipation of the charger. See Section [5.1.2 Preparation of Sites and Tools for details](#).
5. Before installing the charger, make sure that the circuit breaker inside the charger and the upper circuit breaker are deactivated.
6. Before connecting the power supply, please check whether the power supply conforms to the rated input value of the charger, and ensure that the switch on the charger is deactivated.
7. Before turning on the power supply, make sure that the ground cable is properly connected to the ground bar inside the charger and the ground hole reserved on the side of the charger.

2.3 Use

1. Do not directly spray high-pressure liquid to the charger and the connector and holder, or soak the charging connector in liquid.
2. After charging, please put the connector into the protective seat to avoid unnecessary pollution or moisture.
3. In case of potential safety hazard on the charger for its defection, crack, wearing or otherwise damage, do not use the charger.
4. Do not attempt to disassemble or repair the charger or tamper with or modify the software and parameters. The ordinary users are disqualified for maintenance, if maintenance is required, please contact our after-sale service center or local distributor.
5. Do not insert fingers or foreign objects into any part of the charger.
6. Do not forcibly fold or press, or hit any part of the charger, or damage it with sharp objects.
7. It is strictly prohibited to draw the connector to ensure personal and vehicle safety during charging process.
8. Please turn off the electric vehicle before charging. During the charging process, the electric vehicle is prohibited from driving and can be charged only when the electric vehicle is stationary.
9. Keep children away from the charger.
10. Do not operate the touch screen by sharp hard objects, such as screwdrivers or cards; otherwise, the touch screen may be cracked and damaged.
11. Do not use the charger in marine environment and outdoor and simple-sheltered environment near strong pollution sources. Otherwise, it is possible to cause fault, abnormal function or component damage for corrosion and moisture, which will be excluded from the warranty.
12. In case of use in offshore environment, it is possible to cause spot-like rust on the module shell or shorten the service life of the charger. If required, please consult the relevant service department for details. The offshore environment refers to the area which is 0.5km-3.7km from saltwater (sea).

2.4 Maintenance

1. The charger must be maintained by the personnel who are trained and qualified to operate the electrical system. Other personnel are kept from safe distance during the maintenance.
2. Before cleaning and maintaining, disconnect the input power of the charger.
3. Maintain the charger strictly according to the maintenance instructions provided in this document.
4. It is strictly prohibited to modify, add or remove the internal components of the charger without authorization.

3. Maintenance instructions

3.1 Maintenance schedule

Due to the impact of ambient temperature, humidity, dust and vibration, the internal components of the charger will age or be damaged during daily operation, resulting in potential failures of the charger. In order to extend the service life of the charger and ensure its more reliably operation, the charger shall be maintained during daily operation. The following describes some specific maintenance items and maintenance period.



Warning: Only professional electrical engineers or electricians authorized by us are allowed to maintain the charger. After the maintenance, do not leave the tool in the charger, otherwise it is possible to cause personal injury or damage to the charger!

Before maintaining the charger, please make sure that the following work is completed:

- 1) In the standby state of the charger, place the charging connector in the charging connector holder, disconnect the external input power supply from the charger, open the internal input circuit breaker of the charger, and wait for at least 15 minutes.
- 2) Open the cabinet door, and use a multimeter to measure the voltage between input and output terminals and between the terminals and the ground, to ensure that no dangerous voltage occurs.

No.	Inspection items	Inspection method	Maintenance period
1	System operating status and operating environment	Observe whether the operating status of the charger is abnormal in standby and charging modes. 1. Check the charger for unusual noise during operation. 2. Check whether the indicator status and the parameters are normal during the operation of the charger. 3. Visually check whether the main components are normal. 4. Check the housing for normal temperature, and use a thermal camera to monitor the system temperature. 5. Check humidity and dust in the ambient environment, and the air inlet filter for normal function. 6. Observe whether inlet and outlet air is normal. Keep the air vent unobstructed, and there should be no foreign matter within 500mm from the air vent. Attention! Make sure to ensure that the air inlet and outlets of the charger is unobstructed. Otherwise, the charging module may not be cooled effectively, and may fail due to overheating.	Once every month

2	System cleanness	<p>After turning off the charger, check the circuit board and the components for cleanness.</p> <ol style="list-style-type: none"> 1. Check for surface dust. If necessary, clean by a vacuum cleaner or replace. 2. Replace or clean the air filter. 	At least once every 1-3 months (depending on the dust content of the environment)
3	Cable connection	<p>After turning off the charger, check the power cable for stable connection. If loose, tighten the power cable according to the specified torque.</p> <ol style="list-style-type: none"> 1. Check the power and control cables for any damage, and particularly any cut sign on the cable sheath touching the metal surface. 2. Check whether the insulation tape on the wiring terminal of the power cable is damaged. 	Half a year after commissioning; once every 6-12 months after that
4	Terminal and wiring connection	<p>After turning off the charger:</p> <ol style="list-style-type: none"> 1. Check whether the screws of the control terminal are loose. If yes, tighten the screws with the screwdriver. 2. Check the main loop terminal for poor contact and the screws for overheating. 3. Visually check terminal connections and cable distribution. 	Once a year
5	Maintenance and replacement of cooling fan	<ol style="list-style-type: none"> 1. After turning off the charger, check the fan blades for cracks. 2. Check the fan for abnormal noise and fault in the charging mode. If the fan has abnormal conditions, replace the fan in time. 	Once a year
6	Circuit breaker, AC contactor	<ol style="list-style-type: none"> 1. Routinely check all metal components for corrosion. 2. Check the AC contactor (auxiliary switch and micro switch) to ensure its good mechanical operation. 3. Simulate the current leakage of the circuit breaker and press the circuit breaker test button to check whether the circuit breaker is tripping normally. 	Once every 6-12 months
7	Lightning protection	<p>Visually check the indicator window of the lightning protection module. If the indicator window displays green, the lightning protection module is normal. If the indicator window displays red, replace the lightning protection module.</p>	Once every 6 months

8	Charging connector	<ol style="list-style-type: none"> 1. Check the charging connector for good appearance and the connector head for damage, and the connector needle for binding or damage. 2. Check the cable sheath of the charging connector cable for damage and good appearance. 	Once every month
9	Charging module	In the charging and standby states, check the indicator status during the operation of the charging module, and the internal fan for normal operation.	Once every month
10	Safety function	<p>Check the emergency stop button for normal stop function:</p> <ol style="list-style-type: none"> 1. In the standby mode, press the emergency stop button, and check whether the emergency stop fault is displayed and the indicator light is normally on in red. 2. In the charging mode, press the emergency stop button, and check whether the charger stops the charging immediately. 	Once every 6 months

Please carefully read [2. Safety Instructions](#) before maintaining the charger.

3.2 Cleanness of cabinet

Before cleaning the cabinet, disconnect the AC input circuit breaker and the superior circuit breaker.

3.2.1. Dust removal

Remove the dirt from the surface with low pressure tap water. Do not use abrasive cleaning tools to avoid wearing the cabinet.

3.2.2. Rust removal

When Atlas DC charger is placed in high humidity and high salt environment, it is possible to cause the rust on the metal welding points. The rust does not affect the integrity of the cabinet, and can be removed with a mild cleaning agent. In addition, if you want to use anti-rust paint, please consult the manufacturer in advance.

3.3 Charger inspection

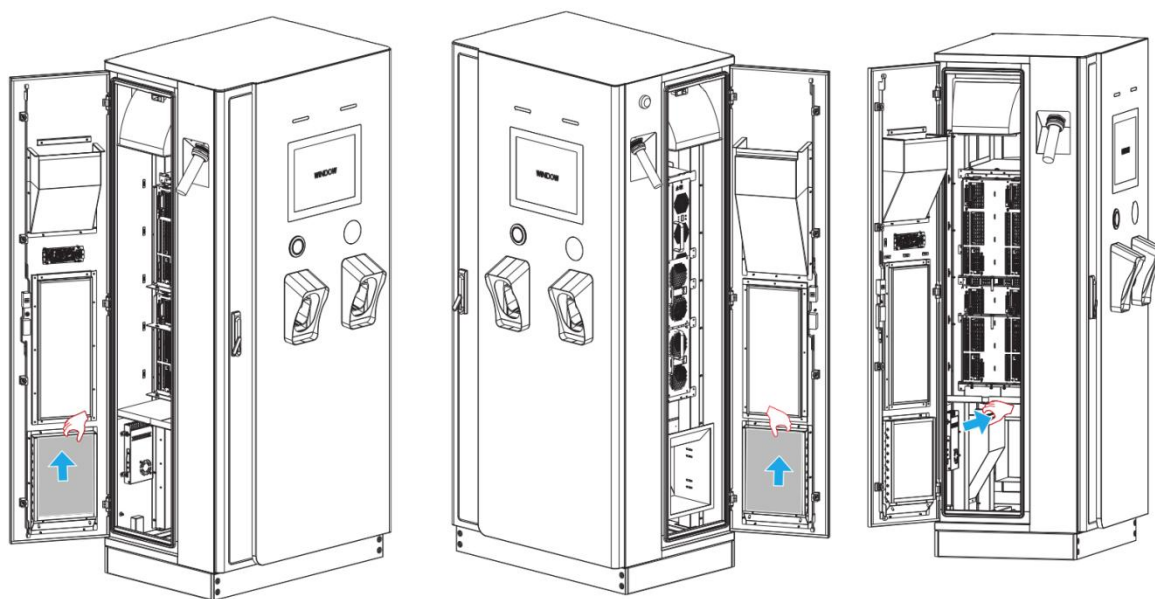
The charger inspection should cover the following:

1. Charging connector cable and connector head: check them for cracks or other obvious damage;
2. Touch screen: check it for cracks and response sensitivity;
3. Cabinet coating: check it for cracks or other obvious damage;
4. Charger body: check it for the cracks or rust resulting in water inflow;

If the above defects are found during checking, please contact the manufacturer for after-sales treatment.

3.4 Cleanness and replacement of filter cotton

1. Open the left door and remove the filter net of the air inlet on the left door to see the filter cotton;
2. Remove the old filter cotton, and install the new filter cotton;
3. Remove the filter net of the air inlet at the back of the housing to see the filter cotton;
4. Remove the old filter cotton in the direction shown in the figure, and install the new filter cotton;
5. Open the right door and remove the filter net of the air inlet on the right door to see the filter cotton;
6. Remove the old filter cotton, and install the new filter cotton.



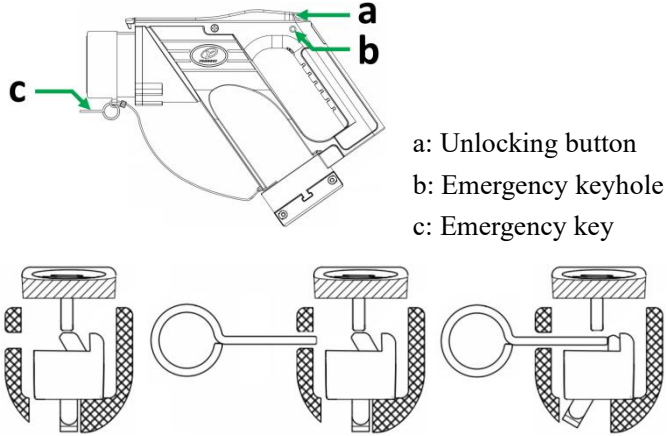
4. Troubleshooting

4.1 Troubleshooting procedure

During the installation and commissioning process, it is normal that the monitoring module gives an alarm. This chapter describes how to identify and remove the problem. You can view the real-time alarm information of the charger on the screen.

If you cannot find a solution for the problem, contact the manufacturer for technical support.

4.2 Common troubleshooting table


Problem	Possible causes	Possible solution
The touch screen is black and it does not light up when you touch it.	<ol style="list-style-type: none"> Control circuit breaker disconnected No AC input power supply 	<ol style="list-style-type: none"> Check whether the control circuit breaker is closed. See Section 4.4 for details. Check whether the input cable is properly and reliably connected. Check whether there is current on the input terminal.
The charging connector cannot be pulled out after charging	CCS2 connector	<ol style="list-style-type: none"> Restart the charging, stop the charging after about 5 minutes, and try pulling out the charging connector again. The physical lock of the CCS2 connector is in the electric vehicle; contact the electric vehicle distributor to ask how to unlock.
	GB connector	<ol style="list-style-type: none"> Restart the charging, stop the charging after about 5 minutes, and try pulling out the charging connector again. After charging is completed, if the unlocking button cannot be pressed and the connector cannot be pulled out normally, insert the emergency key on the connector into the emergency keyhole and push it inward to unlock the  <p>a: Unlocking button b: Emergency keyhole c: Emergency key</p>
	CHAdeMO connector	<ol style="list-style-type: none"> Restart the charging, stop the charging after about 5 minutes, and try pulling out the charging connector

		again. 2. If the connector cannot be pulled out, disconnect the power supply to pull out the connector.
AC input under-voltage	1. The voltage of the local grid fails to fall within the input voltage range of the charger.	1. Ensure that the input voltage is within the specified range. 2. Use power meter to measure the input voltage to check whether the voltage fluctuation is within the specified range. 3. If the abnormal sampling is caused due to the damage of the charger, contact the local distributor.
AC input over-voltage	2. The voltage of the local grid is unstable, and its fluctuation greatly exceeds the input voltage range of the charger. 3. Abnormal sampling is caused due to the damage of the charger.	
Ground Fault	1. The ground cable is incorrectly connected to the charger. 2. The power supply fails, and the ground voltage is too high.	1. Reconnect the PE cable to the charger. 2. Use power meter to measure the voltage between N wire and PE wire. The voltage between normal N wire and PE wire does not exceed 2V.
Emergency stop fault	Emergency stop button pressed	Turn the emergency stop button clockwise until the emergency stop button bounces back to its initial state.
Lightning protection failure	1. The charger is damaged by lightning due to the failure of the lightning protection module. 2. The lightning protection module is not securely installed.	1. Check the status window of the lightning protection. If the status window is red, the lightning protection module is faulty. Replace the lightning protection module. See Section 3.10. 2. Turn off the charger, replace the lightning protection, and restart the charger.
Access control failure	The door of the charger is not fully closed.	Close the main, left and right doors of the charger completely.
Insulation detection failure	1. System insulation failure 2. Insulation failure of electric vehicle	1. Clean the charger and remove the dust in the charger. 2. Check the charging connector for foreign matters and water, etc. 3. Charge another electric vehicle to check whether the insulation failure is reported.
AC input circuit breaker failure	AC circuit breaker disconnected	1. Check whether the protective trip of the AC circuit breaker is caused by current leakage or short circuit. 2. If not, close the AC circuit breaker and check whether the failure persists.

4.3 Parameter setting and fault view

The parameter settings provided in this section are only for the operation and maintenance personnel. The parameter settings are not required for commissioning.

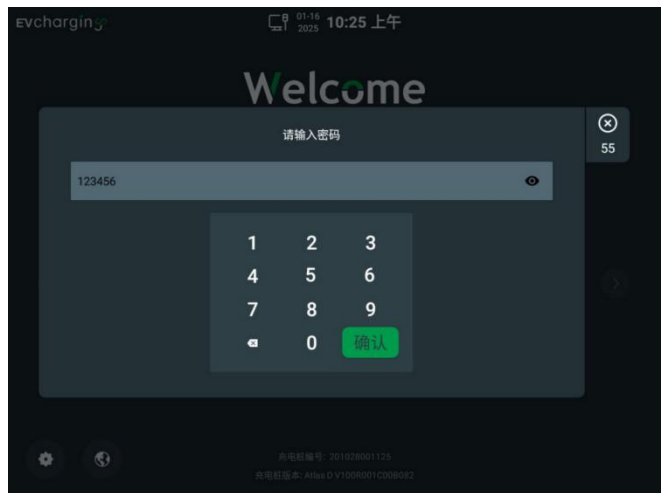
4.3.1. Language setting

Click the language switch button  on the home page as required and select the desired language in the pop-up box.




4.3.2. Administrator page


Only professional operation and maintenance management personnel is allowed to access the administrator page for login and operation, which then avoids that the charger fails to provide the expected functions due to parameter modification made by non-professional users.



4.3.2.1. Login

Click  in the lower left corner of the main interface. Log in the interface by the account password.

Default login password: 123456

 **Warning:** the parameters have been set before delivery, please do not change the parameters.



Function selection: Select the corresponding function after successful login.

4.3.2.2. Display screen

Company: You can customize the company name and LOGO;

Display setting: You can set screen brightness and theme;

Availability: You can set the availability of the charging connector;

Time zone: You can set time and time zone

Screen saver: You can set the screen saver. Pictures or videos can be uploaded for advertising rotation when the standby page is displayed on the screen.



4.3.2.3. System

Factory Serial number: Unique code of each charger, which corresponds to the nameplate;

Charger number: Code related to the platform;

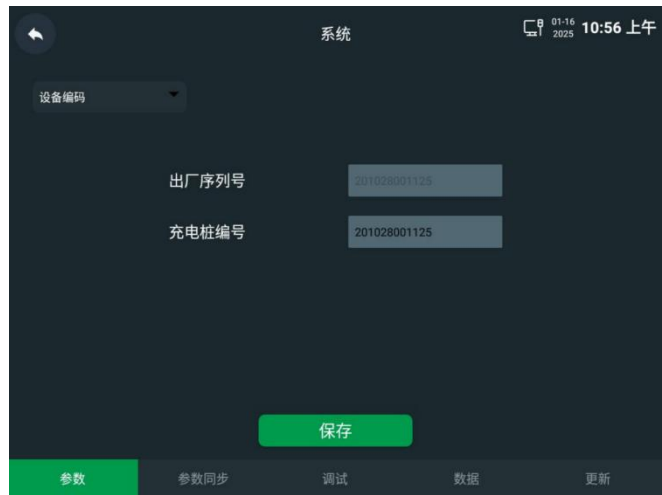
Parameter synchronization: synchronization of TCU and CCU parameters;

Commissioning: test on the charger start-up and network availability;

Data: View the operation data of the charger;

Upgrade: Upgrade the firmware of the charger.

Note: in the debugging mode, the charger may start for charging without communication with the BMS.



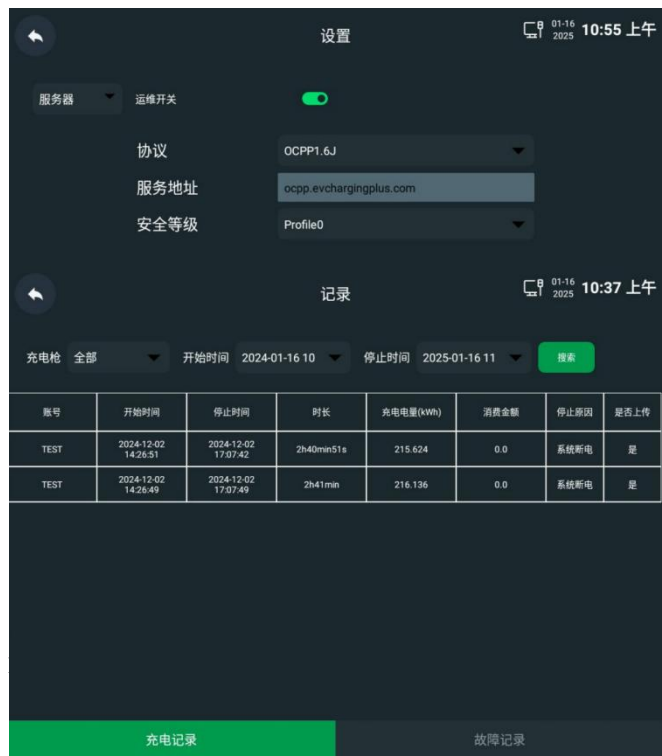
4.3.2.4. Setting

Server& IP: When the charger is connected to the operation server, you can set the network parameters of the operation server;

Network: the local network parameters setting of the charger.

CCU Configuration: You can set the parameters associated with the charging connector, such as light board information, module information, and kilowatt-hour meter information.

Charging mode: The starting charging mode of the charging pile can be configured



Card reader: You can set the card reader parameters.

4.3.2.5. History

Charging record: You can filter and view the charging record according to the connector number and the time, view the charging details by clicking the charging records, and clear the charging record (it is recommended not to clear the charging record);

Fault record: You can filter and view the alarm record according to the connector number and the time.

4.3.2.6. Current alarm

View the current fault or alarm information of the charger

The screenshot shows the '当前告警' (Current Alarm) interface. At the top, there is a dropdown menu for '充电枪' (Charging Gun) set to '全部' (All) and a '清空告警' (Clear Alarm) button. Below is a table with the following data:

序号	设备地址	等级	开始时间	描述
0	CCU0	1	2025-01-16 10:58:53	急停故障
1	CCU(2-CCS 2)	1	2025-01-16 10:58:56	PCU急停故障
2	CCU(1-CCS 2)	1	2025-01-16 10:58:56	PCU急停故障

4.3.2.7. Charger inspection

Insulation inspection: Insulation self-inspection can be made according to the connector number to test the resistance of busbar+ to ground and the resistance of busbar- to ground;

Insulation resistance $\geq 500\Omega/V * U$, which indicates the insulation is normal, and charging may be normally started

$100\Omega/V * U \leq$ insulation resistance $\leq 500\Omega/V * U$, which indicates charging still can be started although insulation alarm is given.

Insulation resistance $\leq 500\Omega/V * U$, which indicates the insulation fault

U: Rated output voltage of charger

Self-inspection: the charger conducts CCU and PCU self-inspection to check the status of each component in the charger.

The screenshot shows the '设备检查' (Device Inspection) interface for '充电枪 1-CCS 2'. It features a table with the following data:

类型	数值
母线正对地电阻 (kΩ)	999.9
母线负对地电阻 (kΩ)	999.9

Below the table is a '开始' (Start) button and a bottom bar with '绝缘检查' (Insulation Check) and '自检' (Self-Check) options.

4.3.2.8. Other

USB flash disk command: After inserting the USB

The screenshot shows a '重启' (Restart) dialog box with the following options:

- 重启屏幕 (Restart Screen)
- 重启TCU (Restart TCU)
- 重启系统 (Restart System)
- 退出屏幕 (Exit Screen)

At the bottom of the dialog are '取消' (Cancel) and '确认' (Confirm) buttons. The background shows a menu with items like '屏幕显示', '系统', '其他', and '版本'.

flash disk into the USB port of the "embedded control unit FCU2401" in the charger, you can achieve configuration export, log export, order export, USB flash disk script execution, and configuration import

Password setting: you can set the login password of the administrator page



Note: The default login password is 123456. Please remember the login password if changed. If you forget the password, please contact the after-sales service department of EV Charging Clean Energy Technology Co.,Ltd.

4.3.2.9. Restart

Restart screen: only restart the display

Restart TCU: only restart the TCU

Restart system: restart the system



4.3.2.10. Clear log

Clear the operation log of the charger



Note: if the log is cleared, all operation logs of the charger will be deleted, and the deletion is irreversible. Do not clear logs unless necessary.



4.3.2.11. Version

View the version information of the charger.

5. Status description

5.1 Network status

Check the network status of the charger according to the following figure:

Network connection status	4G status					
	Ethernet status					/
	WiFi status					/
	Legend	Server connected	Server not connected (accessible to Internet - Local communication network)	Server not connected (inaccessible to Internet - Local communication network)	Server not connected (inaccessible to Internet - Local communication network not connected)	4G card not inserted

5.2 Status of charging connector

Check the status of the charging connector according to the following figure:

Connector status		Available		Connector inserted		Start charging
		Charging		Stopping charging		Charging finished
		Suspended		Reserved		Fault
		Unavailable				

5.3 Status of indicator light

Status	Color	Note
Standby	Green light normally on	The charger is online and available, and without connector inserted.
Offline and standby	White light normally on	The charger is offline and available, and without connector inserted.
Connector inserted	Green light flickering	The charger is online and available, with inserted connector
Starting for charging	Blue light flickering	Starting
Reserved	Yellow light normally on	Online, reserved, and no connector inserted
Charging	Blue waterfall light	
Charging suspended	Yellow light flickering	

	slowly	
Charger unavailable	Red light normally on	
Charging stopped	Green light flickering	Charging stopped
Upgrading	Blue light normally on	Upgrade process
Level 2 fault	Red light normally on	For example: relay fault, current leakage, grid fault and ground contact fault
Fault	Red light normally on	

6. After-sale services

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