

DC150KWMulti-Standard

User Manual & Installation Instructions

用户手册和安装说明



Revision Table 修订表

Version 版本	Date 日期	Content 内容	Author 制作人
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Safety Warning 安全警告

Personnel who install and use this equipment must comply with the following principles and regulations to ensure the personal and equipment safety of related personnel:

- ◆ Only qualified and authorized electrical professionals who have received relevant training are responsible for installation, commissioning and maintenance;
- ◆ Before turning on the equipment, please make sure that the equipment is well grounded to avoid personal injury or death caused by electric shock;
- ◆ All unnecessary exposed metal parts of all tools used should be insulated to prevent the exposed metal parts from touching the metal shell and causing short circuits;
- ◆ Do not modify or install any parts by yourself under any circumstances;
- ◆ To ensure the service life and stable operation of this equipment, please clean the dustproof cotton of the ventilation holes regularly;
- ◆ This equipment must not be used in volatile gas or flammable environments;
- ◆ Before powering on the device, please make sure that the input voltage and power frequency meet the technical requirements of the device;
- ◆ Do not bend, squeeze, or tilt the charging connector to cause mechanical damage;
- ◆ Do not use damaged, cracked or dirty charging connectors;

安装和使用本设备的人员必须遵守以下原则和规定，以确保相关人员的个人和设备安全

- ◆ 只有接受过相关培训的合格和经授权的电气专业人员才负责安装、调试和维护
- ◆ 在打开设备前，请确保设备接地良好，避免触电造成人身伤亡；
- ◆ 所有使用工具中所有不必要的裸露金属部件均应绝缘，防止裸露的金属部件接触金属外壳，造成短路
- ◆ 在任何情况下，不得自行修改或安装任何部件；
- ◆ 为保证本设备的使用寿命和稳定运行，请定期清洁通风孔中的防尘棉
- ◆ 本设备不得在挥发性气体或易燃环境中使用；
- ◆ 在设备通电前，请确保输入电压和工频符合设备的技术要求；
- ◆ 不要弯曲、挤压或倾斜充电接头以造成机械损坏；
- ◆ 请勿使用损坏、破裂或弄脏的充电接头；

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1. Product description 产品说明

1.1 Scope of application 适用范围

The electric vehicle DC charger is a special device that provides safe and reliable charging services for electric vehicles with the CCS1/ N A C S standard interface. The charger communicates with the vehicle Battery Management System (BMS) in real time during the entire charging process to ensure vehicle charging Smart and safe. Mainly used in the following scenarios: 采用CCS1/ N A C S 标准接口, 充电过程中与车辆电池管理系统 (BMS) 进行实时通信, 以确保车辆充电的智能和安全。主要用于以下场景:

- ◆ Electric bus depots, public operating charging stations; 公共运营的充电站
- ◆ Expressway service area, electric taxi waiting area; 高速公路服务区、出租车候车区
- ◆ Electric vehicle service operators, commercial fleet operators; 电动汽车服务运营商, 商业车队运营商
- ◆ Electric vehicle infrastructure operators and service providers; 基础设施运营商和服务提供商

1.2 Product features 产品特点

The product adopts advanced soft-switching technology and has the characteristics of high conversion efficiency and stable performance. Adopting modular design, it has the characteristics of convenient installation, convenient debugging and convenient maintenance. This product is mainly composed of signal indicator, human-machine interface, RFID module (swiping card), metering module (watt-hour meter), billing control unit, power conversion module, charging controller, charging connector, emergency stop button and various protection modules, etc.

本产品采用先进的软开关技术, 具有转换效率高、性能稳定的特点。
采用模块化设计, 具有安装方便、调试方便、维护方便等特点。

本产品主要由信号指示器、人机接口、RFID模块(刷卡)、计量模块(电能表)、计费控制单元、电源转换模块、充电控制器、充电连接器、紧急停止按钮及各种保护模块等组成

- ◆ Signal indicator: display the current operating status of the charger;
 - ◆ Man-machine interface: You can directly touch the screen to perform related operations, and the detailed information of each charging interface and battery can be displayed in real time during the charging process;
 - ◆ RFID card reader: Identify and verify user information, and start or stop charging;
 - ◆ Metering module: record the power delivered to the vehicle;
 - ◆ Billing control unit: background interaction, storage and reporting of charging information and fault information, statistics and reporting of charging fees;
 - ◆ Power conversion module: Convert AC power to DC power
 - ◆ Charge controller: intelligently dispatch power output according to vehicle BMS requirements, and collect, process and control system charging information;
 - ◆ Charging connector: CCS1/ N A C S , charging interface;
 - ◆ Emergency stop button: emergency cut off the input power and stop charging;
 - ◆ Protection module: with multiple protection functions such as over (under) voltage, overload, short circuit, over temperature, anti-reverse, surge, grounding, emergency stop, insulation, leakage, etc.;
 - ◆ Cable management system (Optional);
-
- ◆ 信号指示器：显示充电器当前运行状态；
 - ◆ 人机界面：直接触摸屏进行相关操作，充电过程中可实时显示各充电界面和电池的详细信息
 - ◆ RFID读卡器：识别和验证用户信息，启动或停止充电；
 - ◆ 计量模块：计量模块：记录传递到车辆的功率
 - ◆ 计费控制单元：计费控制单元：收费信息和故障信息的后台交互、存储和报告、收费费用的统计和上报；
 - ◆ 电源转换模块：将交流电源转换为直流电源
-
- ◆ 充电控制器：根据车辆BMS要求智能调度电源输出，采集、处理、控制系统充电信息；
 - ◆ 充电连接器：CCS1/ N A C S 充电接口；
 - ◆ 紧急停止按钮：紧急切断输入电源并停止充电；
 - ◆ 保护模块：具有过（低）电压、过载、过载、短路、过温、防逆、浪涌、接地、急停、绝缘、泄漏等多种保护功能。；
 - ◆ 电缆管理系统（可选）；

1.3 Man-machine operation 人机操作



User operating parts and visual indication parts:

- ◆ A. Display module, including 10.1-inch high-brightness touch screen, status indicator, card reader;
- ◆ B. Shutters, containing dustproof cotton, for heat dissipation and ventilation, detachable;
- ◆ C. VPOS, credit card payment terminal (optional);
- ◆ D. Wire rod for winding the charging cable;
- ◆ E. Empty buttstock for charging connector placement;
- ◆ F. Emergency stop button, used to cut off the power in an emergency situation;
- ◆ G. CCS1/ N A C S connector;
- ◆ H. Door lock;

Note: Please refer to the technical agreement or actual confirmation for the appearance of silk-screen effect.

用户操作部件和视觉指示部件：

- ◆ A. 显示模块，包括10.1英寸高亮度触摸屏、状态指示灯、读卡器；
- ◆ B. 含防尘棉，用于散热和通风，可拆卸；
- ◆ C. VPOS，信用卡支付终端（可选）；
- ◆ D. 充电电缆绕线杆；
- ◆ E. 放置充电接头的空按钮；
- ◆ F. 紧急停止按钮，紧急切断电源；
- ◆ G. CCS1/ N A C S 连接器；
- ◆ H. 门锁

注：丝网效果的外观请参考技术协议或实际确认。

2. Product performance 产品性能

2.1 Specification model description 规格型号说明

150 KW Multi-Standard	
Model No 型号编号	Model No description 型号无说明
DC-150 KW	150KW Tri CCS1/ N A C S

2.2 Technical parameter 技术参数

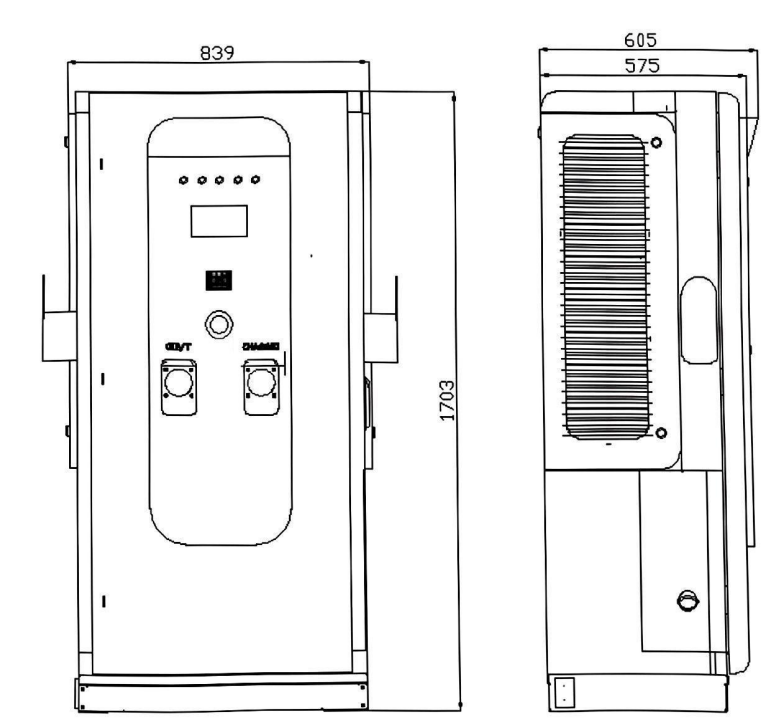
1	Model:	150 KW Multi-Standard
2	Input powerconnection: 输入电源连接	3P+N+PE(L1、L2、L3、N、PE), 60 Hz
3	AC input voltage: 交流输入电压	480VAC+-10%
4	Rated Power: 额定功率	150 kW
5	Output voltage range: 输出电压范围：	200-1000 V
7	Maximum output current (tri connector): 最大输出电流（三节连接器）	300A
8	Rated input current: 输入电流	194A
9	Recommended inputcable (mm ²): 推荐输入电缆 (mm ²)	3x120+2x95
10	Power factor:功率系数	>0.99
11	Charging efficiency:充电效率	95%
12	HMI:触摸屏	10.1 inch Touch-Screen
13	Charging authentication :充电身份验证：	RFID, QR Code, Plug and charge (Via EVCCID), NFC, RFID，二维码，插头和充电（通过EVCCID），NFC
14	Network connection:网络接线	4G, /TCP-IP/WIFI
15	LED status indicator: LED状态指示灯	Red-Power; Green-Charging in progress; Yellow-error红色电源，绿色充电，黄色误差
16	Communication protocol:通信协议	GSM/3G/4G modem; 10/100 Base-T Ethernet
17	Protection: 保护	OVP,UVP,RCD,OCP,OTP,OPP,SCP,SPD,IMD,Reverse polarity etc;过压、欠压
18	Charging protocol: 充电协议	OCPP 2.0.1 and 1.6
19	Charging port:插口	CCS1, NACS
20	Charging cable length:电缆长度	5 meters, others as required
21	RFID module:RFID 模块	ISO 14443, Type A,Mifarel
22	Dimension: 尺寸	Charging station: 860(W) × 610 (D) × 1700 (H) mm
23	Weight (NET): 净重量	350kg

2.3 Environmental parameters

1	Protection level:	IP 54	防护等级
2	Operating temperature:	-30 °C~+50 °C	工作温度:
3	Storage temperature:	40 °C~+70 °C	储存温度
4	Relative humidity:	5%~95%, No condensation	相对湿度
5	Altitude:	≤2000 m	海拔高度
6	Running noise:	≤65 dB	运转噪音
7	Cooling method:	Forced air cooling	风冷
8	Working environment:	Indoor or outdoor	工作环境：室内或室外
9	Operating environment:	No conductive dust, no corrosive gas, no explosive gas, no strong vibration 工作环境：无导电性粉尘，无腐蚀性气体，无爆炸性气体，	

2.4 Dimensions 尺寸

Main Size of Charger:(Unit: mm)



2.5 Direction of cooling Airflow 冷却气流方向



3. Installation Instruction 安装说明

3.1 Before Installation 安装前

- ◆ Read all the instructions before using and installing this product.
- ◆ Do not use this product if power cable or charging cable have any damage.
- ◆ Do not use this product if the enclosure or charging connector are broken
- ◆ Do not put any tool, material, finger or other body part into the charging connector or EV connector.
- ◆ Do not twist, swing, bend, drop or crush the charging cable. Never drive over it with a vehicle.
- ◆ 在使用和安装本产品前，请阅读所有的使用说明。
- ◆ 如果电源电缆或充电电缆有任何损坏，请勿使用本产品。
- ◆ 如果外壳或充电连接器损坏，请不要使用本产品
- ◆ 不要将任何工具、材料、手指或其他身体部件放入充电连接器或EV连接器。
- ◆ 不要扭曲、摆动、弯曲、跌落或压碎充电电缆。永远不要一起开车经过它。



WARNING: The product should be installed only by a licensed contractor and/or licensed technician in accordance with all building codes, electrical codes and safety standards.

警告：该产品应仅由许可承包商和/或许可技术人员按照所有建筑规范、电气规范和安全标准进行安装。



WARNING: The product should be inspected by a qualified installer prior to initial use. Under no circumstances will compliance with the information in this manual relieve user of his /her responsibilities to comply with all applicable codes and safety standards.

警告：产品在首次使用前应由合格的安装人员进行检查。在任何情况下，遵守本手册中的信息都不会免除用户遵守所有适用的规范和安全标准的责任

- ◆ Power feed must be 3 Phase Wye configuration with TN(-S)/ TT grounding systems.
- ◆ In the installation of TN(-S) system: the neutral (N) and the PE of the power distribution are directly connected to the earth. The PE of the charger equipment is directly connected to the PE of power distribution and separate conductor for PE and neutral (N).
- ◆ In the installation of TT system: the neutral (N) and the PE of the power distribution are directly connected to the earth. The PE of the charger equipment is isolated to the PE of power distribution to the earth.
- ◆ The product should be installed in free air area and keep at least 50cm clearance distance to all air vent of the product.
- ◆ 电源供电必须为3相白线配置，具有TN（-S）/ TT接地系统。
- ◆ 在TN（-S）系统安装中：配电的中性(N)和PE直接接地。充电器设备的PE直接与配电PE相连，PE和中性导线(N)
- ◆ 在TT系统安装中：配电的中性(N)和PE直接接地。充电器设备的PE与接地配电的PE隔离。
- ◆ 产品应安装在自由空气区，并与产品的所有通风口保持至少50cm的间隙距离

**NOTICE 注意**

It is recommended to conduct 3G/4G signal strength while charger installation. The RSSI (Received Signal Strength Indication) value is considered as good as higher than -65dBm. Poor connection quality might interrupt charging process or data transaction.

建议在充电器安装时进行3G/4G信号强度。RSSI（接收信号强度指示）值被认为高于-65dBm。如果连接质量差，可能会中断充电过程或数据处理。

3.2 Grounding and Safety Requirement 接地和安全要求

- ◆ The product must be connected to a grounded, metal, permanent wiring system.

Connections shall comply with all applicable electrical codes. Recommend the ground resistance be less than 10 Ω .

- ◆ Ensure no power is connected at all times when installing, servicing, or maintaining the charger.
- ◆ Use appropriate protection when connecting to main power distribution network.
- ◆ Use appropriate tools for each task.

- ◆ 产品必须连接到一个接地、金属、永久布线系统。连接件应符合所有适用的电气规范。建议接地电阻小于10
- ◆ 在安装、维修或维护充电器时，确保始终不连接电源。
- ◆ 在连接到主配电网时，应使用适当的保护措施。
- ◆ 为每个任务使用适当的工具

3.3 Unpack the charger 打开充电器

- ◆ The product is direct current (DC) charger and the packing design passed the packaging simulation test. If the packaging damage caused by overturning, falling or external impact during transportation, it may cause the product damage or defects. If there is any serious damage to the packaging when receiving the goods, please notify the supplier about your findings.
- ◆ Packing list is attached to the charger when it shipping out from factory;
- ◆ When unpacking, please refer to the packing list to check whether all parts are included;
- ◆ 该产品为直流（DC）充电器，包装设计通过了包装仿真试验。在运输过程中倾覆、坠落或外部冲击造成包装损坏，可能造成产品损坏或缺陷。如果在收到货物时包装有任何严重损坏，请将您的调查结果通知供应商
- ◆ 充电器出厂时，附有装箱清单
- ◆ 开箱时，请参考装箱单，检查是否包含所有部件；



WARNING! 警告！

Charger weight might be over 350 kg. Charger with package might be over 400 kg. Be careful during unpack process.

充电器的重量可能超过350公斤。带包装的充电器可能超过400公斤。在打开包装的过程中要小心。

3.4 Installation Procedure 装配程序

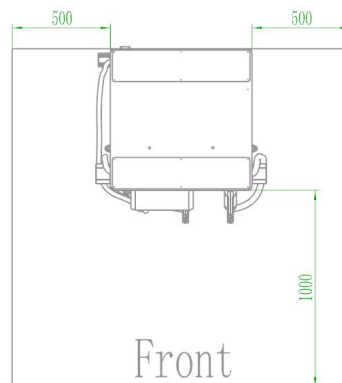
Required space for placing and maintaining

Required a space of 1520x1350mm. This space is calculated as follows:

- ◆ Size of the Charger W x D x H: 860x610x1700mm.
- ◆ Front side 1000mm, in order to open the front door.
- ◆ Left and right side 500mm.

放置和维护所需的空间需要1520x1350mm的空间。该空间的计算方法如下：

- ◆ 充电器的尺寸W x D x H：860x610x1700mm。
- ◆ 正面1000mm，以便打开前门。
- ◆ 左右两侧500mm



Unit: mm

3.5 Power on 通电

- ◆ Turn on the lightning protection switch (QF2) → auxiliary power switch (QF1) → AC inlet switch (QF) in sequence.
依次打开防雷开关（QF2）→辅助电源开关（QF1）→交流入口开关（QF）

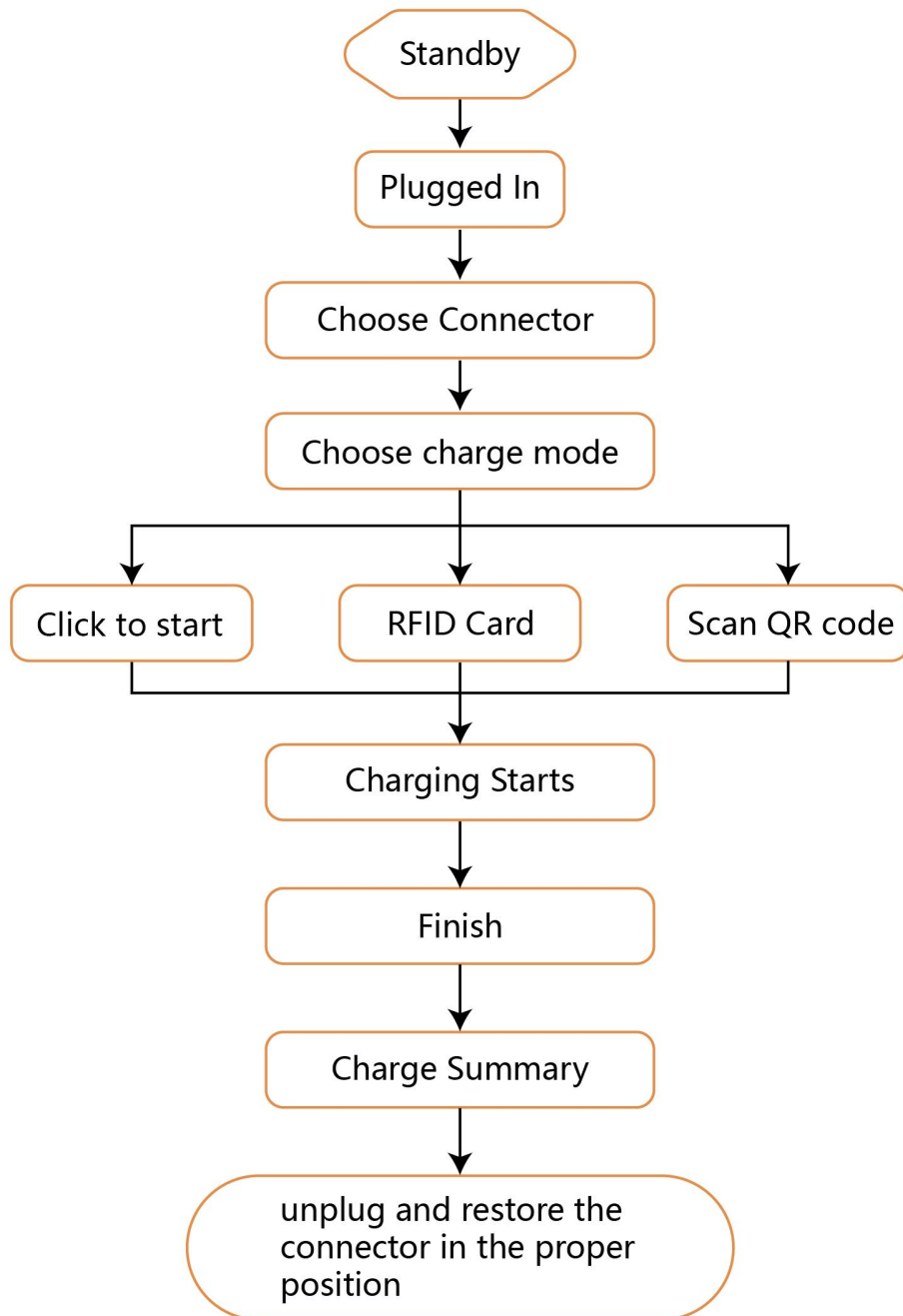
3.6 Equipment inspection 设备检查

- ◆ Whether the equipment operating environment meets the technical requirements;
- ◆ Check whether the pile is fixed. Shake the pile from different directions, and no obvious looseness and shaking should be felt;
- ◆ Check whether the protection level of the equipment meets the requirements, especially whether the cable entrance at the bottom of the equipment is sealed;
- ◆ Before starting up, check whether the equipment has loose connection lines, mechanical damage, line breakage, etc.;
- ◆ After power on, check whether the LCD touch screen, card reader, meter, etc. are working properly;
- ◆ In case of emergency, press the emergency stop button immediately;
- ◆ Only qualified personnel can repair the charger;

- ◆ 设备运行环境是否符合技术要求；
- ◆ 检查桩是否固定。不同方向摇桩，无明显松动、晃动，
- ◆ 检查设备防护等级是否符合要求，特别是设备底部电缆入口是否密封；
- ◆ 开机前，检查设备是否有连接线松动、机械损坏、断线等情况。；
- ◆ 开机后，检查是否有液晶触摸屏、读卡器、仪表等。工作正常；
- ◆ 紧急情况下，立即按下紧急停止按钮；
- ◆ 只有合格人员才能维修充电器；

4. Instructions 操作指南

4.1 Operating procedures 操作程序



4.2 Operation steps 操作步骤

(1) Standby interface 备用接口

- ◆ This interface indicates that the charger is idle;
此界面表示充电器空闲状态

(2) Connect the charging plug 连接充电插头

- ◆ Remove the charging plug of the device and connect it to the charging socket of the vehicle. If the charging plug is fully connected to the vehicle socket, the interface displays connected;
取下设备的充电插头，并将其连接到车辆的充电插座上。如果充电插头与车辆插座完全连接，则界面显示已连接

(3) Start-up method selection 启动方法选择

- ◆ Click the plug below the connected to jump to the start mode selection interface, you can select credit card, RFID card to start charging and scan code charging; 点击所连接的下面的插头跳转到开始模式选择界面，您可以选择信用卡、RFID卡开始充电和扫描码充电；

(4) Start charging 开始充电

- ◆ After selecting the charging method, enter the operation countdown interface;
选择充电方式后，进入操作倒计时界面；

(5) Charging starts 充电启动

- ◆ After swiping the card or scanning the code, enter the charge start countdown interface; 刷卡或扫描代码后，进入充电开始倒计时界面；

(6) Charging 充电

- ◆ After the charging is started, enter the charging interface; 充电开始后，进入充电界面
- ◆ The interface displays current charging information such as charging voltage, charging current, charging power, charging energy, charging time, charging cost, battery SOC, remaining charging time, etc.; 该界面显示充电电压、充电电流、充电功率、充电能量、充电时间、充电成本、电池SOC、剩余充电时间等电流充电信息。；

(7) End charging 端部充电

- ◆ If you want to end charging during the charging process, you can click the red stop button in the lower right corner of the interface to enter the stop charging countdown interface; 如果要在充电过程中结束充电，可以点击界面右下角的红色停止按钮，进入停止充电倒计时界面；
- ◆ According to the card swiping or APP scanning method used when charging is started, charging ends; 根据充电开始时使用的刷卡或APP扫描方式，充电结束；
- ◆ After the charging is completed, enter the settlement interface, the interface will display the relevant information of this charging, after confirming that the information is correct, please pull out the connector and plug it back into the charging device; 本次充电的相关信息，确认该信息正确后，充电完成后，进入结算界面，显示界面，请拔出接头，插回充电装置；

5. Product Maintenance 产品维护

5.1 Routine maintenance 日常维护

- ◆ In order to ensure the long-term stable operation of the product, the equipment should be inspected regularly. The routine maintenance items are recommended as follows:

Serial number	Inspection items	Inspection cycle	Inspection guidance
1	Whether the air inlet and outlet filters and dustproof cotton are well ventilated	3 months	1. Check whether the air circulation at the inlet and outlet is smooth; 2. Check whether the dustproof cotton has accumulated dust, if the dust is blocked, remove it for cleaning or replace;
2	Whether the charging plug head and cable are damaged	3 months	1. Check whether the charging plug head is broken; 2. Check whether the cable has broken skin or copper leakage;
3	Whether the cooling fan is normal	3 months	1. During the normal operation of the system, check whether the cooling fan is operating normally;
4	Whether the charging module is normal	3 months	1. Check whether there is a module failure problem on the display; 2. During the normal operation of the system, check whether the charging module is

			operating normally;
5	Display screen	3 months	1. Check whether the display screen is broken; 2. Click on the display to check if there is any touch sensitivity;
6	Whether the grounding parts of the charging pile are loose	3 months	1. Check whether the grounding points are loose or unreliable;
7	Emergency stop function	3 months	1. During the normal operation of the system, press the emergency stop button to stop charging immediately; 2. After pressing the emergency stop, check whether the display interface prompts the emergency stop button failure;

5.2 Common troubleshooting 常见故障排除

Code	Fault name	Troubleshooting method
0	Emergency stop	Check if the emergency stop button is pressed, turn clockwise to recover;
2	AC input breaker failure	Check whether the AC input circuit breaker has tripped, push the handle of the circuit breaker to the bottom, and then close and resume;
4	DC output bus bar output fuse failure	Check whether the internal resistance of the DC fuse is normal, if it is blown, replace the fuse;
7	Lightning arrester failure	1. The lightning protection module is loose, check whether the lightning protection module is firmly inserted; 2. Whether the color of the lightning protection module indicator changes from green to red, replace the lightning protection device;
8	Insulation monitoring failure	1. Check whether the output voltage of the charging module is normal during the insulation test; 2. Check whether the impedance values of the positive electrode and the negative electrode to the ground are normal;
9	Battery polarity reverse connection	1. Check whether the battery voltage sampling line at the end of the pile is reversed; 2. Check whether the power cord of the car socket is reversed;

12	Charging interface over temp. fault	Unplug the charging gun, wait a few minutes, and then plug the gun again to charge;
14	Communication with BMS failure	1. Check whether the connection of BMS communication is loose; 2. Check whether the connection of BMS communication is reversed;
20	Charging power module fault	1. Check whether the CAN wire of the charging module communication is loose; 2. Check whether the charging module has a fault light;
33	DC output contactor fail to act	Power off after stopping charging, check whether the auxiliary contact of the output relay is disconnected;
66	The meter module is abnormal	1. Check whether the meter address is configured correctly; 2. Check whether the RS485 communication line of the electric energy meter is properly connected;

6. Warranty 保修期

6.1 Warranty conditions 保修条件

- ◆ After the product leaves the factory, due to transportation reasons, the product or accessory parts found by the user are damaged during unpacking inspection.
- ◆ After the product leaves the factory, the user has fully complied with the quality problems arising from the storage, installation and use rules specified in this manual.

6.2 Warranty period 保修期

- ◆ According to the provisions of the business contract, there is no stipulation that the default is 12 months. 保修期12个月

6.3 Warranty method

- ◆ The manufacturer is responsible for free replacement or repair during the warranty period. 保修期间免费更换或维修。
- ◆ After the warranty period, the user should negotiate with the manufacturer to replace or repair it with a paid method. 保修期结束后，用户应与厂家协商进行付费更换或修理。



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