Poros nova-EC 22kW交流充电桩

Poros nova-EC 22kW AC charger

AEG

安装使用说明书

Installation Manual

安装使用前仔细阅读此说明书并妥善保管
Read the operation manual carefully before use and keep it properly

因技术升级或采用更新的生产工艺，本说明书可能会被再修订
This operation manual may be revised due to technical upgrades or the adoption of newer manufacturing processes

版本号：V01
Version

目　　录
Catalogue

一、 产品简介 Product Introduction

1.1 概 述 Summarize

Poros nova-EC 22kW 交流充电桩由控制板，计量模块，充电枪，联网模块以及户外箱体等组成。全方位多层次保护，漏电保护、过载保护、浪涌保护、过压保护、欠压保护、短路保护、急停保护等，确保充电安全。适合安装于电动汽车充电站、公共停车场、住宅小区停车场、大型商厦停车场、路边停车位等场所，能够为具备车载充电机的电动汽车充电，是电动汽车交流充电的首选产品。

Poros nova-EC 22kW AC charging pile is composed of a control board, metering module, charging gun, connectivity module, and outdoor enclosure. It offers comprehensive multi-level protections, including leakage current protection, overload protection, surge protection, over-voltage protection, under-voltage protection, short-circuit protection, and emergency stop protection, ensuring charging safety. Suitable for installation in electric vehicle charging stations, public parking lots, residential community parking areas, large commercial building parking facilities, and roadside parking spaces, it is capable of charging electric vehicles equipped with onboard chargers. This product is the ideal choice for AC charging of electric vehicles.

1.2 遵循标准 Standard

IEC 61851-1 《Electric vehicle conductive charging system -Part 1: General requirements》
IEC 61851-1 《电动汽车传导充电系统 第1部分：通用要求》
IEC 62196-2016《Plugs, socket-outlets, vehicle couplers and vehicle inlets-Conductivecharging of electric vehicles》
IEC 62196-2016《插头、插座、车辆连接器和车辆接口——电动汽车传导充电》

1.3 充电桩插座接口 Charging Pile Socket Interface

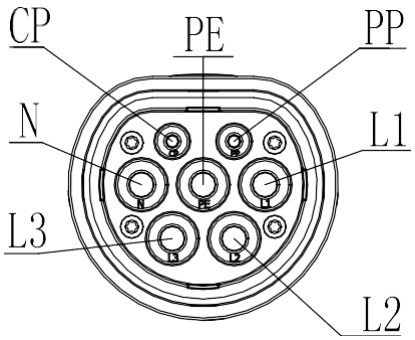


图 1.1 标准通用插座表

Picture 1.1 Standard universal socket table

表 1-1 标准通用插座：

Table 1-1 Standard universal socket：

端子编号 Terminal No.	功能定义 Functions
L1	交流电源 1 Phase 1
L2	交流电源 2 Phase 2
L3	交流电源 3 Phase 3
N	交流电源 中性线 Phase N
PE	保护接地 Ground
CP	控制信号线 Control pilot
PP	接近信号线 Proximity pilot

1.4 产品参数 Product Parameter

产品型号 Product Type	Poros nova-EC 22KW
输入电压 Input Voltage	400V±10%
输出电压 Output Voltage	400V±10%
输出电流 Output Current	32A
额定功率 Rated Power	22KW
额定交流频率 Rated Frequency	50/60Hz
防护等级 IP Rating	IP54
工作环境温度 Operating temperature	-25℃～+50℃
相对湿度 Relative Humidity	5%～95%
海拔高度 Altitude	≤2000m
刷卡频率 RFID Frequency	13.533MHz~13.567MHz
重量 Weight	5.25kg

二、产品使用说明 Product Operation Manual

2.1 产品操作简要流程 Product Operation Brief Flow

(1) 确认充电桩已经供电。
Verify that the charging pile is powered.

(2) 插好充电枪 ，刷卡或扫码开始充电。
Plug in the gun, swipe the card, and start charging.

(3) 通过小程序或刷卡停止充电，拔下充电枪并收好。
Stop charging by program or swiping the card, unplug the charging gun and put it away.

提醒：如出现紧急情况，请按下急停按钮。
Warning: In case of emergency, please press the emergency stop button.

2.2 指示灯状态说明 Indicator Status Instruction

(1) 电源灯：显示充电桩是否通电。
Power light: indicates whether the charging pile is power on.

(2) 充电灯：指示充电桩连接与充电情况。
Charging light: indicate charging pile connection and charging status.

① 充电灯常亮：充电枪线已经连接好。
Charging light on: Charging cable is connected.

② 充电灯闪烁：充电桩正在充电。
Charging light blinking: the charging pile is charging.

(3) 故障灯：指示充电桩的故障情况。
Fault light: indicate the fault status of the charging pile

状态模式 State mode	故障灯 Fault light
急停 Emergency stop	 1 秒 5 次-- 停2 秒-- 1 秒 5 次 5 times/s -- stop 2 s -- 5 times/s
读卡器异常 Card reader is abnormal	 1 秒 2 次-- 停 2 秒-- 1 秒 2 次 2 times/s -- stop 2 s -- 2 times/s
CP 异常 CP is abnormal	 常亮 Lights on
门禁故障/电表通信异常/计量 Access control fault Meter communication is abnormal Metering	 1 秒 1 次 1 times/s
未接地 Ungrounded	 1 秒 3 次-- 停 2 秒-- 1 秒 3 次 3 times/s -- stop 2 s -- 3 times/s
EEPROM/FLASH EEPROM/FLASH	 1 秒 1 次-- 停 2 秒-- 1 秒 1 次 1 times/s -- stop 2 s -- 1 times/s
漏电自检失败/漏电/PEN漏电 Leakage self-test failure Leakage PEN leakage	 1 秒 2 次-- 停 2 秒-- 1 秒 2 次 2 times/s -- stop 2 s -- 2 times/s
过流 Over current	 1 秒 1 次 1 times/s
粘连 Adhesion	常亮 Lights on
短路 Short circuit	 1 秒 5 次-- 停 2 秒-- 1 秒 5 次 5 times/s -- stop 2 s -- 5 times/s
过压 Over Voltage	 1 秒 1 次-- 停 2 秒-- 1 秒 1 次 1 times/s -- stop 2 s -- 1 times/s
欠压 Under Voltage	 1 秒 2 次-- 停 2 秒-- 1 秒 2 次 2 times/s -- stop 2 s -- 2 times/s
过温 Over temperature	 1 秒 3 次-- 停2 秒-- 1 秒 3 次 3 times/s -- stop 2 s -- 3 times/s
输出状态异常 Abnormal output status	 常亮 Lights on
 灯亮 lights on	 闪烁 Blinking

三、安装及调试 Installation and Commissioning

3.1 安装方法及注意事项 Installation Method and Precautions

3. 1. 1. 安装工具 Installation Tool

建议安装工具清单如下

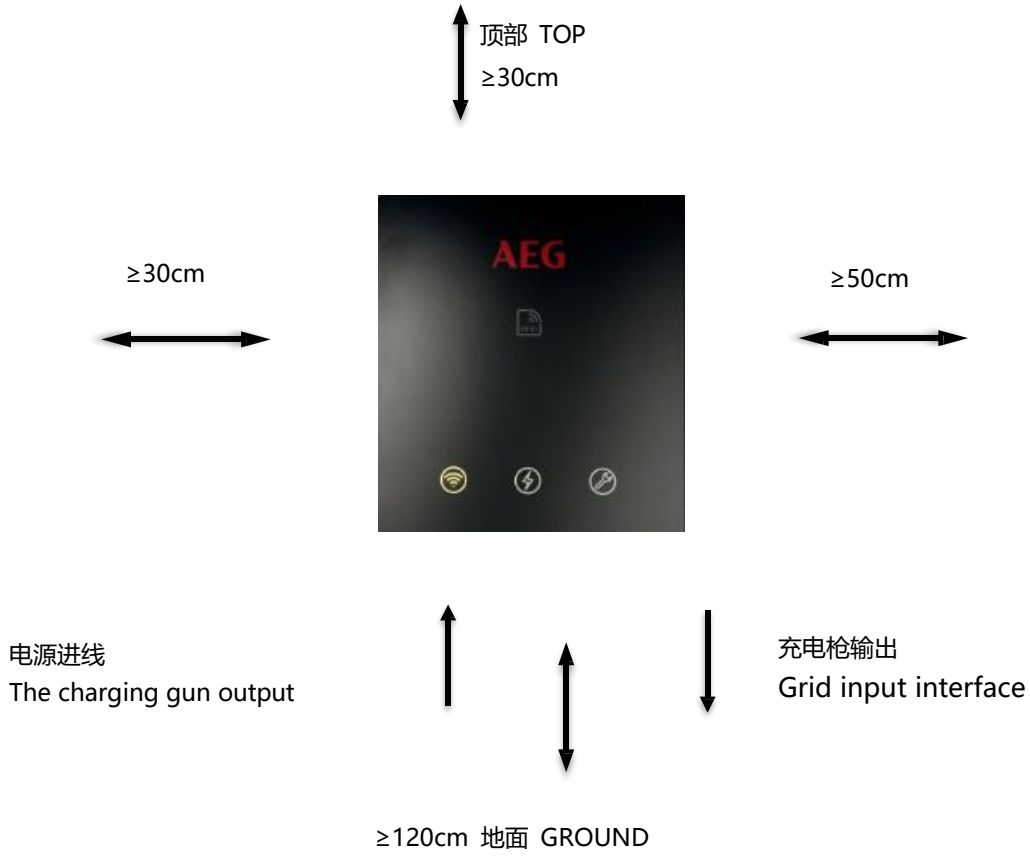
The recommended installation tools list is as follows

序号 No.	名称 Name	数量 Quantity
1	电动冲击钻及配套钻头（φ6mm） Electric impact drill and auxiliary drill bit (φ6mm)	1
2	卷尺（2m） Tape measure (2mm)	1
3	十字螺丝刀 cross screwdriver	1
4	电缆剥线钳 Cable stripper	1
5	端子压线钳 Terminal crimping pliers	1
6	电工手套 Electrician gloves	1

7	19mm 扳手 19mm wrench	1

3.1.2. 定位安装 Positioning And Installation

充电桩安装位置要预留足够的维修空间
The installation position of the charging pile should be reserved enough maintenance space



（1） 壁挂安装定位 Wall mounting positioning

安装前需准备相应紧固螺栓，推荐参数如下：

Secure bolts before installation. The recommended parameters are as follows

序号 No.	名称 Name	数量 Quantity	用途 Purpose
1	Φ6*20mm 膨胀螺钉 φ8*60mm Expansion Screw	4	固定挂板A Fixed Hanging Panel

步骤一：取出挂板A，利用挂板确定安装位置。

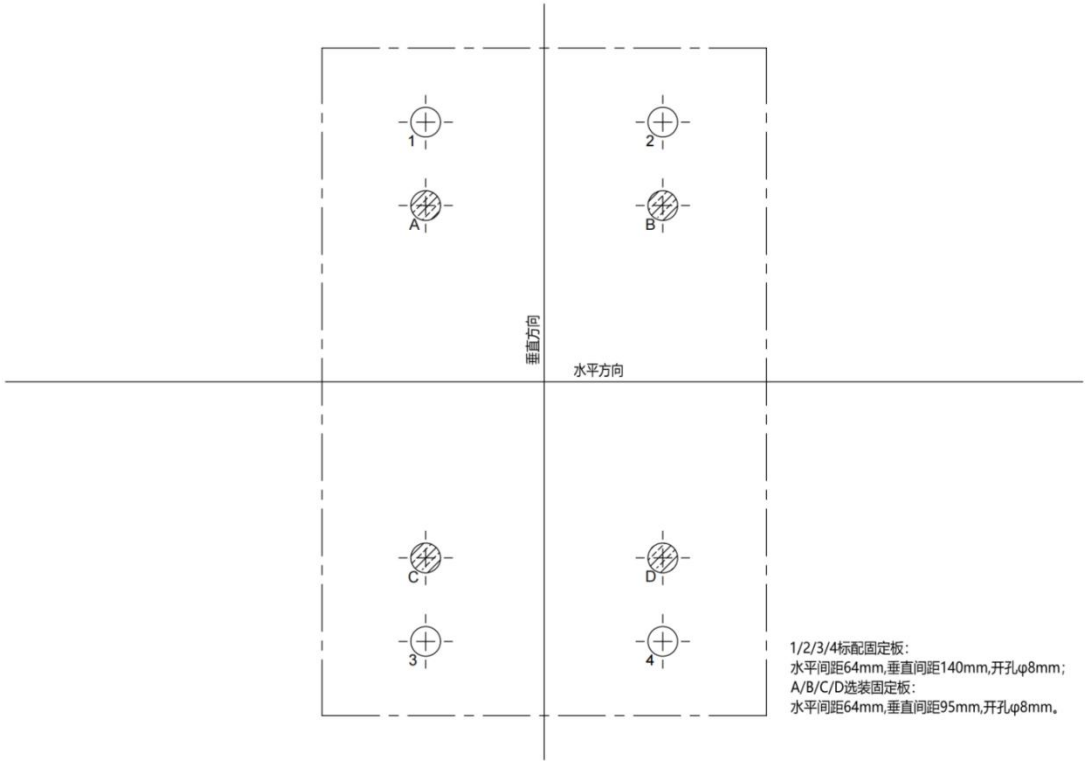
Step 1: Take out the hanging plate and use the hanging plate to determine the installation position.

步骤二：根据挂板的开孔位置，使用冲击钻在墙上钻孔（φ6）。

Step 2: Drill holes on the wall using a impact drill according to the opening hole position of the hanging panel.

步骤三：将膨胀胶塞插入各孔内，使用膨胀管自带的螺钉将挂板A固在墙面上。

Step 3: Insert the expansion rubber plug into each hole, and secure the hanging panel to the wall using the screws provided with the expansion tube.



（2） 立柱安装定位 Column installation and positioning

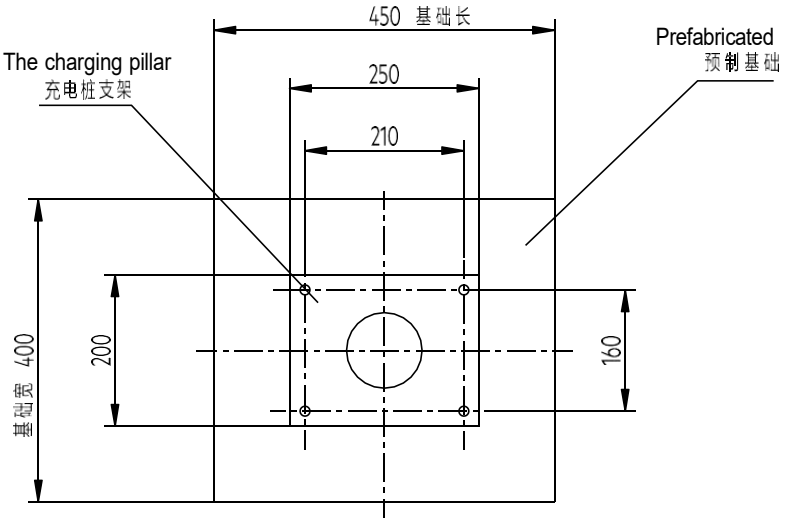
安装前需准备相应紧固螺栓，推荐参数如下：

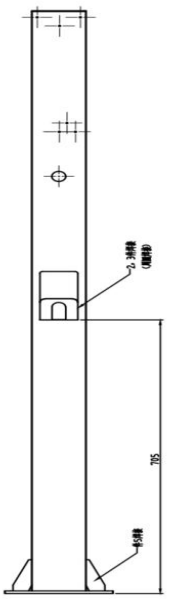
Secure bolts before installation. The recommended parameters are as follows:

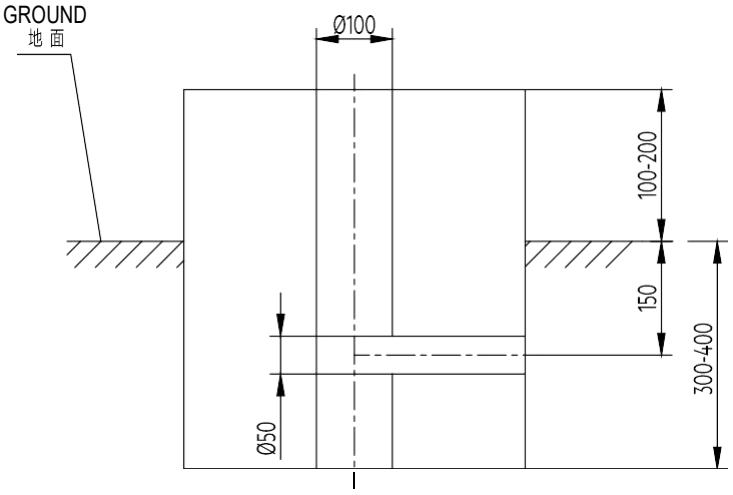
序号 No.	名称 Name	数量 Quantity	用途 Purpose
1	M10*80mm 膨胀螺钉 M10*80mm Expansion Screw	4	固定支柱 Fixed Pillar
2	M6*20 自攻螺钉 M6*20 self-tapping screw	4	固定挂板A Fixed hanging panel A

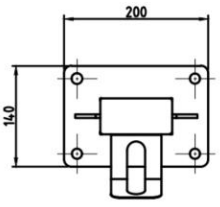
使用立柱安装时，应先对安装位置的地面进行检查，立柱应安装在牢固的地面上，否则需做预制基础，预制基础的要求如下。

Using column installation, should first inspection on the ground of the installation position, mast shall be installed on firm ground, or to do prefabricated foundation, prefabricated basic requirements are as follows.









步骤一：利用底座确认安装位置（预留电缆孔在立柱的正下方）。

Step1: Determine the installation position using the base(the reserved cable hole is right below the column).

步骤二：将预留的电缆穿出立柱的电缆孔。

Step 2: Put the reserved cable through the cable hole of the column.

步骤三：将立柱用随机提供的膨胀螺栓安装到地面上。

Step 3: Install the column on the ground using the provided expansion bolts.

步骤四：将挂板A用 4 个 M6*20 的螺钉装在支架上。

Step 4: Secure Mounting Plate A to the bracket using four M6*20 screws.

（3） 充电桩固定 Fixed the charging pile

安装前需准备相应紧固螺栓，推荐参数如下：

Secure bolts before installation. The recommended parameters are as follows:

序号 No.	名称 Name	数量 Quantity	用途 Purpose
1	M5*16 组合螺钉 M5*16 Combination Screw	3	固定挂板B Fixed hanging panel B
2	M6*20 组合螺钉 M6*20 Combination Screw	4	固定挂板A&B Fixed hanging panel A&B

步骤一：用 3 个 M5*16 的组合螺钉穿过挂板B固定在充电桩底部固定孔，将充电桩固定在挂板上。

Step 1: Use three M5*16 combination screws to pass through Mounting Plate B and secure them into the bottom fixing holes of the charging pile, fixing the charging pile onto the mounting plate.

步骤二：将固定好挂板的充电桩挂上立柱，用4个M6*20 组合螺钉从侧边固定上A&B挂板。

Step 2: Mount the charging pile with the pre-attached mounting plate onto the column, and secure Mounting Plates A & B from the side using four M6*20 combination screws.

(4) 接线要求 Wiring requirements

① 输入电源连接 L1/L2/L3/N 和 PE 电缆，颜色应符合当地标准要求。按照标记接线。
The input power supply is connected to cables L1/L2/L3/N and PE, and the color should meet the requirements of local standards. Follow the markings.

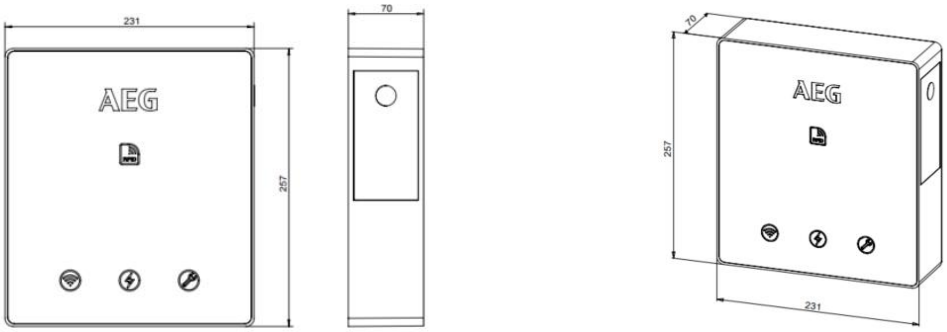
② 充电桩应具备独立的配电回路，不得与其他用电产品共用。
The charging pile shall have an independent distribution circuit and shall not be shared with other electrical products.

③ 充电桩应配置带漏电保护的断路器。
The charging pile should be equipped with a circuit breaker with leakage protection.

④ 充电桩的输入电缆导体结构应为五芯多股铜绞线，并且电缆应按要求压接接线端子片。
The structure of the input cable conductor of the charging pile should be Five-core multi-stranded copper wire, and the cable should be crimped with the terminal piece as required.

⑤ 充电桩的输入电缆应满足如下要求：22KW充电桩输入电缆要求≥$6mm^2$ 。
Input cable of the charging pile should meet following requirement: 22KW charging pile input cable requirements ≥$6mm^2$

(5) 产品外观尺寸 Product appearance size



(6) 安全检查 Safety inspection

检查安装连接，必须检查现场的所有电气连接，确保连接正确、牢固；

To check installation connections, you must check all electrical connections on site to ensure that the connections are correct and secure;

1、检查充电桩的电缆线径是否符合要求；
Check whether the cable diameter of the charging pile meets the requirements;

2、检查进线电缆相序连接是否正确；
Check whether the phase sequence connection of the incoming cable is correct;

3、检查充电桩的端子是否压紧、牢靠；
Check whether the terminal of the charging pile is tight and secure;

4、检查充电桩的进出线电缆接头处力矩是否符合要求（充电桩进出线力矩为 0.6N.m）；
Check whether the torques at the inlet and outlet cables of the charging pile meet requirements. (The inlet and outlet torques of the charging pile are 0.6 N.m);

5、检查充电桩前端的漏电断路器进线方向是否准确；
Check whether the inlet direction of the leakage circuit breaker at the front end of the charging pile is accurate;

6、检查充电桩输入及输出的电缆接头是否锁紧无漏水；
Check whether the input and output cable connectors of the charging pile are locked without leakage;

7、安装完成后应测试输入电缆对地（L1/L2/L3对PE，N 对 PE）绝缘电阻应≥30MΩ（DC500V,测试时间 1min）。
After installation, the input cable should be tested to the ground (L1/L2/L3 to PE, N to PE) Insulation resistance should ≥30MΩ (DC500V, test time 1 min)。

3.2 调试 Commissioning

1、确认所有线都已经连接正确，将充电桩总开关打开，查看电源灯是否亮起；
Make sure all wires are connected correctly, turn on the mian switch of the charging pile, and check whether the power light is on;

2、连接充电桩和电动汽车，启动充电，查看是否有电流电压显示；
Connect the charging pile and electric vehicle, start charging, and check whether there is a current and voltage display;

3、以上全部通过，即可进行正常使用。
All the above pass, you can carry out normal use.

四、异常现象及处理方法 Abnormal Phenomena and Treatment Methods

序号 No.	异常现象 Abnormal Phenomena	可能原因 Possible cause	解决方法 Solution
1	电源灯不亮 Power light is off	上级断路器跳闸 Upper circuit breaker trip	检查电源线路 Check the power line
		上级电表欠费 Superior meter arrears	进行电表充值 Recharge the meter
2	故障灯常量/闪烁 Fault light on/blink	根据颜色和闪烁方式区分不同故障 Distinguish faults according to color and flash mode	参照2.2章节故障灯语 Refer to the fault indicator to view the corresponding
3	充电灯不亮 Charging light is off	充电枪未插好 The charging gun is not plugged properly	重新插拔充电枪 Reinsert the charging gun 保证充电枪连接到位 Make sure the charging gun is properly connected 检查充电枪上按钮是否弹起 Check whether the button on the charging gun flicks 检查充电口内是否有异物 Check the charging port for foreign objects 检查充电口绝缘胶圈是否扭曲 Check whether the insulation rubber ring of the charging port is twisted
4	充电 5S 停止 Stop charging in 5s	地线接触不良 Poor ground connect	检查地线连接 Checking ground connections
5	冬季充电功率为负值 The charging power is negative in winter	电池预热 Battery preheating	车辆预热完成后自动恢复 The vehicle will resume automatically after it has warmed up
6	无法拔枪 Unable to draw	车辆自我保护 Vehicle self-protection	尝试反复解锁车门 Try unlocking the door repeatedly

如以上处理方法未能解决问题，或出现其他异常情况，可将充电桩断电后重启，并重新插拔充电枪，再次尝试。若问题还未得到解决，请立即停止操作、断开电源并与售后服务中心联系。

If the above processing methods fail to solve the problem, or other abnormal conditions occur, the charging pile can be restarted after the power off, and re-plug the charging gun, and try again. If the problem is not solved, stop the operation immediately, disconnect the power supply, and contact the after-sales service center.

五、维护说明 Maintenance Instruction

序号 No.	检修内容 Maintenance content	检修步骤 Maintenance procedure	周期（建议） Cycle (recommended)
1	输入电缆以及接地 Input cable and grounding	检查充电桩的输入电缆绝缘层有无因过热而引起的烧焦老化的现象，接地电缆是否连接牢靠。 Check whether the insulation layer of the input cable of the charging pile is charred and aging due to overheating, and whether the grounding cable is securely connected.	6 个月 6 months
2	外观检查及除尘 Appearance inspection and dust removal	检查充电桩、枪线、枪头有无破损；清除充电桩和电缆表面灰尘；清除充电接口内部灰尘、异物。 Check charging pile, gun wire, gun head for damage; Remove dust from the surface of charging piles and cables; Remove dust and foreign bodies from the charging port.	
3	检查各种安全标识 Check the various safety signs	检查各种安全标识，如发现有脱落或模糊不清的标识，应立即更换。 Check all kinds of safety signs. If you find any missing or blurred signs, replace them immediately.	

4	充电流程检测 Charging process detection	充电桩上电，进行一次完整的充电过程，观察充电桩指示灯状态是否正常，观察充电过程是否正常。 Power on the charging pile, conduct a complete charging process, observe whether the indicator status of the charging pile is normal, and observe whether the charging process is normal.	3 个月 3 months
5	急停开关测试 Emergency stop button test	充电桩上电，开始充电过程，按下急停开关，测试急停开关是否能断开输出电路。 Power on the charging pile, start the charging process, press the emergency stop switch, test whether the emergency stop switch can disconnect the output circuit.	

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