60-120KW Dual Gun Integrated DC Charger

User's Manual

Introduction

In order to enable you to use the electric vehicle dc charger safely,encounter trouble can be eliminated in time, please read the manual carefully before use.

The Charger is suitable for lithium-ion power battery, which provides no more than rated power output, and maintains high output voltage and current accuracy, the main function is to display the status of charge,battery pack status, fault status and other information during the charging process.

This manual is only applicable to DC charger of electric vehicle. The contents of the manual will be updated with the upgrade of control software and display interface software without prior notice.

Contents

Conditions of use and safety instructions

(1)the environment

Operating environment temperature	Working humidity	Atmospheric pressure
-20℃～50℃	5%～95%	80kPa～110 kPa

(2)a safety statement

- The charging operation shall be carried out according to the operation instructions provided by Huizhou Olink Technology Co. , Ltd.
- Non-professional personnel are strictly prohibited to open the charger cabinet at will, do not disassemble the display screen without permission and do not operate on the display screen with sharp objects;
- Stop Halfway, you must first manually click the“Stop” button to stop, and then pull out the charge gun head; It is strictly forbidden to directly plug and unplug the charging gun head during the charging process, otherwise the charging gun head and the charger will be burned, and even the operator will be burned;
- During the charging process, it is forbidden to do any operation which is not related to charging. The charger“Stop" button must be clicked to stop the machine and the charging gun head must be disconnected from the car before any other operation can be done;
- In case of emergency, press the red“Stop" button of the charger to cut off the internal power supply of the Charger;
- Avoid fireworks near the charger (Open Fire) , pay attention to ventilation;
- The fuse must be replaced with the same type of product, can not be replaced with copper, iron wire;
- The Charger has high voltage, there should be a fault by professional maintenance,in order to avoid danger;

- The upper circuit breaker and distribution cabinet of the Charger should be selected, installed and operated by a professional electrician;

- Thunderstorm and other bad weather recommended to disconnect the power supply, if the charger water phenomenon need to contact manufacturers after the end of the treatment can continue to use.

- The unit weight of the charging gun cable is large, and the long wire is easy to be dragged and forced during the actual charging process, which is not conducive to releasing the twisting force, increasing the risk of cable twisting and bulging, and affecting the service life of the product. Therefore, it is forbidden to pul and twist the charging cable. The charging gun cable must be smoothed during charging and must not be twisted to force the charging gun seat in use.

- it is strictly forbidden to swing the charging gun from side to side when inserting or pulling out the charging gun. The charging gun must be inserted or pulled out with vertical force.

- **If any of the following happens, please turn off the power and notify a professional for repair:**

- Inside the Charger appears abnormal sound;
- A strange smell or smoke coming from inside the charger;
- No display or no response on charger display screen;
- The Charger has an unrecoverable failure alarm

Note: before power-on operation, please ensure that the equipment shell and the earth effectively connected, otherwise there is a risk of electric shock!

1、Overview

1.1 functional description

The integrated DC charger can realize quick charge of single gun and quick charge, and can also meet the requirement of simultaneous and average power charge of two guns. Equipped with 12V or 12/24V auxiliary power supply to provide power for BMS

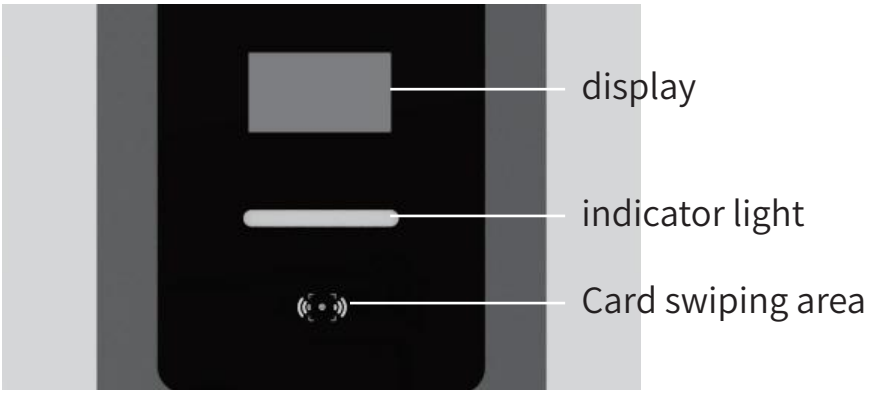
1.2 description

1.2.1 operating area
The operation area includes indicator, display, card reading area and emergency stop button. The indicator can show the power supply, the charging gun and the

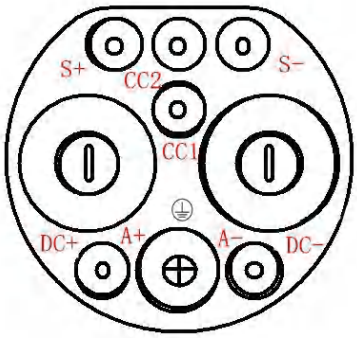
Failure status, the display screen is used to display charging information, the card reading area is used to identify charging cards while providing simple operation

The emergency stop button is used to cut off the power supply in case of emergency to avoid accidents and normal power cut-off is forbidden to use.

Schematic diagram of Charger Operation Area



charging connection device



Interface diagram of charging plug

1.3 Main technical parameters

Product name	60-120KW DC Charger		
Model	OLEV-GBT-DC060-001	OLEV-GBT-DC080-001	OLEV-GBT-DC120-001
Contour size(mm)	700mm*389mm*1580mm(长*宽*高)		
Human-computer interaction	7-inch touch screen		
Input Voltage	AC380+15%(three-phase five-wire system)		
Maximum input current	116A	152A	232A
Output voltage	150-1000Vdc		
Output Power	60KW	80KW	120KW
Metrological accuracy	1.0		
Working Environment	Altitude:≤2000m,Temperature:-20°C ~ +50°C		
Charging mode	Charge by swiping card, scanning code, etc.		
Internet access	4G, Ethernet		
Input frequency	50±5 HZ		
Protection function	Overvoltage, undervoltage, overcurrent, short circuit, surge, leakage, etc.		
Charging interface	GB/T 20234.2-2015		
Long charging line	Standard 3m (5m optional)		
Protection Grade	IP54		
Shell color	Panel white or panel gray (optional)		
Humidity	5% -95% RH (no condensation)		
Communication protocol	OCPP 1.6/0CPP 2.0		

2、use method

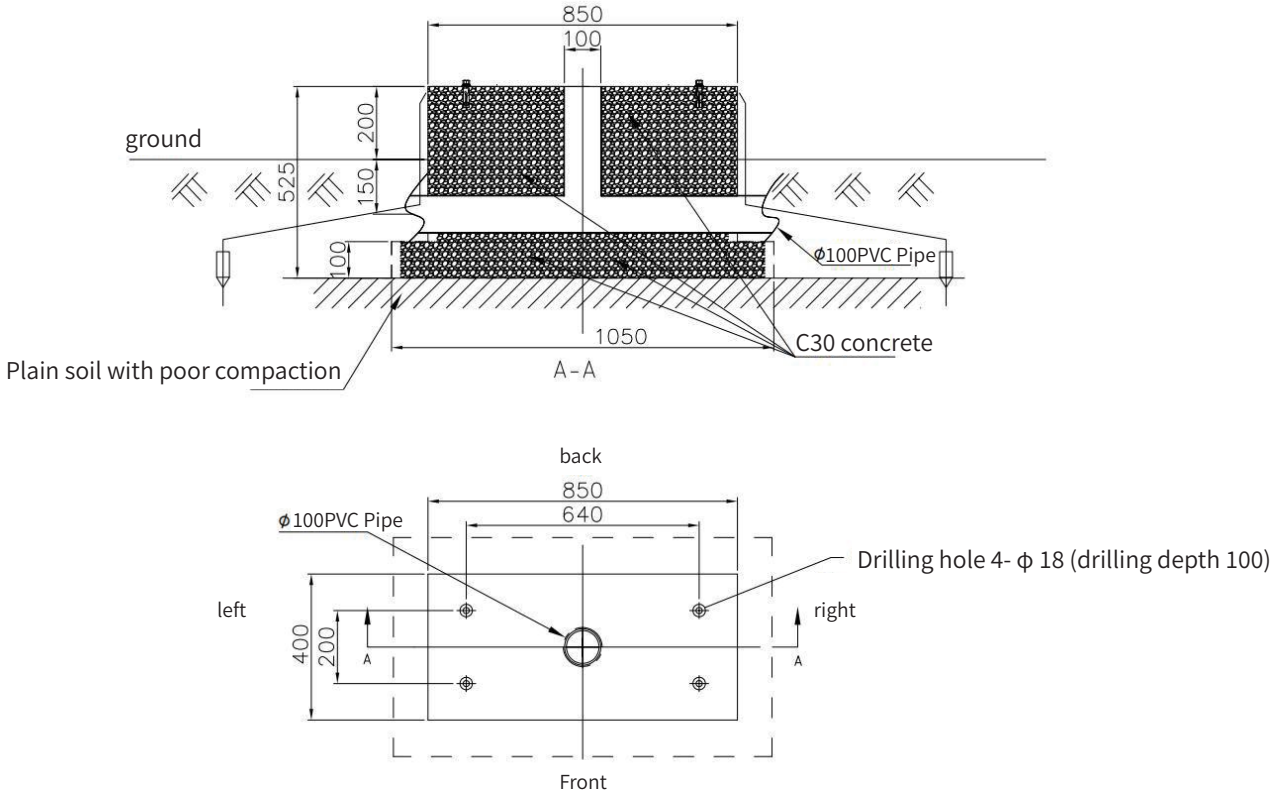
2. 1 installation instructions

2. 1. 1 structural installation

（1） Foundation plan

60kw charger adopts the form of ground installation, installation should ensure that the installation is reliable, solid, the proposed foundation map is as follows

Picture:



Foundation map

Technical Requirements:

1.60 kw: YjV-0.6/1KV-3*80mm2 +2*60mm2, slanting through Φ150 insulated flame-retardant electrical pipe, distribution box with in = 400A three-phase 4p plastic case leakage circuit breaker, Lug Model DT80, DT60;

2. The foundation is cast with C25 concrete, and the M12 stainless steel dart bolt is embedded in the foundation, and the dart bolt is exposed 40mm and remains vertical, and the size of the dart is based on the section drawing of concrete casting, each set of M12 stainless steel dart head should be matched with 12 gaskets (GB/T96 Big Gasket C), elastic gasket, M12 dart mother(8.8),to ensure that 10 years of rust;

3. In the construction of foundation, it is necessary to tamp the ground in the loose soil area to ensure that the charging pile will not tilt after a long time of work

4.It is necessary to prevent rain water from pouring into cable hole.incline embedding, reduce cable laying resistance, and the plane degree of concrete boss installation is not more than 3 mm.

5.Protective measures such as railings or car stalls shall be installed on the periphery of the concrete base platform

6. Yellow and black warning lines (width of warning lines) shall be formed around the exposed side walls of the concrete foundation into 45 °C with the horizontal plane 100mm)

（2） Instructions for disassembly and assembly

When installing, remove the wooden tray of the cabinet, move the cabinet to the foundation platform, then fix the cabinet with nuts and Shim, and install the protective rubber suit back to the original position.

Installation notes:

- Charger installation location should be well drainage measures to avoid the charger immersion, affect the normal use.

- Installation, must ensure that the charger left and right two meters within the scope of obstacles to ensure that the normal cooling charger,Set aside a certain distance for easy operation.

- When the cabinet is fxed on the base, the vertical inclination of the cabinet should not be more than 5% . The recommended tightening torque for the nut is 28.5 N.m

- Places should be protected from direct sunlight and outdoor shading (rain proofing) should be provided.

electricalinstallation instructions:

The electrical installation of DC Chargers shall be guided by a professional technician. Open the front door of the charging pile (facing the charger)and connect the incoming wire to the lower terminal of the circuit breaker,as shown in the figure.

Entry position

The charger input adopts three-phase five-wire AC power supply, the maximum input current is 250A, the AC incoming cross-section area is calculated as follows:

It is recommended that copper core cables conforming to GB 50217 andGB/T 12706.1 should be crimped with terminals corresponding to the cross sectional area of the cable, and the exposed parts of the terminals should be insulated by heat shrinkable sleeve or insulating tape.

Tensile strength requirements for crimped terminals of various sizes:

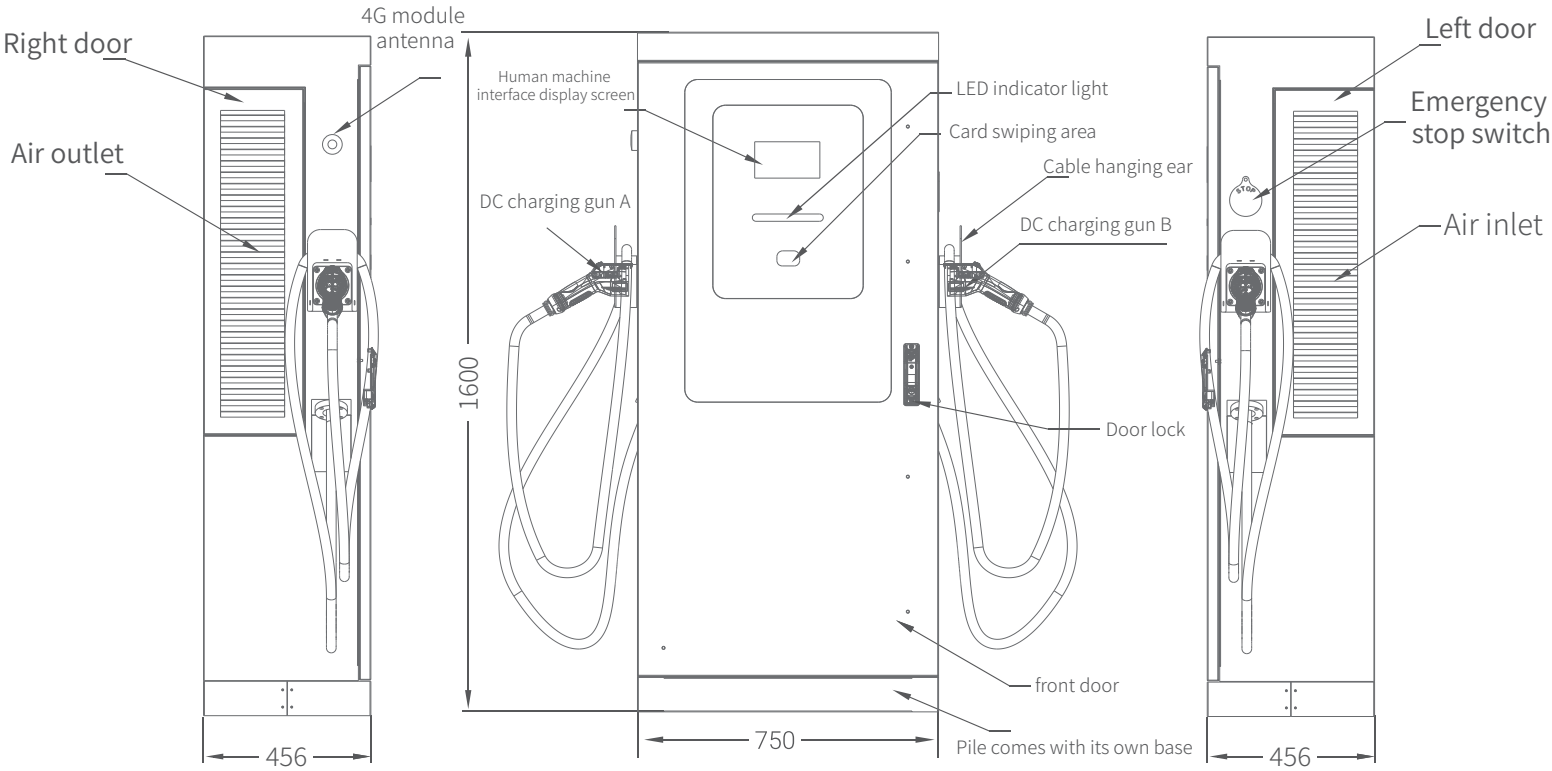
Conductor size (mm2)	Compressive tensile strength (N)	Conductor size (mm2)	Compressive tensile strength (N)
0.13(AWG# 26)	13	30	2300
0.2(AWG#24)	22	38	2500
0.3(AWG#22)	36	50	2900
0.5(AWG#20)	58	60	3200
0.75(AWG#18)	89	80	3500
1.25	200	100	3900
2	290	125	4000
3.5	540	150	4100
5.5	780	200	4400
8	980	250	4600
14	1400	325	4800
22	1800		

If the dimension of conductor used is not in the table, the tensile strength corresponding to the approximate size can be selected for testing.

The AC incoming line is connected to the AC input terminal (the plastic case circuit breaker incoming line downward) and the zero line copper row (n)and the grounding copper row (PE) inside the charger from the bottom of the charger. AC input must be connected according to incoming line, zero line (N) and phase line (A, B, C) can not be connected back, otherwise it will lead to the charger failure unrecoverable. The circuit breaker and distribution cabinet shall be selected and operated by professional electrical personnel. The recommended installation torque for electrical installation is.

Note: The terminal block should be removed before wiring, and then use socket wrench to tighten the terminal screws, do not use screwdriver operation.

2.1.3 outline dimensions



2.2 power up ready

2.2.1 personnel requirements

Users should pass the operation training before using the charger. Work during the required wear uniform, insulating shoes, long hair comrades should wear a helmet.

2.2.2 check before use

- According to the electrician's code of operation, check whether there is electrical damage and position movement inside the cabinet, ensure that the terminals are frmly pressed, no damage and burning.

- Open the front cabinet door, open the circuit breaker to ON gear, and close the air switch of the control circuit for ON-off test to ensure no short circuit.

- Push the circuit breaker into OFF gear, at which point the circuit breaker disconnects. Disconnect the control loop air switch and connect the incoming AC line.

- After the AC incoming line is energized, make sure that the emergency stop switch is loose, then turn on the circuit breaker and Air Switch, and use the multimeter test to ensure that the power is energized

- Before charging, check whether there is any foreign body in the charging gun, insulator, pin and Jack, If there is any foreign body, follow this instruction

3.2 section (8) clean.

2.3 network matching requirements for charging piles

Problem 1:4G signal is weak

- Description of problem: 4G network coverage weak area definition: signal radiation area (such as near high-speed Railway) , remote and no domestic operators base station area (such as Xinjiang, Xizang, Inner Mongolia, etc.)some indoor areas (such as underground parking lots, airtight rooms, etc.),mountainous areas for 4G signal weak areas;

- Proposal: the above weak signal area from 4G network signal connection to Ethernet cable connection to avoid network problems affecting the operation.

Problem 2:the number of base station connections exceeds the limit

- Problem description: The Charging Post uses a 4G module to connect to a nearby mobile base station (the company currently ships standard mobile traffc cards) to create an Internet network, When the number of mobile base station connections in the area reaches a peak, there will be 4G instability, leading to charging data upload is not timely, network failure and other phenomena;

- Proposal: due to the inability to predict the site of the network environment, the proposed problem, to replace other operators of the flow card (such as replaced by Telecom,Unicom)

2.4 introduction to charging system

2.4.1 introduction of charging method

After the Charger is charged, the system checks itself. Subsequently, the screen enters the system main interface, the Charger according to the battery management system issued by the instructions to charge. The charging mode includes charging by swiping card, scanning code and soon, Users can choose different charging modes according to their needs. Before charging, check whether there is any foreign body in the charging gun, insulator, pin and Jack, If there is any foreign body, follow this instruction

(1)charge by swipe card: Swipe card charging is suitable for general self-use charging, but also for operation, For operation can not be linked to the background, only to buy a top-up machine and M 1 white card, the cost is very low, but the card to charge charging, charging a little cumbersome.

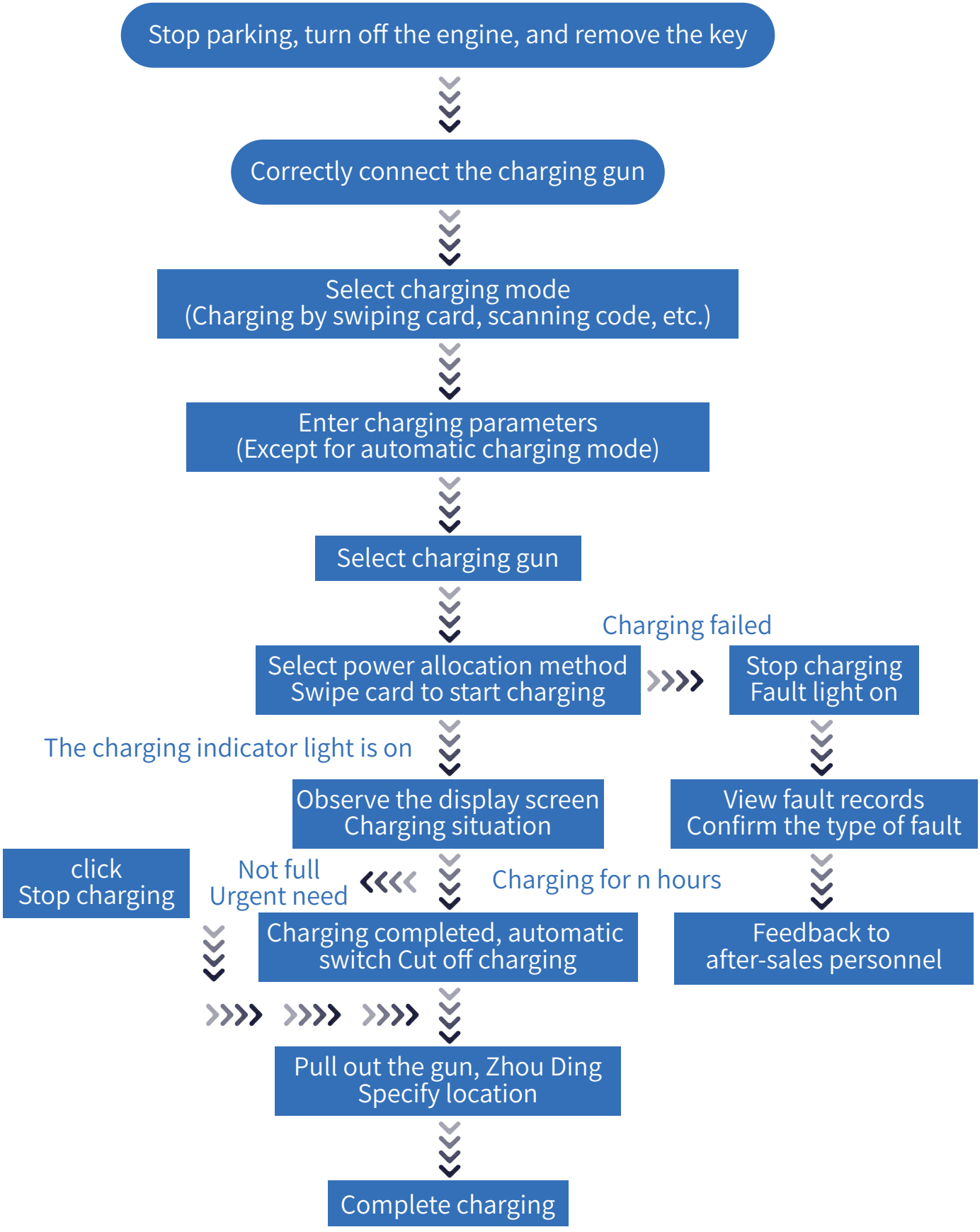
(2)scan code charging:commonly used in operation, support wechat/Alipay scan code payment function, can link cloud platform, can also connect the customer specifed platform. There is no need to install a mobile phone APP, and the charging balance can be recharged in seconds.Quick and easy to charge, support remote upgrade, remote maintenance and other functions.

2.4.2 introduction of charging mode

The Charger has two charging modes: single chargin!with two guns and double charging with two guns at the same time.

Double gun single charge: each charge gun with rated power output. While a gun is charging, operate B gun to charge. After the charging connection device is reliably connected, the charging operation is completed. Wait for a gun to finish charging, the system will charge B gun automatically. Two guns charge at the same time: each charge gun to rated power output half, different charge guns can charge at the same time. While the gun is charging, the B-gun can be charged automatically after the charging connection is reliably connected and the charger is correctly operated.

2.4.4 easy operation



3、Equipment Storage and maintenance instructions

3.1 storage of chargers

The packed equipment shall be stored in a place with air circulation,temperature between, monthly average relative humidity not greater than.and the storage place shall be free from corrosive and explosive gases, no rain, exposure, condensation or frost during storage. Storage Life:

Device name	Class 1 environment, finite, shelf life(years)	Class 2 environment, Limited, shelf life(years)	Class 3 environment with limited shelf life(years)	Notes
Charger	1	0.8	0.5	

Relationship between environmental conditions of storage:

Classification of storage environment conditions	Temperature°C	Relative humidity%	Notes
I	15 ~ 25 ℃	Not more than 65 %	
II	-5 ~ 30 ℃	Not more than 75 %	
III	-35~ 55 ℃	Not more than 90 %	

⚠ Do not store in the same place as corrosive articles!

3.2 maintenance of the Charger

The daily maintenance of DC charger can ensure that it is always in good working condition, the main work is:

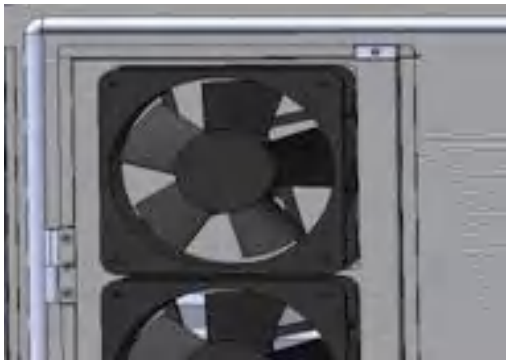
(1)regular inspection of the cavity is dust, regular cleaning, to prevent the decline of internal insulation。
(2)regularly check whether the grounding wire is reliably grounded。
(3)regularly check whether the cooling fan is working properly, and replace the same type of fan if it is damaged。
(4)regularly check the ventilation status of the cabinet. In order to ensure good ventilation of the cabinet, it is necessary to clean the dust-proof net of the side door regularly. It is recommended that the charging cabinet should be cleaned once every three months. In case of bad environment, the user can shorten the cleaning interval time according to the specifc situation.The steps for removing and cleaning are as follows:

Open the right door, remove the black flter, take out the ventilation shutters and metal dust-proof net, clean it with water.

Open the right door, remove the butterfly-shaped screw fastening the fan parts, open the fan parts take out the black flter, ventilation shutters and metal dust screen, clean them with water;

After the metal dust screen and the black flter are dry, install the metal dust screen, the ventilation shutters and the black flter in reverse order And screw it tight.

Detail drawing of ventilation louver



Fan parts on the right

(5)regularly check the charging connection line and winding pipe, there is aging, wear and tear need to be replaced in time to ensure the safety ofuse.The charging connector should be loosened and fastened in time.

Maintenance operations are recommended once a month, in case of adverse circumstances, depending on the circumstances to shorten the interval

(6)daily maintenance of surge protectors

Check the incoming and outgoing lines of surge protector regularly to prevent line failure caused by surge protector and line aging.

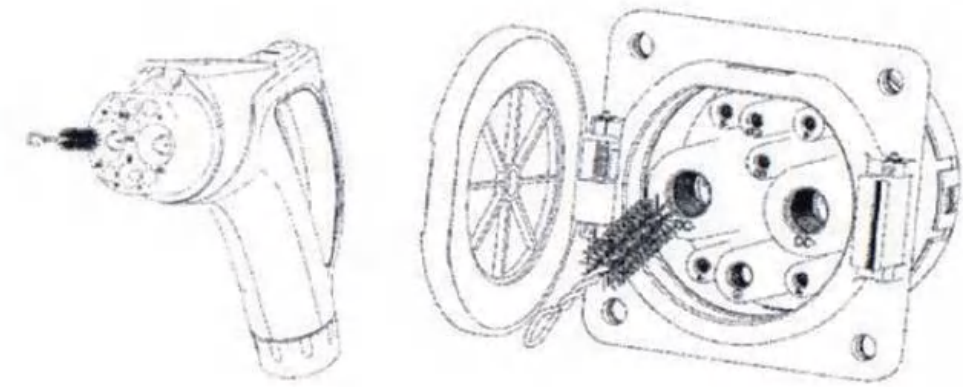
Check the aging and wear of surge protector and circuit

(7)daily maintenance of dust collection

Regular inspection of cabinet dust, Ash status, need to regularly clean the cabinet and parts of the dust. After the power supply is disconnected, the bottom surface, side surface and parts of the cabinet shall be cleaned by a vacuum cleaner or an air compressor.

(8) daily maintenance of charging gun

When the charging gun is idle, the dust cover should be covered or inserted into the gun seat of the Charger to prevent foreign matter from entering.Use a high-pressure air gun and a brush to clean the charging gun and gun seat every week, Clean the charging gun and gun seat with a clean cloth or cotton swab if necessary, use the above cleaning methods in a timely manner.



Clean the charging gun and socket

⚠ Note: non-professionals are not allowed to remove equipment components!

4、Common trouble shooting

Serial number	Fault	Cause	Measures
1	Detailed explanation of power-on failure		
1.1	Power supply system protection tripping	The internal cables inside the cabinet are peeling and iron is laid	Find out if the conductor in the cabinet is charred and replace the cable
1.2	After the circuit breaker tripped, the system failed to power on	The emergency stop button is tapped	Turn and unlock the emergency stop button before operating
		The charging cabinet closes abnormally	Manually reset the circuit breaker OFF state, and then hit the ON state
2	After the power-on state abnormal detail		
2.1	The display screen is not lit up	The power cable is loose	Tighten the power supply cable
2.2	The display button is not responsive	The display is too tight	Loosen the screen back screw properly
		The screen warps	Check the front door for distortion
		The display is broken	Overhaul the display screen
2.3	All fans are not started	Contactor not engaged	Check the conductivity of the control circuit
		The wires are loose	Check if the fan power line is loose
2.4	The line is dead	Check if the wiring has been squeezed off	
2.5	Line failure	Check the corresponding line conductivity	
2.6	The fan is damaged	Replace the fan	
Remark: Press The Open Button, the circuit breaker closes. When the controller is working properly, the indicator lights will flash rhythmically			

3	Detailed explanation of charging abnormality		
3.1	The charging handshake was unsuccessful	Vehicle BMS not started	Check the 12/24V output of the charging gun
		The communication cable is loose	Check wiring inside cabinet
3.2	Charge voltage is 0	Charging module failure	Contact the manufacturer
		Output contactor not closed	Repair contactor 3KM6 KM
3.3	Charging current is 0	Charging module failure	Contact the manufacturer
		Fuse Open	Replace the fuses
3.4	No 12V output on the charging gun	Line failure	Check the corresponding wiring is open or loose
		The Contactor Control Line is open	Check thevoltage with a multimeter,and fasten the line
		Contactor Open	Replace the contactor
3.5	Output contactor not closed	Line failure	Check the corresponding wiring is open or loose
		The Contactor Control Line is open	Check the voltage with a multimeter,and fasten the line
		Contactor Open	Replace the contactor
Note: After power on, start charging			
4	Other common fault details		
4.1	Charging abnormally stopped	Timeout protection	Reboot
		Vehicle BMS sends too hot, etc. , problem	The battery can be recharged after waiting for the temperature drop

5、Warranty:

5.1 Within the warranty period from the date of purchase, if the product has any quality problems caused by the correct use, our company will provide quality maintenance for the user;

5.2 During the installation and use of the charger, if the charger is not operated in accordance with the charger manual and the requirements of this specification, various quality problems of the product will be caused, which are not covered by the warranty. For example;

5.2.1 Any product problems caused by installing the charger in a natural environment without protection and using it in extremely bad weather conditions such as heavy rain, hail, and snowstorms;

5.2.2 During the normal operation of the charger, the charging gun is directly unplugged without stopping charging first, and all product problems caused by this;

5.2.3 Any product problems caused by dismantling and modifying the charger without communication with our company and without permission;