BLAUPUNKT

BLAUPUNKT DC Charging Station

DC Charging Station

BPDC30KEU

BPDC40KEU

Enjoy it.

Please read this instruction carefully before using the product.

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Introduction

For your proper and safe using Blaupunkt electric vehicle DC charging station produced by our company,and troubleshoot in-time,Please carefully read the manual before use.

The charging station is suitable for lithium-ion power batteries, providing energy output no greater than rated power, and maintaining high output voltage and current accuracy. The display screen is the most important human -machine communication interface for charger. The main function is to display information,such as state-of-charge,battery pack, and the failure status during charging process.

The charger strictly executed the relevant requirements of "IEC 62196-1,2,3", "IEC 61850", "IEC 61851-1,21,22,23,24", "ISO 17409", "ISO/IEC 15118", "IEC 61439"-7, "IEC 61890", "IEC 61440", "IEC 62040", "IEC 60529", "IEC 60364-7-722", "IEC 6469-3",and realize the standard of vehicle device plugs, charging network topology, communication mechanism security standards.

This manual is only applicable to the Blaupunkt Electric Vehicle DC Charging Station produced by our company,The content of the manual will be upgraded with the upgrade of control software and interface software without prior notice. Please keep the user manual propely for future reference.

Instruction & Precaution

(1) Use environment

Model	Power	Work Temperature	Work Humidity	Altitude	Atmospheric pressure
BPDC30KEU	30kW	-30°C~55°C	5%~95%	≤2000m	80kPa~110 kPa
BPDC40KEU	40kW	-30°C~55°C	5%~95%	≤2000m	80kPa~110 kPa

(2) Safety Instruction

- The charging process shall be executed in accordance with the operation instructions provided by the manufacturer.
- Non-professionals are strictly prohibited to open the machine cabinet; the display screen shall not be dismantled privately, and the sharp objects is prohibited on the display screen.
- When stopping halfway, you must manually click the "Stop" button to stop, and then unplug the charging gun head; it is strictly forbidden to insert or pull out the charging gun head directly during the charging process, otherwise it will burn the charging gun head and charger, or even burn the operators.
- No operations that are not related to charging during the charging process, you must click the "stop" button to stop, and then, other operations continue if the charging gun is disconnected from the car.
- In case of emergency, press the red "emergency stop" button to cut off the internal power inside of the charger.
- Avoid fireworks or fire near the charger, and keep ventilation.
- The fuse should be replaced with the same model units,No copper or iron wire for replacement.
- High voltage in the charging machine, Any fault should be repaired by professionals to avoid danger.
- The air break circuit breaker and power distribution cabinet must be be selected, installed and operated by electrical professionals.
- It is recommended to cut off power supply under bad weather such as thunderstorms, If seeper phenomena happened in the charger, Please contact the manufacturer, and can be used after fix it.
- The unit weight of the charging gun cable is heavy, The long cable is easy to drag during charging process, disadvantage of Distorting force release,Increase the risk of cable twisted and drums, Affect the service life.So It is forbidden to pull, twist the cable. The charging gun cable must be smooth during charging process, No twists of charging cable with force.
- It is forbidden to shake the charging guns when inserting or pulling out the guns,It should be inserted or unplugged vertically.

If the following situation occurs, please turn off the power in time and notify the professionals for maintenance.

- Abnormal noise inside of the machine
- Peculiar smell or smoke inside of the machine
- No Display on screen or No Response from machine
- Irreplaceable failure alarm

Note: Before the power-on operation, Please ensure that the device shell is effectively connected with the earth, otherwise there is a danger of electric shock.

1. Overview

1.1 Design Standard

Standard	Standard Requirement
IEC 62196-1	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements.
IEC 62196-2	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 2: General requirements.
IEC 62196-3	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 2: General requirements.
ISO/IEC 15118-1	Vehicle to grid communication interface - Part 1: General information and use case definition.
ISO/IEC 15118-2	Vehicle-to-Grid Communication Interface - Part 2: Network and application protocol requirements.
ISO/IEC 15118-3	Vehicle to grid communication interface - Part 3: physical and data link layer requirements.
ISO/IEC 15118-20	Vehcele to grid communication interface - Part 20: 2and generation network layer and application layer requirements.
IEC 61850	The IEC61850 standard is a global standard in the field of power system automation.
IEC/EN 61851	Electric vehicle conductive charging system - Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging (IEC 61851-24:2014); German version EN 61851-24:2014.
DIN70121	Electromobility - Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging in the Combined Charging System.

SAE J1772	SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Couple.
IEC/EN 61439	The IEC 61439 standard specifies the safety, reliability, interchangeability, and performance requirements that low-voltage switchgear and control equipment assemblies must meet.

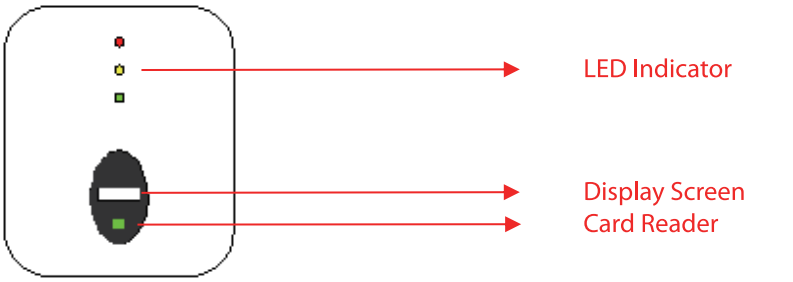
1.2 Function

This Integrated DC charger can fast charging for the vehicle. According to 2023 new International General Standard, It can be compatible with the major new energy vehicles on the market.

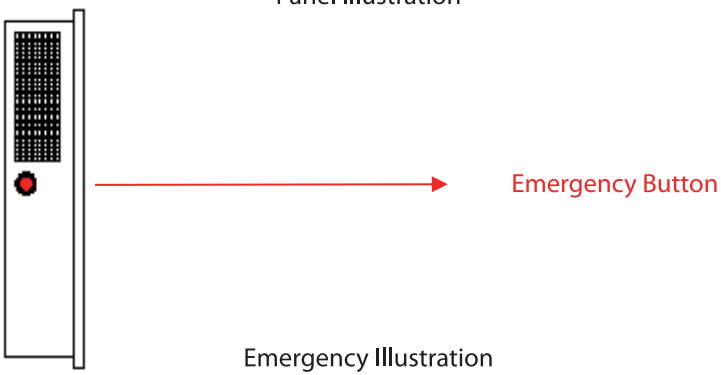
1.3 Appearance Illustration

1.3-1 User Interaction

The operating area includes Display Screen, Card Read area and Emergency stop button.The Display Screen is used for charging information display, The card read area is used to identify the charging card and provide simple operation instruction, The emergency stop button is used to cut off the power under emergencies,avoid accidents.stop it by power off.

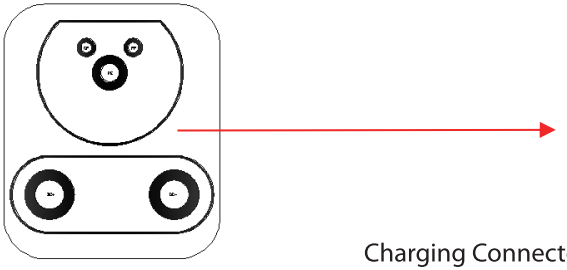


Panel Illustration



Emergency Illustration

1.3-2 Charging Connector



Charging Connector

1.3-3 Parameters

No	Item Name	Technical Description	
1	Model No.	BPDC40KEU	BPDC40KEU
2	Rated Power	30kW	40kW
3	Weight (wall-mounted)	About 67Kg	About 67kg
4	Max output current for single connector	100A	133A
5	Size (W*H*D)	580*780*206mm	
6	Connector Quantity	Single	
7	Cable	5m	
8	Compliant Standard	ISO15118/DIN70121/ICE61851	
9	Input voltage	AC400V±15%	
10	Input Voltage Type	3 Phase Alternating Current	
11	AC power grid frequency	50Hz±10%Hz	
12	Output Voltage	200—1000V	
13	Output Current Range	0~100A	0~133A
14	Output Voltage Error	≤0.5%	
15	Output Current Error	when Output current≥30A,:≤±1% when Output current<30A:≤±0.3A	

16	Steady Voltage Precision	≤0.5% 20%-100% Load
17	Steady Current Precision	≤1.0%
18	ripple coefficient	≤0.5%
19	average efficiency	≥94.5% 50%-100% load
20	Power Factor	≥0.99 50%-100% load
21	Duration Power Frequency Voltage Withstand	2500VAC 1 min No breakdown or flashover
22	Leakage	≤10mA
23	Noise	≤60dB
24	Insulation Resistance	≥20MΩVoltage Testing 1000VDC
25	Ingress Protection	IP54 Outdoor
26	Cooling Mode	Fan Cooling
27	Installation	Wall-mount or Floor-stand
28	User Interface	10.1"Touch Screen
29	Communication	Ethernet
30	Measuring accuracy	1.0 Grade
31	Start Mode	APP,RFID Card,PASSWORD
32	Protection	Over/Under voltage protection,short circuit protection, Residual current protection, Over temperature protection, Leakage Protection
33	OCPP	OCPP1.6-J

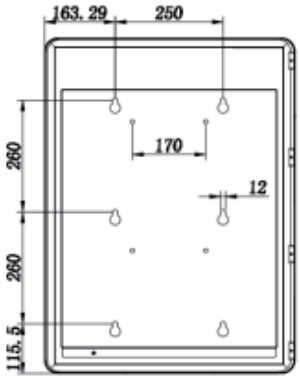
2. Use Instructions

2.1 Installation Instruction

2.1-1 Back Panel Installation

(1) Back Panel Mounting Hole

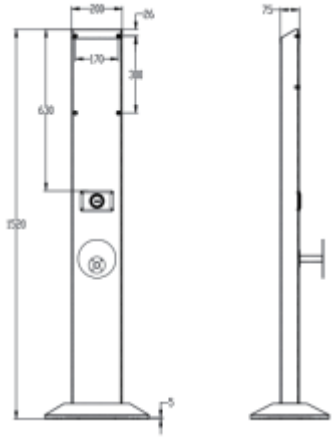
When the charger is installed on the wall, It should be safe and reliable. The installation chart is shown as below:



Back Mounting Hole

(2) Column Mounting Hole

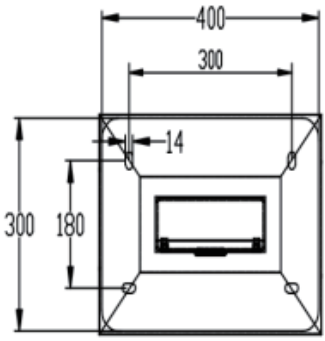
When the charger is installed on the column, It should be safe and reliable. The installation chart is shown as below:



Column Mounting Hole

(3) Column base mounting holes

When the charger is installed on the column, It should be safe and reliable. The installation chart is shown as below:



Column base mounting holes

Installation Precautions:

- The installation location of the charger should not be too low, the distance from base to the ground should be more than 80cm,which is to prevent from soaking and affect it's normal use.

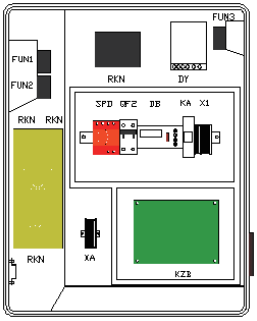
- When installing, it must be ensured that there are no obstacles within two meters on the left and right sides of the charger,to ensure the normal heat dissipation; a certain distance should be reserved in front of the charger for easy operation.

- After the body is fixed on the wall, the installation vertical inclination should less than 5%. When fixing, the recommended nut tightening torque is 28.5 N·m.

- The use envrionment should avoid direct sunlight, and a sunshade (rainproof) shed should be installed outdoors.

2.1-2 Electronic Unit Installation

The electrical installation of the DC charger must be guided by professional technicians. Open the front door, connect the inlet wire to the terminal at the bottom of the circuit breaker, as shown in the figure below.



Emergency Illustration

For AC cables,It's recommended to use flame-retardant ZR-YJV or ZR-RVV cables, 0.6/1KV Voltage Class or higher,at least 105°C temperature resistance. The user determines the cross-sectional area of the input and output cables and the copper lug according to Table 2-1.

Table2-1 AC Charger Inlet Wire Cross-sectional options.

Connector name	Rated output current	Cable Wiring Diameter Range	Connection screw size
30KW DC charger AC Input	50A	10mm²~16mm²	L1,L2,L3,N are pin terminal, PE is M6
40KW DC charger AC Input	61A	16mm²~25mm²	L1,L2,L3,N are pin terminal, PE is M6

Note:
1.Properly select cables according to on-site wiring distance and line loss...etc factors. As the wiring distance is less than 20m, suggest to estimate the cable diameter as per the current density 6A/mm².

2.Choose the connect copper lug according to above table. It is forbidden to choose the oversize copper lugs, otherwise, the screw connect not firm, the connection between the cable and the copper bar will be unreliable, and it will eventually cause severe heat and burn out the cable and switch.

According to electrical requirements,when the phase wire is larger than 35 mm2, the ground wire should be half of the phase wire cross section;As the phase wire is larger than 16 mm2 but less than or equal to 35 mm2, the ground wire should be consistent with the cross section of the phase wire,The ground wire cross-section should not be less than 6 mm².

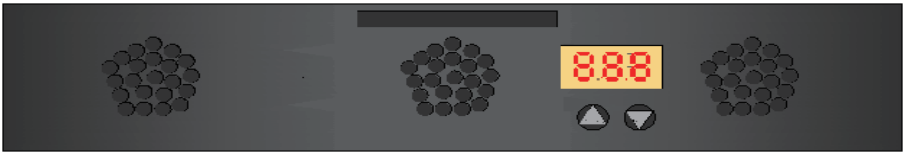
The AC inlet wire enters from the bottom of the charger and connected to the AC input terminal and ground terminal inside the charger.The AC input must be wired according to the inlet wire indication,the neutral line and the phase line cannot be reversed connected, otherwise it will cause an unrecoverable failure,The upper-level circuit breaker and power distribution cabinet must be selected and operated by professional electricians,and the electrical installation torque suggested is 24 N.

2.1-3 Charging Module Installation

Charging Module Installation Process as below.

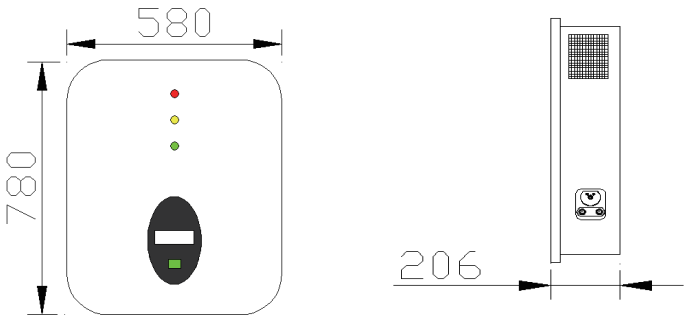
1. Open door and Spacer Plate, Hold the handle of the charging module with one hand, hold the charging module with the other hand, and insert the charging module into the cabinet.
2. Slowly push the charging module into the slot.
3. Tighten two fixing screws on the panel of the module to fix it on the cabinet.
4. Install the charging modules into the cabinet in sequence from top to bottom.

2.1-4 Module Address Setting



* 30KW Charger,module address not change,as default.
* If the module is displayed by digital tube, please set the module address according to the user manual (under normal circumstances, no need to set, the default address is fine);

2.1-5 Equipment Size



2.2 Preparation Before Power-on

2.2-1 Operator Requirement

The user must take training and hold the electrician certificate before using the charger.During the working period, I is necessary to wear work clothes and insulated shoes according to the regulations. Anyone with long hair should wear safety helmets.

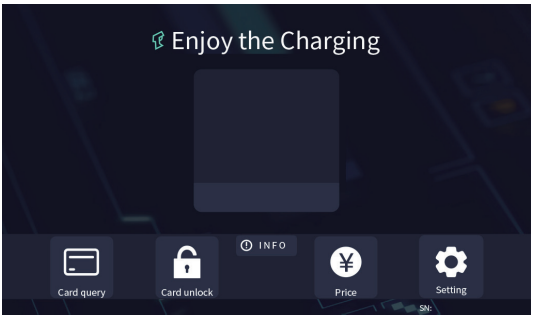
2.2-2 Attention Before Use

- According to the electrician's operation rules, check whether any electrical damage or movement inside the body.
- Open the front door, turn the circuit breaker to the ON position, close air switch of the control circuit,conduct on-off test to ensure that there is no short circuit in the line.
- Turn the circuit breaker to the "OFF",the circuit breaker is disconnected.disconnect the air switch of control circuit and connect the AC incoming line.
- After the AC inlet wire is powered on, please make sure that the emergency stop switch is loose, then turn on the circuit breaker and air switch, and use a multimeter to test to ensure that the power is on.
- Before charging, check whether there are any foreign matter in the charging gun, charging insulator, pins and sockets. If there have, they should be cleaned according to Article 3.2 (4) of this manual.

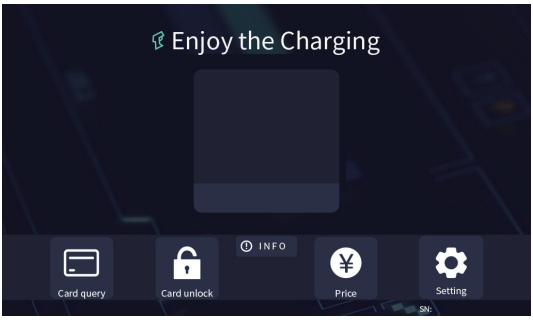
2.3 Network Parameter Setting

2.3-1 Network Parameters

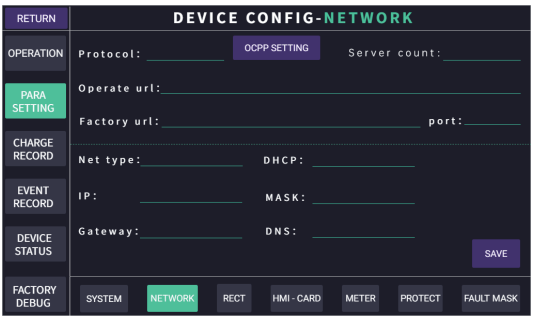
A. Click "Settings" on the home page.



B. Input the initial default password "115200" to enter the administrator interface.

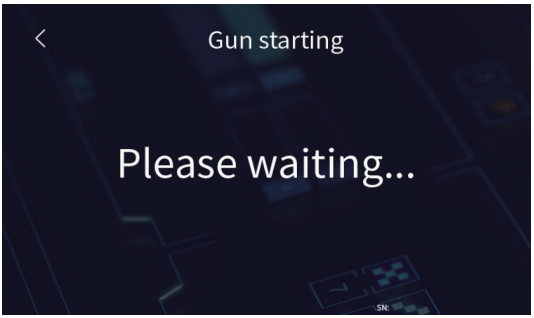


C. On Parameter Page,set input gateway, server domain name and port number, SN.



2.4 Charging System Introduction

2.4-1 Self-Inspection

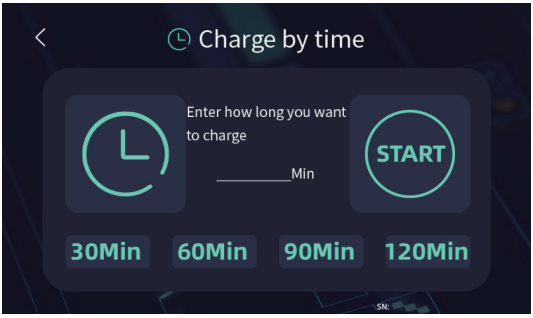


2.4-2 System Mode

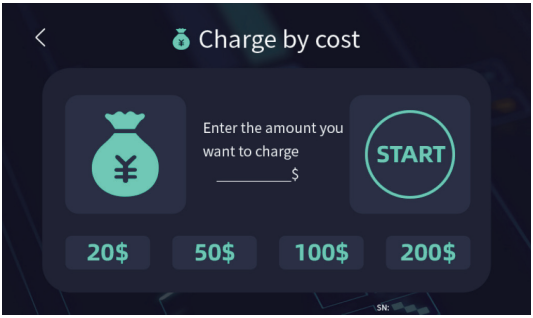
There are 4 charging modes: Auto full charging,Timed Charging, Elec charging, chargingby cost.Different charging modes can be selected according to their needs,as below shown.

Charging mode

Charge by elec



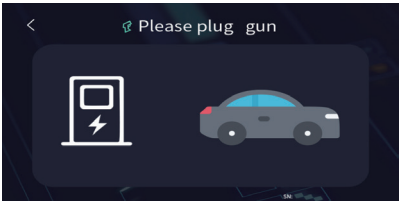
Charge by time



Charge by cost

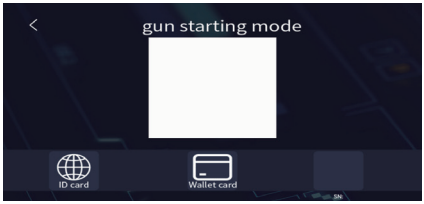
2.4-3 APP Charging Process

(1) Plug the gun to connect the car



Unconnected Status

(2) Use APP to scan QR code

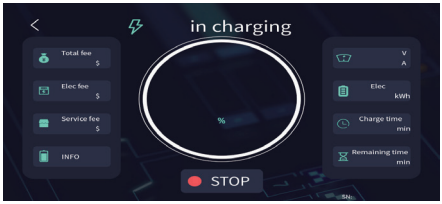


QR Code

(3) Click APP to start charging

Device Running

(4) In Charging



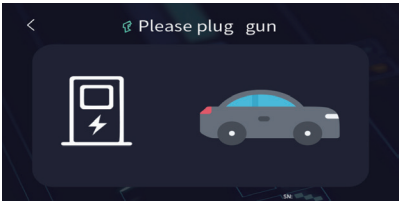
Charging Information

(5) Billing

Billing Information

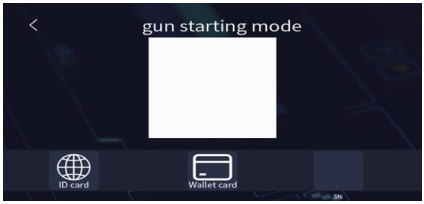
2.4-4 RFID Card Charging Process

(1) Plug the gun to connect the car



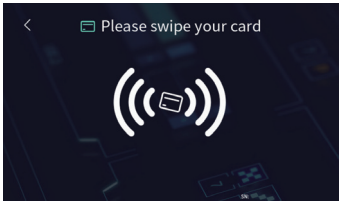
Unconnected

(2) Select "Wallet Card" to start charging



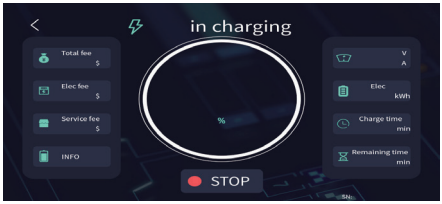
Choose Card Mode

(3) Waiting to swipe card to start



Swiping and Timing

(4) In Charging

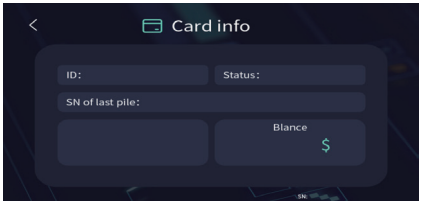


Charging Information

(5) Billing

Billing Interface

(6) Query IC Card Balance



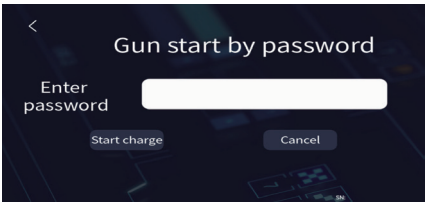
IC Card Balance

2.4-5 Password Charging Process

(1) Plug the gun to connect the car

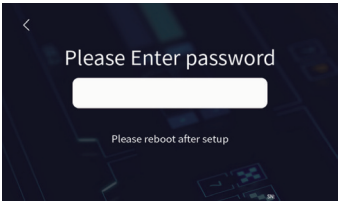
Unconnected

(2) Click Password Mode



Click Password Mode

(3) Input Password

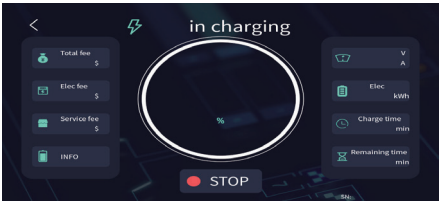


password login mode

(4) End Charging and Password confirmation

password keyboard

(5) In Charging



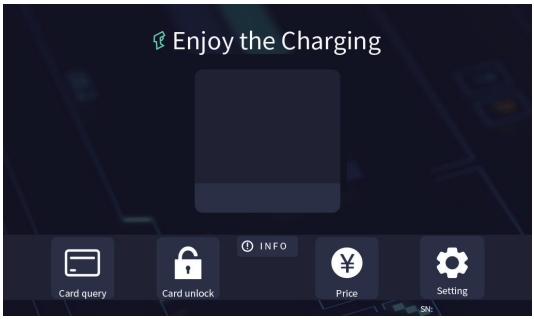
Charging Information

(6) Billing

Billing Interface

2.4-6 Billing

(1) Click "Settings" button on the above left corner of home page.



Enter "Administrator" interface

(2) Input Factory Initial Password "115200".

Input engineering password

(3) Enter the parameter setting page, set the unit price of electricity, save and exit after setting, power off and restart.

Electricity unit price setting page

(4) After restart,click the "Charging Rate" button in the upper right corner of home page， check if the electricity price setting is okay. password Electricity unit price setting page(2) Input Factory Initial Password "115200".(3) Enter the parameter setting page, set the unit price of electricity, save and exit after setting, power off and restart.

Charging fee in the upper right corner of home page

(5) After enter,check the unit price,as below shown.

electricity rate

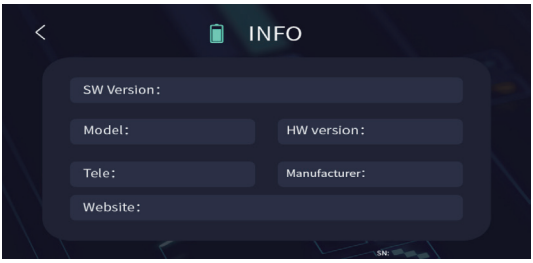
2.4-7 Charging Record

1. Check module status, alarm record, charging record, charging information...etc functions on main interface .

Module Parameters

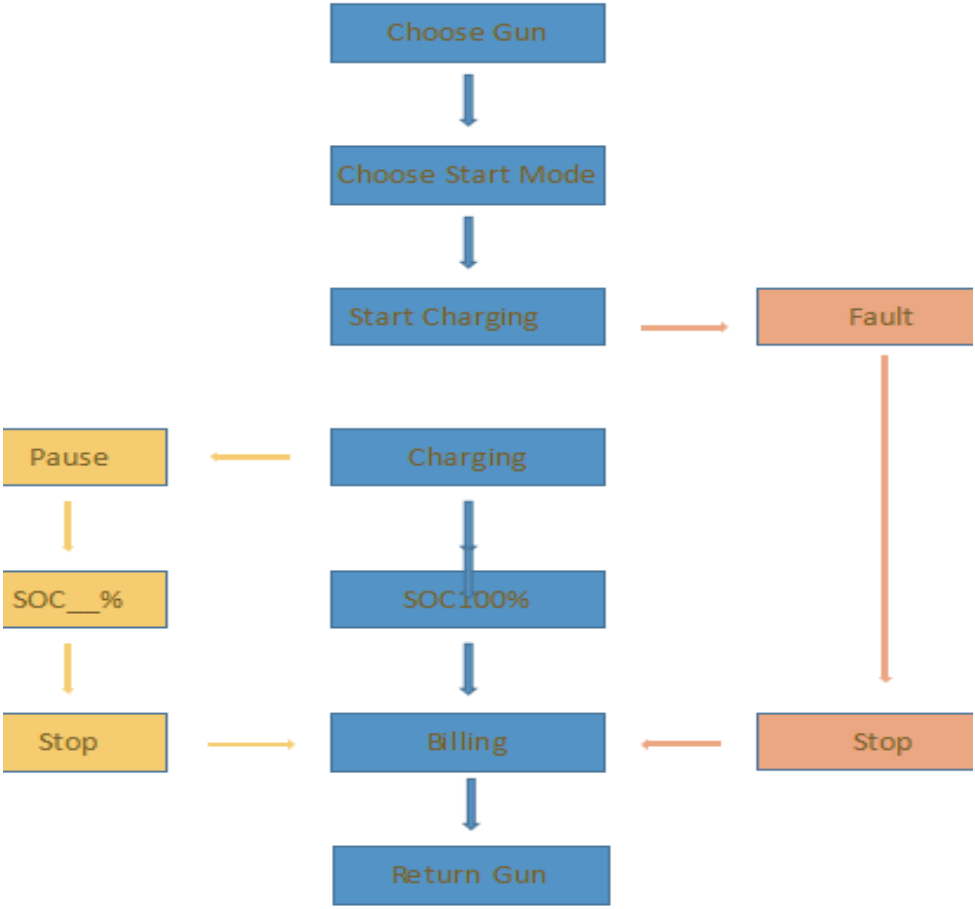
Alarm Information

2. For Single Gun Charger,The method to check motherboard program version No.



Homepage Information

2.4-8 Charging Process



3. Equipment storage and maintenance instruction

3.1 Storage Environment

3.1-1 Environment

The packaged equipment should be stored in a place with air circulation, -35°C~55 °C temperature, where the monthly average relative humidity is less than 90%.

Equipment Name	Class I environment Limited storage period (years)	Class II environment Limited storage period (years)	Class III environment Limited storage period (years)	Remark
DC charger	1	0.8	0.5	

3.2 Storage Temperature

3.2-1 Temperature

The storage place should be free of corrosive and explosive gases, and should not be exposed to rain, sun, condensation and frost during storage.

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

It is forbidden to store with corrosive items in same place

3.3 Daily Check and maintenance

3.3-1 Charging Station

The Daily maintenance of DC charging pile ensure that it is always in good working condition. The main tasks are as follows:

1. Regularly check if any dust in the cavity and clean it, to prevent internal insulation from degradation.

2. Regularly check whether the ground wire is reliably grounded.

3. Regularly check if the cooling fan works normally, and replace the new same model fan in time if any damaged.

4. Regularly check the body ventilation status. For it is well ventilated, the dust-proof net of the side door needs to be cleaned regularly. It is suggested to clean the inside of the charging body every three months,In case of harsh environment, the user can shorten the cleaning interval time as per the situation. Disassembly and cleaning steps are as follows.

5. open left side door, pull out the dustproof filter, separate the black dustproof filter from the fixed bracket, and clean the dustproof filter net.

6. After black filter net is dry, connect the black dust filter to the fixed bracket, and insert the dust filter into the inner guide groove of the dust louver.

7. Regularly check the charging connection cable and winding tube. If there is aging and wear, it needs to be replaced in time to ensure the safety of use.Regularly check the charging connect cable and winding tube. If there is aging and wear, it needs to be replaced in time to ensure the safety. If the charging connector is loose, it needs to be tightened in time.

The maintenance operation is recommended once a month. In case of harsh environment, the interval can be shortened depending on the specific situation.

3.3-2 Lightning arrester

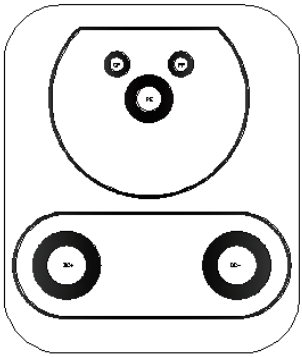
Regularly check if the inlet wire and outlet wire of the surge protector are loose, to prevent line fault caused by the aging of the surge protector and lines.

3.3-3 Dustproof Net

Regularly check the dust inside of charger, and clean the dust on the body and parts regularly. After power off, use vacuum cleaner or air compressor to clean the bottom, sides and parts of the cabinet.

3.3-4 Gun Seat

When the charging gun is not in use, it should be covered with dust cover or inserted into the holder to prevent any foreign objects.Use high-pressure air gun, brush to clean the gun and gun seat every week. If any accident like gun drop on ground, Please clean as above ways.



Gun Seat

Note: It is forbidden for non-professionals to disassemble the equipment components.

4. Maintenance of Common Malfunction

	Fault	Reason	Measure
1	**Detailed explanation of power failure**		
1.1	Power supply system protection tripping	The cables inside the cabinet are peeled and grounded	Find the blackened part of the wire in the cabinet, replace the cable
1.2	After the circuit breaker trips,the system cannot be powered on	emergency stop button was pressed	Rotate and unlock the emergency stop button before operating
		Abnormal shutdown of the charging cabinet	Manual reset circuit breaker OFF and then ON

2	**Abnormal Status Detailed Explanation After power-on**		
2.1	Display Screen not light up	power supply cable is loose	Fasten the power supply cable
2.2	Display buttons are unresponsive	Display installed too tight	Properly loosen the fastening screws on the back of the screen
		Display screen deformation	Check the front door any deformation
		Display screen damaged	repair display screen
2.3	All fans not started	contractor not pull in	Check control circuit continuity
		Wiring Loosen	Check whether the fan power supply cable is loose
2.4	line is blocked	Check whether the wiring is squeezed and disconnected	
2.5	line fault	Check the continuity of the corresponding line	
2.6	Fan damage	Replace new fan	
Note: Press the ON button to close the circuit breaker.When the controller is running normally, the indicator light flashes rhythmically.			
3	**Detailed Explanation Of Abnormal Charging**		
3.1	Charging Communication Failed	Vehicle BMS does not start	Check charging plug PP input
		Communication line is loose	Check the internal wiring
3.2	The charging voltage is 0	Charging module failure	Contact Factory
		Output contactor not closed	Repair contactor KM1~KM2
3.3	The charging current is 0	Charging module failure	Contact Factory
		Open-circuit fuse	Replace new fuse
3.4	No output on the charging gun	Line fault	Check whether the corresponding wiring is open or loose
		Contactor control line Open circuit	Check voltage with multimeter and tighten the line
		Contactor open circuit	Replace contacto
3.5	Output contactor not closed	Line fault	Check whether the corresponding wiring is open or loose
		Contactor control line Open circuit	Check voltage with multimeter and tighten the line
		Contactor open circuit	Replace contacto
Note: After closing all the air switches and power on, start charging			

4	Detailed Explanation of other common faults		
4.1	Abnormal Stop Charging	overtime protection	Restart
		Temperature is too high sent by the vehicle BMS	Recharge after the battery temperature cool down

5. Warranty

5.1. Warranty Period

This product is guaranteed for two years. During the warranty period from the date of receipt, operate correctly according to the instruction manual. If the equipment cannot be used due to quality problems, Our company will provide remote on-line technical maintenance services; If necessary,The related accessories can be provided within warranty period.

5.1. Warranty Period

During the installation and use of the charging pile,It is not covered by this warranty If any quality problems results from any operate incompliance with the instruction manual or requirements.

1. Products exceeds the warranty period.

2. Failed to provide valid invoices or other valid sales documents.

3. The manufacture date, serial number, model name on the equipment label was altered and cannot be identified.

4. Damage caused by force majeure such as earthquakes, volcanic eruptions, tsunamis, hail, blizzards, floods, fires, lightning strikes, etc.

5. During charging pile operation, All the problems caused by removing the guns without stop/pause the charging process first.

6. All the problems caused by dismantling and refitting the charging pile without communicating with our company and without our permission.

7. Defects results from normal wear and tear or normal aging.

8. No corrosive gas,No flammable and explosive gas in usage scenario, Otherwise, the equipment is also not covered by the warranty.

5.3 Paid maintenance

If maintenance is required after the warranty period, the appropriate maintenance cost will be calculated based on the cost of parts and labor, and quotation will be offered to you,After obtain your consent, we will provide you with product maintenance services.This policy is formulated in strict accordance with the Consumer Protection Law and the Product Quality Law of the People's Republic of China.

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