

USER MANUAL

FAST DC Charger

120 kW / 180 kW / 240 kW / 360 kW / 480 kW

LEKTRI·CO

LEKTRI·CO

Overview

This manual is applicable to the product of our company and is used to guide readers to know about product's structure, performance and installation operation.

The pictures on this text are only for reference. The concrete structure shall be subject to the physical object.

The contents in this manual will slightly not match with physical object or are incorrect due to sustained update and correction. The physical object purchased shall prevail.

Product operation objects: Technicians specializing in debugging, maintenance, etc. and the users of charger.

Safety Precautions

Before starting operating, please carefully read operation instructions and precautions to reduce accidents. "Caution, note, warning and danger" in product and manual are only used to supplement the safety precautions of various operation rather than rep resent all safety matters which shall be abided by. Technicians and users shall abide by the safety norms of related industries and strictly observe the relevant equipment precautions and special safety instructions provided by our company upon various operations of our company's product and equipment. Charger shall be installed as per safety norms of related industries, and the personnel installing equipment shall own high and low voltage electrician certificate and other operation qualifications. It is strictly prohibited to wear conductive objects such as watch, bracelet, ring, etc. on wrist upon operation. Please immediately power off when finding the water or dampness in cabinet. Moisture should be strictly prevented from entering the equipment upon operation in humid environment.
"Signboard of operation forbidden" shall be hung on the switch and button that are not allowed to be operated in the installation process.

Precautions

1. Please keep hazardous items such as flammable, explosive or combustible materials, chemicals, combustible vapors, etc. away from the charger;
2. Keep the charging connector clean and dry, if it is dirty, please wipe it with clean dry cloth, it is strictly prohibited to touch the charging connector core by hand when it is charged;
3. It is strictly prohibited to use the charger when the charging connector or charging cable is defective, cracked, worn, ruptured, or the charging cable is exposed, please contact working personnel promptly if finding;
4. Please do not attempt to disassemble, repair and refit the charger. If there are maintenance and retrofitting requirements, please contact the working personnel. Improper operation may cause damage, water and electricity leakage, etc.;
5. It is strictly prohibited to unplug the charging connector during the charging process to ensure personal and vehicle safety during the charging process;
6. During use, if there is any abnormal situation, please press the emergency stop button immediately to cut off all input and output power;
7. Please charge with caution in case of rainy and thundering weather;
8. Children shall not approach and use the charger during the charging process to avoid injury;
9. Please close all doors on charger while charging to avoid electric shock;
10. During the charging process, the vehicles shall be prohibited from starting and it could be charged only when it is stationary. Please charge electric vehicle after turning off the engine.

Warning Signs

High Voltage Danger



Construction operations of high voltage lines may lead to the fire or electric shock accidents. The area through which AC cable is erected, connected and wired shall meet the local regulations and norms. Only personnel with high and low voltage electrician certificate operation qualification can perform various high voltage operations.

Lightning Danger



It is strictly forbidden to perform high voltage, DC, iron tower and mast operation in thunderstorm weather. In thunderstorm weather, strong electromagnetic fields can be generated in the atmosphere. Therefore, equipment shall be grounded well in a timely manner to avoid damaging equipment by lightning strike.

Tools Warnings



Upon various high voltage and DC operation, special tools shall be used, rather than ordinary or self carried tools.

Attention to Static Electricity



Static electricity generated by human body would damage the electrostatic sensitive components on circuit board, such as large scale integrated circuit (IC), etc. Before contacting equipment, holding plug plate, circuit board, IC chip, etc. in hand, to prevent human body static electricity from damaging sensitive components, technicians and users must wear anti static wrist, because the static electricity generated by human body woul d damage electrostatic sensitive components on circuit board, such as large scale integrated circuit (IC), etc. Before touching equipment, taking circuit board, IC chip, etc. in hand, to prevent human body static electricity from damaging sensitive compone nts, technicians and users must wear anti static wrist and ground the other end of anti static wrist well.

Short Circuit Danger



It is strictly prohibited to make the neutral line of charger AC distribution phase line short circuited or the non grounding electrode short circuited to ground. C harger is AC power supply equipment, and its short circuit will lead to the burning of equipment and the personal safety hazards.

Disclaimer

Our company s hall not be responsible for any consequences resulting from any of the following events:

1. The product has exceeded the warranty period;
2. The equipment fault, component damage, personal injury or property loss resulting from failure to operate as per the operating instructions and safety precautions in this document is beyond the scope of warranty;
3. Installation or operation in the environment which doesn't meet relevant international standards;
4. Inaccurate transportation, disassembly, storage, installation or usage;
5. Modification of product or software code or disassembly of product without authorization;
6. Equipment damage resulting from force majeure (such as lightning strikes, earthquakes, wars, fires and storms, etc.);
7. Modification of product nameplate, serial n umber or product appearance, etc. without authorization;
8. The installation site shall reserve enough area of charger heat dissipation site, otherwise, equipment may have fault; The corresponding equipment fault, component damage, personal injury or propert y loss are beyond the scope of warranty;
9. Storage conditions don't conform to the requirements as specified in this document, the unused products shall be stored in packaging box and placed in dry place;
10. Installation or operation by non professionals; The contents in this document are only for reference. If there is any inconsistency between contents and actual product, the actual product shall prevail.

Contents

1. Product Overview **07**

1.1. Product Introduction 07

1.2. Product Function 07

1.3. Product Appearance 08

1.4. Description of Status Indicator 09

2. Product **10**

2.1. Product Size 10

2.2. Preparation of Installation Tools 12

2.2.1. Accessories 12

2.2.2. Tools and Materials Required 13

2.2.3. Preparation before Connection 14

2.2.4. Production of Wiring Terminal 14

2.3. Disassembly of Outer Packaging 16

2.4. Installation Spacing Requirements 18

2.5. Foundation Requirements 19

2.6. Equipment Movement and Installation 27

2.7. Input Cable Connection 30

2.8. Module Dip Code and Frame Insertion 33

2.9. Checking before Power-on 39

3. Parameter Setting and Device Networking **40**

3.1. Parameter Setting 40

3.2. System Setting 61

4. Operation Interface Description **68**

4.1. Operational Areas 68

4.2. Charging Operation 70

4.2.1. Charging Selection 71

4.2.2. Start Charging 75

4.2.3. Charging in Progress 76

4.2.4. Stop charging 78

4.2.5. Charging Completed 80

Contents

5. Troubleshooting **81**

5.1. Man made Fault 81

5.2. Common Faults and Solutions 82

6. Storage and Transportation **85**

6.1. Packaging 85

6.2. Transportation 85

6.3. Storage 85

7. After-sales Service **85**

8. Technical Data **86**

1. Product Overview

1.1. Product Introduction

The product is a kind of charging equipment integrating DC charging module, control system, display system and communication system, and provides fast charging services specially for electric vehicles. It can directly convert alternating current into direct current, and output direct current at high power to shorten the charging time significantly.
The product is applicable to rapid energy replenishment demands of various electric vehicles and is equipped with touch screen display, with friendly user interface and convenient operation. The product could be equipped with the charging connectors of various standards as per market demands to meet the demands of ele ctric vehicles of various standards in quick charging.

1.2. Product Function

- Ground installation and convenient installation;
- Efficient, reliable and stable;
- The human machine interaction interface is friendly, with 12.1 inch color touch screen;
- Support OCPP 1.6J communication protocol;
- Support Ethernet 4G WiFi;
- Support card swiping / QR code scanning / password input for charging (optional);
- Support IEC 62196 3 CCS2 connector;
- Comprehensive protection of overload;
- Support online data upgrade;
- Equipped with charging cable assistance device for easy operation.

1.3. Product Appearance



S/N	Part name	Descriptions
A	Ambient light	It is mainly used for lighting decoration
B	Charging cable	It is used for connection of charger and transmission charging of electrical vehicle electrical energy
C	Emergency stop switch	It is used for initiate prompt power disconnection in emergency situations to maintain safety
D	Ventilation inlet	It is used for the heat dissipation and ventilation of charging module
E	Right door lock	It is used to control the on/off of module compartment door on the right side
F	Hanging ring	It is used to fix charging cable
G	Status indicator	It is used to display different states of charger
H	12.1-inch display screen	It is used for charging operation and charging information display
I	Charging connector	It is used to connect electrical vehicle for power supply
J	Card reader/POS machine (optional)	It is used by users to start charging and settlement operation
K	Antenna	It is used to enhance the signal of 4G or WiFi communication
L	Left door lock	It is used to control the on/off of module compartment door on the left side

1.4. Descriptions of Status Indicator



Indicator light description	Color
Normally on upon charging	Green
Normally on for idle status	Blue
Normally on for fault	Red

Indicator:
When idle: Blue
When charging: Green
When fault: Red

If it is necessary to change the color of indicator, set as described in content (7) of “3.1 Parameter Setting”.

2. Product

2.1. Product Size

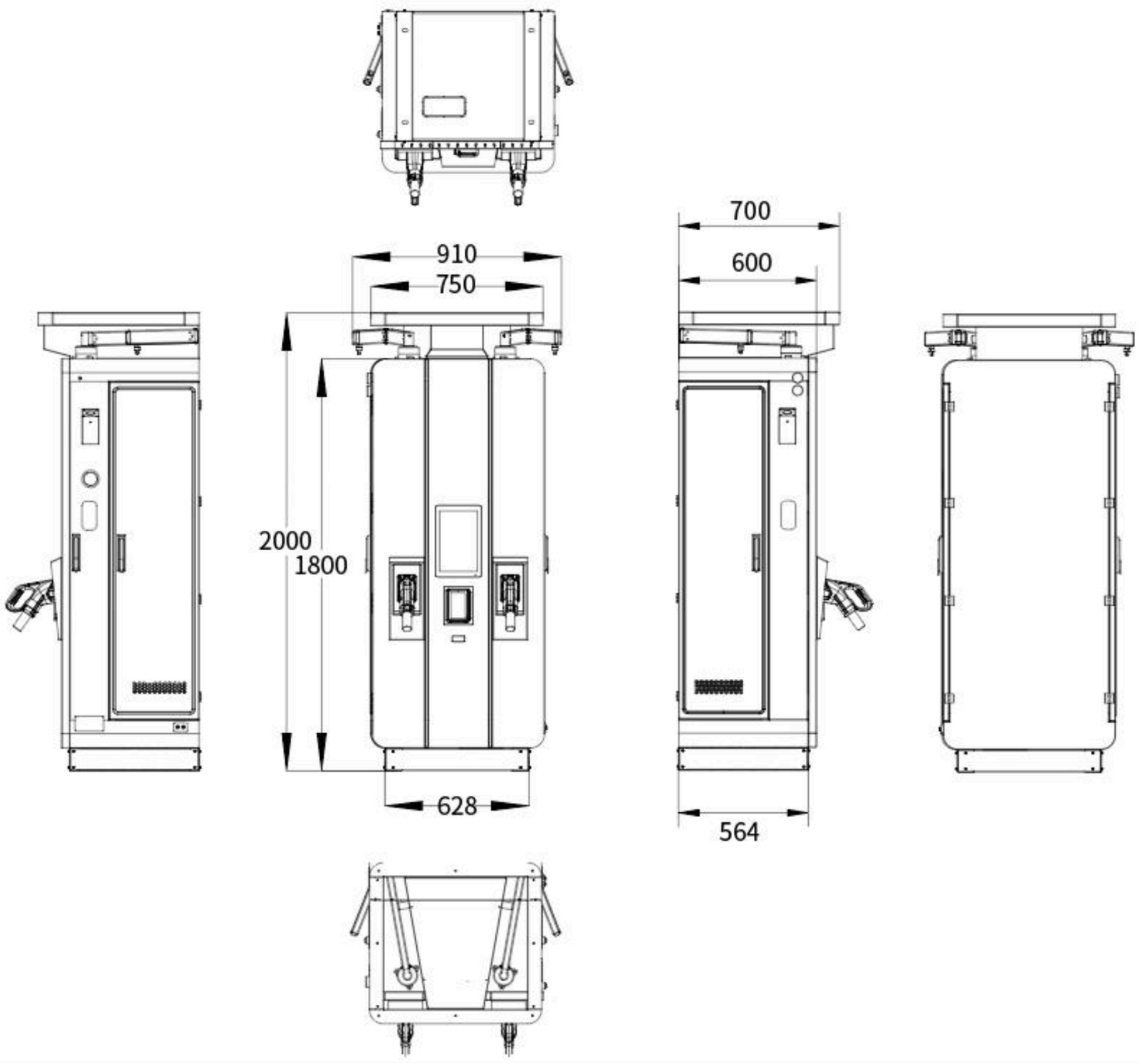


Figure 2.1-1 120~180 kW Cabinet size (Unit: mm)

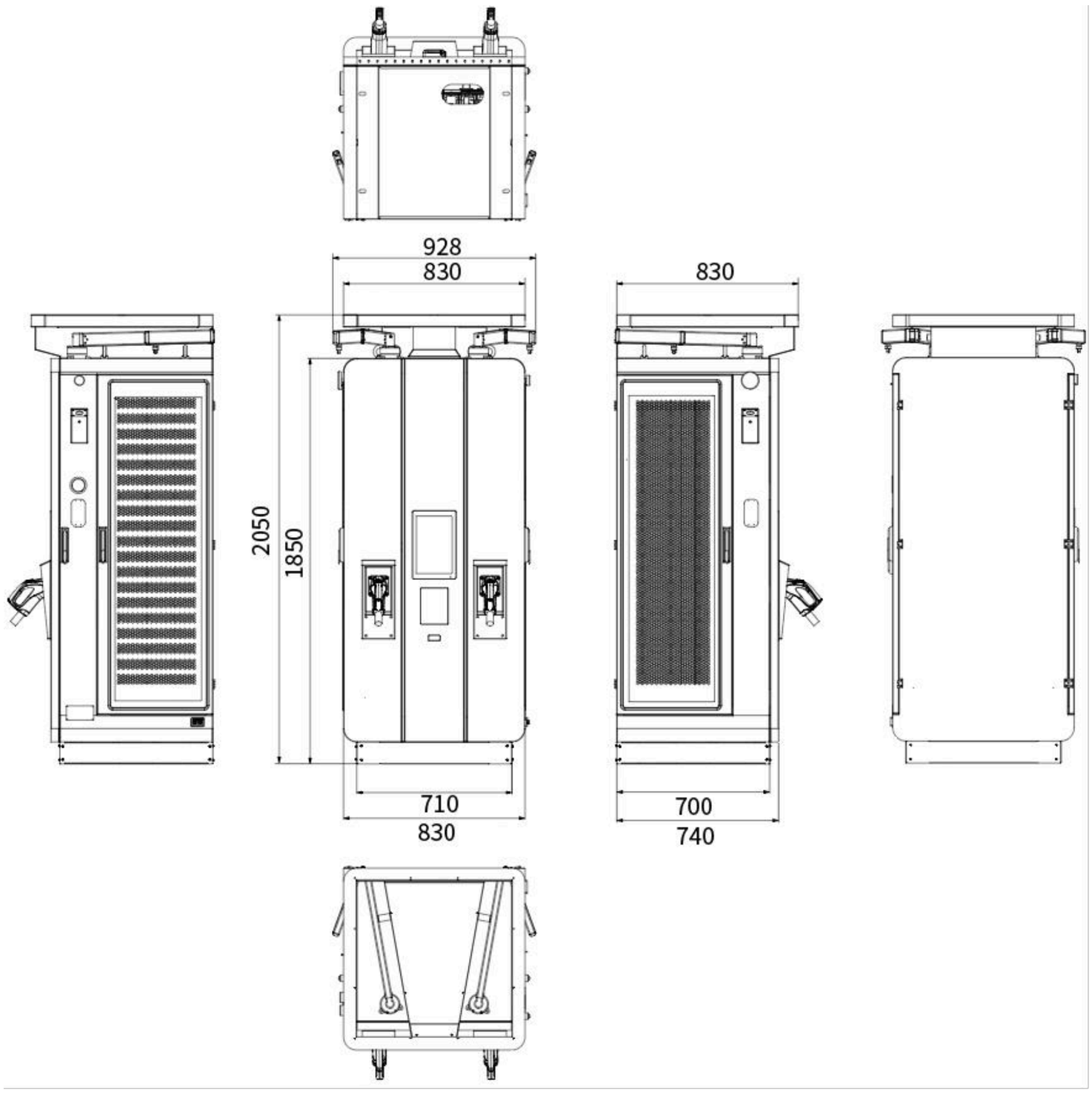


Figure 2.1-2 240~480kW Cabinet size (Unit: mm)

2.2. Preparation of Installation Tools

At least the following tools shall be prepared before installation:



Torque wrench



Wire stripping plier



Socket wrench



Terminal crimping machine



Hot air blower



Multimeter



Screwdriver

2.2.1. Accessories

Name	Specification and model	Quantity	Unit
External expansion-bolt	M12*100 stainless steel	6	PCS
Wiring terminal	Copper wiring terminal DT185	4	PCS
Document	Instruction document with the goods	1	PCS
Wiring terminal	Copper wiring terminal DT120	1	PCS
Keys	Cabinet matching key	6	PCS

2.2.2. Tools and Materials Required

Cable materials:

Power cables

- Special cable for DC charger (Select specification as per power of charger, for example, 95 mm^2 and 150 mm^2 copper core cable resistant to high temperature and flame retardant)
- Grounding wire (Yellow and green cable, ≥50 mm^2 recommended, select specification as per the corresponding specification and model of each model)

Communication cable

- Network cable (Cat5e or above for network connecting if needed; No need if SIM card is used for networking)

Connectors

- Copper nose (Cable terminal matches with cable specification)
- Waterproof junction box (Protection of line upon outdoor installation)

Supporting materials: sealing and protection

- Fireproof mud (used to seal holes through wa ll, and prevent insets and mice and water)
- Heat shrinkable tubing (used for insulation protection for cable joints, and need to match wire diameter)
- Waterproof tape (used to strength waterproofing of cable joints)
- Cable tie (used to fix cable)

Installation and fixation

- Expansion bolt (used to fix base of charger)
- Cable tray (if needed) or PVC wire pipe (used to protect exposed cable)

2.2.3. Preparation before Connection

The wiring in product has been finished before delivery. The connection of equipment's power supply cable, the preparation of joint, the production and connection of power cable shall be performed at the installation site.

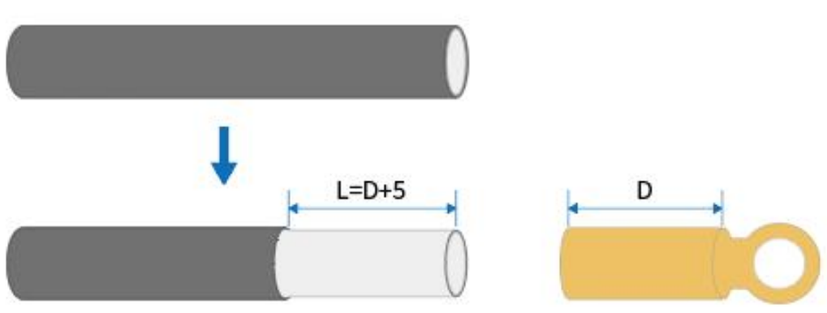


High voltage risk! Ensure that the main circuit switch and auxiliary circuit switch of charger are in the disconnected state! Ensure that there is no current on wires and systems upon voltage detection!

2.2.4. Production of Wiring Terminal

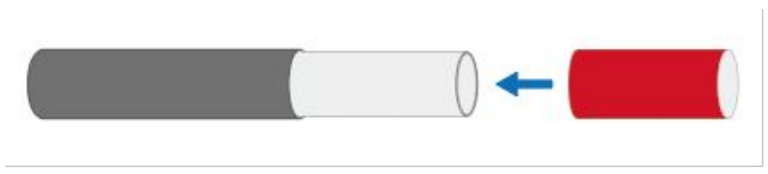
Wiring terminal is produced as per the following steps:

Step 1: Peel off the insulating skin at the end of cable end. The length of insulating skin peeled off shall be about 5 mm more than the depth of wiring copper nose.



Step 2: **The heat shrinkable tubing**

Select the heat shrinkable tubing with the similar diameter with cable. The length of heat shrinkable tubing shall be at least 2 cm longer than the length of wire peeled so that the heat shrinkable tubing could completely package the part of wire peeled, and the heat shrinkable tubing wrapped shall be moved to the place outside the wire peeled to reserve space for installation of wiring terminal.



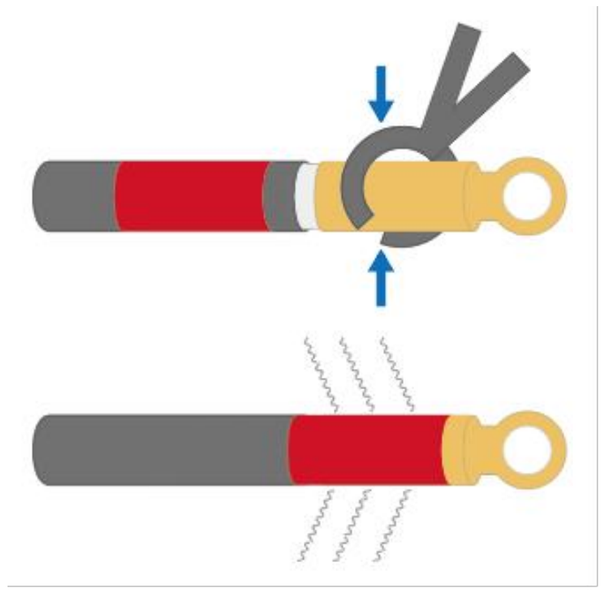
Step 3: Compress wiring copper nose

a) Put the cable head core peeled in the hole of copper nose.

b) Press wiring through the nose tightly using terminal crimping machine. The quantity of compressing shall be over two.

c) Put heat shrinkable tubing on wiring copper nose to completely cover the line pressing hole of wiring copper nose.

d) Blow evenly with hot air blower to tighten heat shrinkable tubing.



2.3. Disassembly of Outer Packaging

1. Tools required: herringbone ladder, hammer, engraving knife and protective gloves.

Straighten the metal card at the top of packaging materials using hammer with the help of herringbone ladder, and remove upper cover plate. Flatten all metal cards using pliers, remove the surrounding wooden boards, unrip the PE bag of wrapping cabinet with utility knife, and remove the PE bags and foam. As shown in Figure 2.3.1

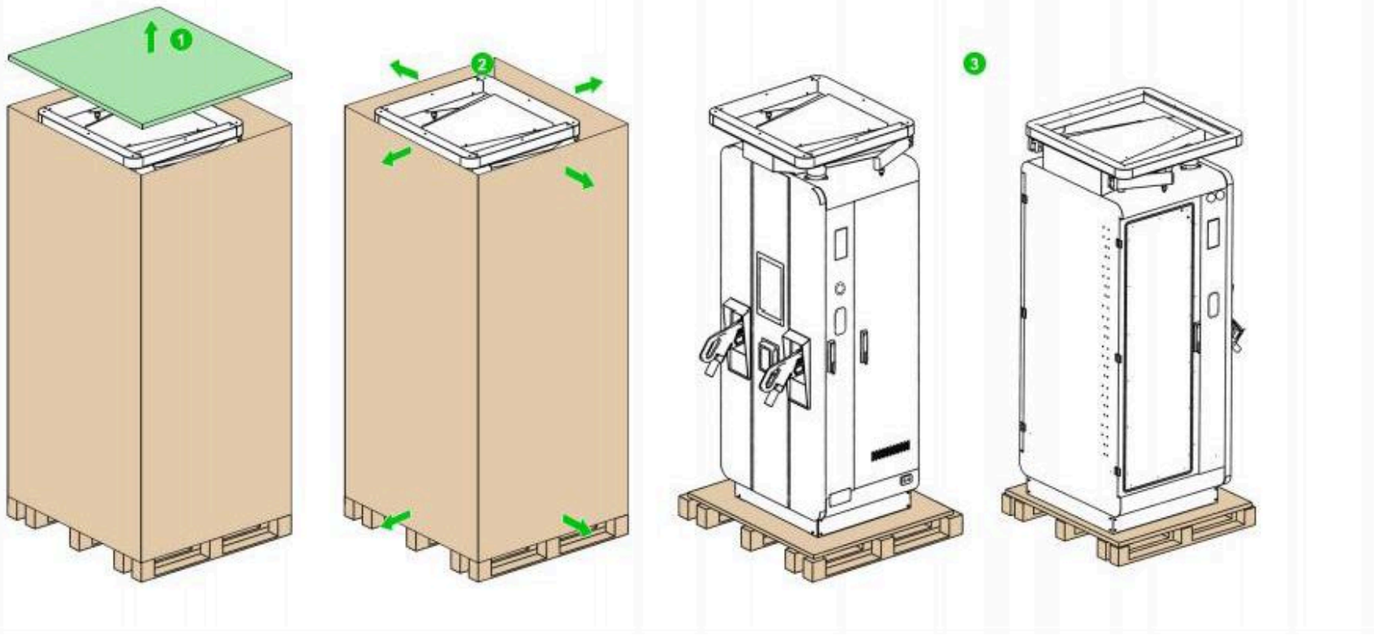


Figure 2.3.1 Unpacking

2. Open the front door of charger, and disassemble AC incoming line sheet metal parts using screwdriver, as shown in Figure 2.3.2

3. Dismantle front, back, left and right sealing plates using screwdriver to prepare for equipment movement, disassemble the four M12*80 screws around foundation and between charger body and wooden pallet using spanner, as shown in Figure 2.3.2

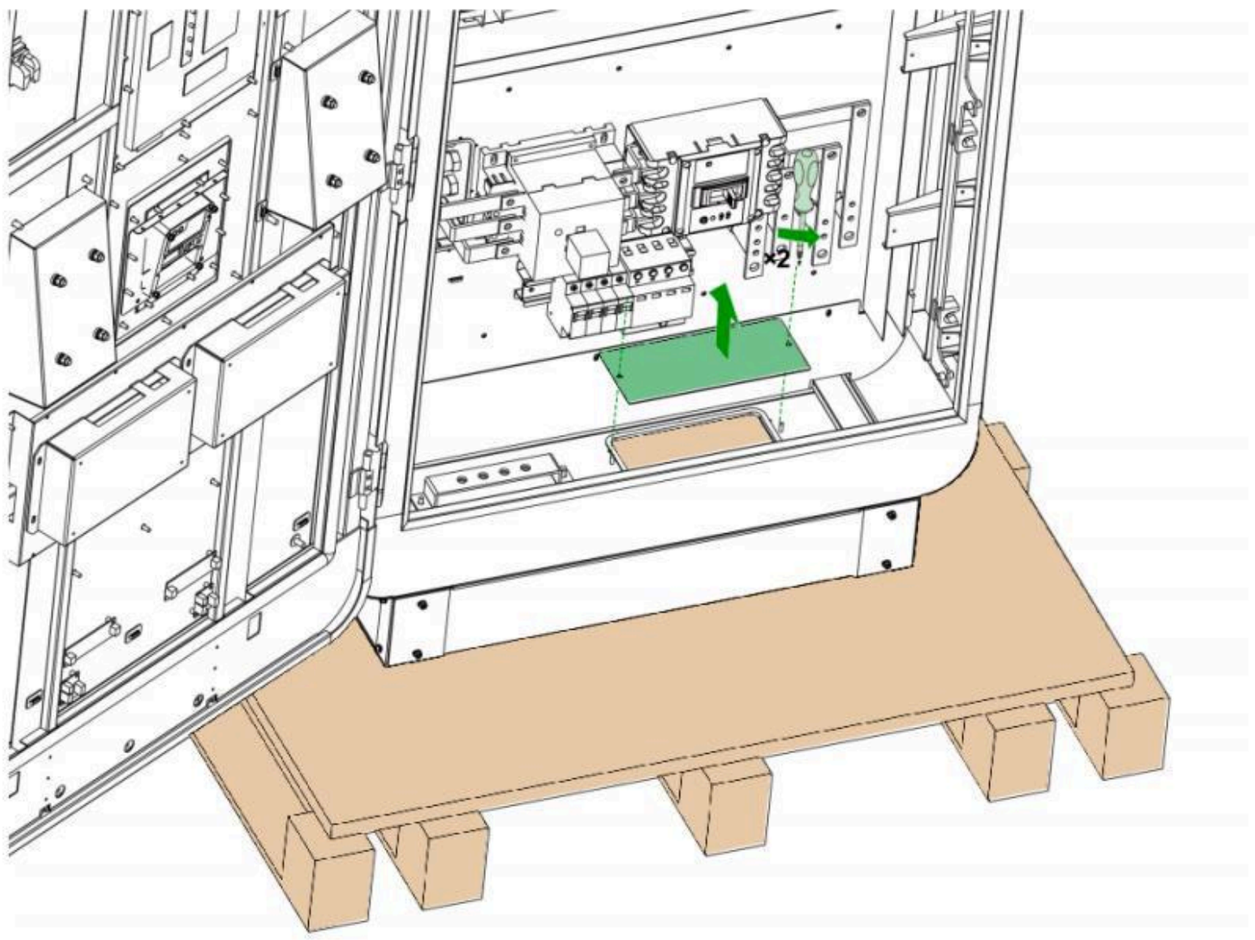


Figure 2.3.2-1 Removing cable input plate

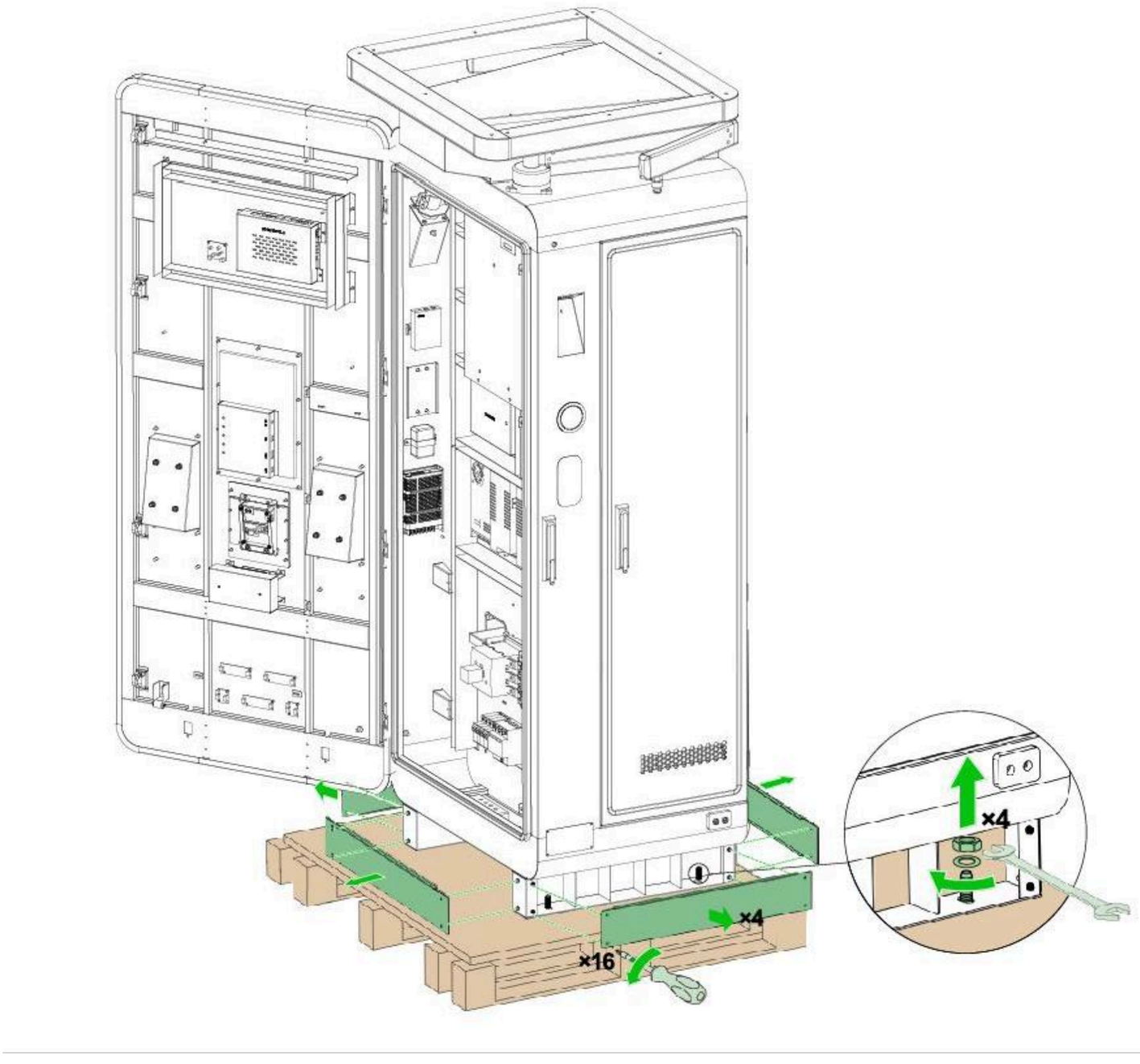


Figure 2.3.2-2 Removing side cover plate

2.4. Installation Spacing Requirements

It is necessary to reserve space for the opening of front, back, left and right doors of charger. Please refer to Figure 2.4.1 for specific reserved space

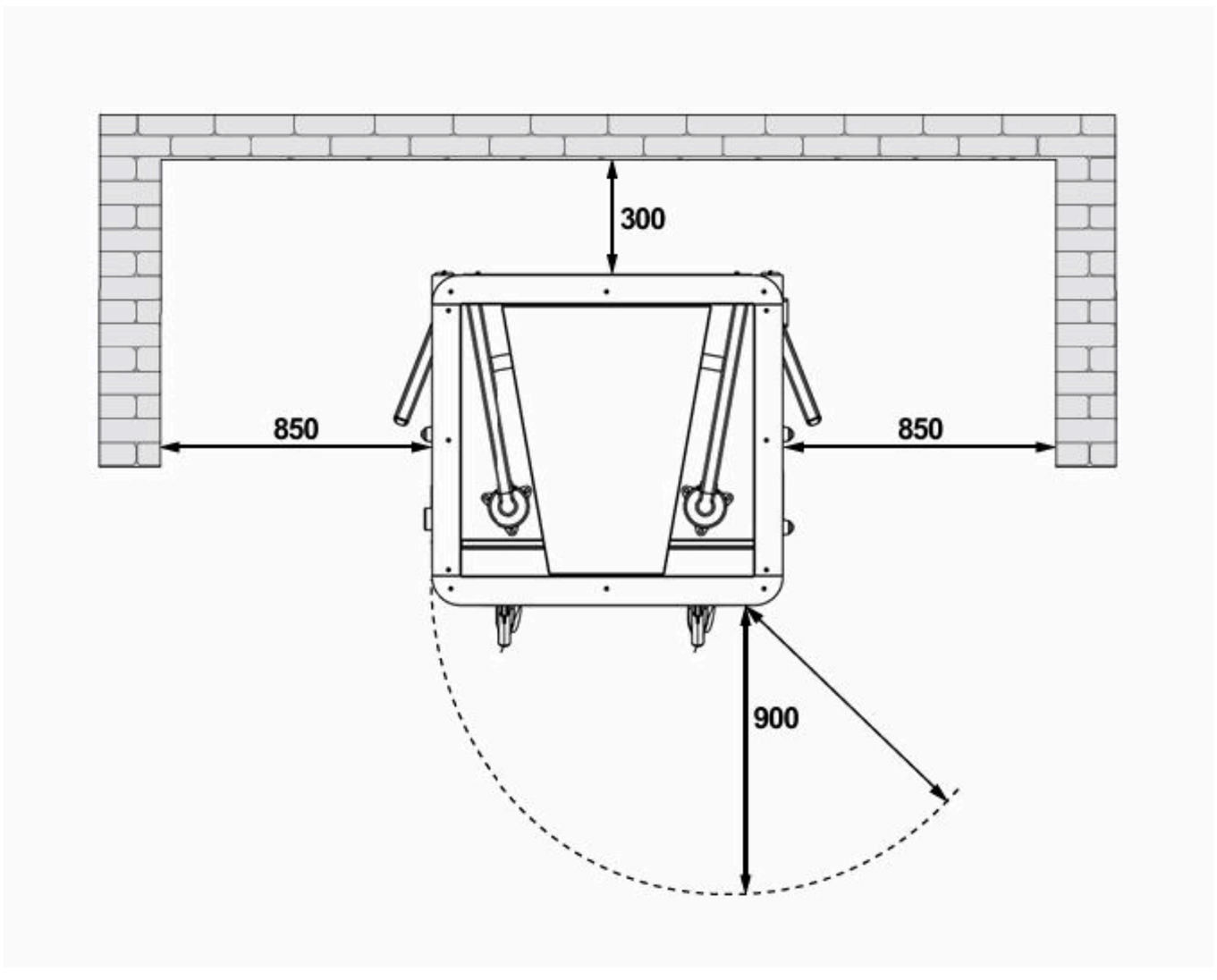


Figure 2.4.1 Installation spacing requirements of cabinet (Unit: mm)

2.5. Foundation Requirements

Tools required: electric drill, Ø 16 mm drill bit and protective gloves

1. Refer to Figure. 2.5.1 / Figure.2.5.4 for hole positions and dimensions; refer to Figure 2.5.2 / Figure 2.5.5 for concrete base dimensions. Cable holes of foundation correspond to the cable holes at the bottom of charger.

   Drill four 16 mm installation holes on the cerement installation foundation using electric drill as per the installation hole position marked, with the depth of 80mm - 85mm.

2. Knock four M12*80 mm expansion bolts in hole using hammer, then loosen the bolt part so that the expansion rod is inserted into the foundation installation hole. If the installed bolts have been reserved in construction process, the next step could proceed. If the installed bolts aren't reserved, it is necessary to set the installation bolts as shown in Figure 2.5.7 as per the above steps.

3. Please refer to Figure 2.5.3 / Figure 2.5.6 for the drilling position at the bottom of incoming power line;

4. Lay the power cord in advance, and the multi core cables hall be peeled off under the foundation. After peeling off AC power cable, the exposed length reserved by foundation shall be no less than 600 mm.

1	M12*100 expansion screws
2	Reserved position for the threading hole
3	Front door direction of charger

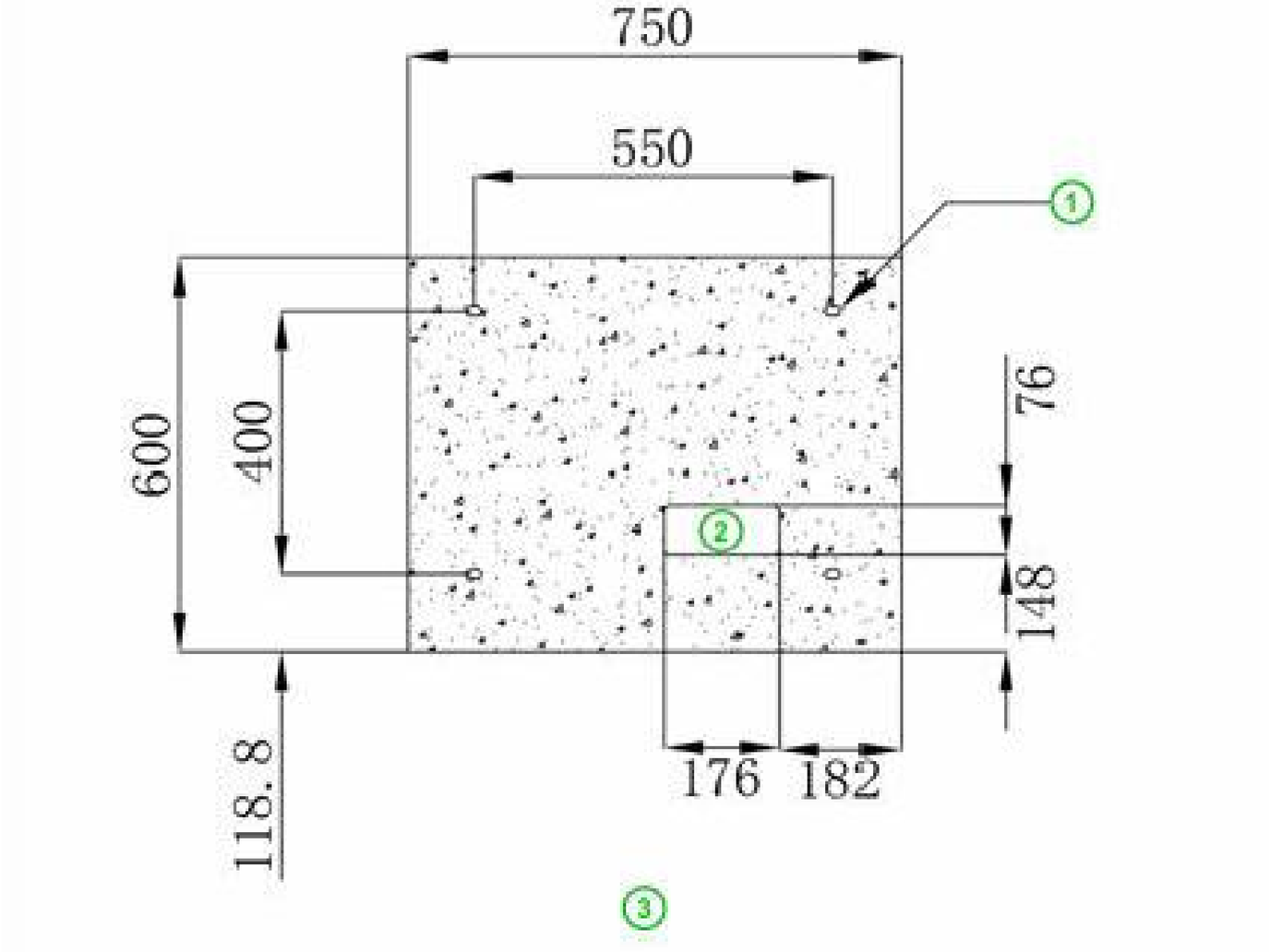


Figure 2.5.1 Hole positions and dimensions of 120~180 kW ground foundation (Unit: mm)

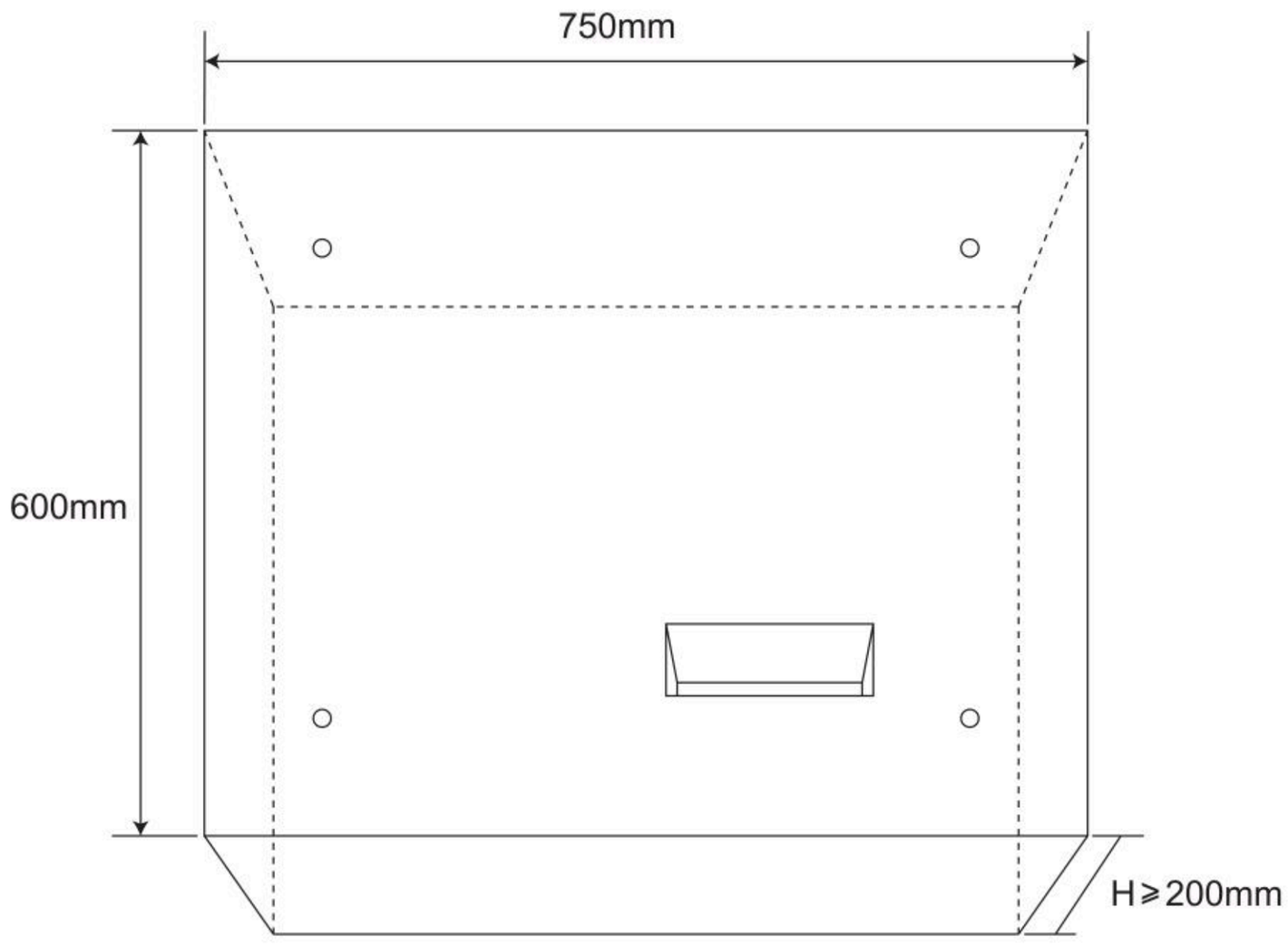


Figure 2.5.2 120~180 kW concrete cement base

1	Screw hole position
2	Front door direction of charger
3	Position of the AC incoming line hole

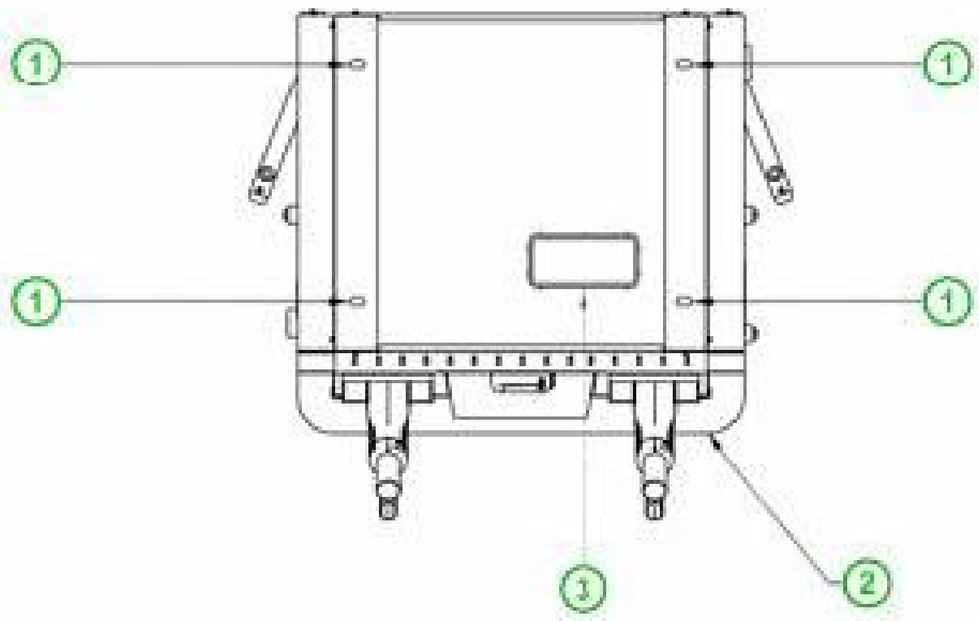


Figure 2.5.3 Drilling position at the end of 120~180 kW AC incoming line

1	M12*100 expansion screws
2	Reserved position for the threading hole
3	Front door direction of charger

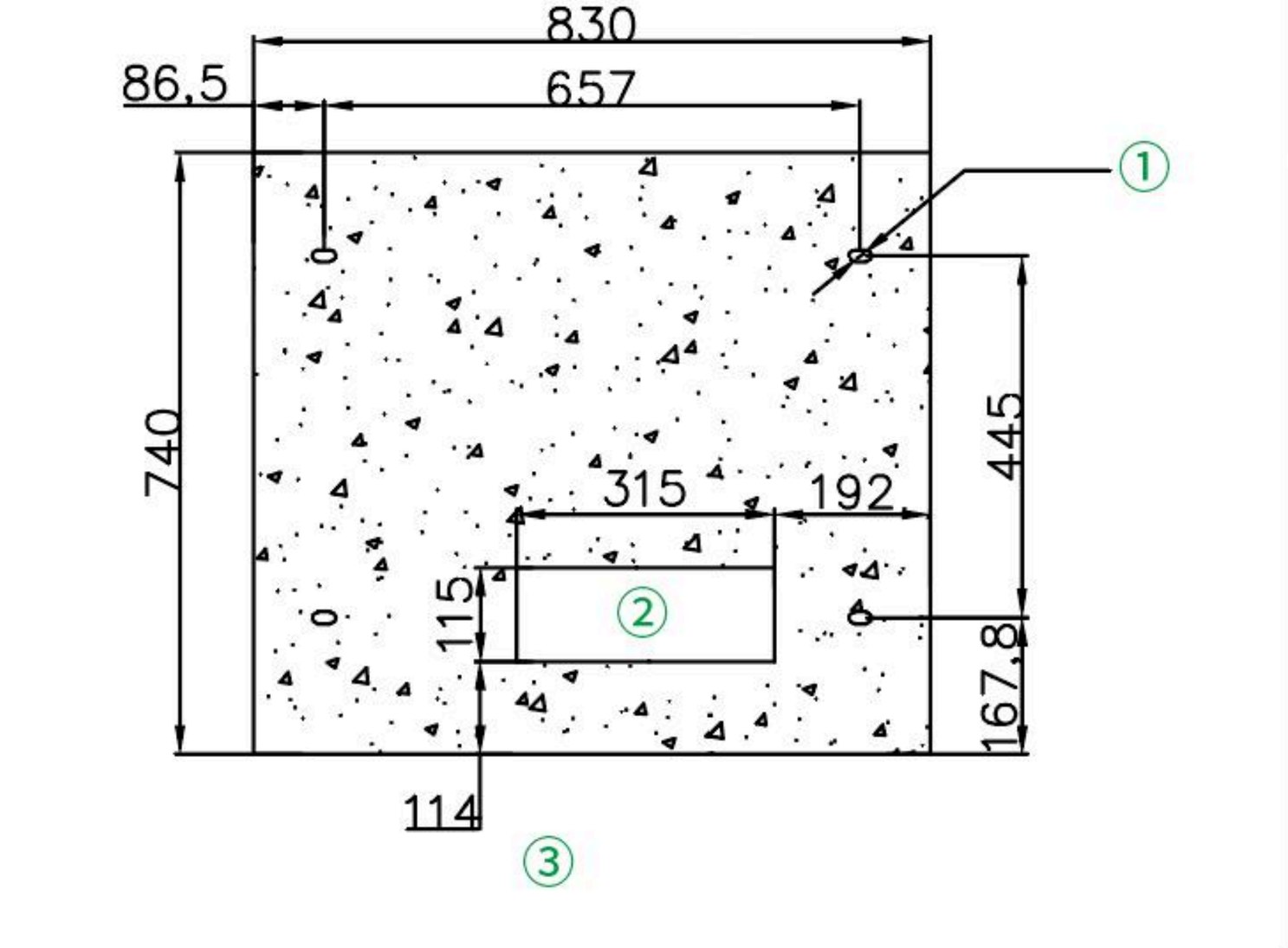


Figure 2.5.4 Hole positions and dimensions of 240~480kW ground foundation (Unit: mm)

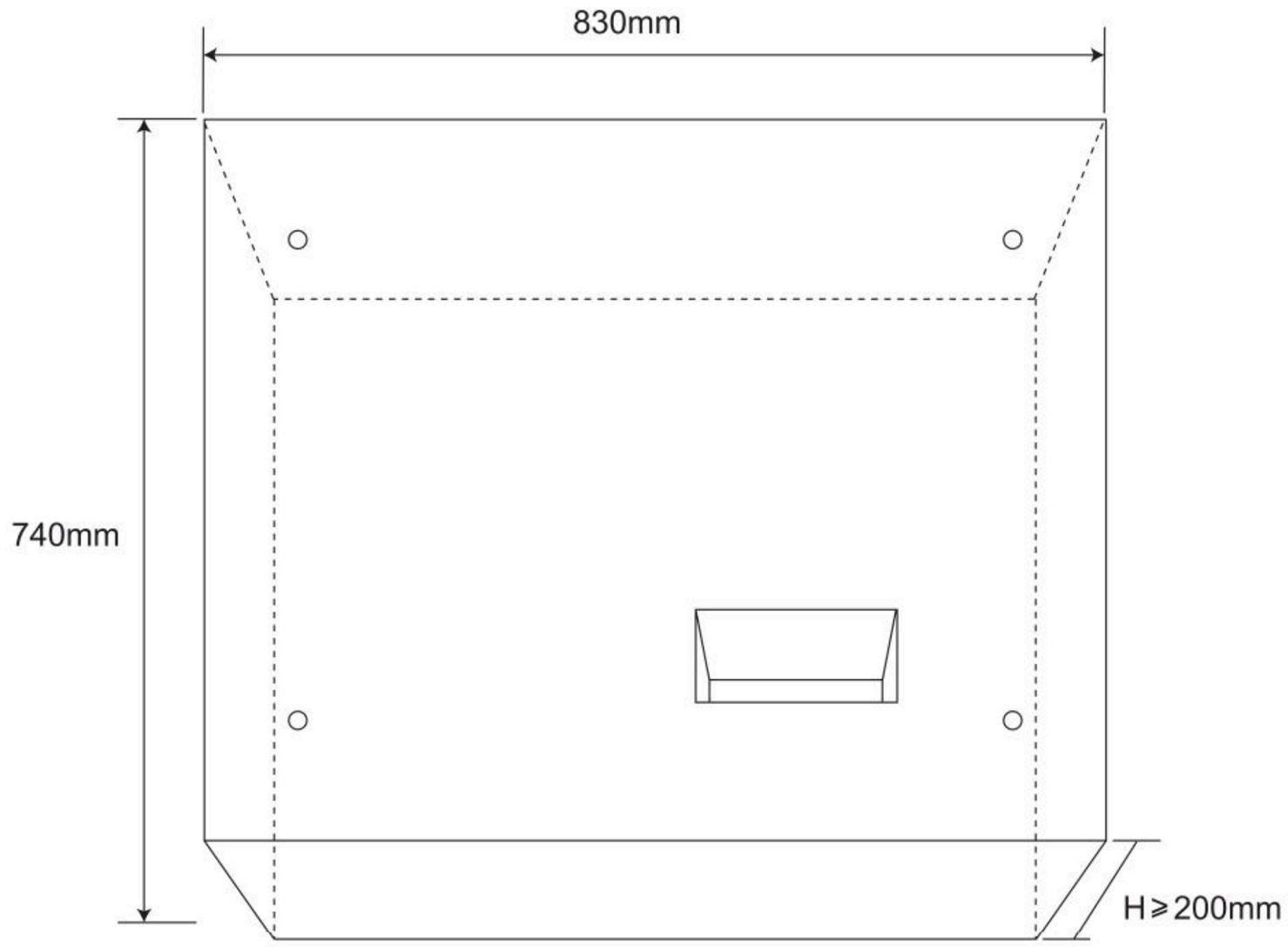


Figure 2.5.5 240~480 kW concrete cement base

1	Screw hole position
2	Front door direction of charger
3	Position of the AC incoming line hole

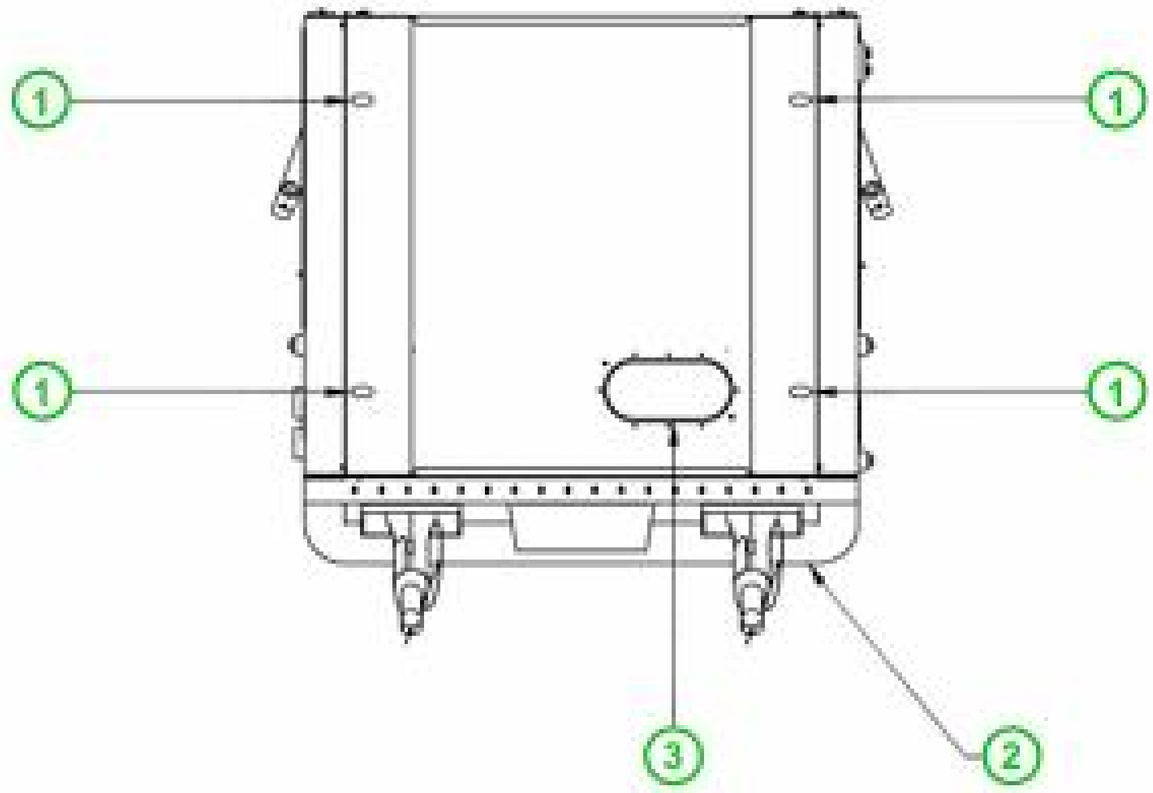


Figure 2.5.6 Drilling position at the end of 240~480 kW AC incoming line

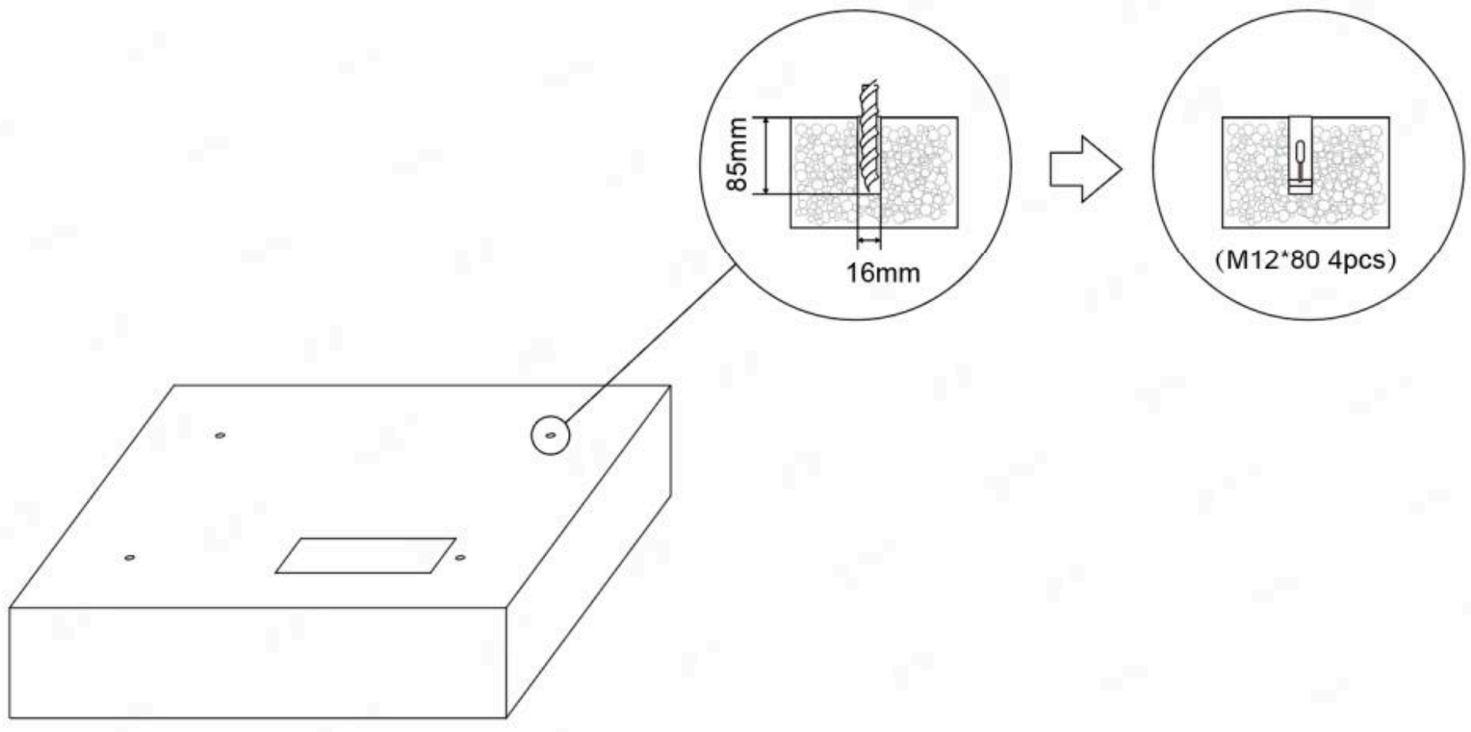


Figure 2.5.7 Setting of installation bolts

2.6. Equipment Movement and Installation

Select from the following methods to move the charger as per actual condition of site:

1. Transports chargers

    - Adjust the width of double forks of forklift, insert forklift from the gap reserved by charger, as shown in Figure 2.6.1
    - Move charger with care and install it properly

2. Place charger above the cement foundation, align at installation hole, open the front door of charger and pull out the cable pre laid from the bottom of charger via cable inlet hole. Later, slowly put down charger and pull out the remaining cable till the charger is completely placed on foundation, as shown in Figure 2.6.2

3. The reserved length of AC incoming power line cable passing through from the bottom of machine box shall be no less than 1,000 mm.

Precautions:

1. The installation hole of charger foundation shall be corresponding to the hole on cement foundation;
2. The sheet metal baffle head of charger cable inlet hole could be dismantled, and the machine box shall not be damaged in disassembly process;
3. The charger is installed on 4 * M12 mm expansion bolts reserved or installed. After bolts are tightened, the front, back, left and right sealing plate shall be installed, as shown in Figure 2.6.3.

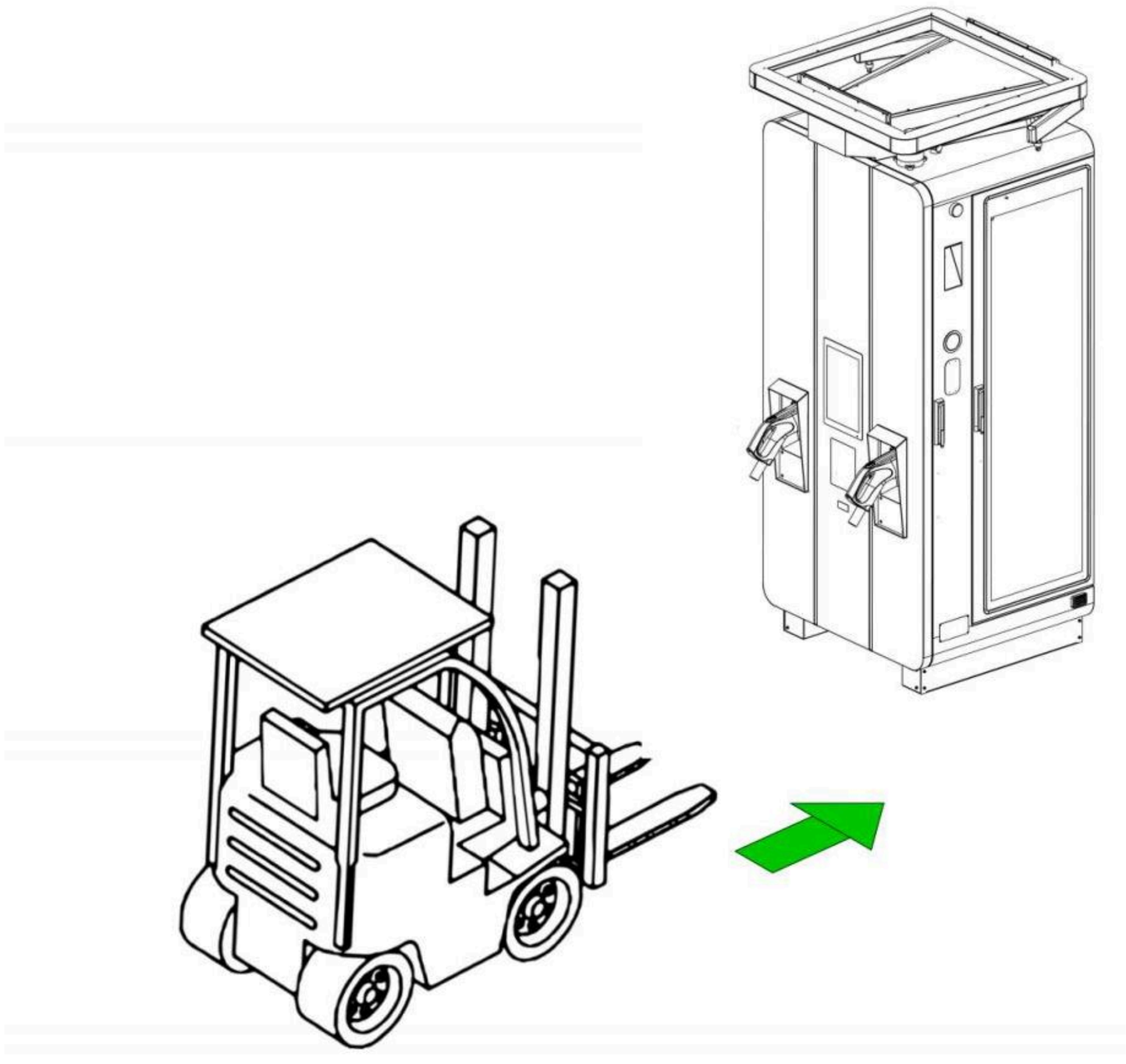


Figure 2.6.1 Forklift handling

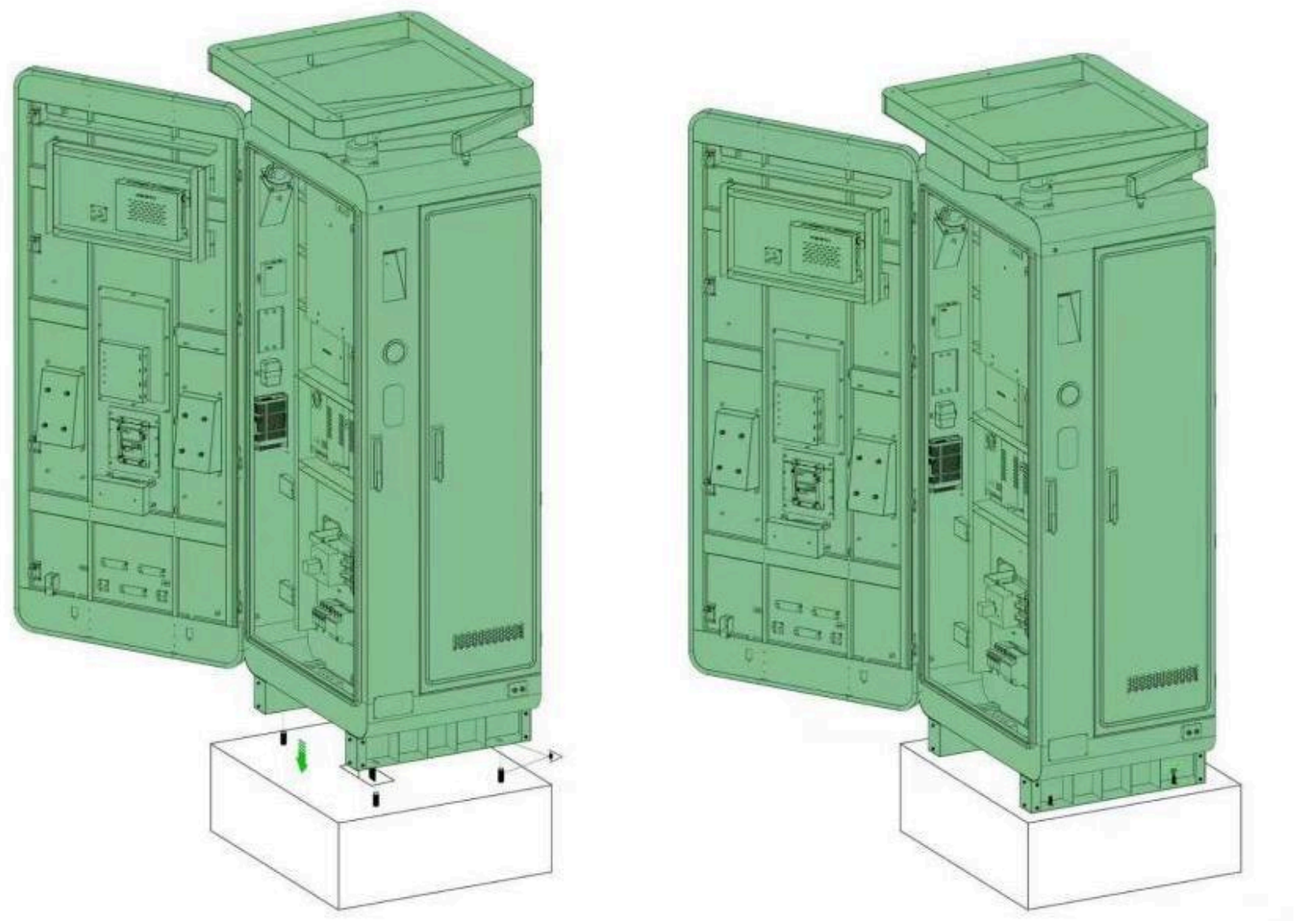


Figure 2.6.2 Position cabinet on right place

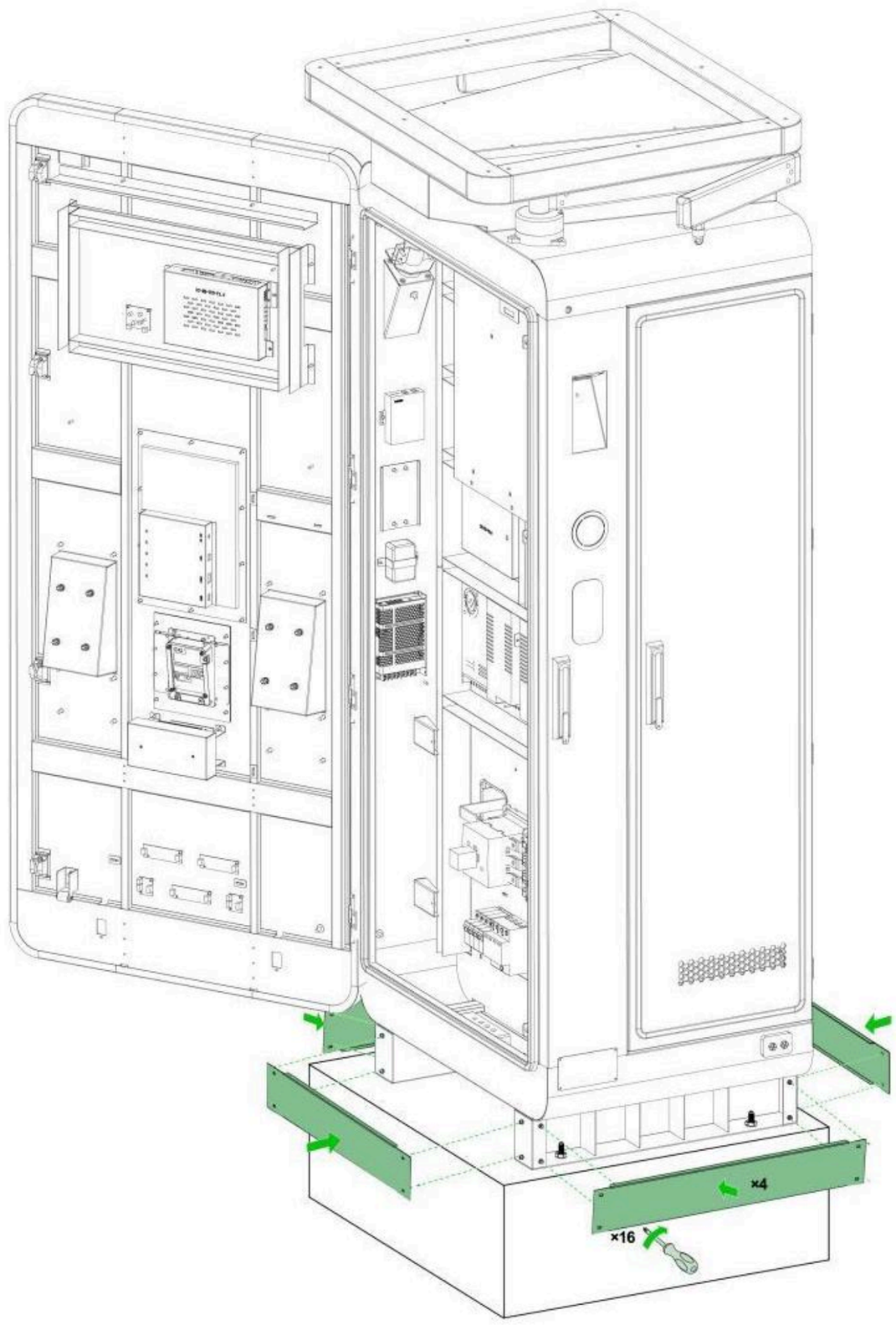


Figure 2.6.3 Install side cover plate

2.7. Input Cable Connection

- **Input Cable Requirements**

Input cable specification is recommended as below:

Recommendation of Cable Model and Specification

Power of charger	Input voltage	Copper cable specification	Breaker model
120 kW	380V three-phase	ZR-YJV22-0.6/1KV-3*95mm²+2*50mm²	3P 250A
180 kW	380V three-phase	ZR-YJV22-0.6/1KV-3*150mm²+2*70mm²	3P 350A
240 kW	380V three-phase	ZR-YJV22-0.6/1KV-2*(3*120mm²+2*70mm²)	3P 500A
360 kW	380V three-phase	ZR-YJV22-0.6/1KV-2*(3*150mm²+2*95mm²)	3P 400A *2
480 kW	380V three-phase	ZR-YJV22-0.6/1KV-2*(3*240mm²+2*120mm²)	3P 500A

Wiring requirements of AC input cable

1. The wiring of AC input cable starts from user's power distribution switch. To guarantee safety, the incoming line cable of charger shall be connected at first, then the electric wire in power distribution box.
2. The switch in power distribution box shall be equipped with the protection device of electric leakage, overcurrent, short circuit, lightning strike, etc., and the capacity of power distribution switch shall be no lower than 1.5 times of actual load capacity.
3. AC input cable's L1 phase, L2 phase and L3 phase and N neutral wire cable shall adopt the easily distinguishable cables of different colors as per the standards of local areas of users, for example, brown (L1 phase), black (L2 phase), gray (L3 phase), blue (N wire), yellow and green (PE wire) cable shall be used. If cable only has a kind of color, it is necessary to stick the line number mark or mark with different colors of insulating adhesive tapes at both ends of cable.

Cable line shall not have broken end, damage and scratch.

- **Schematic Diagram of Wiring**

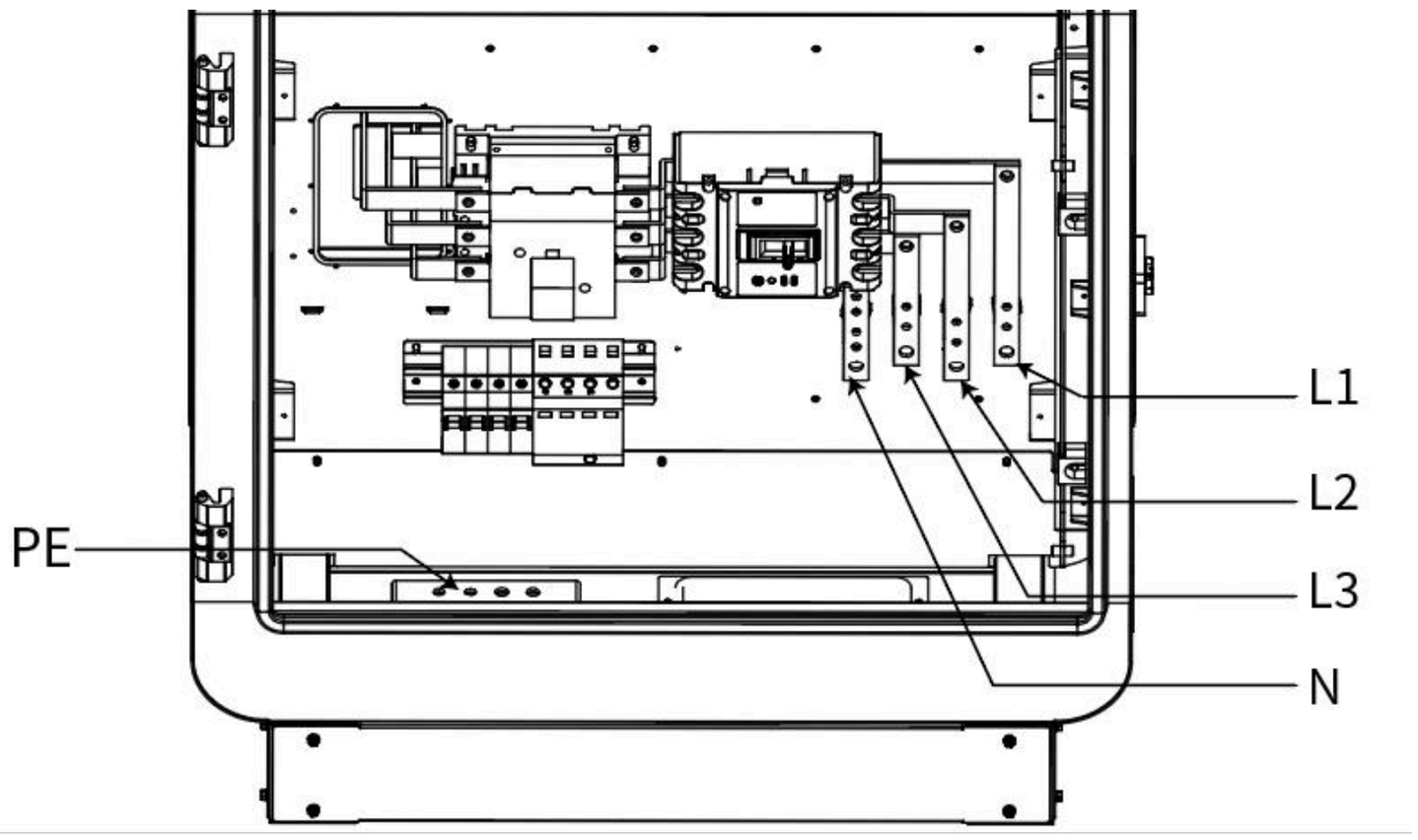
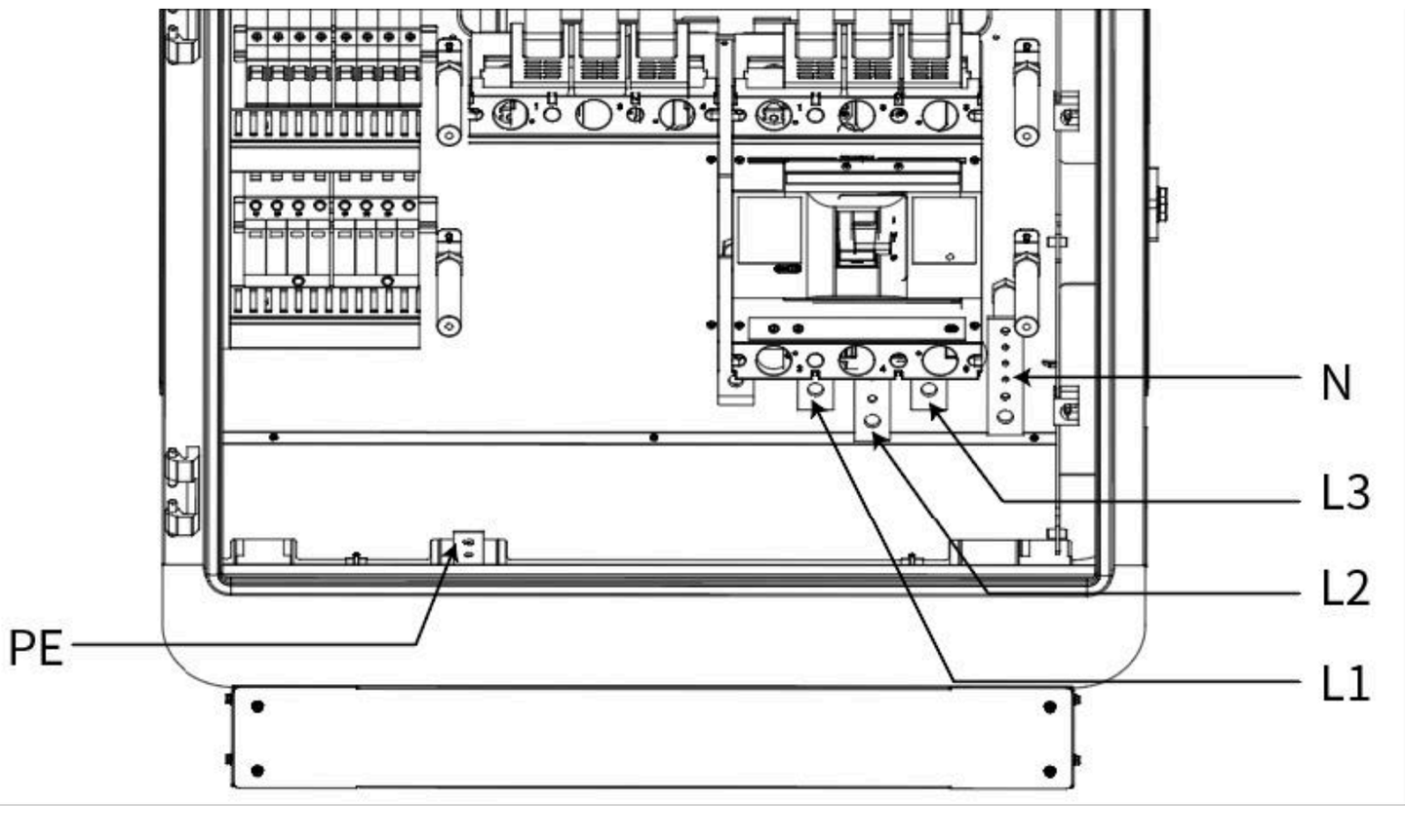


Figure 2.7.1-1 Wiring diagram of 120~180 kW



2.7.1-2 Wiring diagram of 240~300kW

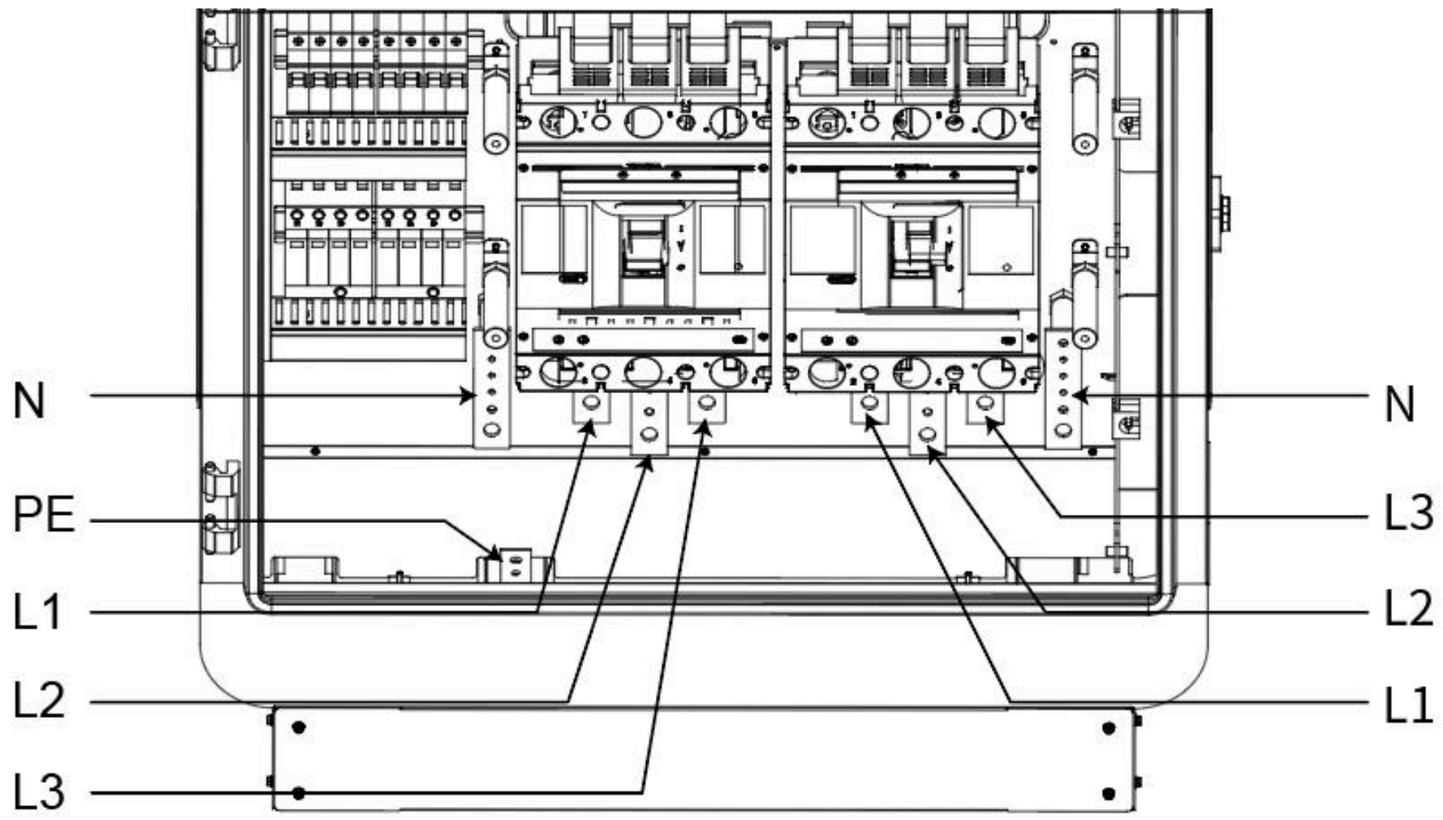


Figure 2.7.1-3 Wiring diagram of 300~480kW

2.8. Module Dip Code and Frame Insertion

The following figures show the installation method of charger module:



Figure 2.8.1 Open side door for installing power module



Figure 2.8.2 Insert power module

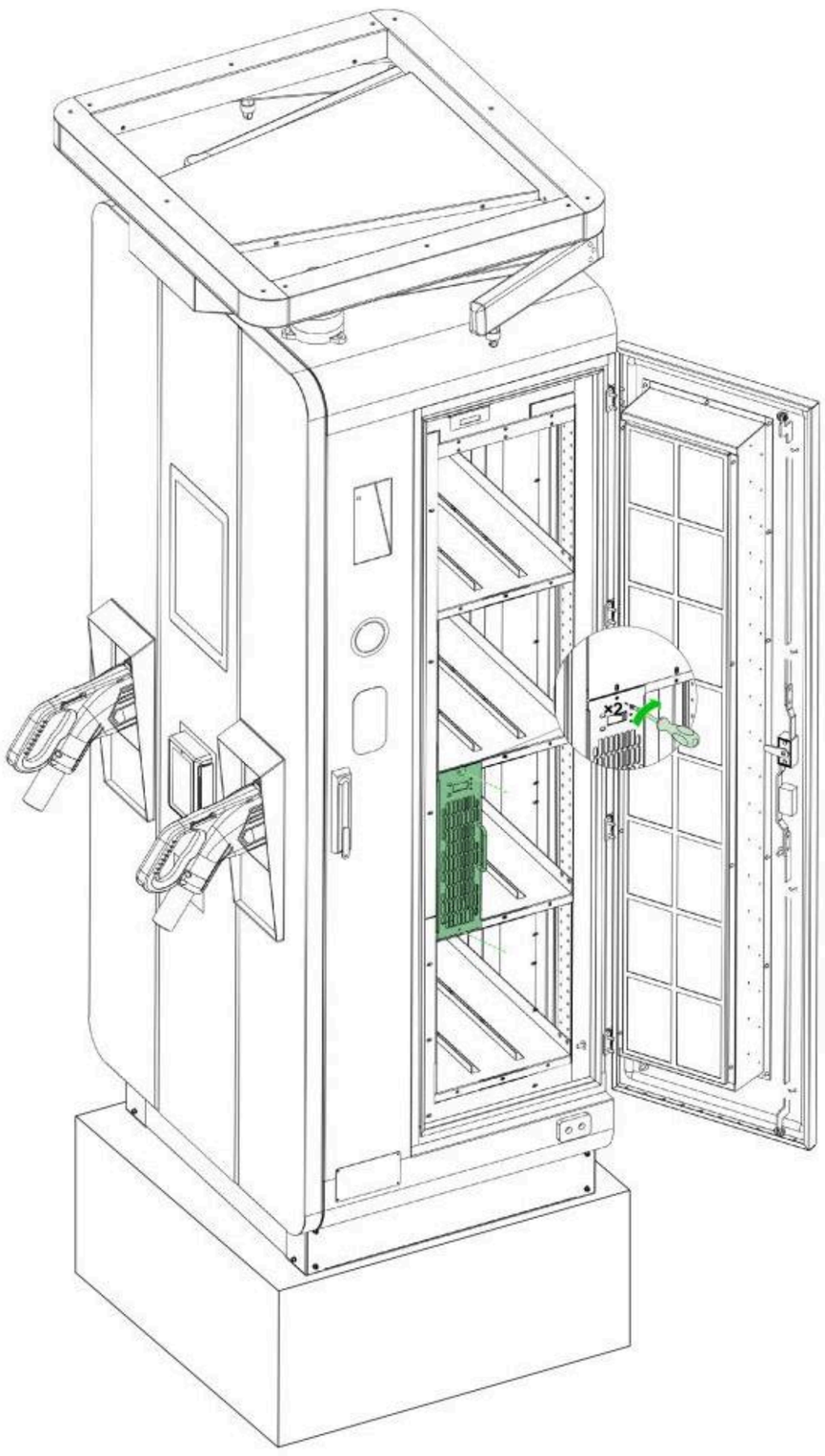


Figure 2.8.3 Install power module screws

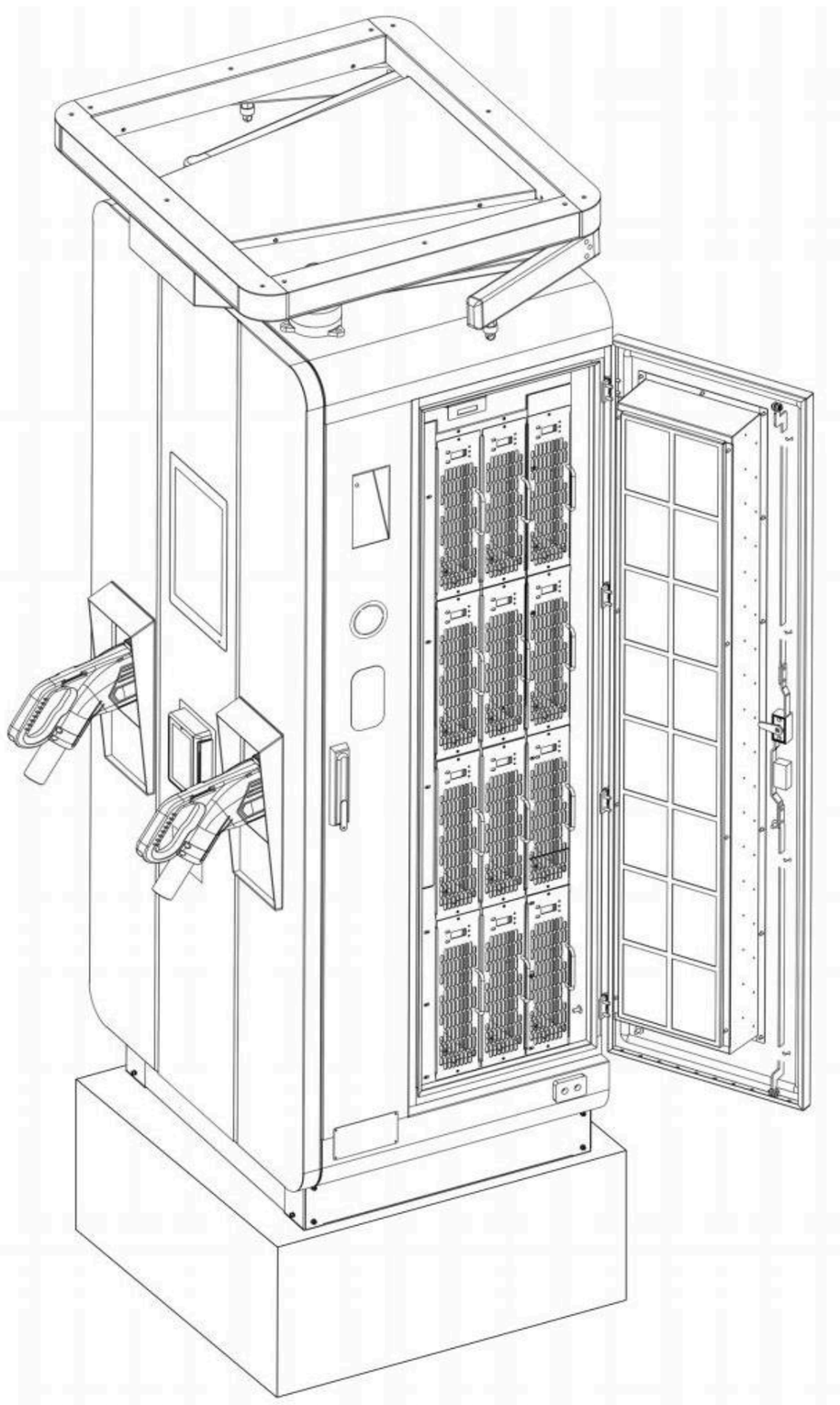


Figure 2.8.4 Check power module installation

After completing the installation, please find the screen and keys on each module as shown below:

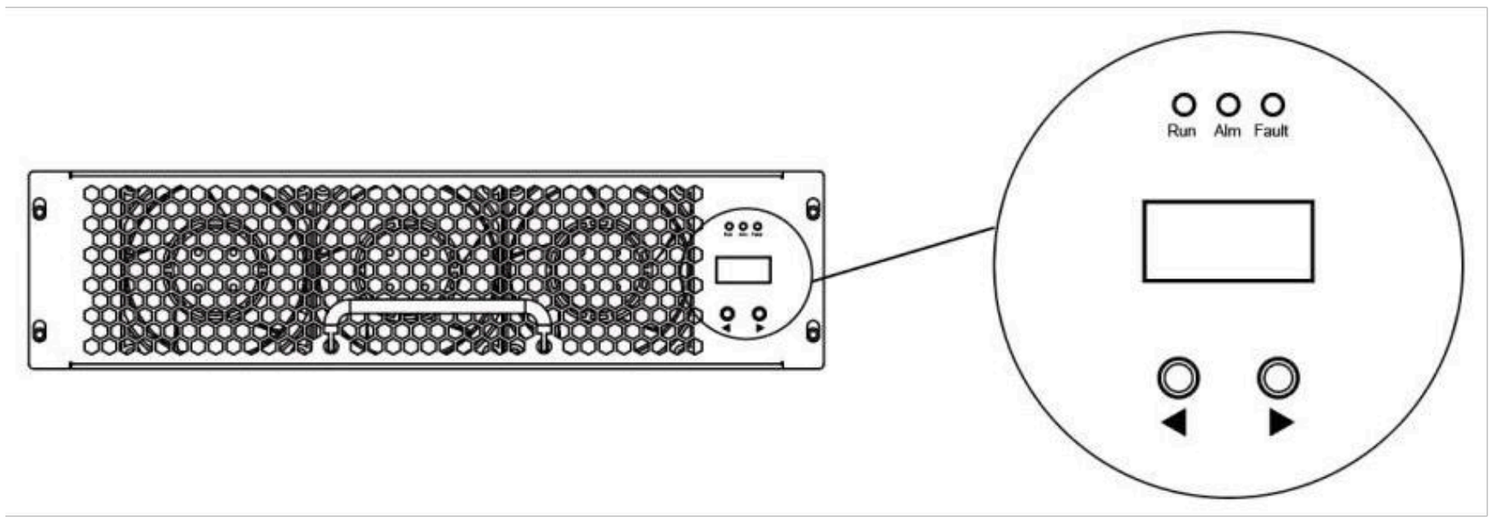


Figure 2.8.5 Screen and keys on module

The dip code of each module should be correctly set. The default code is “80H”, the first two values should be set as indicated in figures 2.8.6~2.8.10 for each specific model. Taking changing “80H” to “61H” as an example, please operate as instructed below.

- Short press ◀ or ▶ until the screen displays contents.
- Long press ◀ or ▶ until the “0” flashes.
- Short press ◀ to change “80H” to “81H”, long press ◀ until “8” flashes and then short press ◀ to change “81H” to “61H”.
- Long press ▶ to save the setting values until the screen stops flashing and just displays.

120 kW (30 kW module)	
60	61
64	65

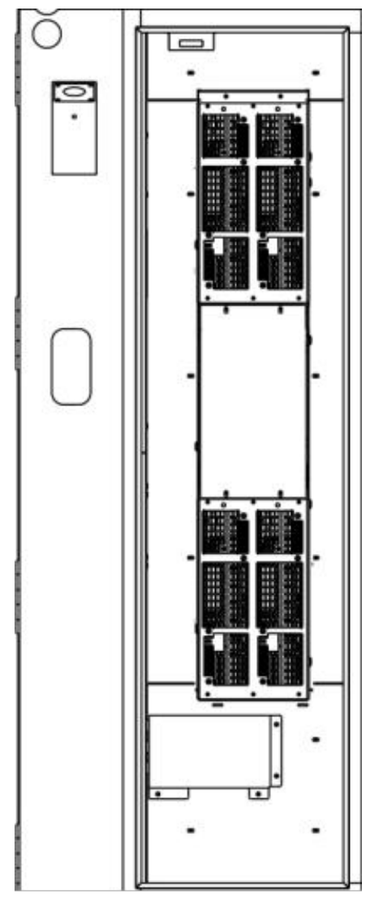


Figure 2.8.6 Module layout for 120 kW

180 kW (30 kW module)	
60	61
62	64
65	66

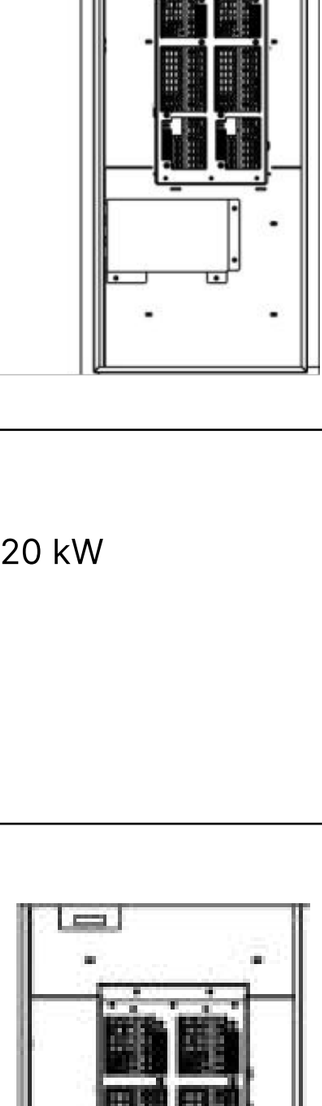


Figure 2.8.7 Module layout for 180 kW

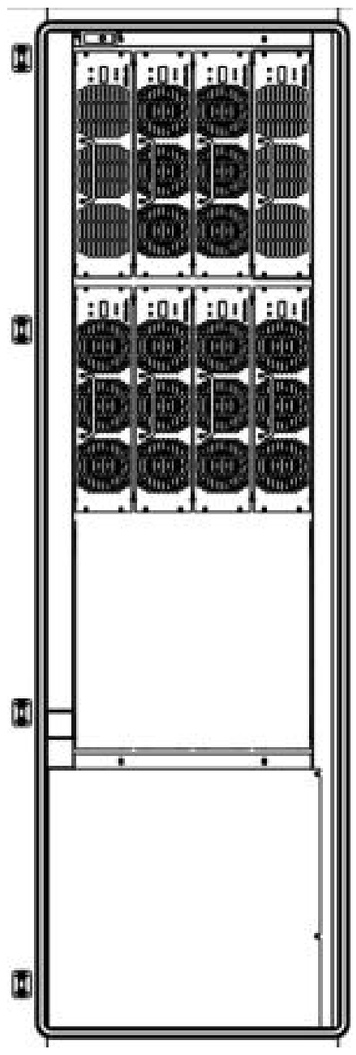
240 kW (30 kW module)				
60	61	62	63	
64	65	66	67	

Figure 2.8.8 Module layout for 240 kW

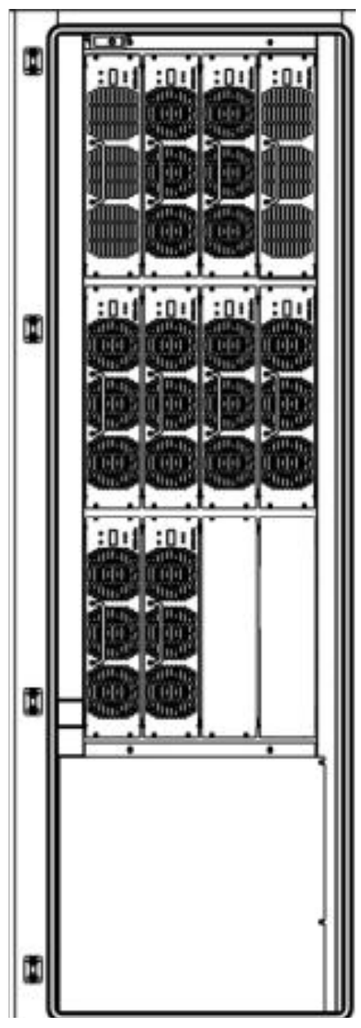
360 kW (30 kW module)				
60	61	62	63	
64	65	66	67	
68	69	6E	6F	

Figure 2.8.9 Module layout for 360 kW

480 kW (30 kW module)			
60	61	62	63
64	65	66	67
68	69	6E	6F

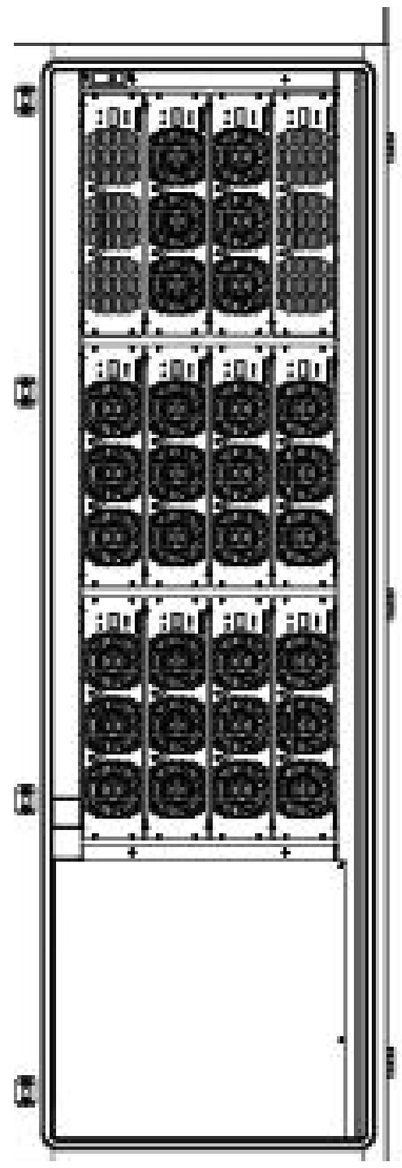


Figure 2.8.10 Module layout for 480 kW

2.9. Checking before Power-on

1. **Check of charger body:** Check whether the charger is installed reliably, and ensure that the charger is installed without inclination and looseness;

2. **Check of cable and terminal:** Check whether all wiring terminals are tightened, and ensure all wiring terminals are connected firmly, without looseness and poor contact;

3. **Insulation check:** Check that all cables are free of broken skin and check whether the grounding is correct and reliable. Measure whether the resistance value of each AC incoming phase line and DC output line to ground is more than 1MΩ using megohmmeter;

4. **Short circuit check:** Measure whether there is short circuit between each phase of AC input line and neutral and ground wire using multimeter and whether there is short circuit between DC output DC+ and DC

3. Parameter Setting and Device Networking

1. **Network setting: set the IP address and port;**
2. **Rate setting: set the price at different time ranges;**
3. **Module setting: display the charging module information;**
4. **Electric energy meter setting: set electric energy meter parameters;**
5. **RFID card setting: set password and RFID card;**
6. **Charging record: inquire charging history record of charger;**
7. **Event record: record all events;**
8. **Password setting: set and change system password.**

Please note that all settings of charger could be saved and come into effect after restarting.

3.1. Parameter Setting

(1) Networking method 1: If network cable is used for networking, Ethernet network cable shall be directly connected to LAN1 or LAN2 on Android TCU board.

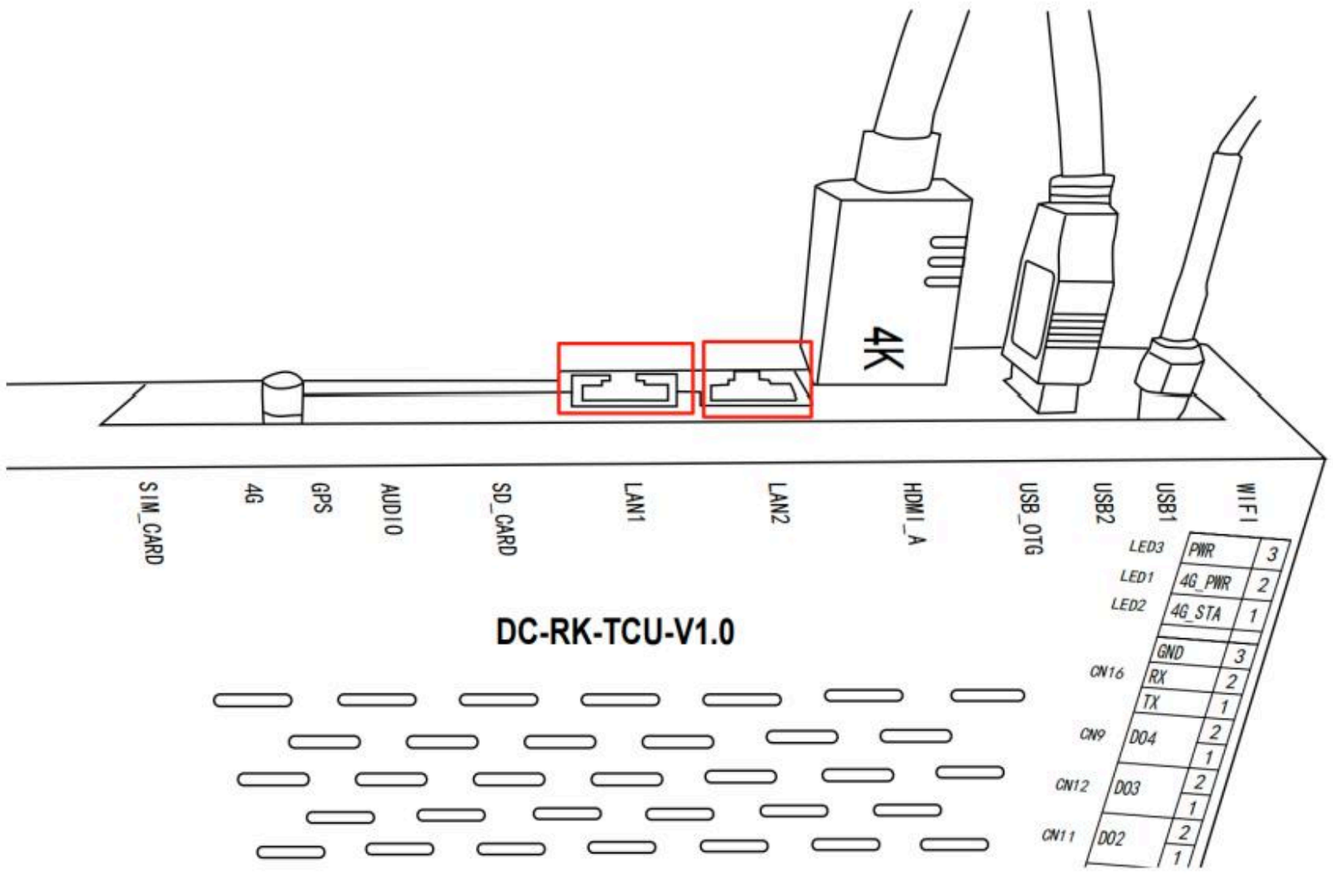


Figure 3.1.1 Network cable port

(2) Networking method 2: If SIM card is used for networking, device shall be connected with SIM card (If TCU is equipped with 4G module, SIM card could be directly put in card slot. If the TCU is equipped with router, the SIM card could be directly put in the card slot of router).

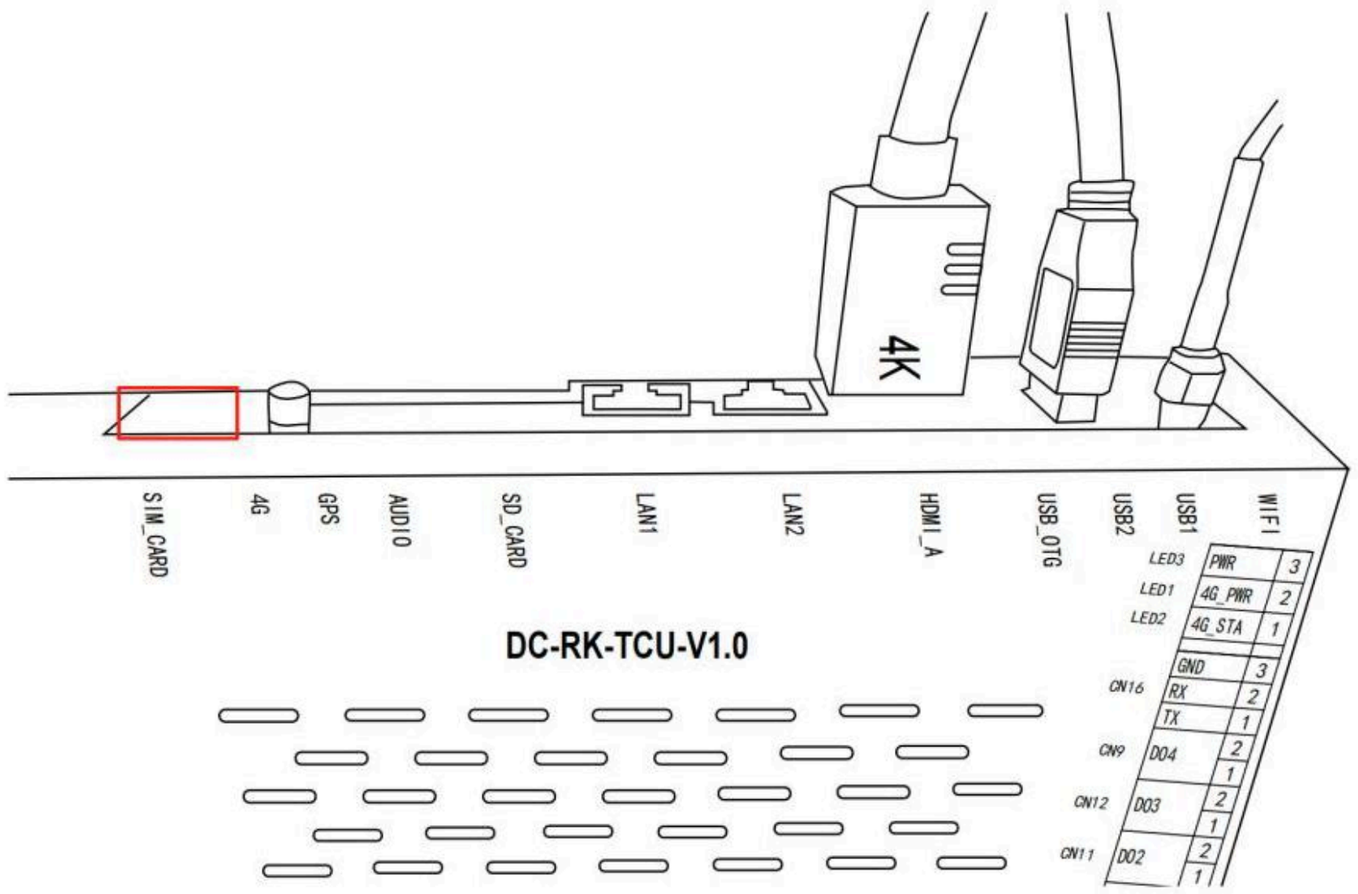


Figure 3.1.2 SIM card slot

Note: Make sure the SIM card meet the following requirements:

Network deployment	Frequency band
LTE-FDD	B1/3/5/7/8/20/28
LTE-TDD	B38/40/41
WCDMA	B1/5/8
GSM	B1/5/8

(3) Networking method 3: If WiFi is used for networking, power on charger and connect the device with WiFi. (Click top right corner of screen and input administrator password 123456, select “Control” after entering administrator interface, then switch on “Show action bar” to enter the Android homepage for setting management, select WiFi connection, choose the name connecting to WiFi and input password for smooth networking, as shown in below figures.)



Figure 3.1.3-1 Main screen page

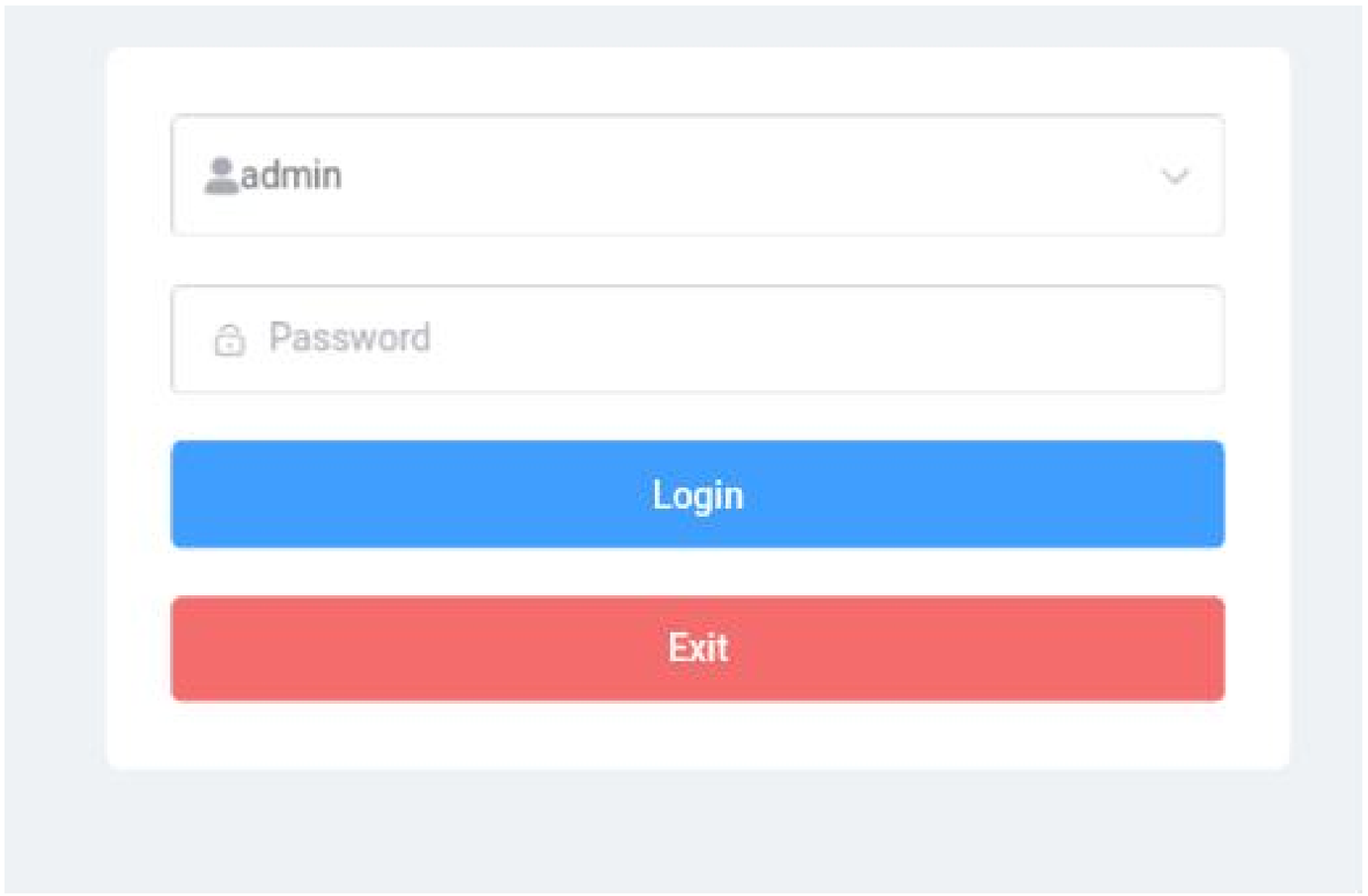


Figure 3.1.3-2 Log in page

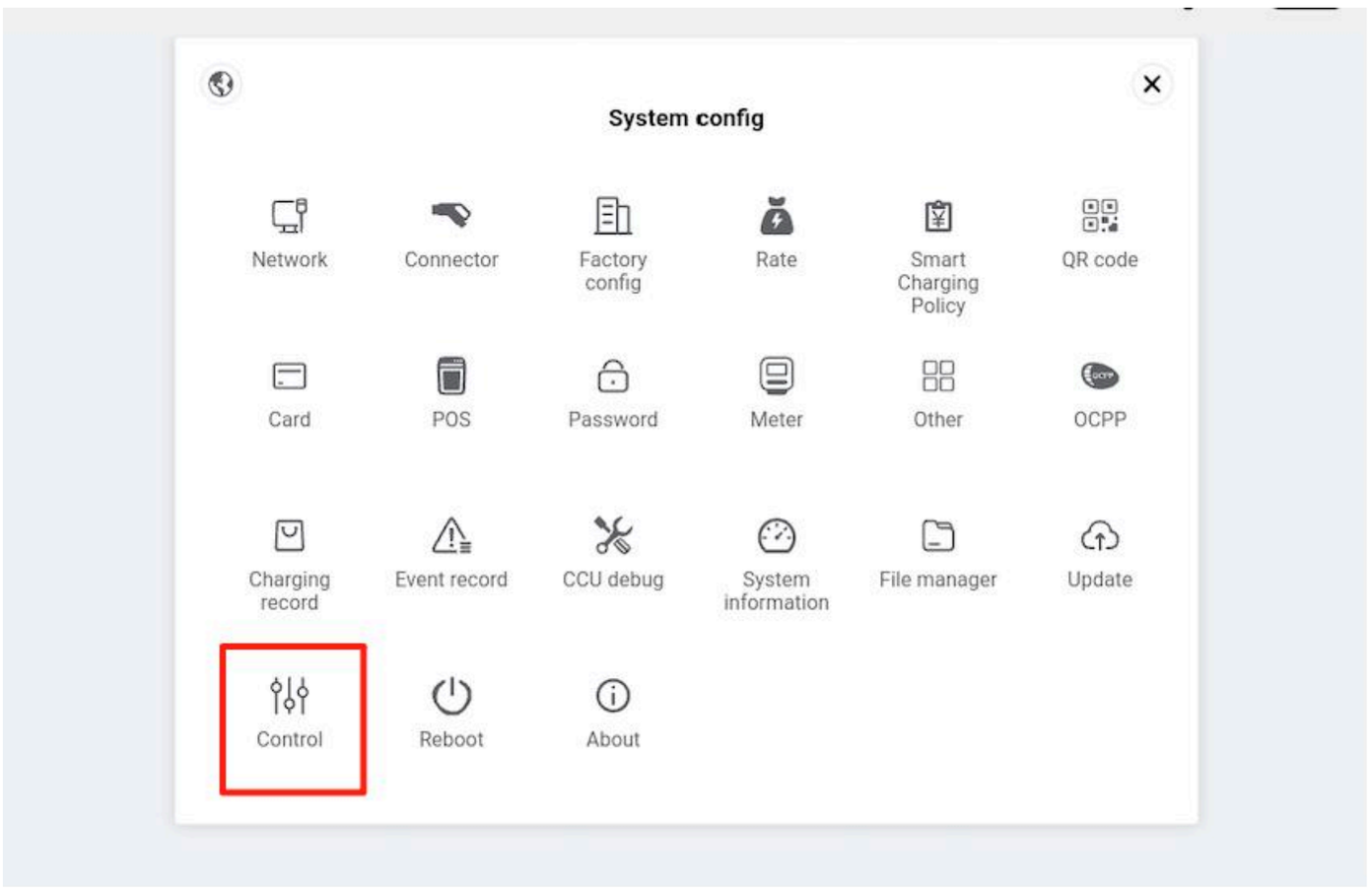


Figure 3.1.3-3 Setting page

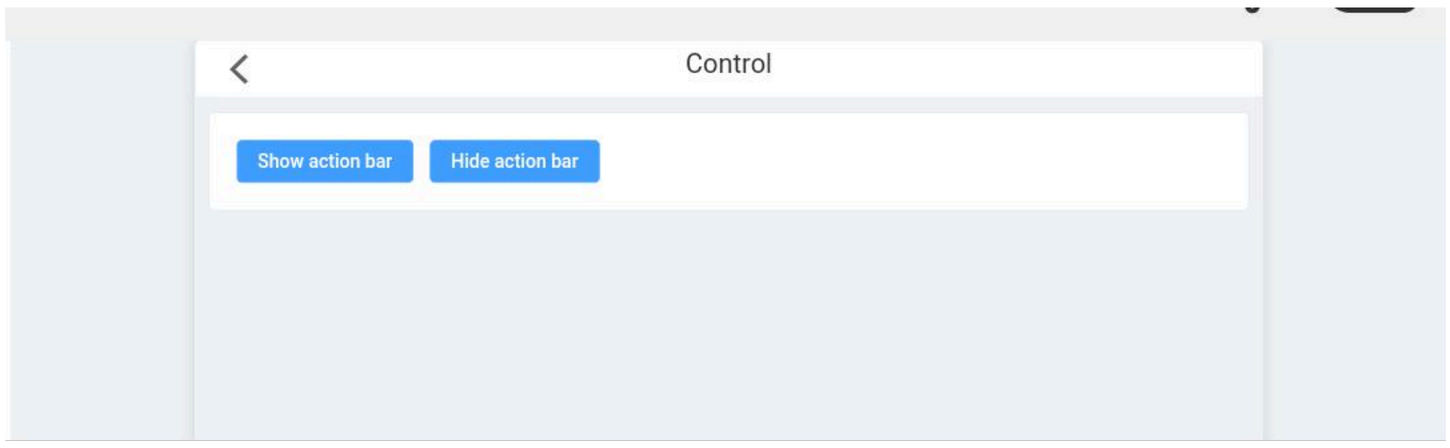


Figure 3.1.3-4 Control

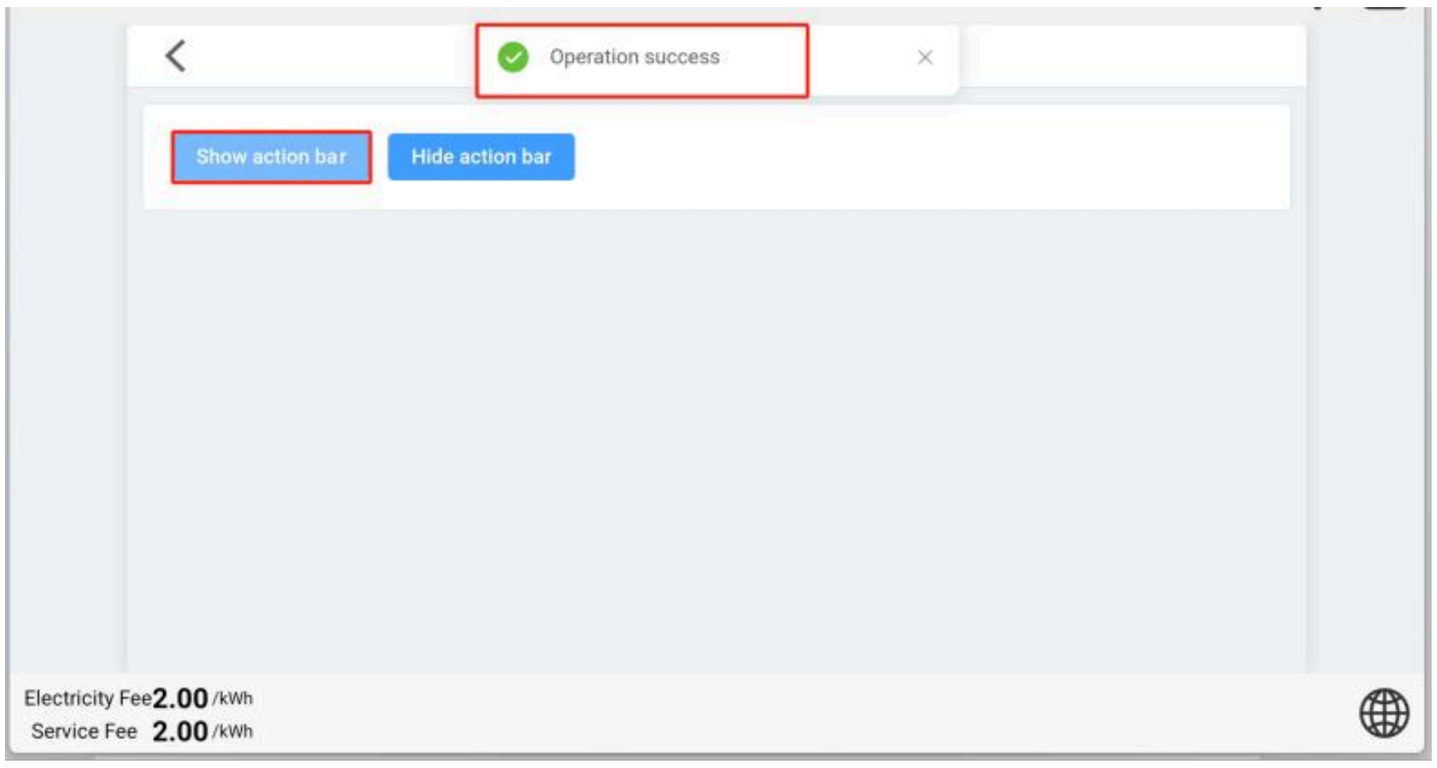


Figure 3.1.3-5 Operation successful

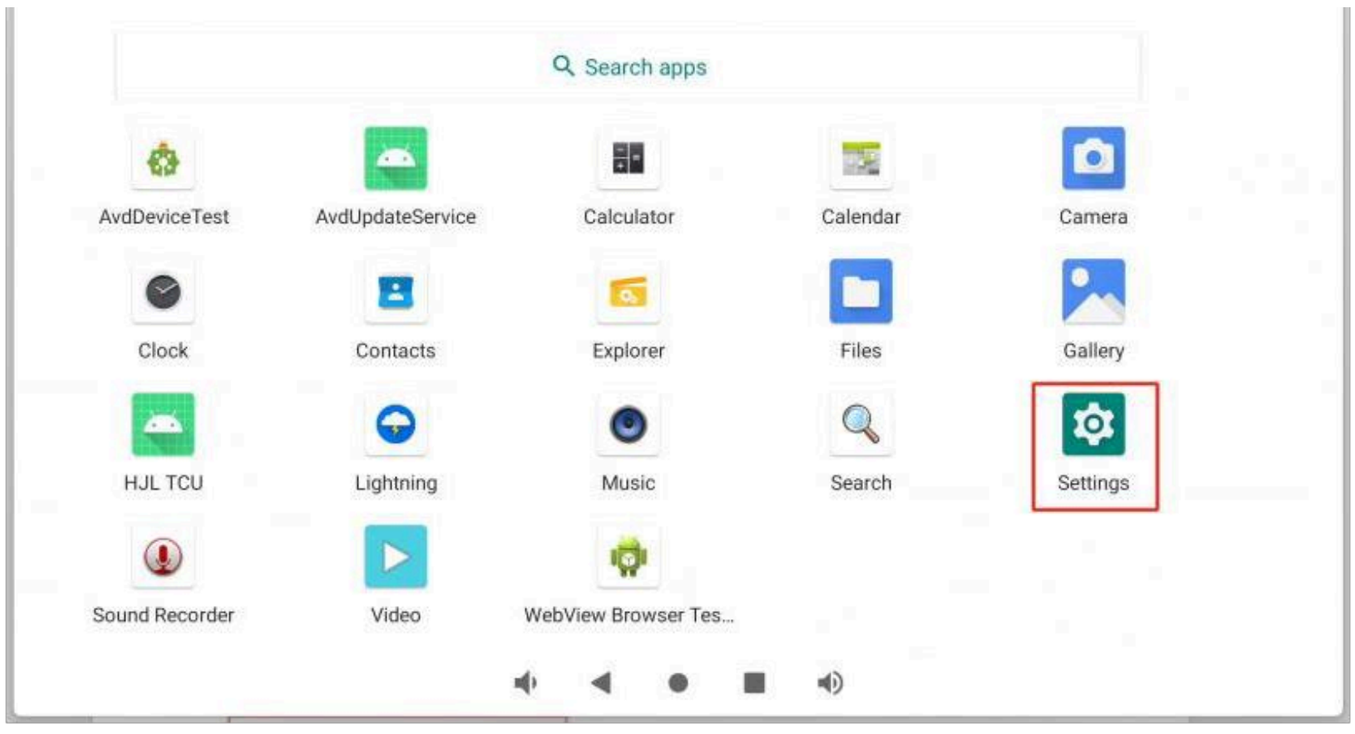


Figure 3.1.3-6 Settings

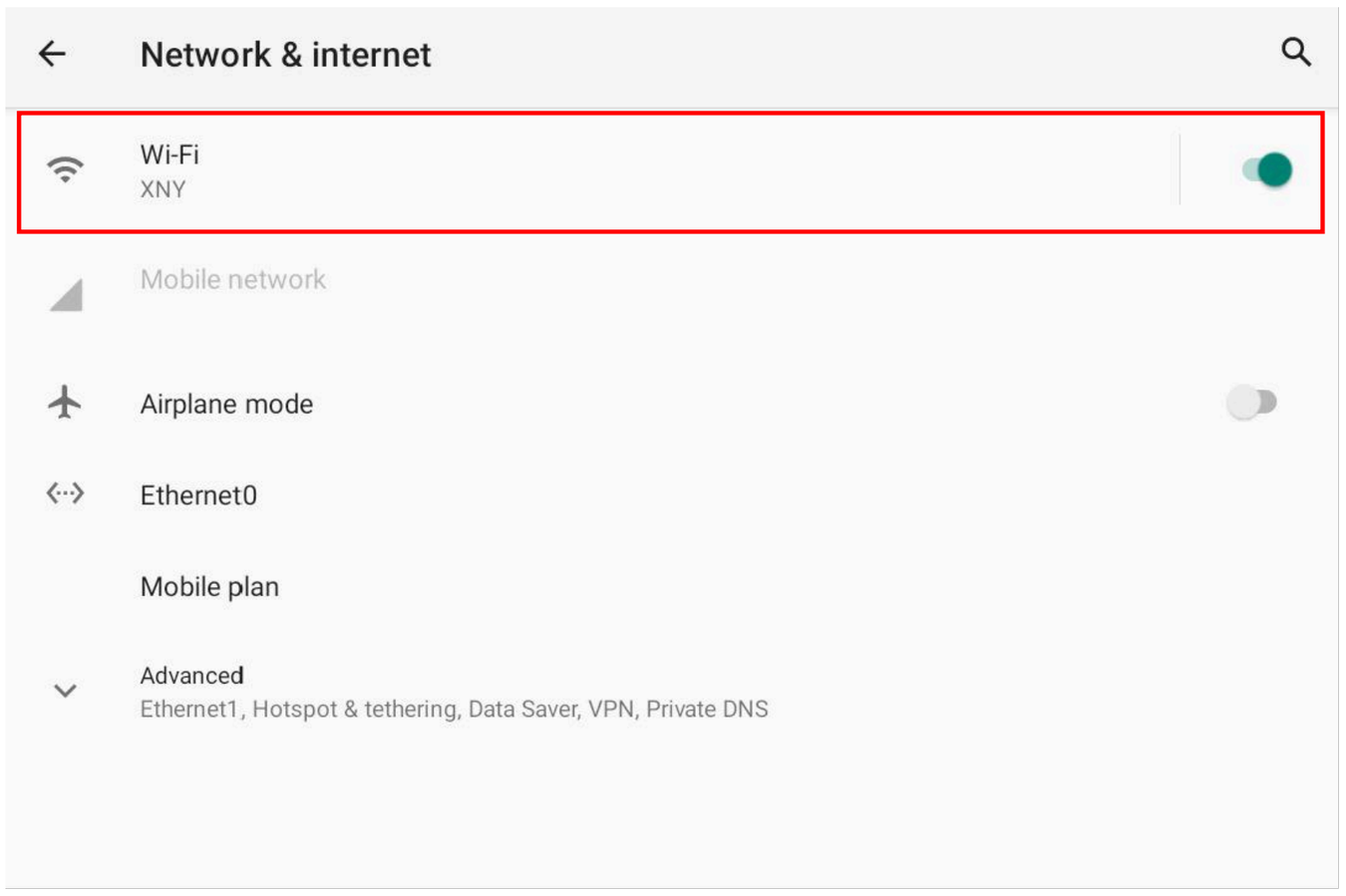


Figure 3.1.3-7 Connect to WiFi

(4) After successful network connection, configure network parameters.

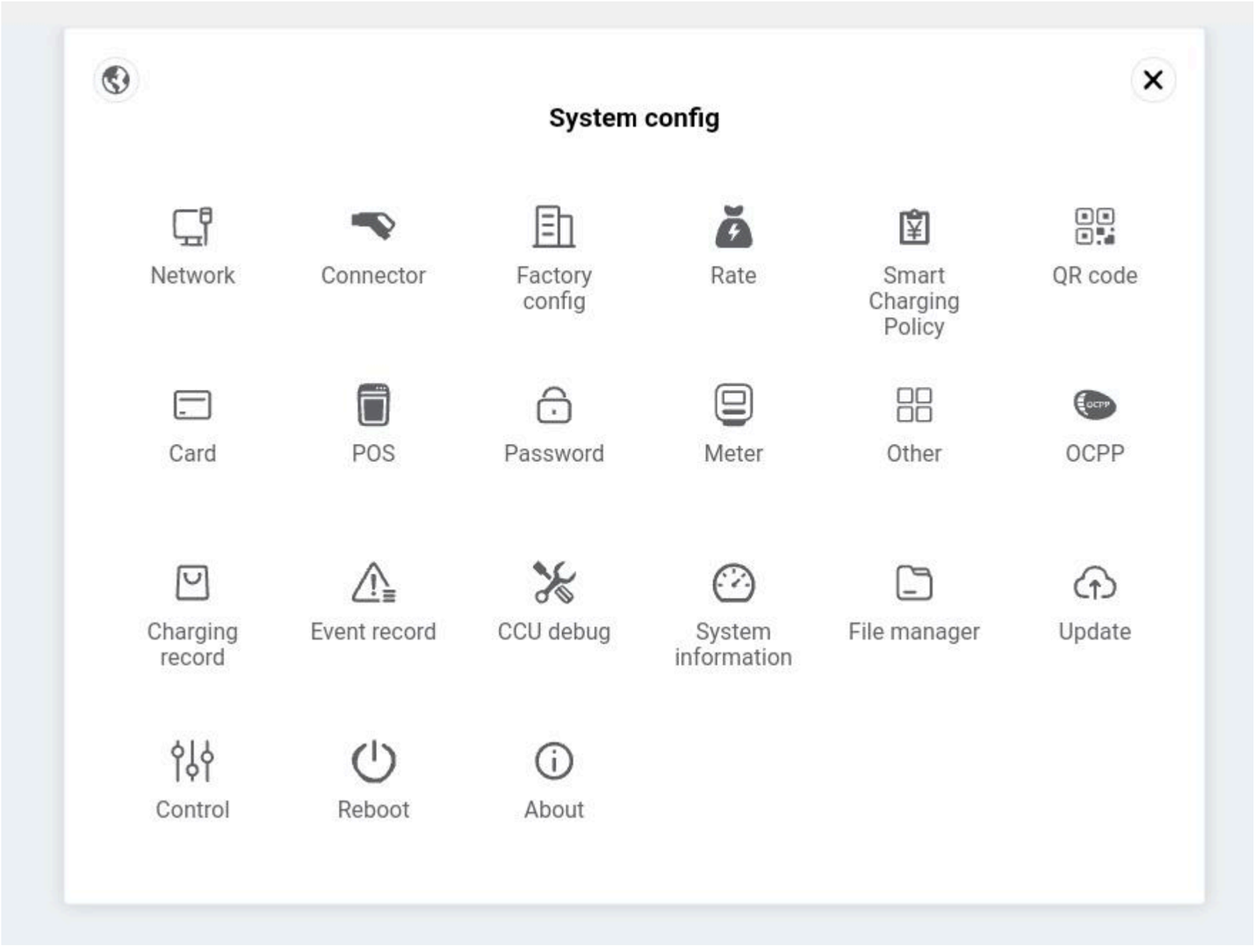


Figure 3.1.4 System config

(5) The communication protocol can be switched in the Network setting (Setting 1 is for OCPP protocol demands). After completion of the above items, please confirm and tick the "√" in the top right corner to save.

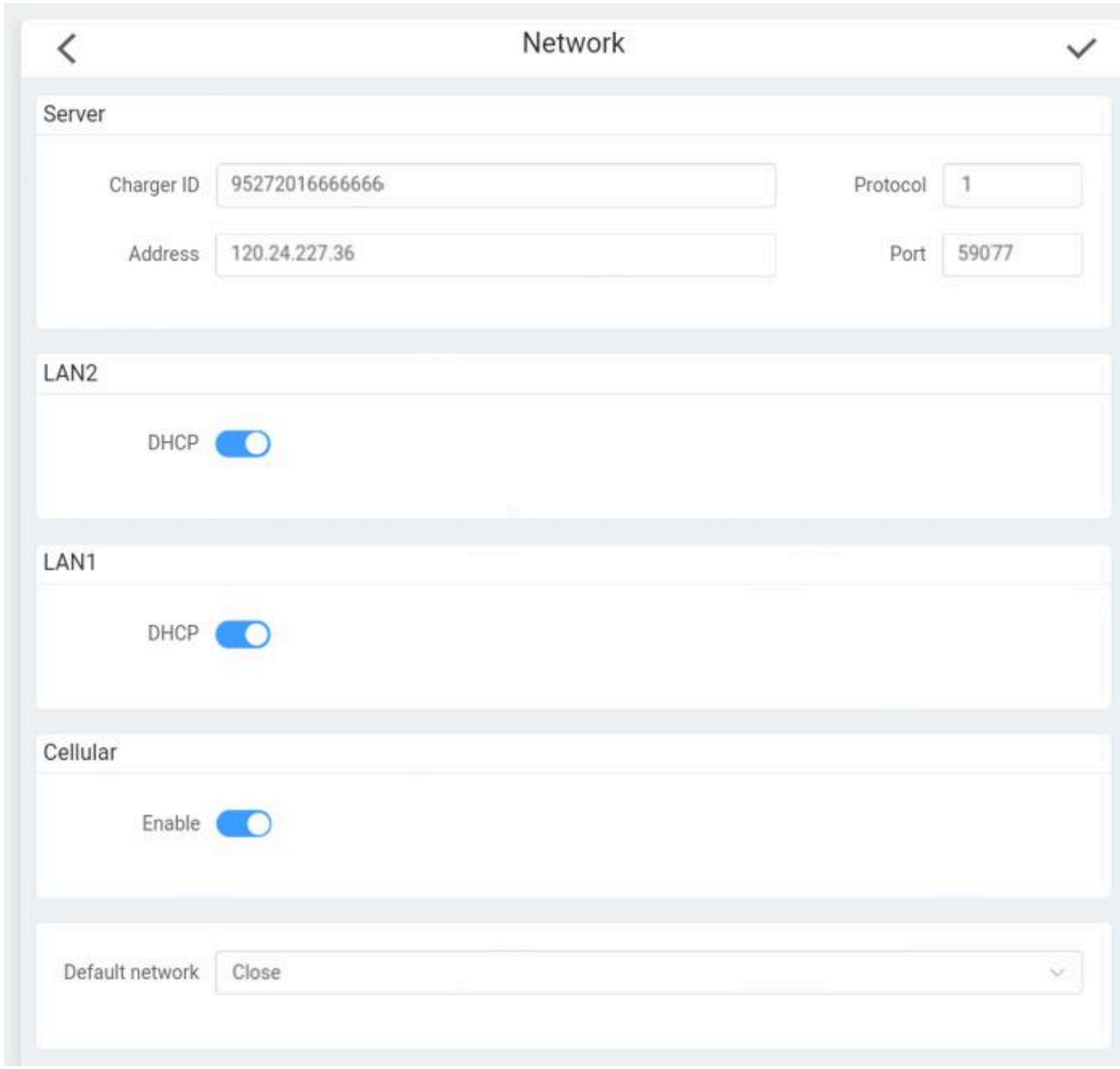


Figure 3.1.5 Network Settings

(6) Setting of charging connector

1. Total number of connector: Confirm the quantity of charging connectors (1 or 2 as per specific model)

2. Connector: Select the specific charging connector to configure

3. Connector type: Set the standard as per actual charger model (GB/T, CCS1, CCS2 and CHAdeMO)

4. Max. Output Curr.: Set current limit as per charger model and maximum output current of charging connector

5. Max. Output power: Set the power limit

6. Connector over temperature: Set the alarm threshold for high temperature. Default value is 100°C

7. Insulation detection: Enable/Set insulation detection function

8. After completion of the above items, please confirm and tick the " √" in the top right corner to save.

For other settings, keep as default. Please do not operate if there is no instruction.

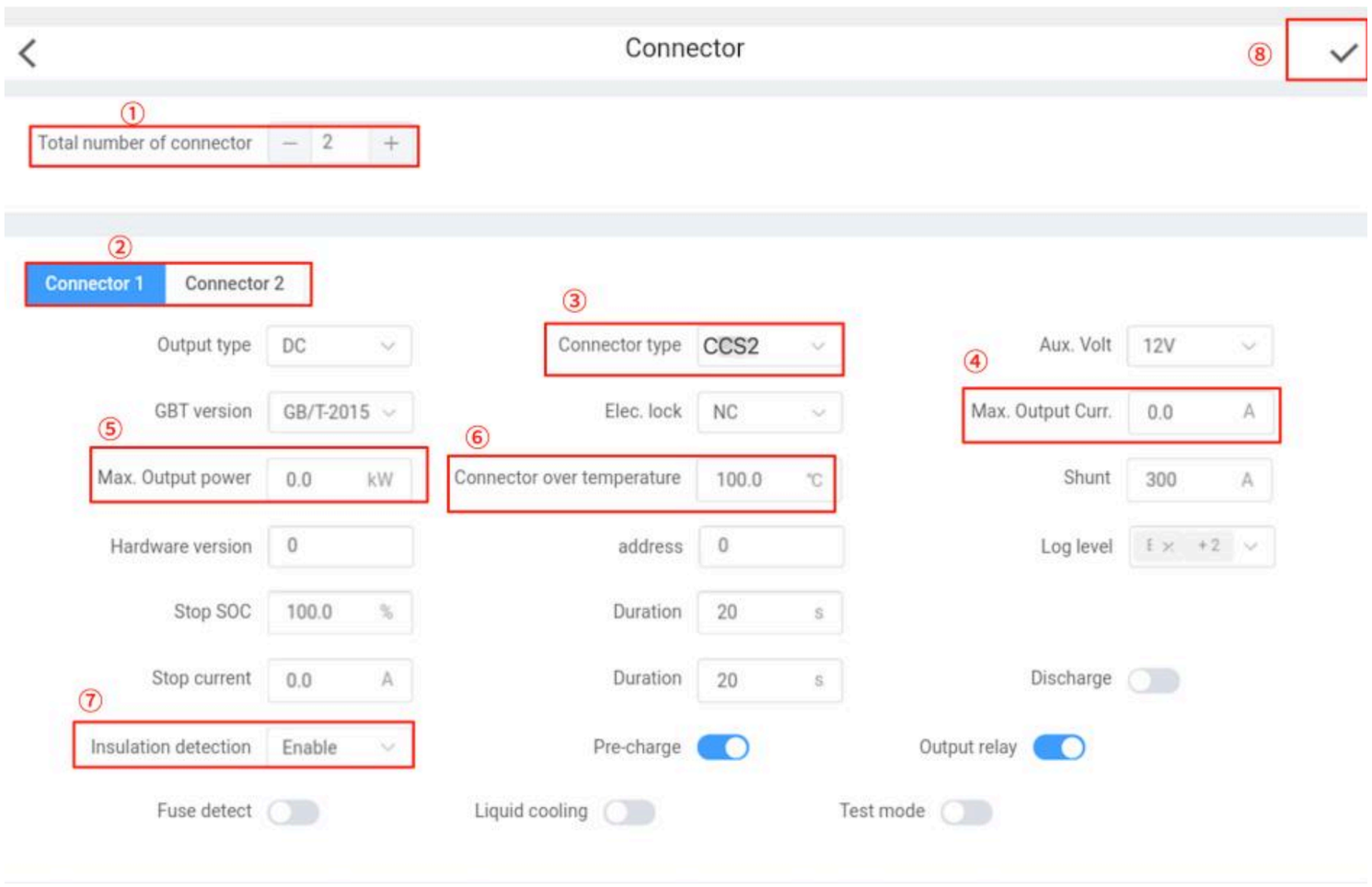


Figure 3.1.6 Charging connector settings

(7) Factory setting (Indicator light by default: blue when idle, green when charging and red when fault)

1. **Module information: Set each parameter value as per actual configuration**

2. **Device information: Set device power as per actual power of charger, and other items are defaulted**

3. **Fault detect: Set as per actual configuration of charger**

4. **LED config: Indicator light by default is blue when idle, green when charging and red when fault. If needing to replace with other colors, click on color box for selection.**

After completion of the above items, please confirm and tick the "√" in the top right corner to save.



Figure 3.1.7 Factory config

(8) Rate (electricity price) setting (Click "+" on the left side to add electricity price and set time period, or click delete. Click the right side to edit current electricity price template or delete such template.

After operation, please confirm and click the "√" on the top right corner to save)

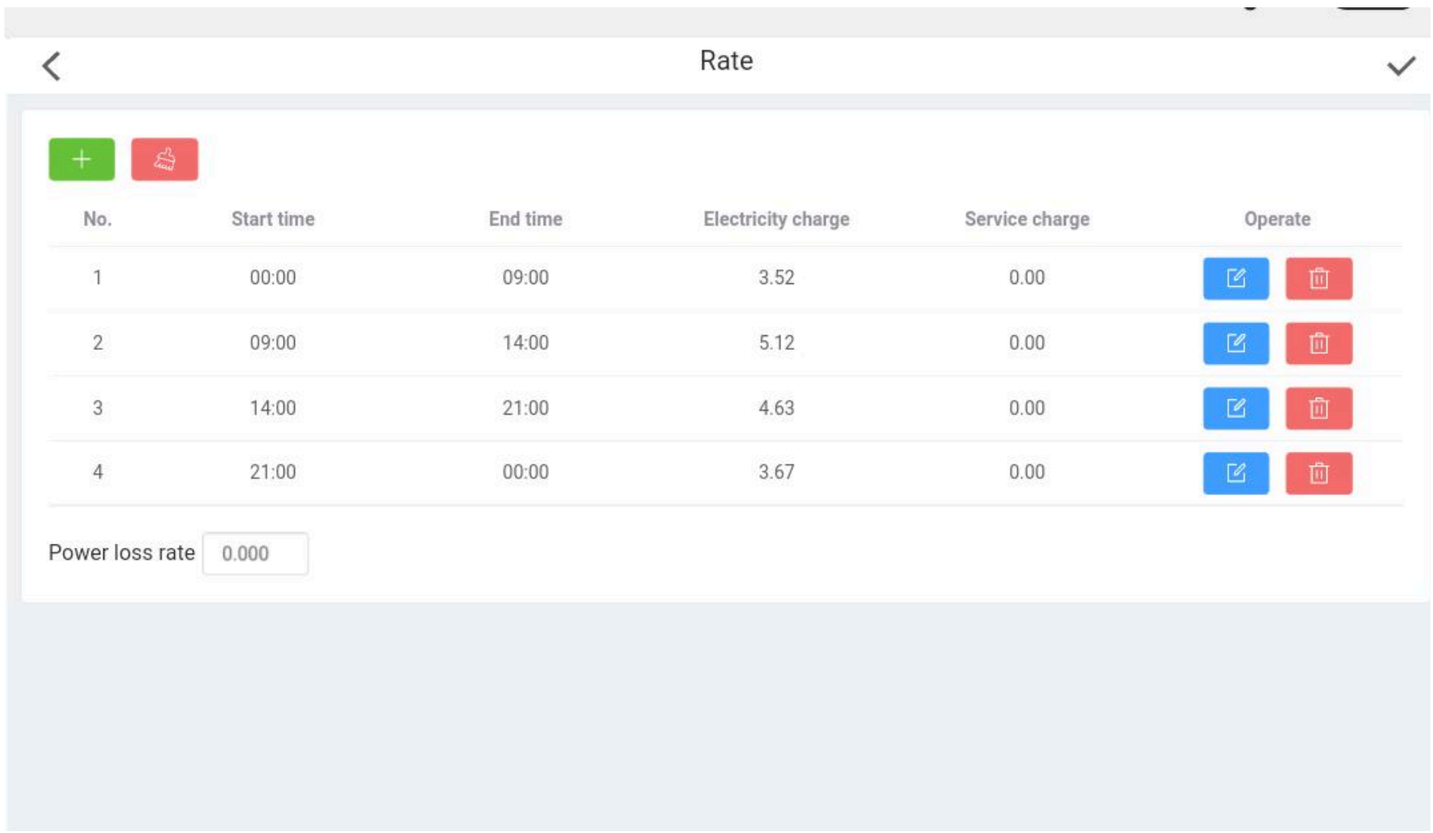


Figure 3.1.8 Fee Settings

(9) QR code setting (If the equipment needs to connect to platform and start charging by scanning code, please contact with the platform side, and paste the prefix of QR code issued to achieve QR code scanning and charging)

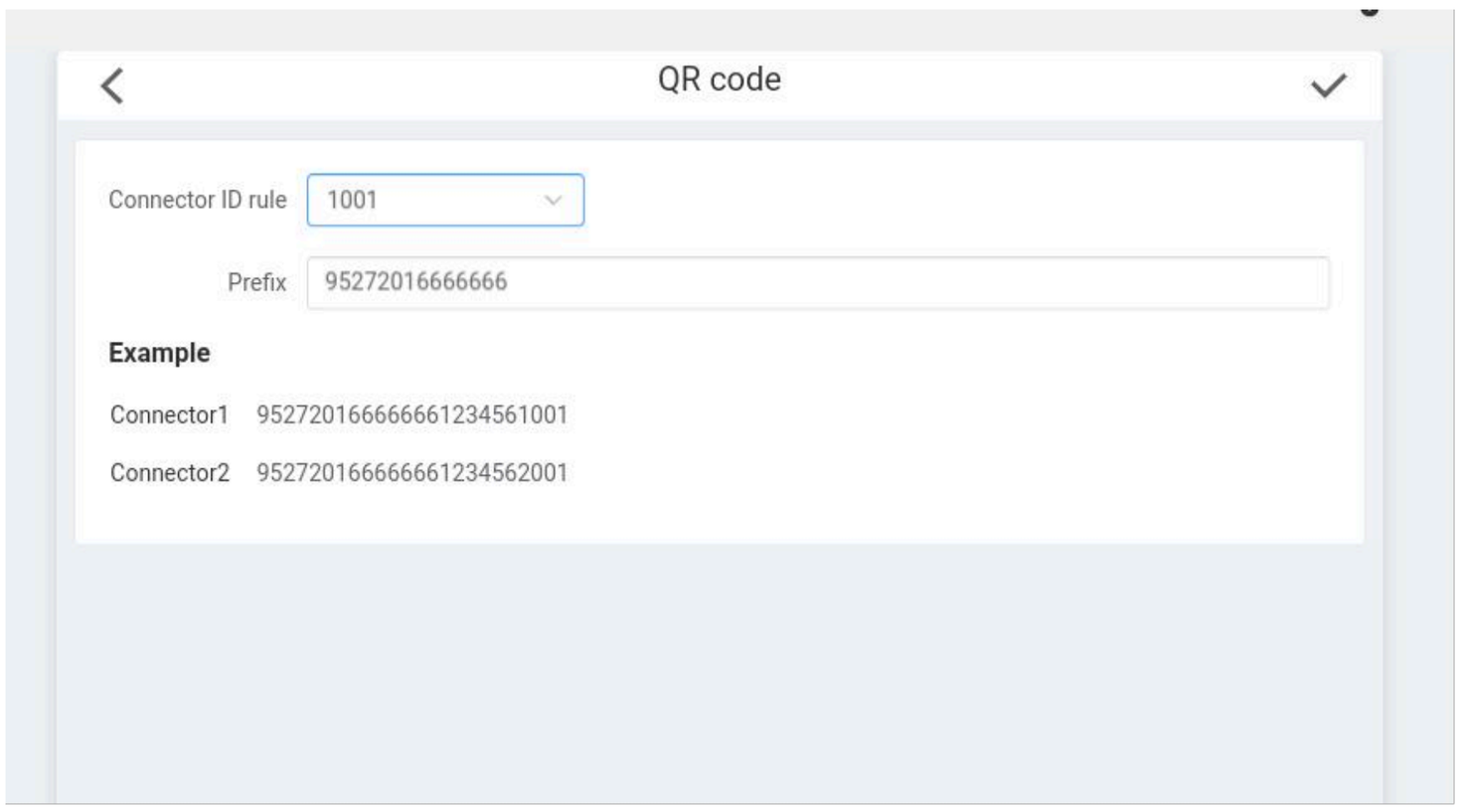


Figure 3.1.9 QR code settings

(10) Charge card setting

“Card type” adopts "SN1".

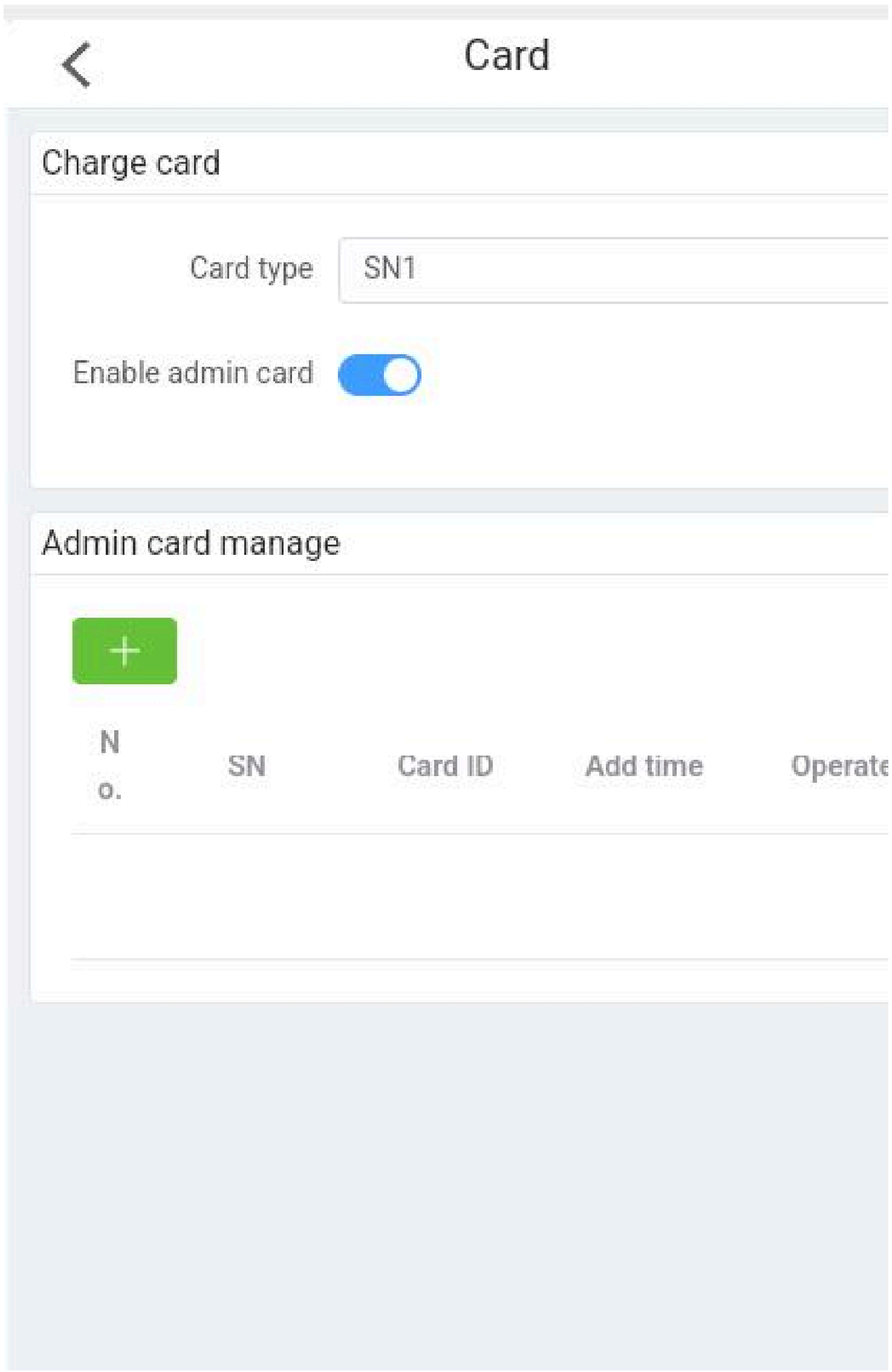


Figure 3.1.10 Charge card settings

(11) POS machine setting

Setting shall be subject to actual model of POS machine.

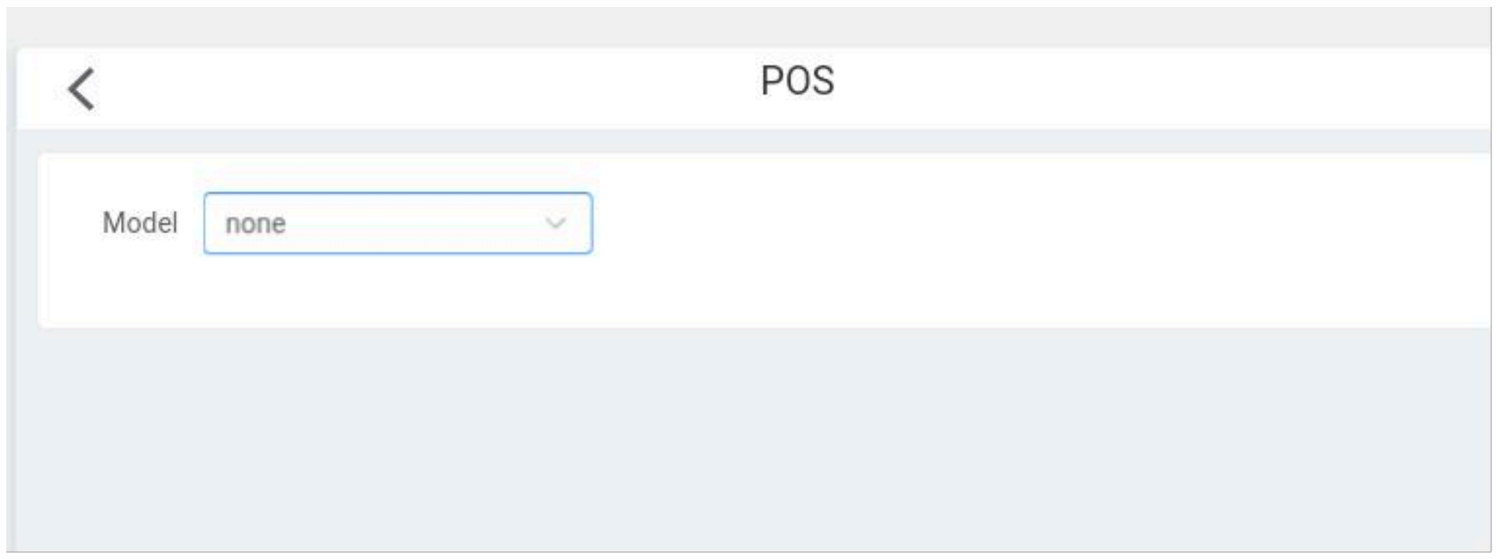


Figure 3.1.11 POS settings

(12) Password setting

- Default administrator/operation and maintenance password: **123456**
- Charging password: **666666**

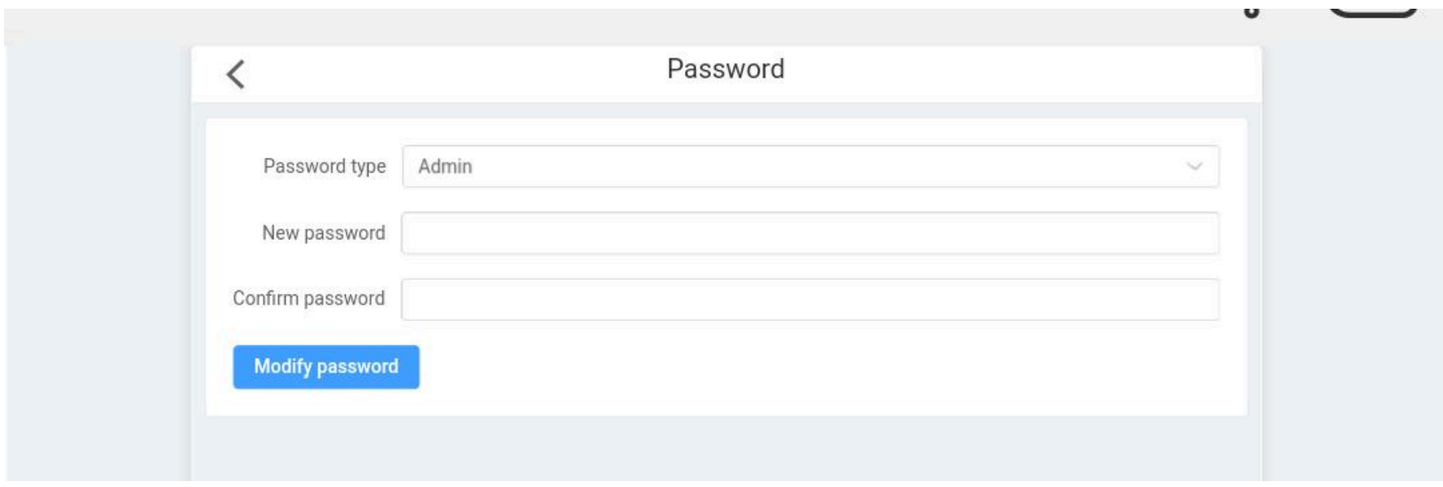


Figure 3.1.12 Password settings

(13) Meter settings

Select “Baudrate” and “Parity” as per actual type of the electricity meter. Fill the No. on the electricity meter in “Meter address” of “Output meter 1/2”.)

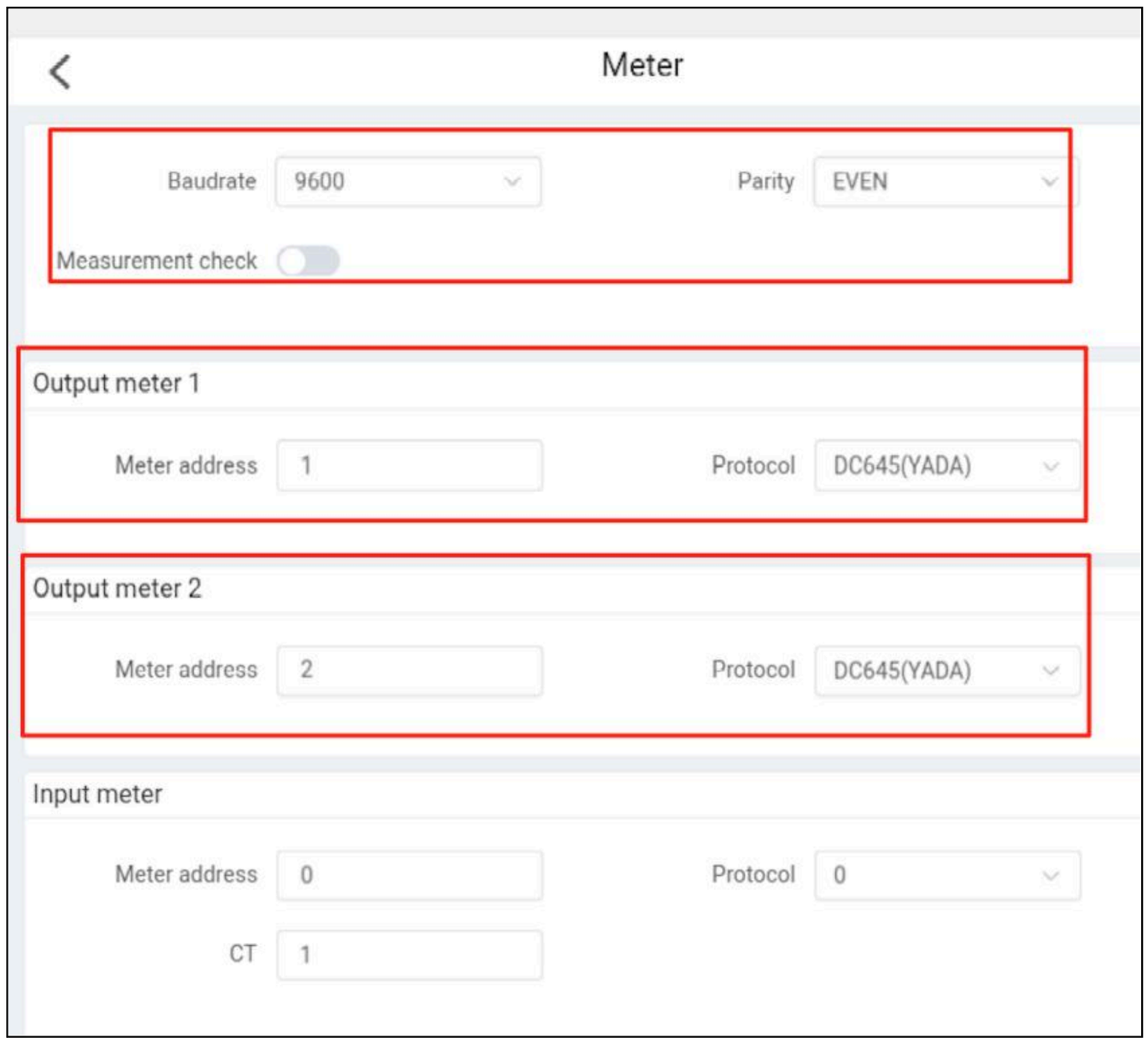


Figure 3.1.13 Meter settings

(14) Other settings

1. **Password charge:** Charge by using charging password after switch on, the password is defaulted as 666666

2. **VIN charge:** Connect the equipment to platform and type in the VIN of the vehicle at platform settings, and use VIN for charging after smooth entry

3. **Lock card:** Switch on by default

4. **Show money:** Switch on by default

After operation, please confirm and click the "√" on the top right corner to save.

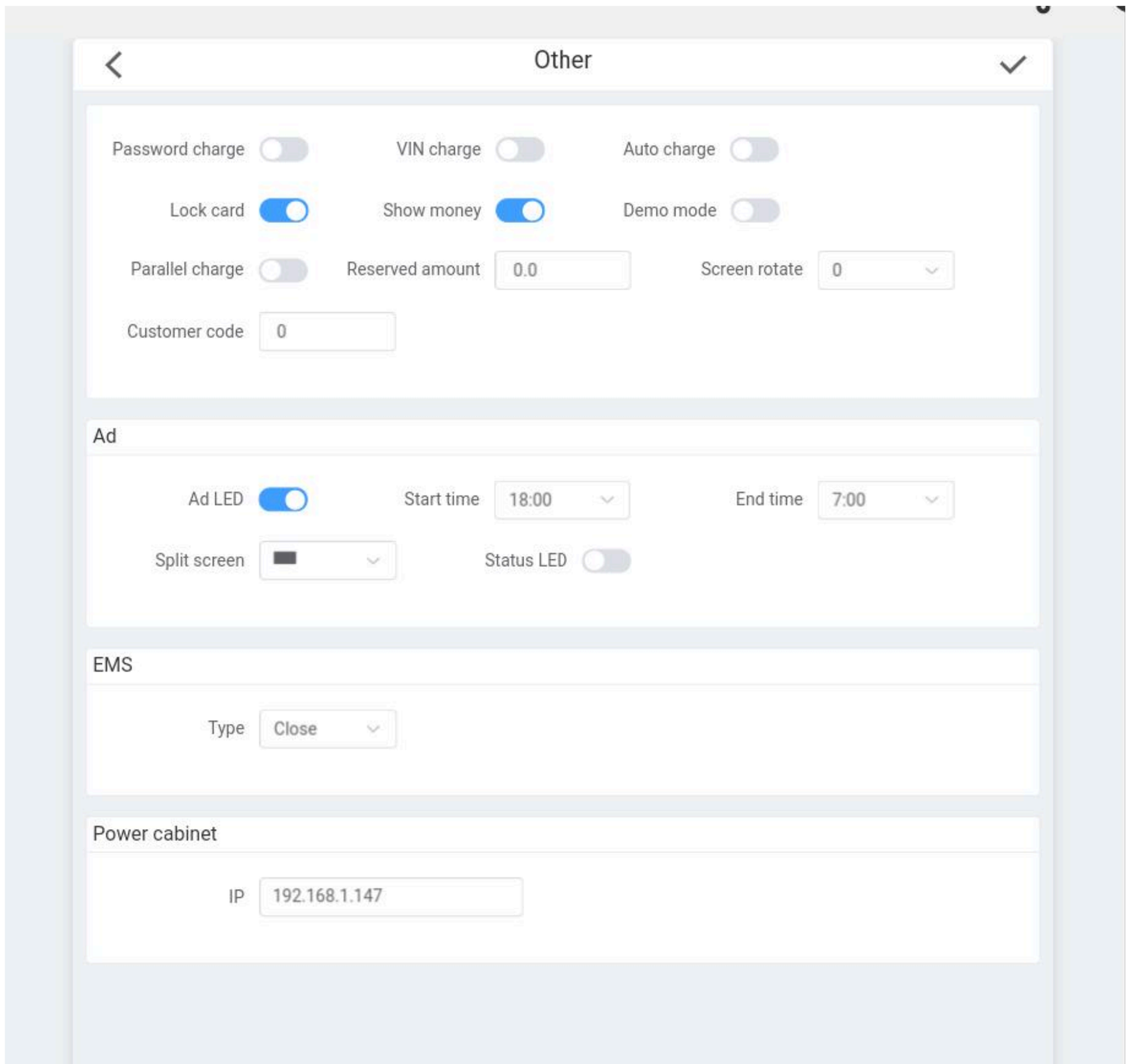


Figure 3.1.14 Other

(15) System information

Enter system information to check the status of charger.

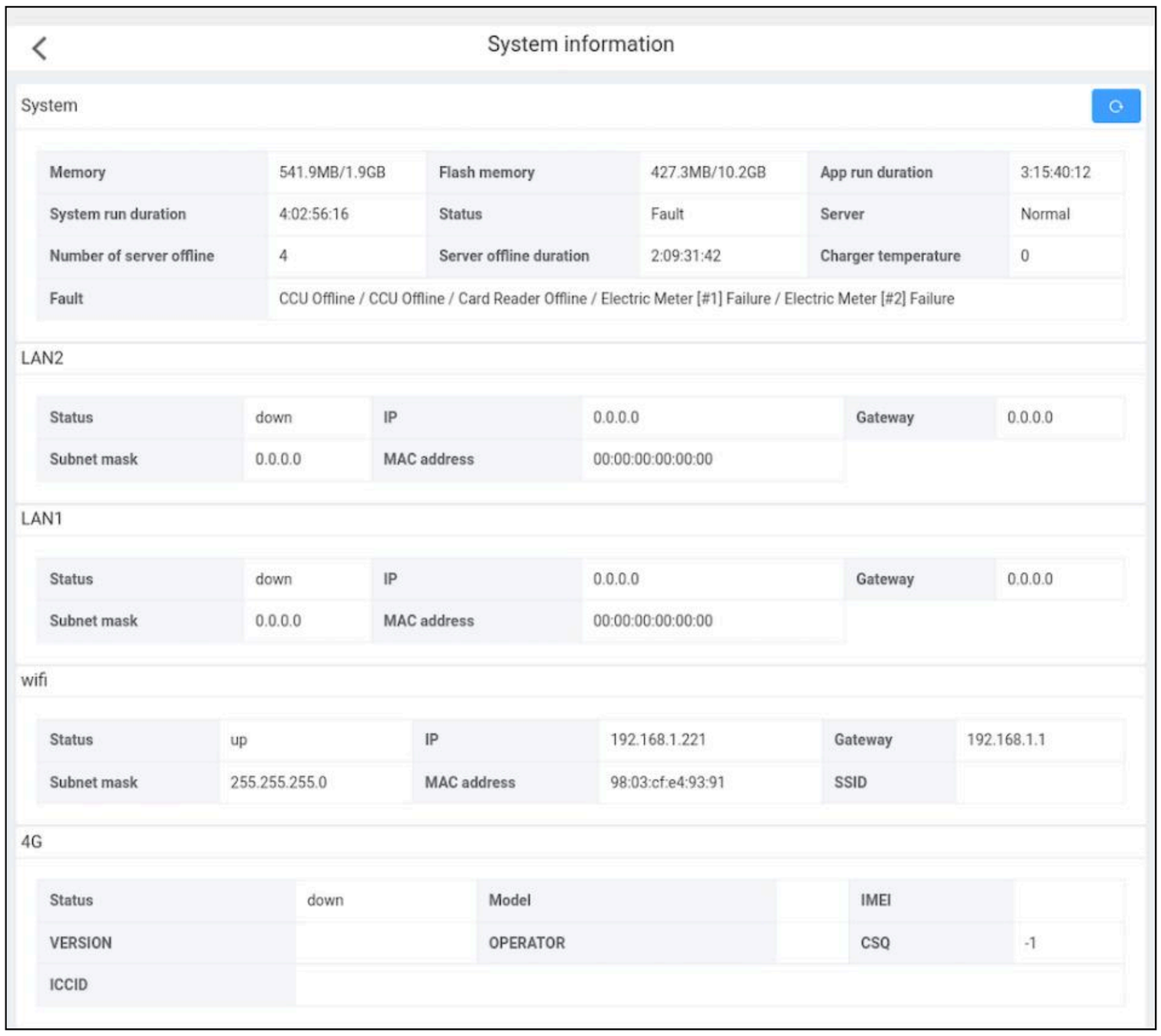


Figure 3.1.15 System Information

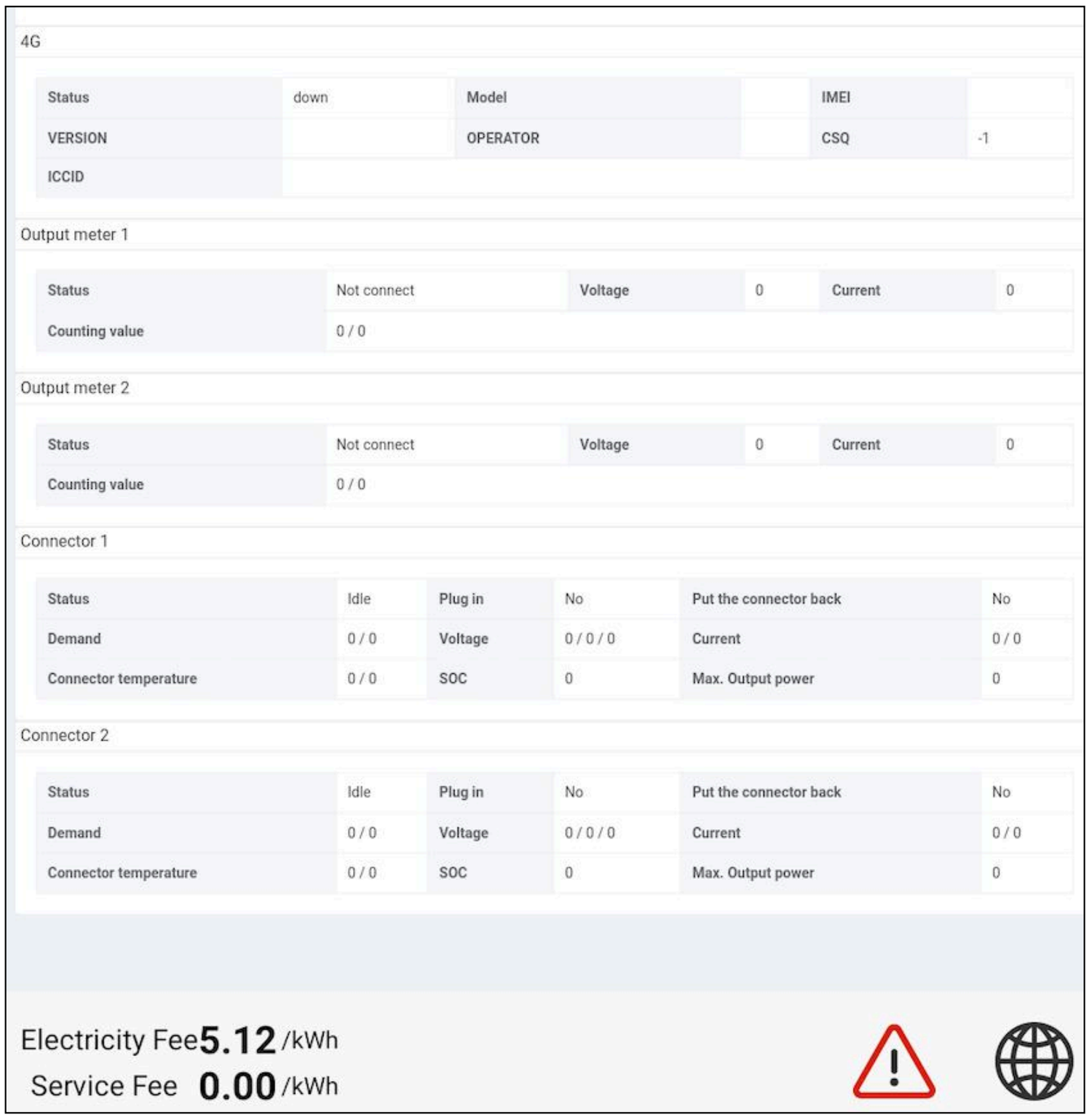


Figure 3.1.15-1 System Information

(16) Reboot (Manually restart TCU of equipment)

Select “APP”, “Connector1” and “Connector2”, and click "Reboot". Alternatively, directly disconnect internal power supply switch of the charger, wait for the LED light of the Android board to completely go out, then power on.

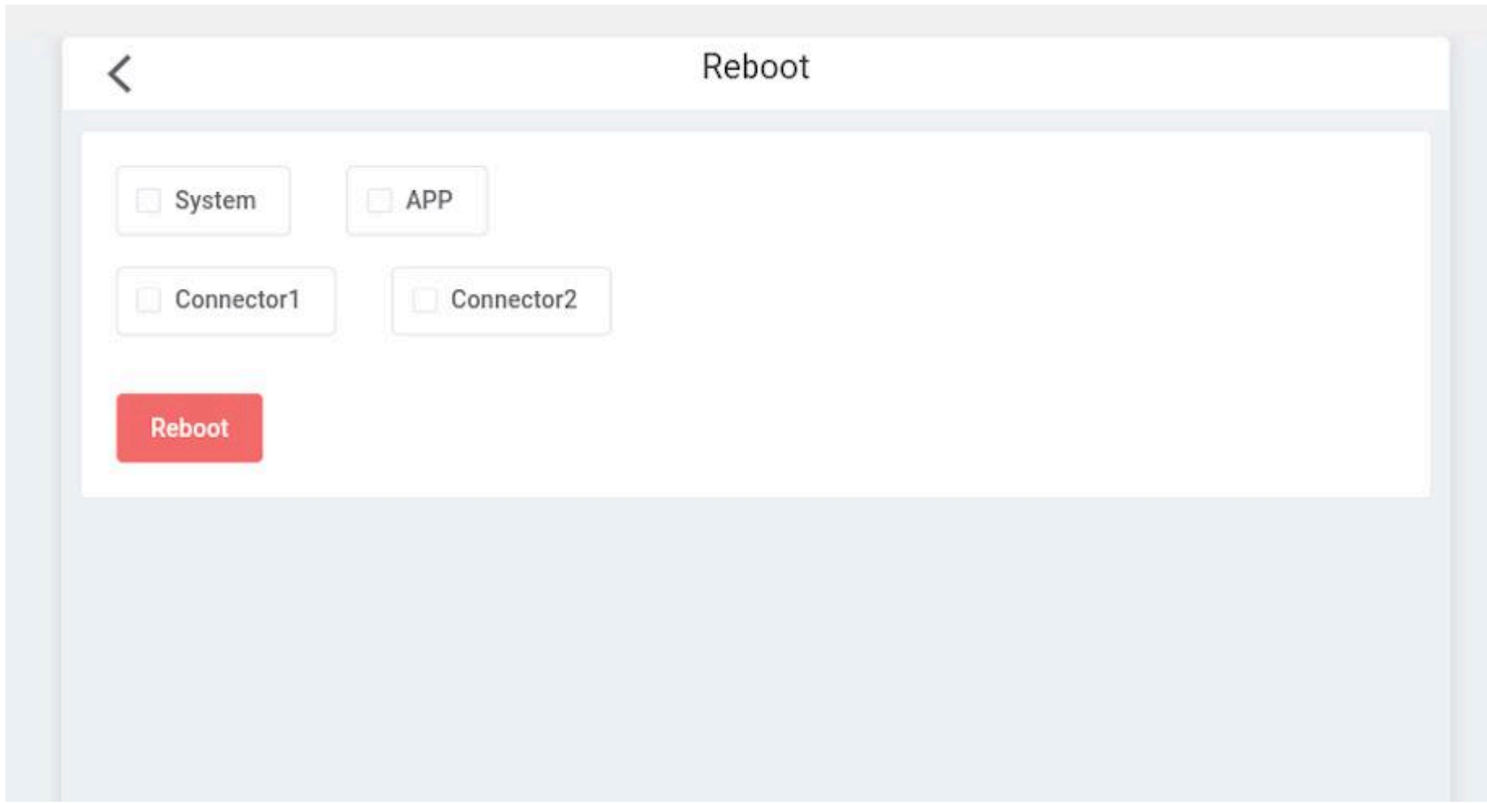


Figure 3.1.16 Manual TCU restart procedure

(17) About

The usage versions of mainboard and TCU could be checked here.

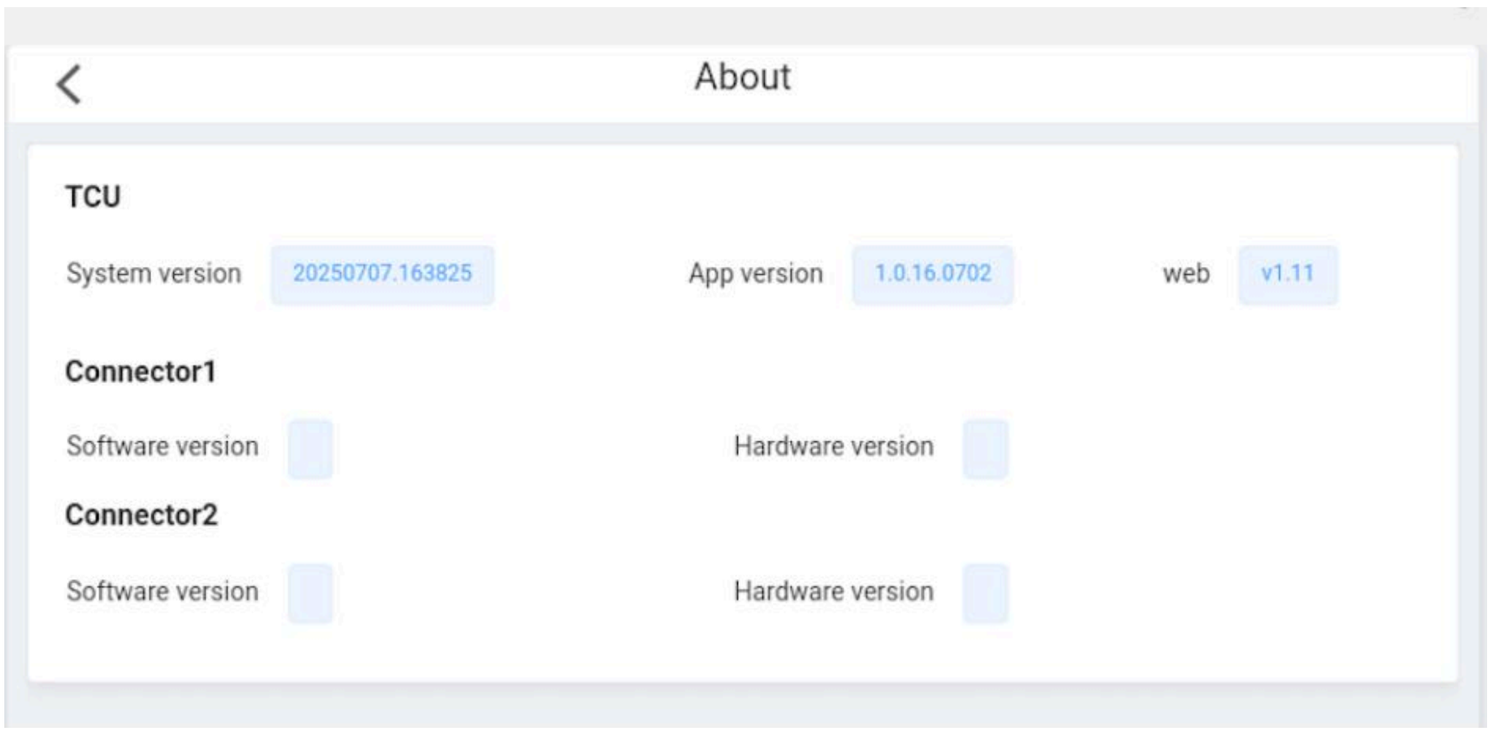


Figure 3.1.17 About

(16) Reboot (Manually restart TCU of equipment)

Select “APP”, “Connector1” and “Connector2”, and click "Reboot". Alternatively, directly disconnect internal power supply switch of the charger, wait for the LED light of the Android board to completely go out, then power on.

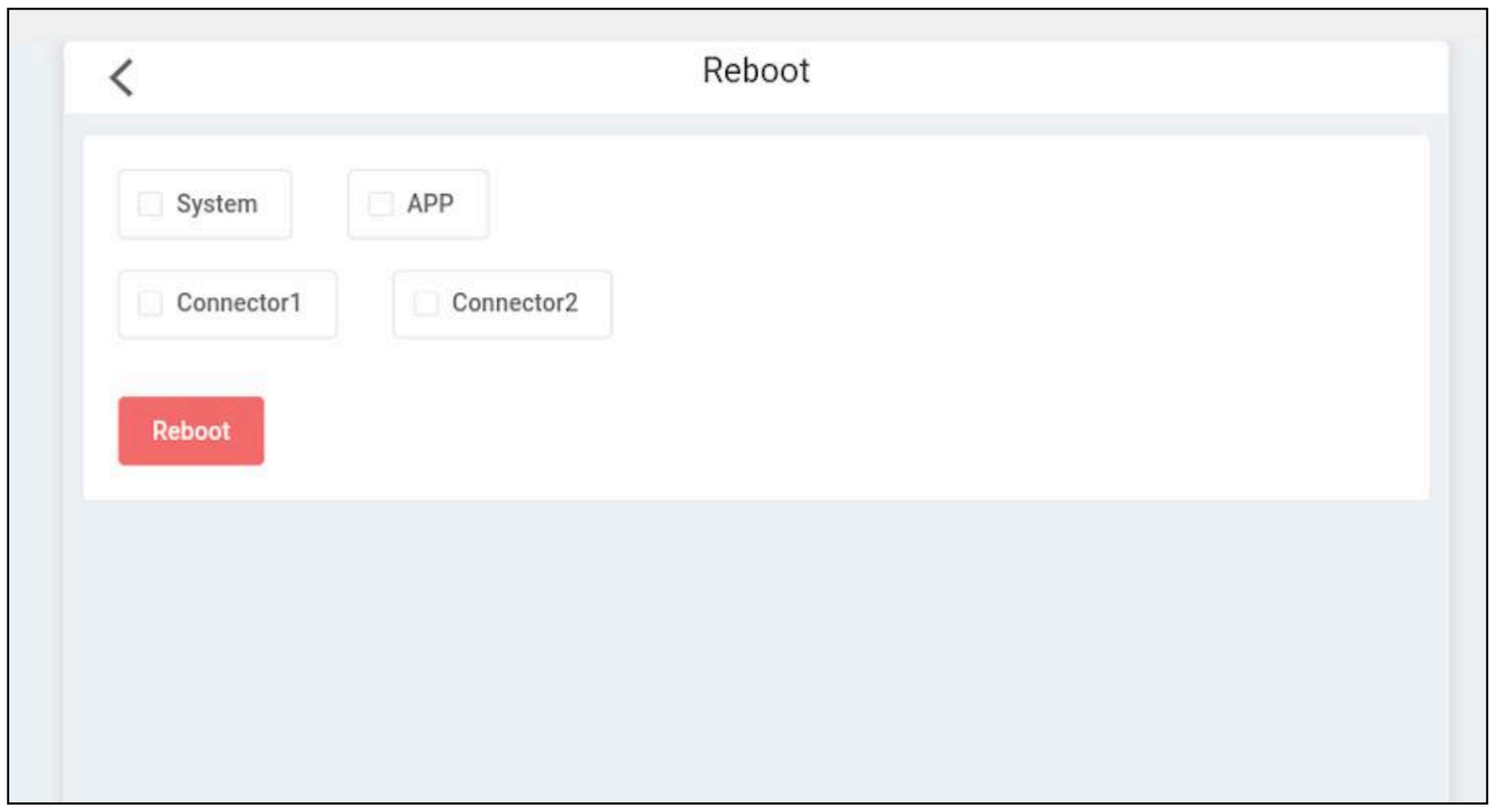


Figure 3.1.16 Manual TCU restart procedure

(17) About

The usage versions of mainboard and TCU could be checked here.

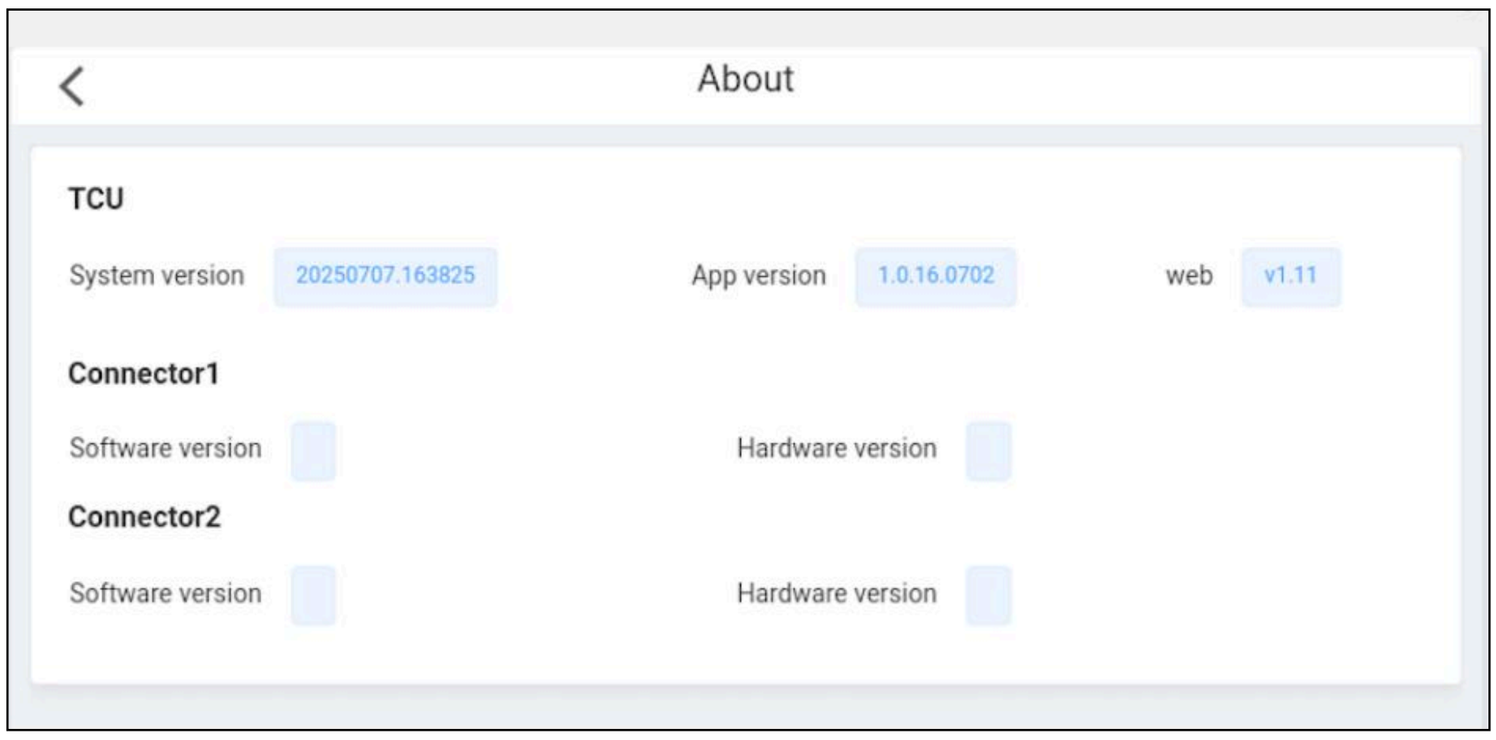


Figure 3.1.17 About

3.2. System Setting

CCU Commissioning

Enter “CCU debug” to calibrate voltage, current, etc.

(1) Check module information

Upon output, it will display whether the module status is normal, and display voltage and current.

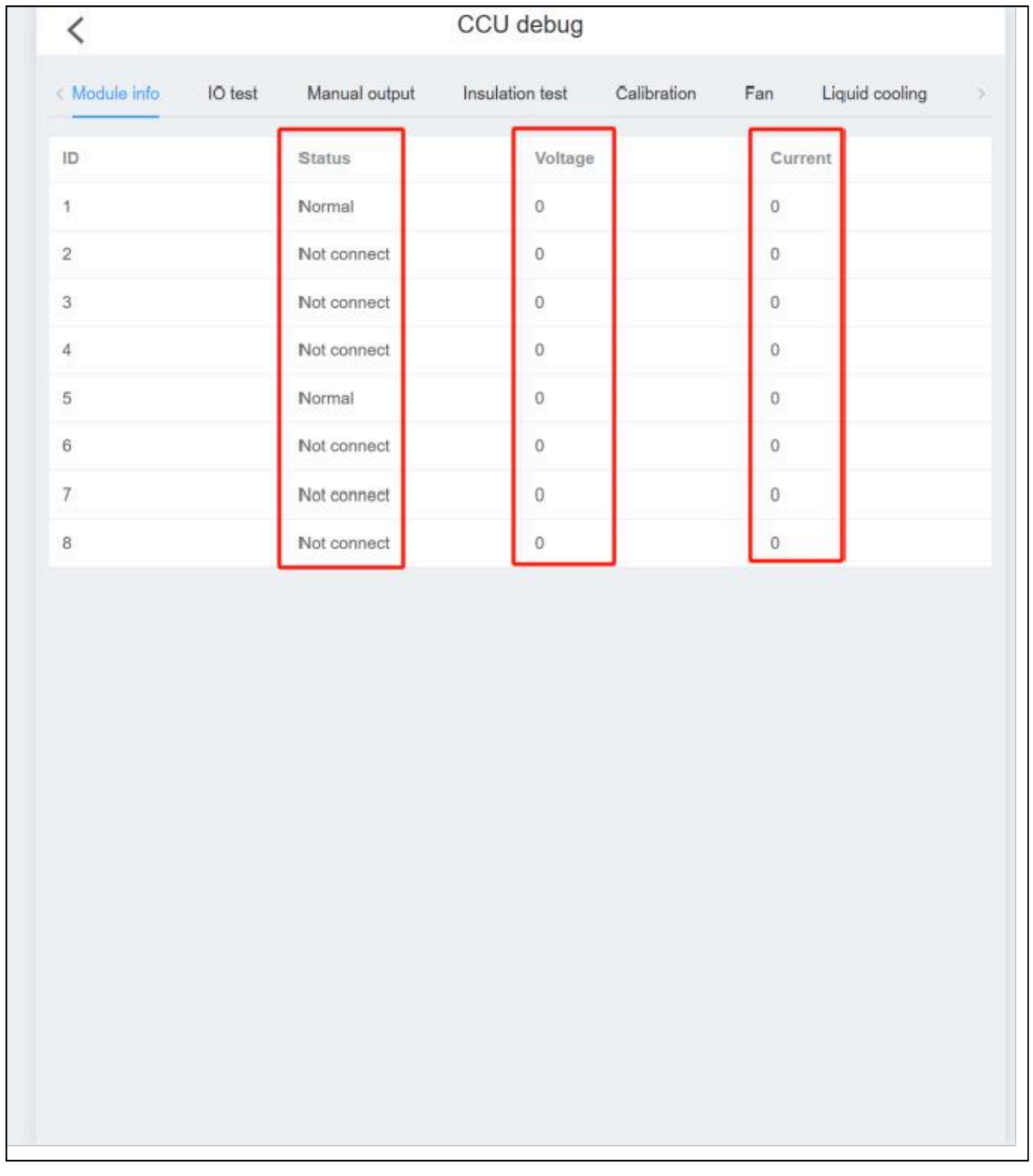


Figure 3.2.1 Check module status

(2) IO test: Relay detection (observe whether relay is normal)

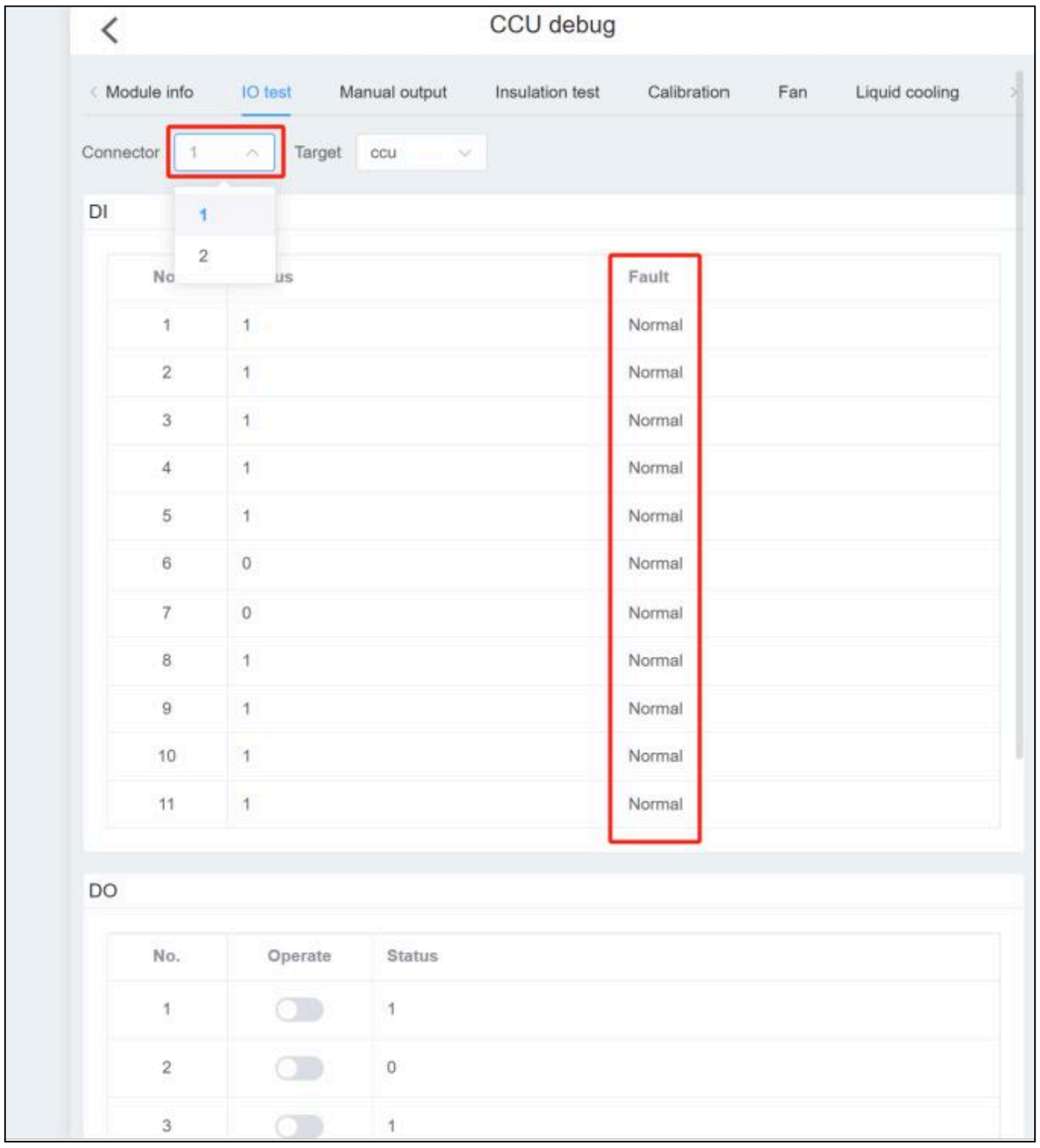


Figure 3.2.2 Relay detection

(3) Manual output: Check the output voltage and current after manually clicking “On” button

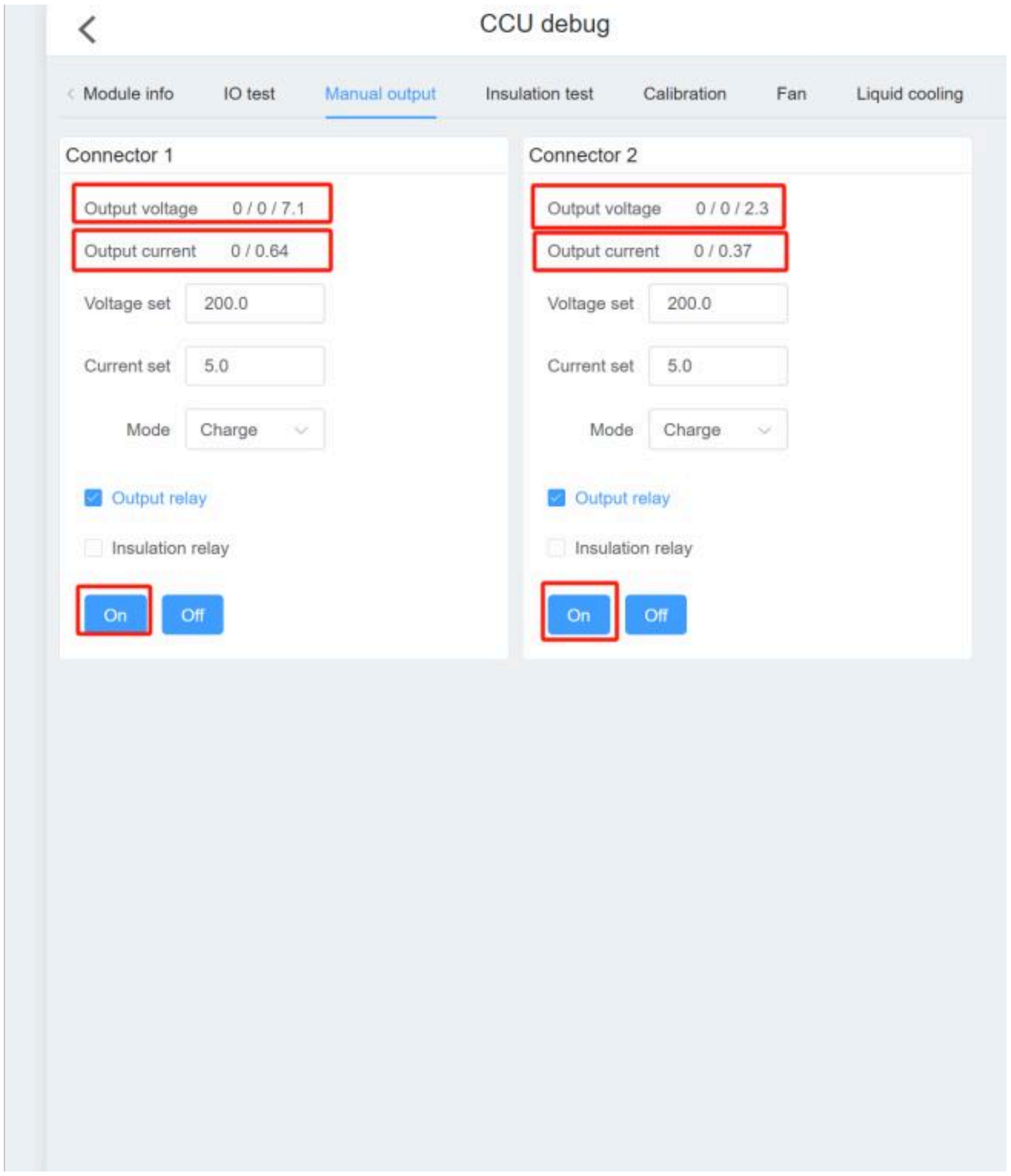


Figure 3.2.3 Manual output

(4) Insulation test: Select Connector 1/2 and click “On” for test

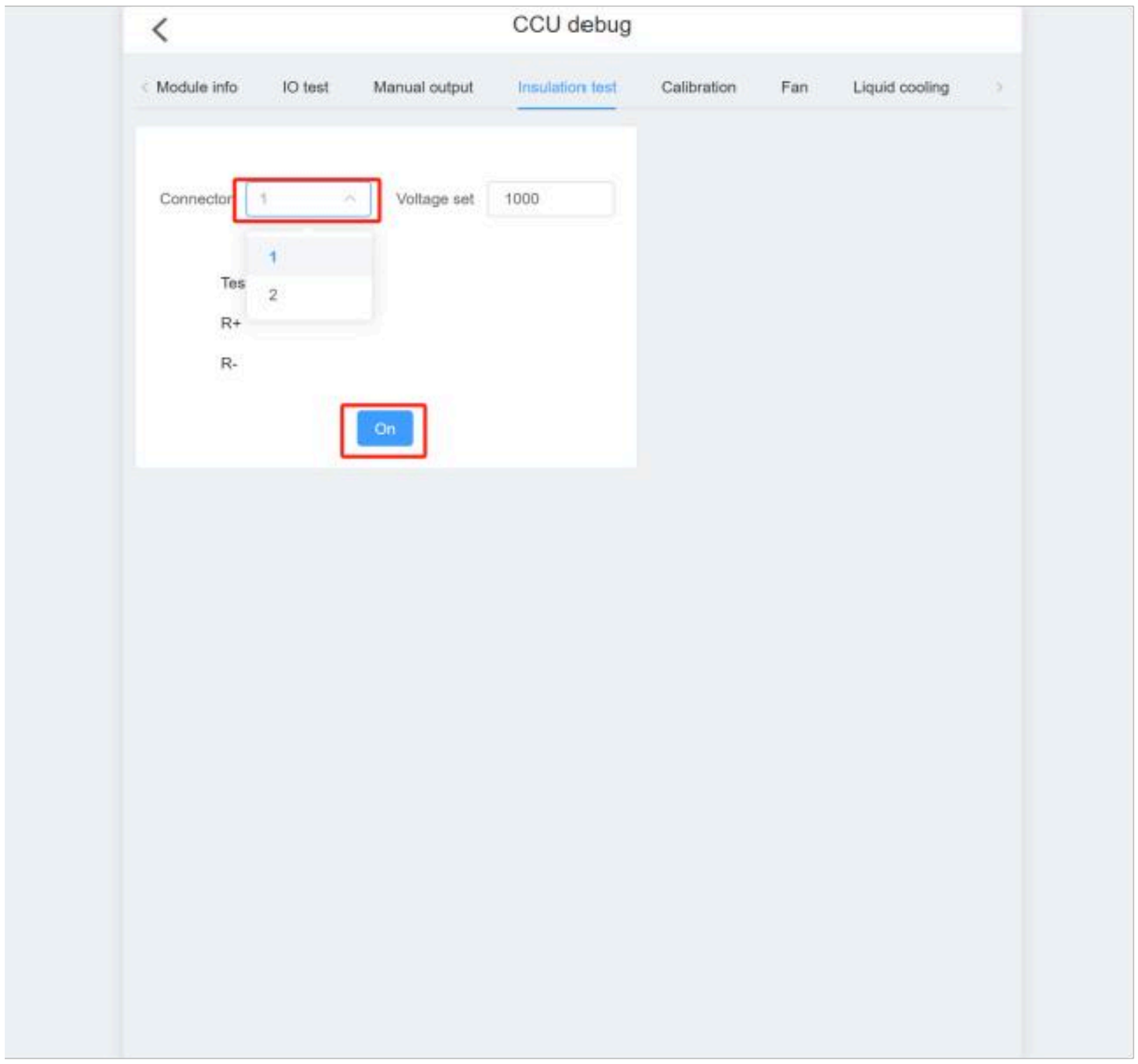


Figure 3.2.4 Insulation test

(4) Insulation test: Select Connector 1/2 and click “On” for test

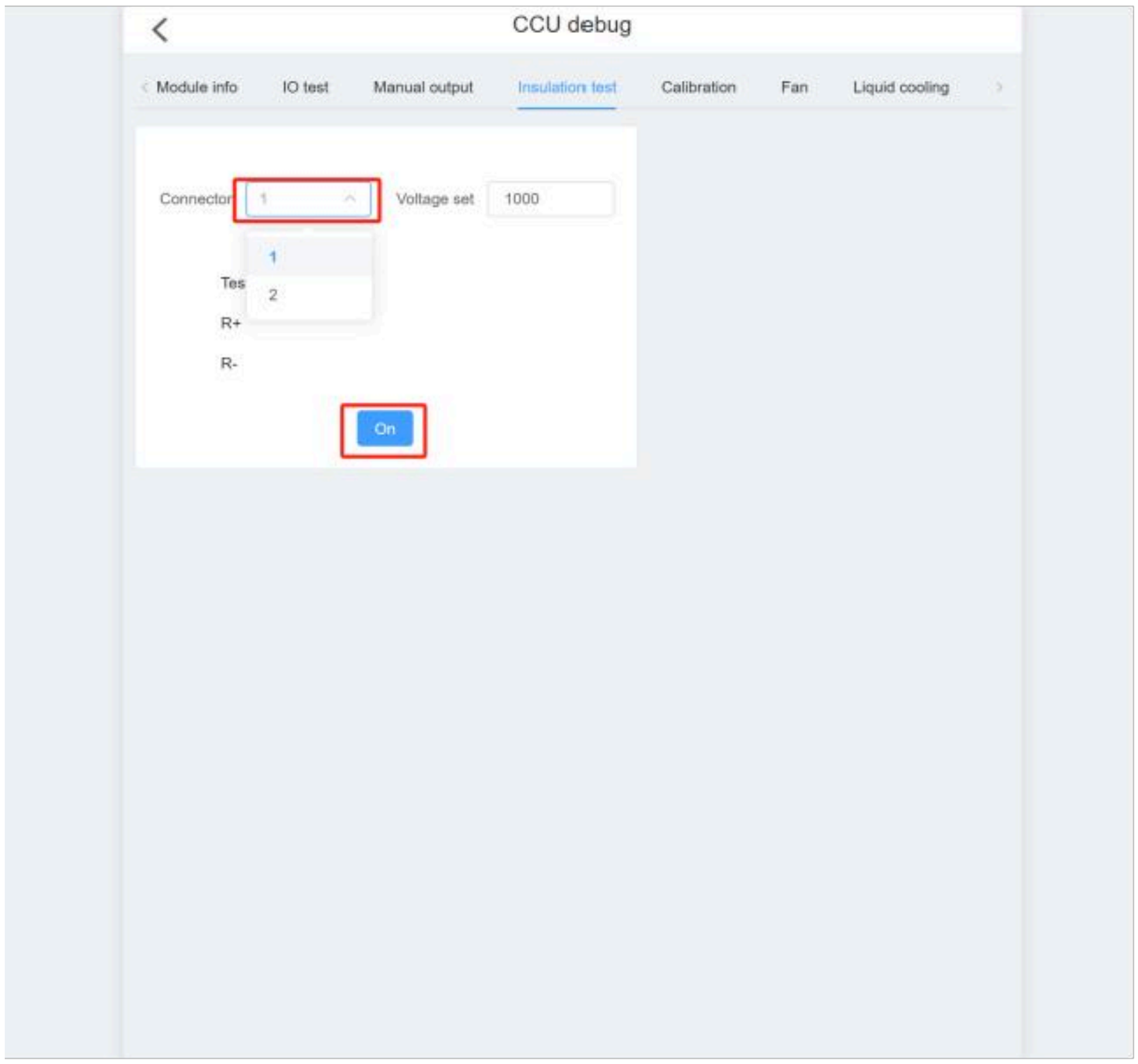


Figure 3.2.4 Insulation test

(5) Calibration: Select Connector 1/2 and click “Auto calibration”

Figure 3.2.5 Calibration

(6) Fan commissioning: “Fan speed" is defaulted as 100%

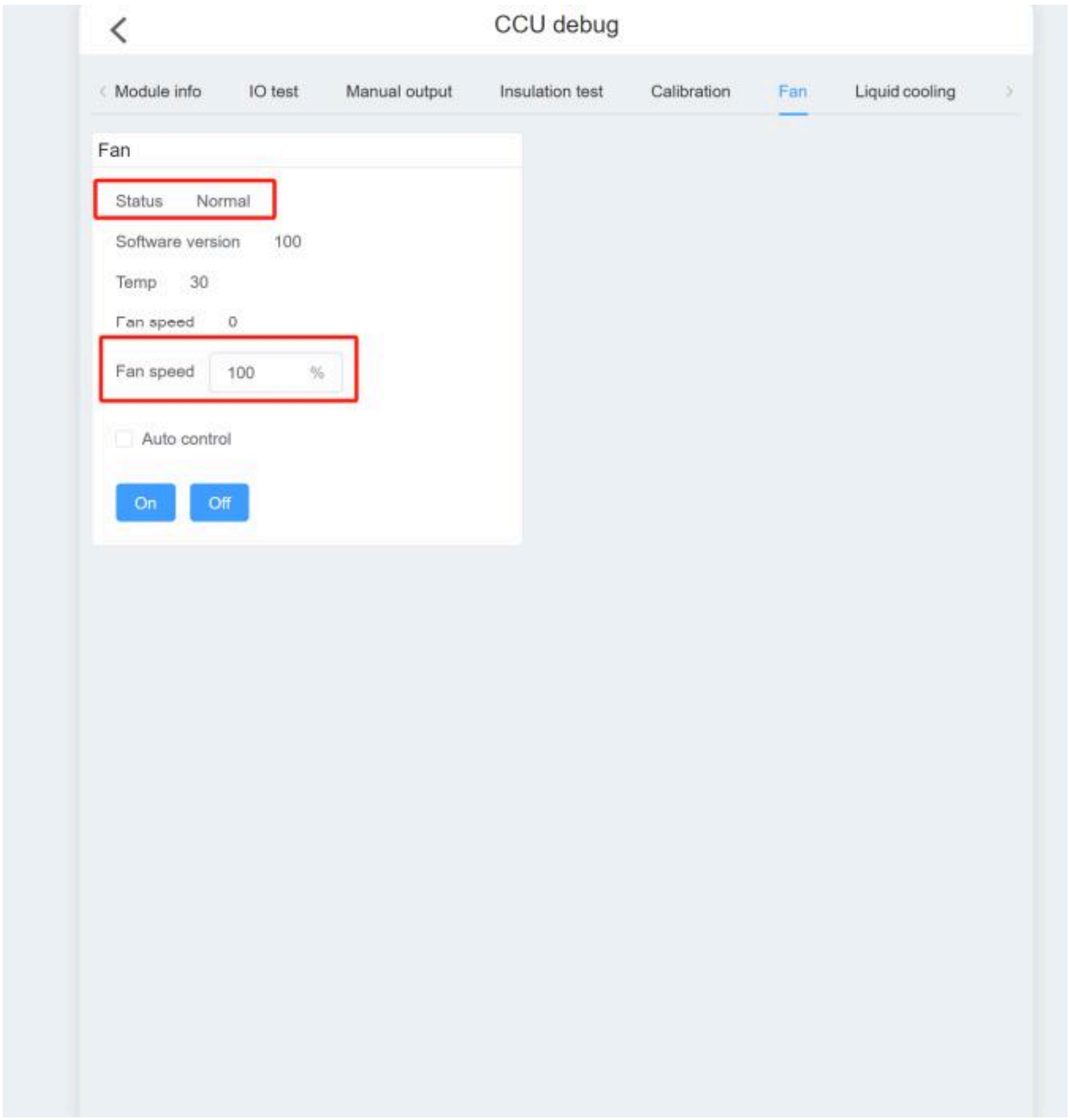


Figure 3.2.6 Fan Debugging

4. Operation Interface Description

Precautions:

1. Before charging, please ensure that the charging system is at normal status.
2. Before charging, please ensure the charging cable is intact, the charging interface is free of water spots. If water enters charging interface, please do not directly charge.
3. Before charging, users shall fully read the user manual, and know the safety operating instructions well to prevent dangerous operation.
4. Before charging, user shall know the charging operation steps well to prevent improper operation.

4.1. Operational Areas

Notes: When charger is in sleep mode, please touch the screen of charger slightly to awaken it.

- Input password for charging;
- Swipe card for charging;
- Scan the QR code for charging;
- When screen displays normally and is free of fault information, charger is in normal idle mode. When appearance and surrounding environment are normal, charger could perform charging;
- When screen displays fault information, please dial the service hotline for help rather than use the product.



Figure 4.1.1 Idle interface

4.2. Charging Operation

- Enter standby interface
- Select the corresponding charging connector and connect it to DC charging port of electric vehicle. After inserting charging connector, select starting method.



Figure 4.2.1 Select starting method

4.2.1. Charging Selection

- Enter password for charging;

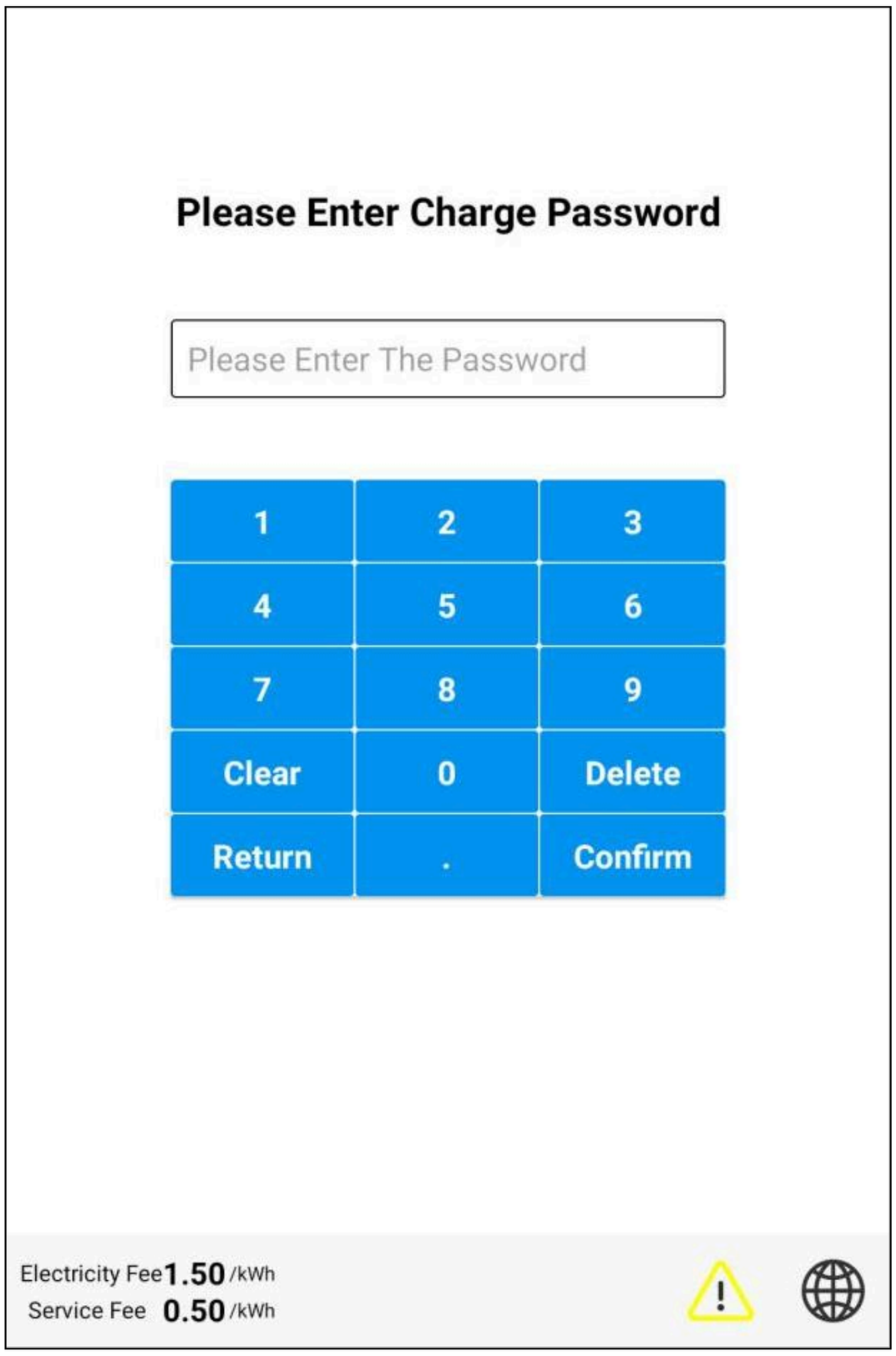


Figure 4.2.2-1 Enter password

- **Swipe card for charging:** Select one of the charging modes (“AUTOMATICALLY FILL UP”, “CHARGE BY AMOUNT”, “CHARGE BY POWER” and “CHARGE BY TIME”) to enter the corresponding mode and input the values. After clicking ok, swipe card again as per prompts to start charging.

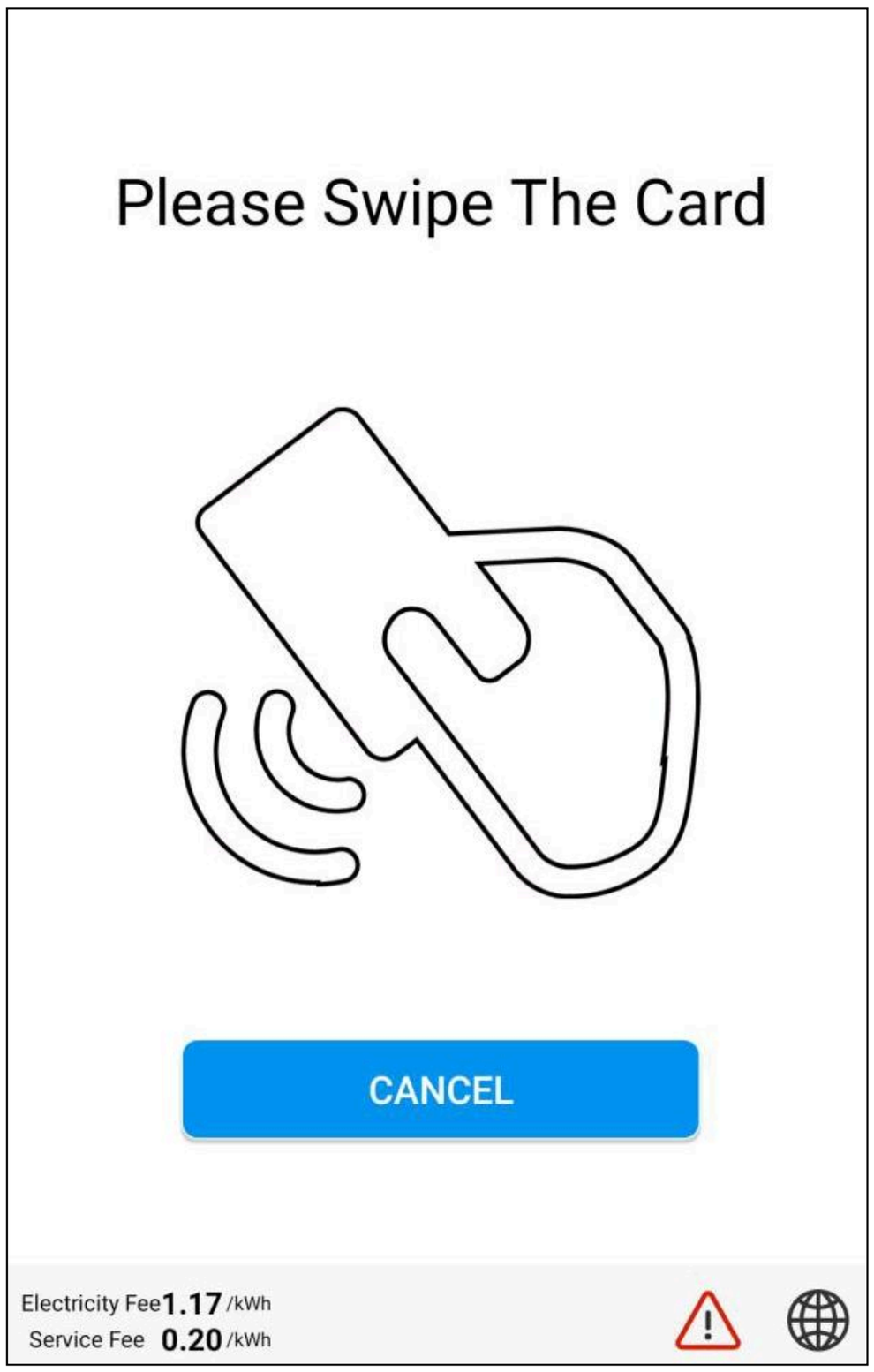


Figure 4.2.2-2 Card charging

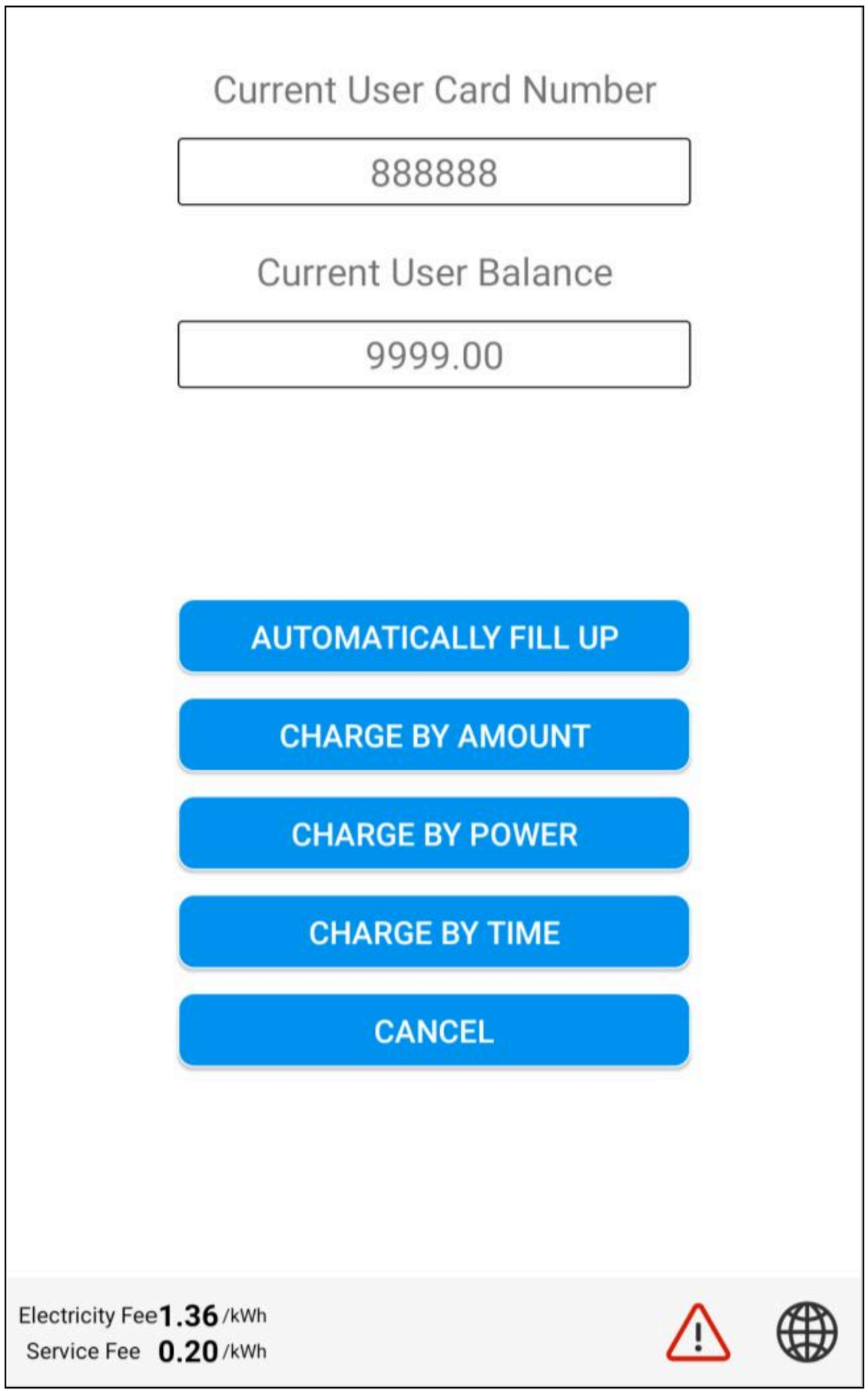


Figure 4.2.2-3 Automatic filling

- **VIN charging:** Connect the equipment to platform and type in the VIN of the vehicle at platform settings, and use VIN for charging after smooth entry

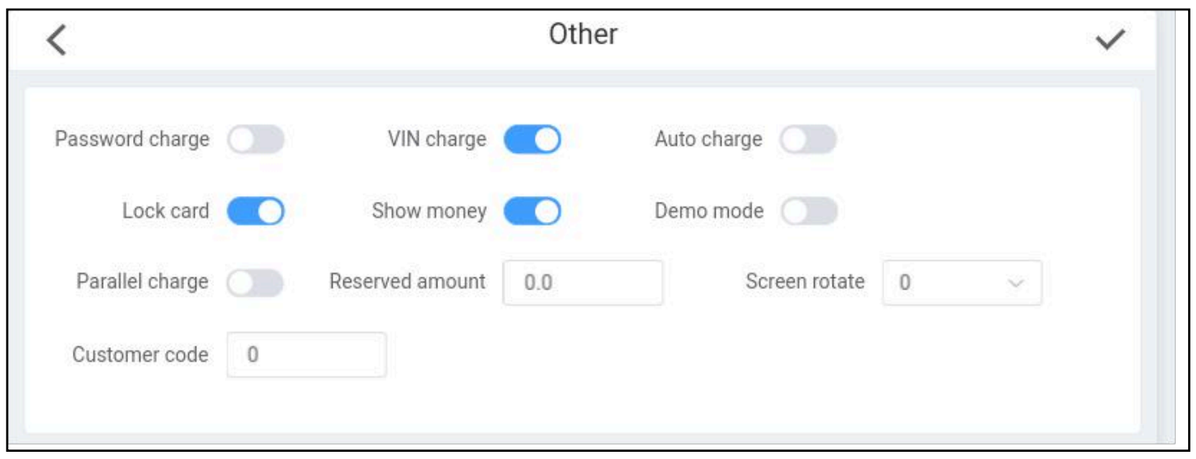


Figure 4.2.2-4 Charging mode settings

- **Scan code for charging** (Refer to content (9) of “3.1 Parameter Setting” for QR code setting.)



Figure 4.2.2-5 QR code issuance

4.2.2. Start Charging

- System performs charging preparation by connecting to BMS to establish communication for safety testing.

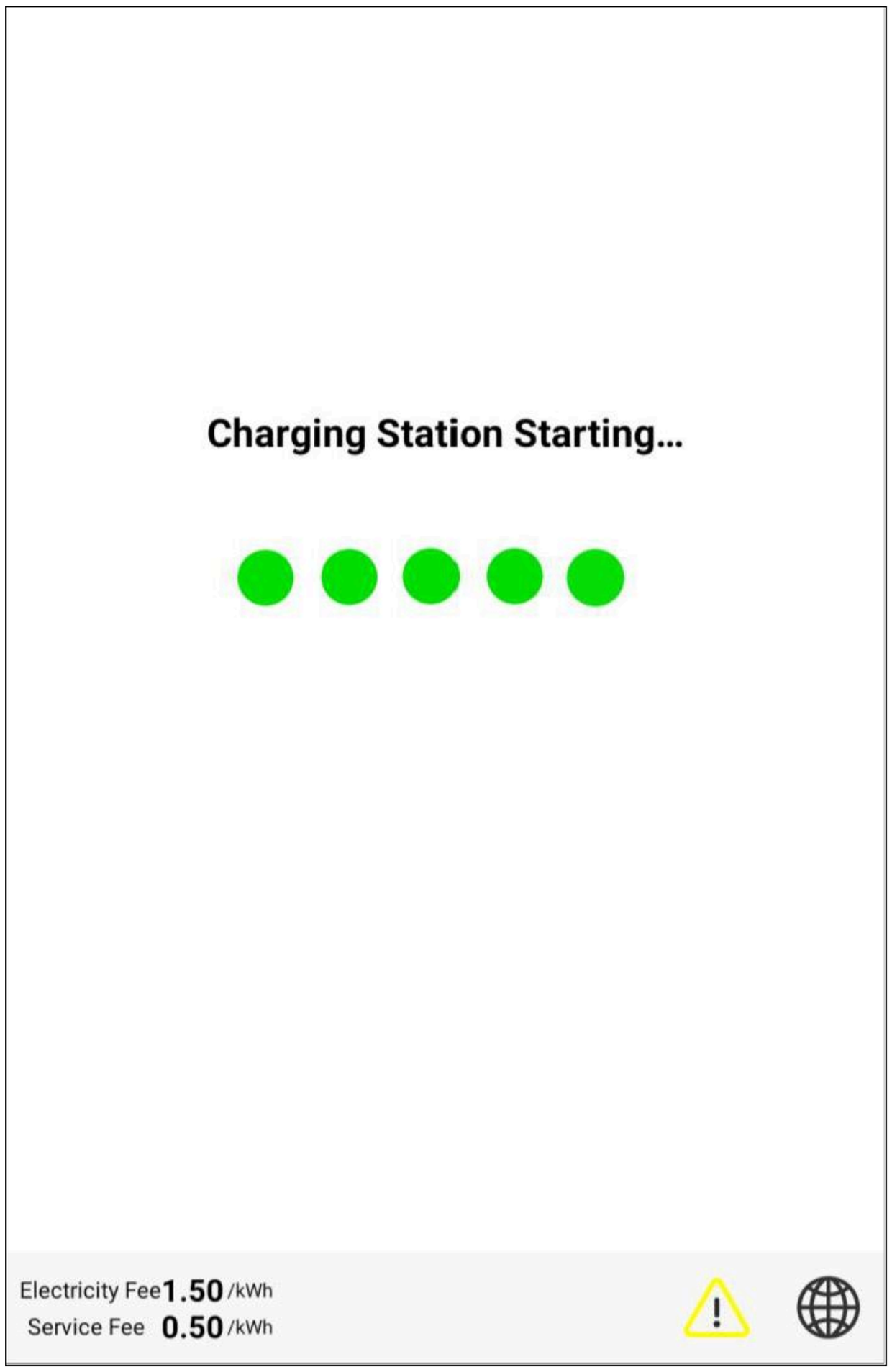


Figure 4.2.3 Starting

4.2.3. Charging in Progress

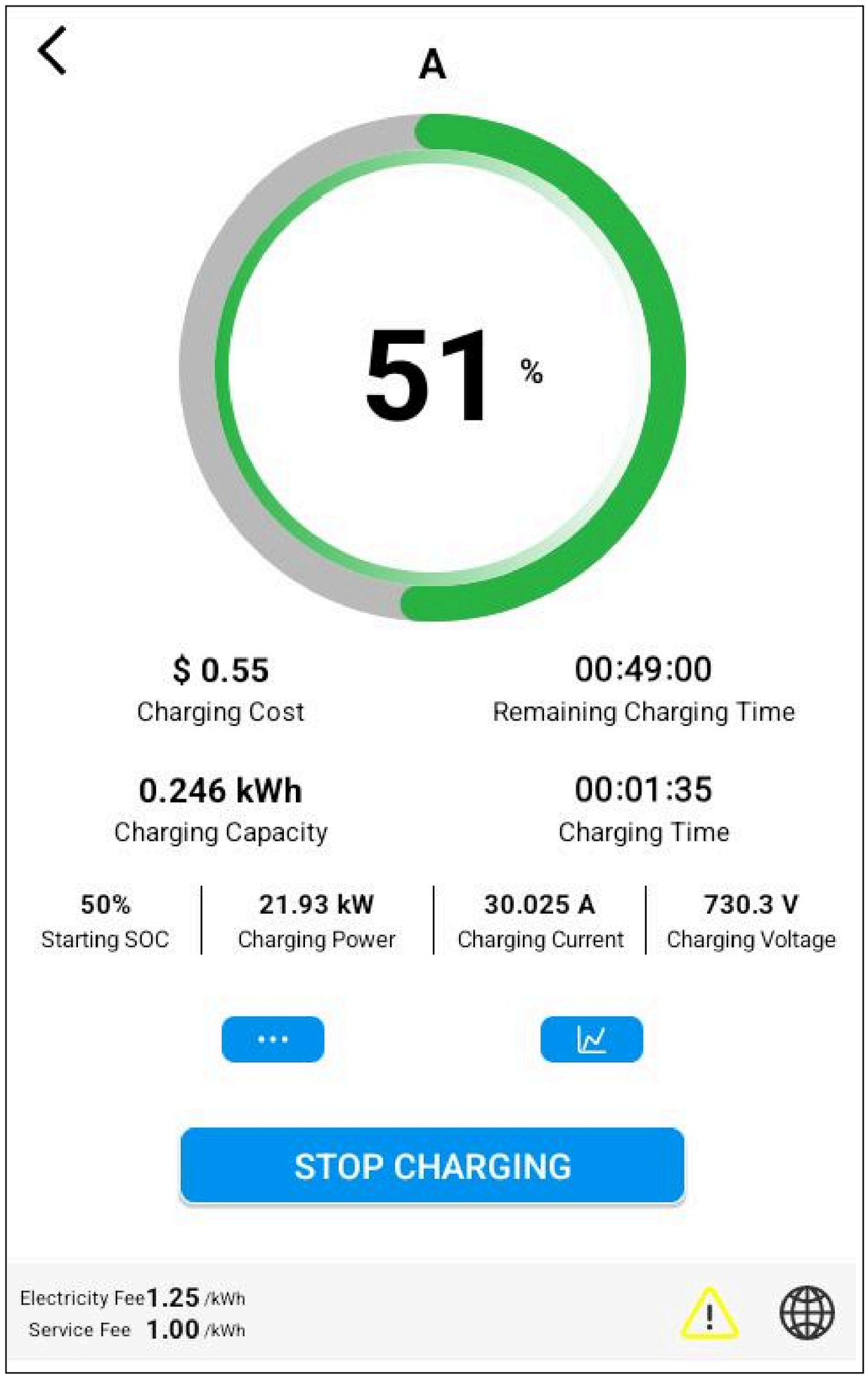


Figure 4.2.4 Charging

Note!

- Since there is high voltage current upon charging, please do not directly unplug the charging connector, otherwise, charger may be damaged or serious casualties may happen. It is necessary to operate on screen or APP for shutdown.
- The charger would heat in charging process. Please do not cover the ventilation inlet of charger.
- Please do not clean vehicle or work in vehicle in the charging process.
- Please do not perform any cleaning work to charger in the charging process.

4.2.4. Stop charging

Get charging IC card close to the sensing area of charger IC card, skip to charging end page, and swipe card again as per prompts for settlement.

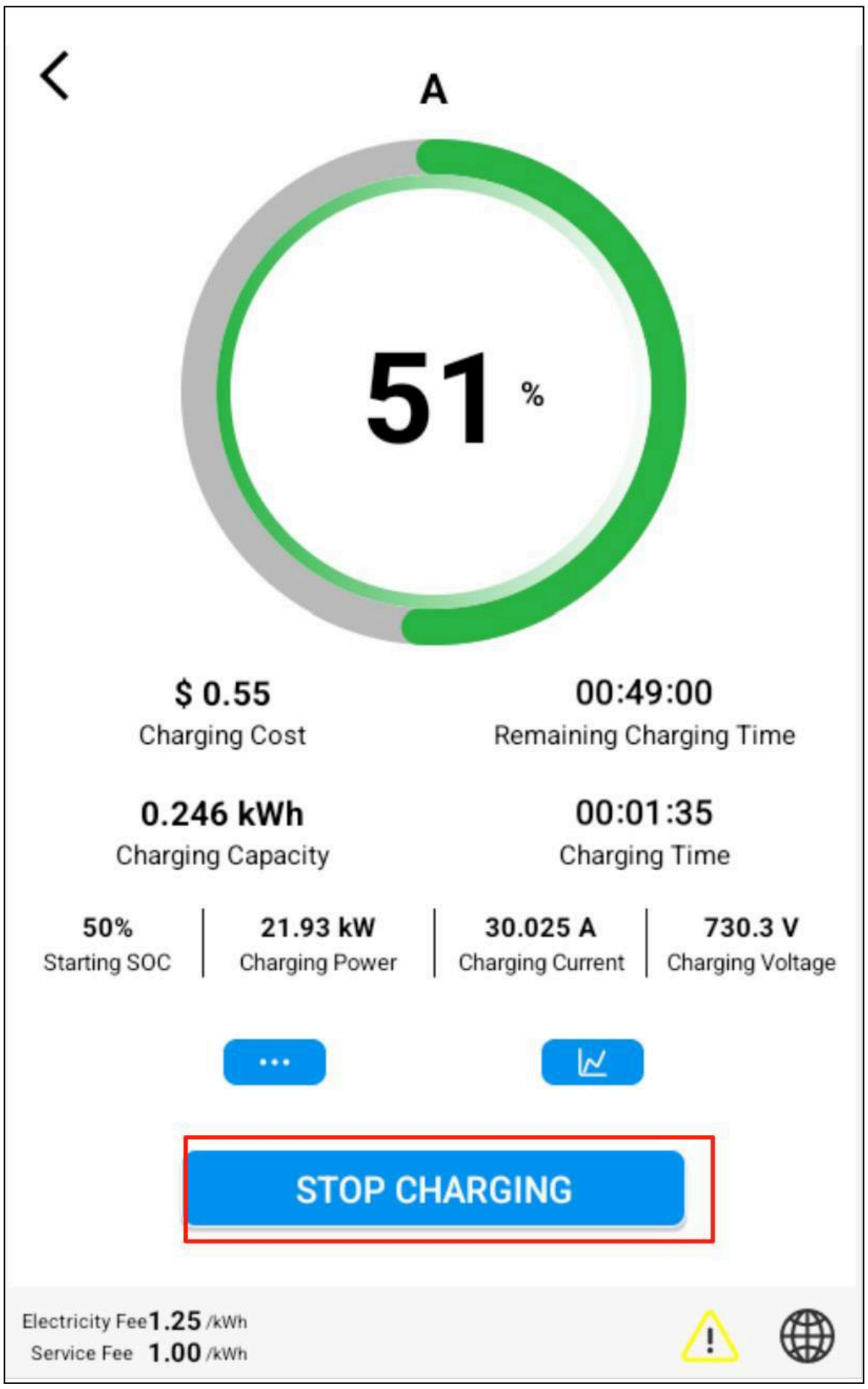


Figure 4.2.5-1 Stop charging

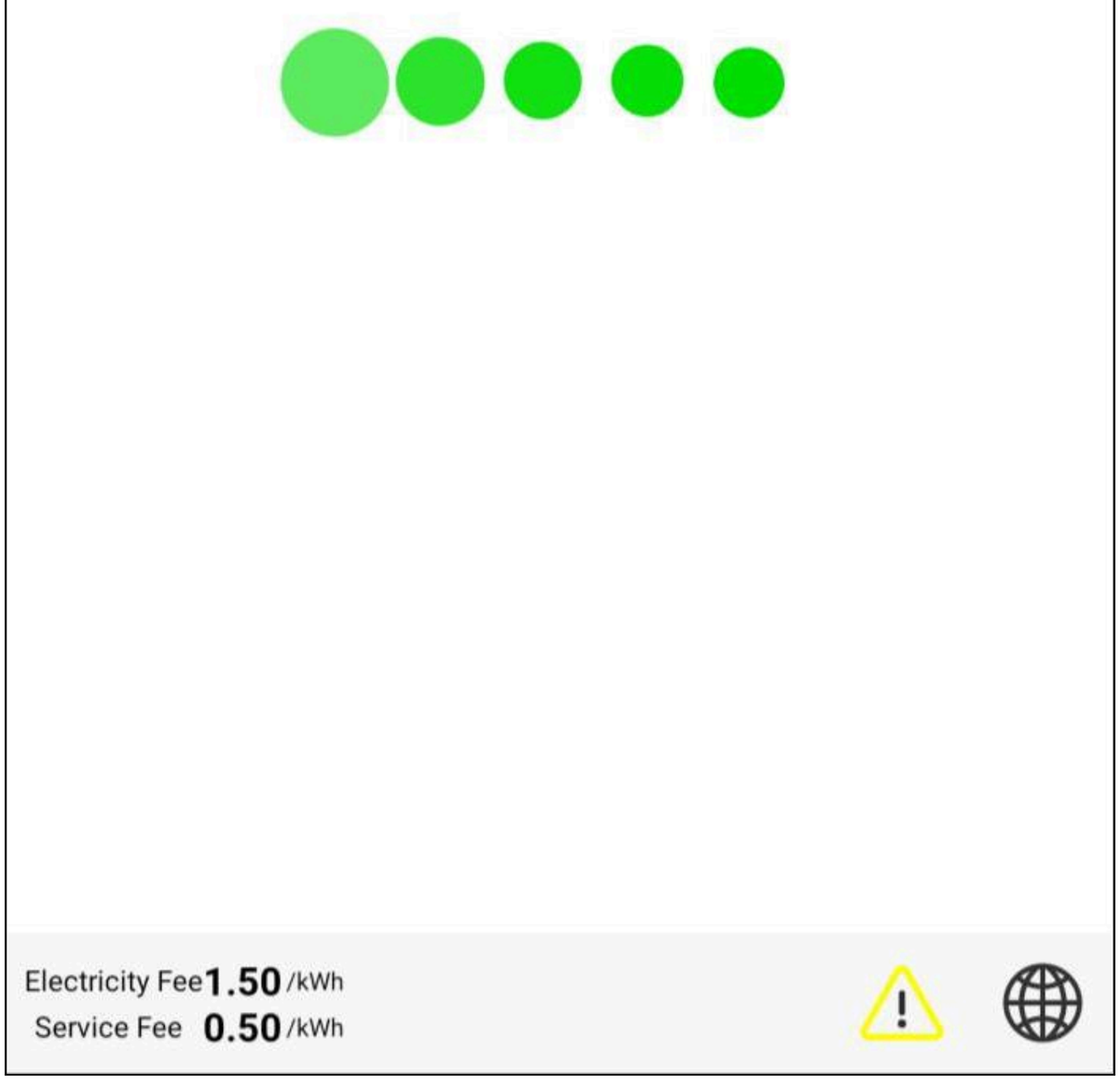


Figure 4.2.5-2 Charging station stopping

4.2.5. Charging Completed

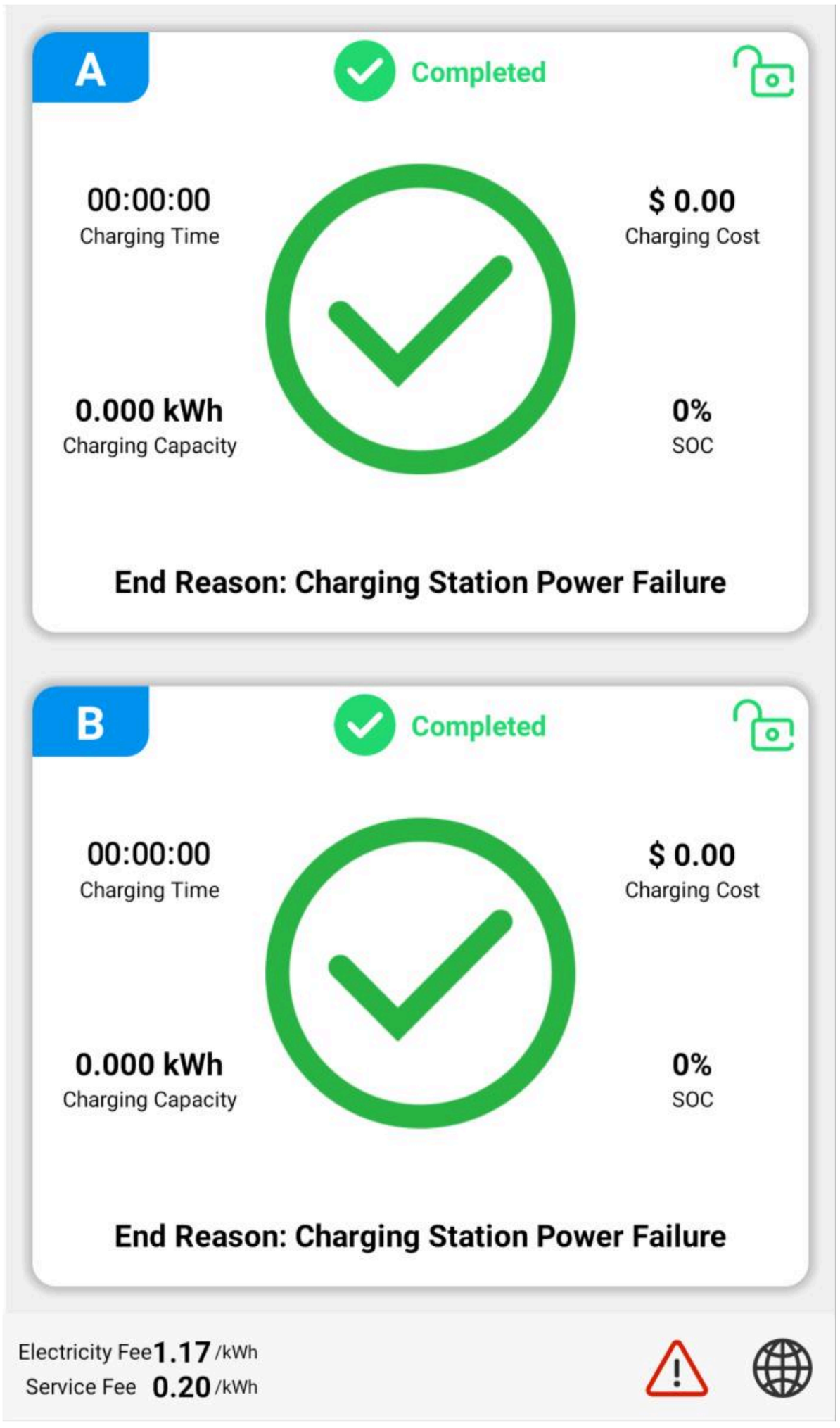


Figure 4.2.6 Charging completed

5. Troubleshooting

5.1. Man made Fault

- Charging connector is crushed, cracked and soaked in water
- Charging cable is crushed by vehicle or forcibly dragged
- Charging cable is broken due to external force pulling
- Charger is hit by vehicle or heavy object
- Cabinet door of charger is abnormally open
- Both air inlet and air outlet of charger are blocked

WARNING!

To prevent personal electric shock accident, all switches and upper level distribution switches of equipment should be disconnected, the protective measures shall be taken and the protection tools shall be used upon detection and troubleshooting.

5.2. Common Faults and Solutions

Fault type	S/N	Fault description	Causes	Solutions
Fail to charger normally	1	Insulation detection undervoltage	Module protection	Unplug the STOP ± wire of the module
			The AC contactor doesn't work	Check wiring of AC contactor, and attempt to replace AC contactor
	2	Press the emergency stop button	The emergency stop detection device at the mainboard end is damaged	Check main control board and attempt to replace mainboard
			Emergency stop button is damaged	Check emergency stop button, and attempt to replace again
	3	Connector isn’t detected	Mainboard is damaged	Check main control board and attempt to replace mainboard
	4	Timeout for receiving battery charging parameter messages	Timeout for communication message	Upgrade program
		Module communication fault	The CAN port IC of the mainboard module is damaged	Check main control board and attempt to replace mainboard

Fault type	S/N	Fault description	Causes	Solutions
	5	Electricity meter fault	Electricity meter 485IC at the mainboard end is damaged	Check main control board and attempt to replace mainboard
	6	Access control fault	The access control detection device at the mainboard end is damaged	Check main control board and attempt to replace mainboard
There was no response upon card swiping	1	There was no response upon card swiping	The mainboard is damaged	Attempt to replace mainboard
Indicator is abnormal	1	The indicator is off	The main control board components are damaged	Attempt to replace mainboard, and hardware engineer check mainboard
Lightning protection failure	1	Unable to enter charging operation interface	Mainboard lightning protection detection port device is damaged	Attempt to replace mainboard, and hardware engineer check mainboard
Program can't be burned to mainboard	1	When it is unable to enter operation interface to burn mainboard program, mainboard LED doesn't flash	Mainboard hardware is abnormal, check mainboard	Attempt to replace mainboard
			The burning program does not match the low level program	Replace program

Fault type	S/N	Fault description	Causes	Solutions
The display screen freezes and crashes	1	Display screen is stuck on the charging startup page in charging startup process	Hardware has defect	Dismantle FB2 magnetic beads and replace with 0Ω electric resistance at original position Dismantle FB2 magnetic beads, perform short circuit connection to C44A capacitance cathode and C47A anode
Network is offline	1	4G router is offline and free of internet connection	4G router network port is damaged	Attempt to replace 4G router
			4G router is burned out	Attempt to replace 4G router
			The adapter is broken	Replace adapter
			PCB board antenna of 4G router falls off	Dismantle 4G router and connect antenna properly

6. Storage and Transportation

6.1. Packaging

Charger body is packed in carton box set, supported by foam on all sides, fixed by pallets at the bottom, and packaged in wooden box on the outside.

6.2. Transportation

The product shall be free of violent vibration, impact and inversion in transportation.

6.3. Storage

If the product does not put into use immediately after purchase, and shall be stored in dry and ventilated indoor place for short term or long term storage to avoid high temperature, humid, dusty and metal powder environment.

7. After-sales Service

Please contact equipment supplier in case of doubt or problem.

Before contacting equipment supplier:

- Check the troubleshooting measures in "Chapter 5 Troubleshooting".
- Please provide the model of equipment, the charger number on the top right corner of the screen, the serial number on equipment nameplate, fault time and picture.

8. Technical Data

Model	ENC-DCL120B	ENC-DCL180B	ENC-DCL240B	ENC-DCL360B	ENC-DCL480B
AC Nominal Input					
Earthing System	TN-S / TT				
Voltage (V)	400 ±15%				
Current (A)	185	277	369	553	738
Frequency (Hz)	50/60				
DC Nominal Output					
Voltage (V)	200-1000				
Current (A)	Max. 250 (350 Optional)				
Power (kW)	120	180	240	360	480
Basic Attributes					
Charge Connector	Dual (CCS2 + CCS2)				
Cable Length	5 m (Including length of the charging connector)				
Enclosure	Galvanized Steel				
Installation Method	Floor Mounted				
Interface & Communication					
HMI	12.1 Inch Touch Screen with Shell				
Language	English (standard), Other languages available by firmware upgrade				
Authentication	QR Code / RFID Card / Password Login				
DC Meter	CE Certified DC Meter Standard equipped (MID Meter Optional)				
POS Terminal	Optional				
Cable Management System	Yes				
Communication Interface	Ethernet / 4G / WiFi				

8. Technical Data

Model	ENC-DCL120B	ENC-DCL180B	ENC-DCL240B	ENC-DCL360B	ENC-DCL480B
Protocol	OCPP 1.6J				
Electrical Parameter					
Efficiency	≥ 95% @ Nominal output power				
Power Factor	≥ 0.99 (50% load above)				
THDi	< 5%				
Standby Self-consumption	≤ 100 W				
Ripple Factor	≤ ±5%				
Safety					
RCD	Type A				
Emergency Stop	Yes				
Enclosure Ratings	IP54				
Impact Protection	IK10 for shell, IK08 for screen				
Electrical Protection	Over Current, Under Voltage, Residual Current, Surge Protection, Leakage Protection, Short Circuit, Over Temperature, etc.				
EVSE-vehicle Protocol	DIN SPEC 70121, ISO 15118				
Certification	CE / CB				
Certification Standard	IEC61851 2017, IEC 62196-1, IEC 62196-3, etc.				
Working Environment					
Cooling Method	Air-cooling				
Noise	≤ 65 dB(A) @1 m distance / 25 °C				
Operation Temperature	-25°C ~ +55°C (Derating above ambient temperature 55°C)				
Working Humidity	5% ~ 95% without condensation				
Working Altitude	≤ 2000 m				

Technical Data (supplement)

This page supplements the Technical Data chapter with weight and mechanical data, and restates the confirmed HMI screen size.

Weight & mechanical data

Model	Type code	Net weight (approx.)
120 kW	ENC-DCL120B	550 kg
180 kW	ENC-DCL180B	560 kg
240 kW	ENC-DCL240B	620 kg
360 kW	ENC-DCL360B	720 kg
480 kW	ENC-DCL480B	890 kg

Weight values are indicative. Verify the actual weight on the nameplate of the specific unit before transport, lifting or foundation design.

HMI screen — confirmed specification

Parameter	Value
HMI display	12.1-inch colour touch screen with shell
Resolution / interface	Touch, user-facing, installed on front panel
Impact protection	IK08 (screen)

Installation implications

Always use a forklift or pallet truck rated for the model’s weight. The concrete foundation and the four M12 expansion bolts described in Section 2 must be dimensioned for the full unit mass with a suitable safety factor.

LEKTRI·CO