Star Charge

August 13, 2023

Basic Training for Venus V1

Star Charge Europe GmbH

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Star Charge

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Brief Introduction

Appearance & Specification

Appearance

- **[A]** —— 7-inch touch screen
- **[B]** —— LED status indicator and card reader
- **[C]** —— DC meter window
- **[D]** —— Air outlet
- **[E]** —— Operation door lock
- **[F]** —— Emergency button
- **[G]** —— Charging connector placement and cable bracket

Specification

General Information	
Input Rating	400Vac±10%, 3 phases, 50/60Hz, L1+L2+L3+N+PE
Power Factor	≥0.98 @ Full Load
Efficiency	≥94% @ Full Load (Peak)
Grid Type	TN-S, TN-C, TN-C-S, TT
Output Interface	1 x CCS2
Output Power	30kW max.
Output Voltage	200-1000Vdc
Output Current	80A max.
User Interface	
Display	7 inches touch screen
Support Language	English (Other languages available upon request)
Button and Switch	Emergency button
User Authentication	RFID card, App, Credit card(Optional)
RFID Reader	ISO/IEC 14443 A/B, ISO/IEC 18092, IEC/ISO 15693
Communication	
Network Interface	4G, Wifi, Ethernet
Protocol (EVSE&Backend)	OCPP 1.6J
Protocol (EVSE&EV)	DIN 70121, ISO 15118
Mechanical	
IP Rating	IP55
IK Rating	IK10
Cooling	Forced Air
Charging Cable Length	3.4m
Dimensions (WxHxD)	680*440*280mm
Weight	Approx. 35kg (excluding power modules)
Installation	Wall mounting, Pole mounting (Pole is optional)

Installation

Requirements & Workflow

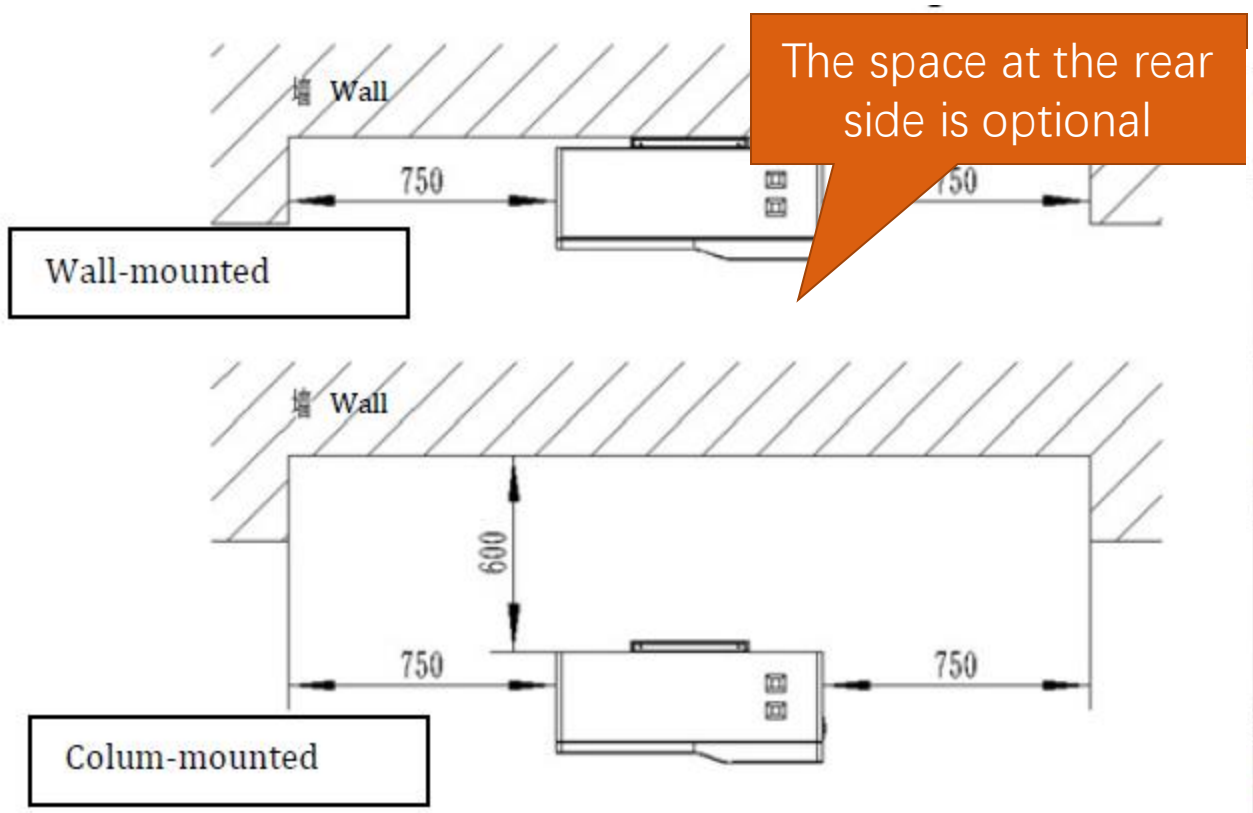
Installation - Requirements

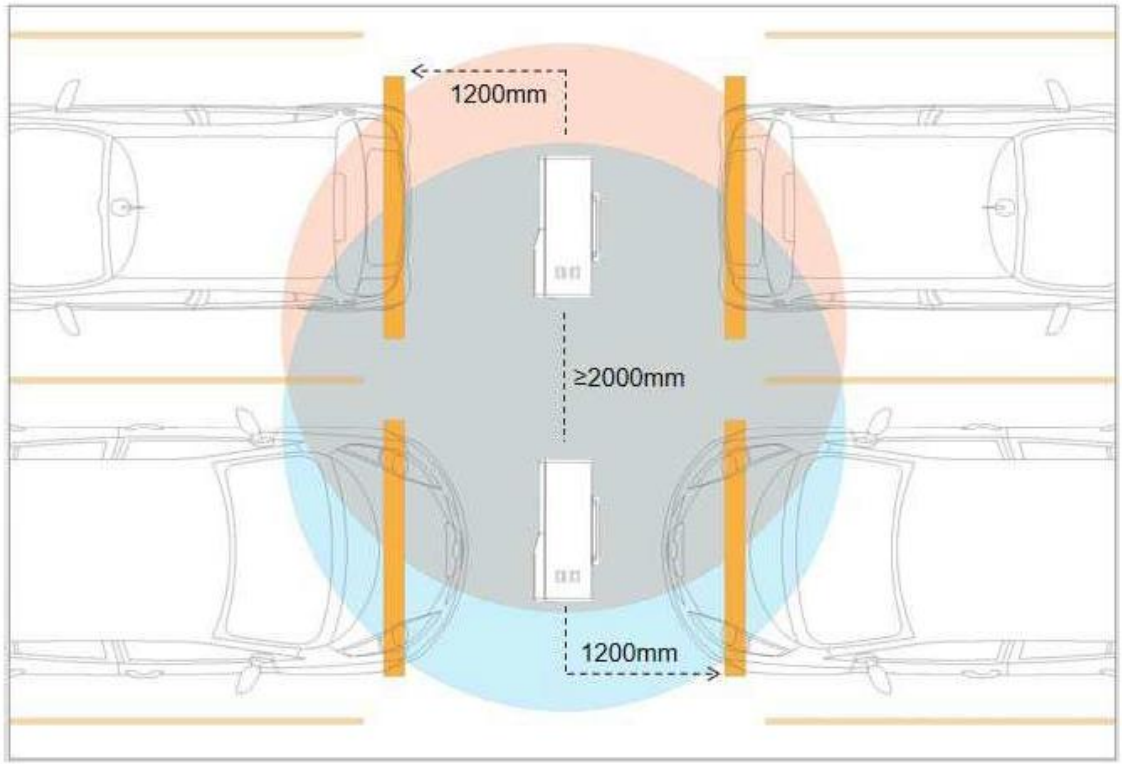
1.Requirements for grid capacity

- If the charger operates at full power, the grid capacity shall be ≥ 35kW
- Three-phase input, phase to phase voltage 400V (±10%)
- Earthing system: TN/TT
- Recommended parameters of superior circuit breaker Ue = 400V, In ≥ 80A, thermal magnetic type, Icu ≥ Ics ≥ 25 kA, 3Poles
- Grounding resistance ≤ 4Ω or follow local regulation
- Insulation resistance ≥ 1MΩ or follow local regulation

Installation - Requirements

2.Maintenance distance



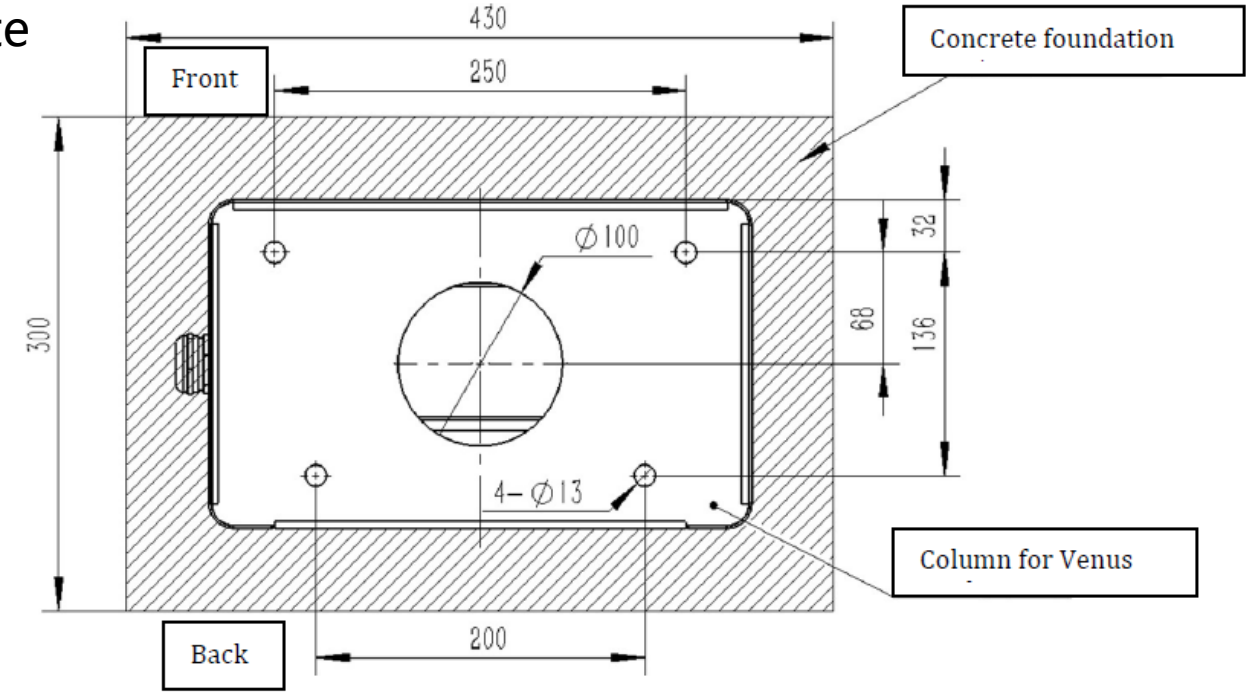


Installation - Requirements

3. Installation foundation

The charger shall be installed on a hard mounting floor (e.g. cement floor), if there is no appropriate mounting floor on site, a concrete foundation is recommended.

- Size 430mm * 300mm * 600mm
- Depth of the foundation 400mm
- Height above the ground 200mm.
- The foundation is filled with C20 concrete



Installation - Requirements

4. Power cable specification

- 5 * 10mm² (L1,L2,L3, N, PE)
- The core material is copper.

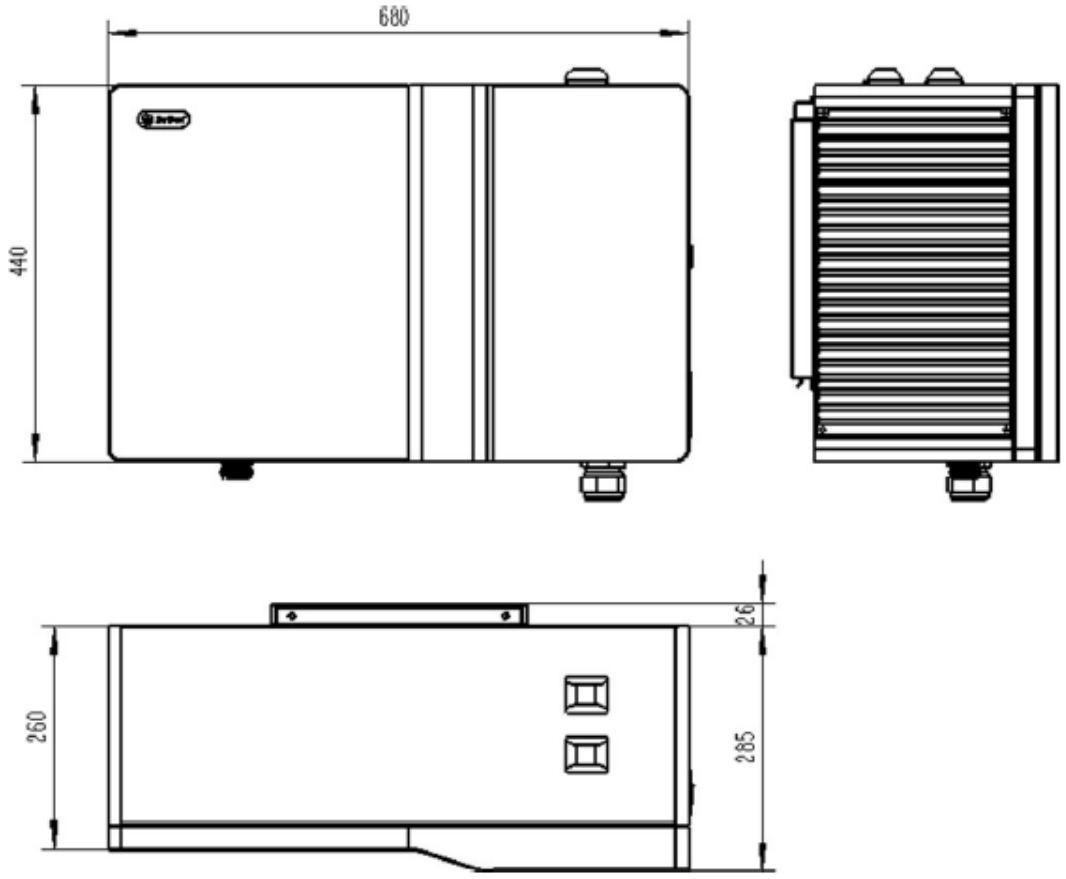
Installation - Workflow

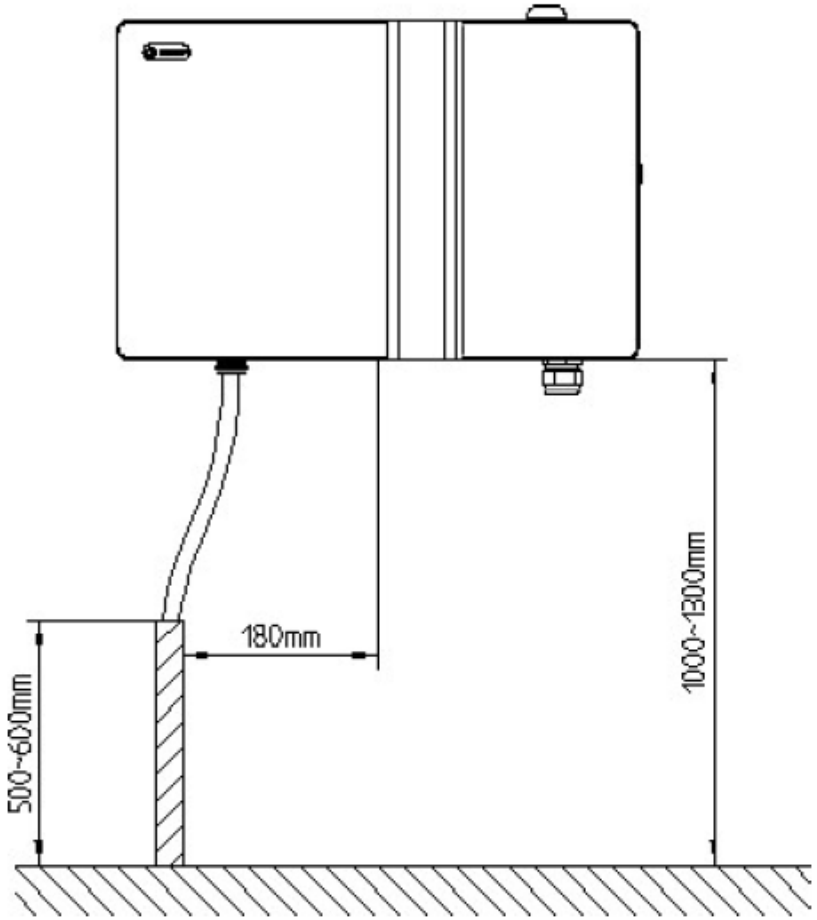
1. Unpacking check

Name	Package	Configuration	Package size (mm)	Weight (with package)	Attachment paper	Accessories list
Charger	Wooden box	Standard	770*680*646	55kg	1. Certification approval *1 2.User manual*1 3.Delivery inspection report*1	1.Charging socket*1 2.Charger*1 3.M6-screw*7 4.IC card*2 5.Key*2
Module	Carton	Standard	540*405*200	35kg	NA	M4-Screw*4
Column（only for column mounting）	Carton	Optional	1672*392*256	16kg	NA	M6-Screw*4

Installation - Workflow

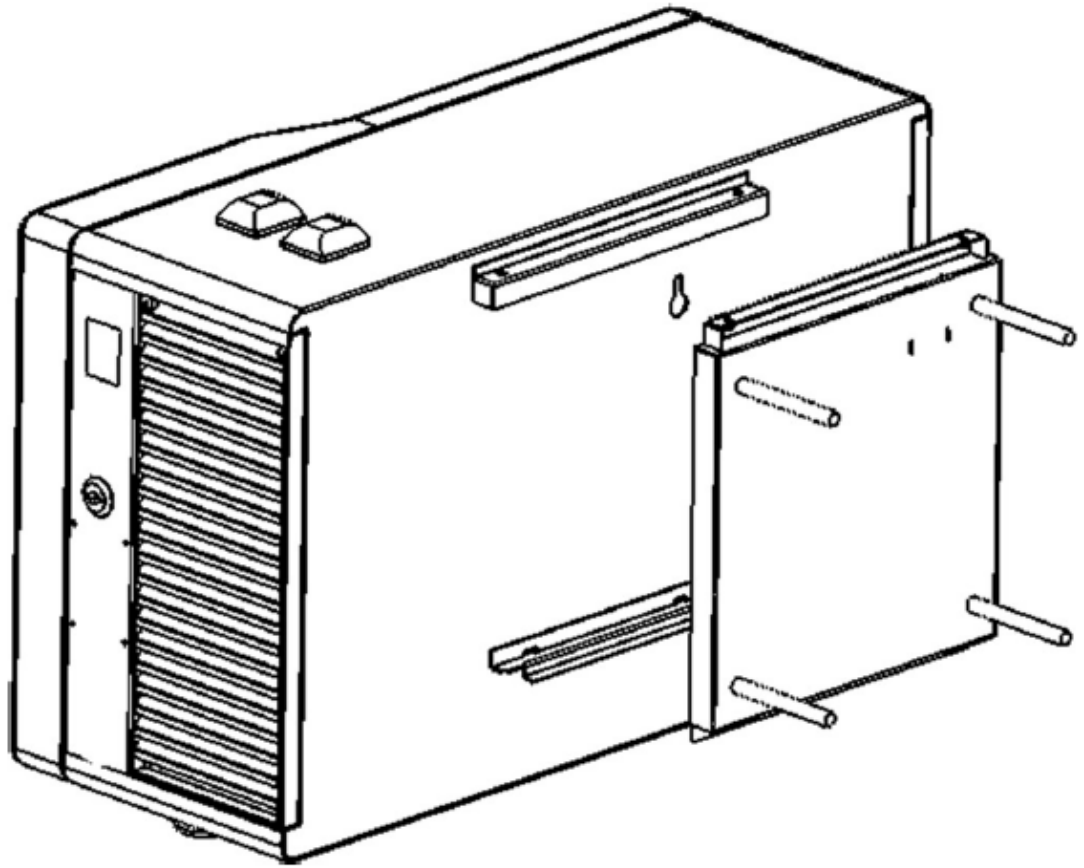
Wall mounted installation





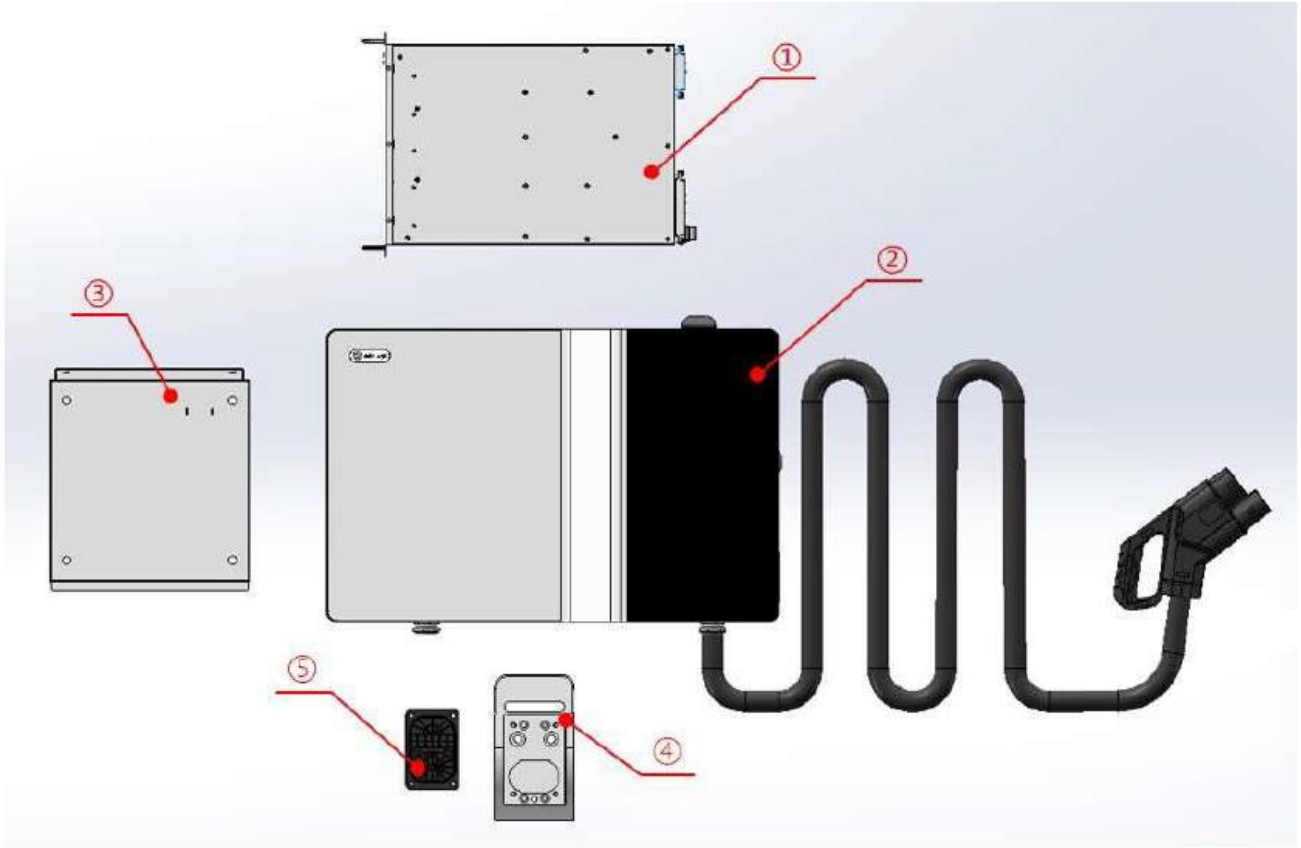
Installation - Workflow

Wall mounted installation



Installation - Workflow

Wall mounted installation



① : 30kW charging module

② : Charging box

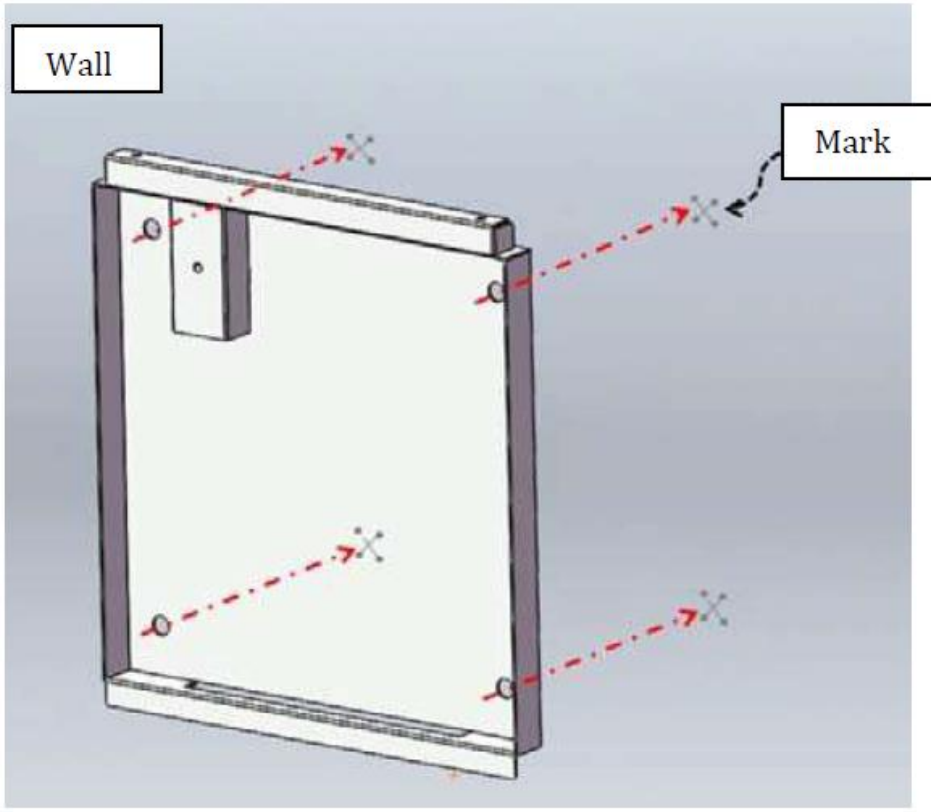
③ : Wall mounted mounting panel

④ : Gun holder assembly 1

⑤ : Gun holder assembly 2

Wall mounted installation

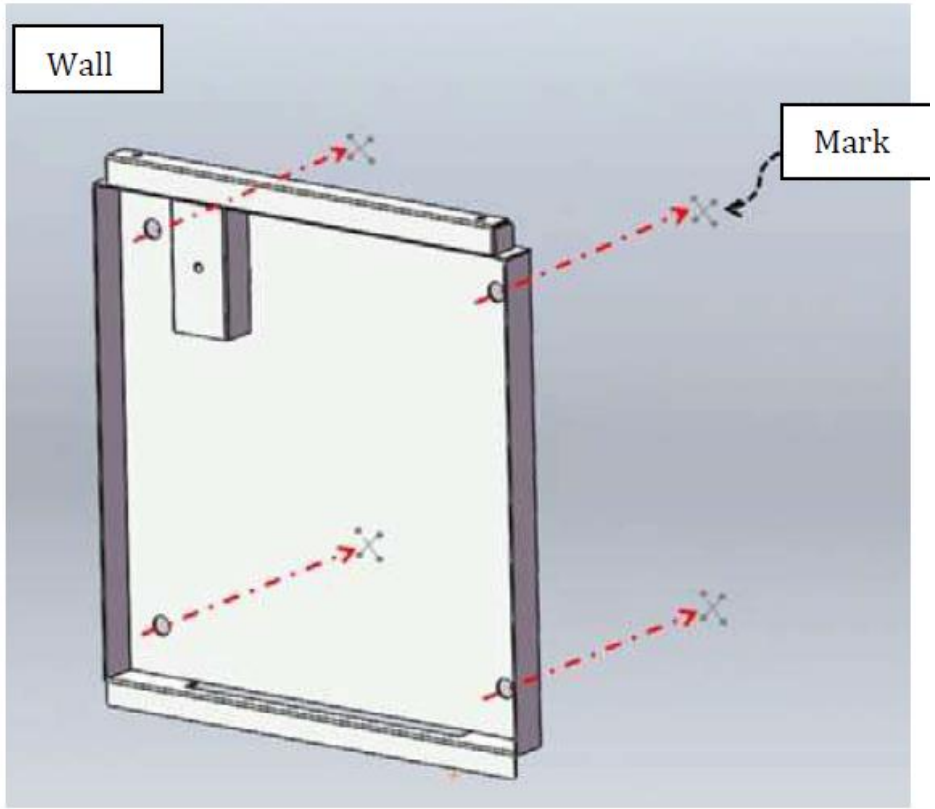
Step 1: Locate the four holes of mounting plate in the wall

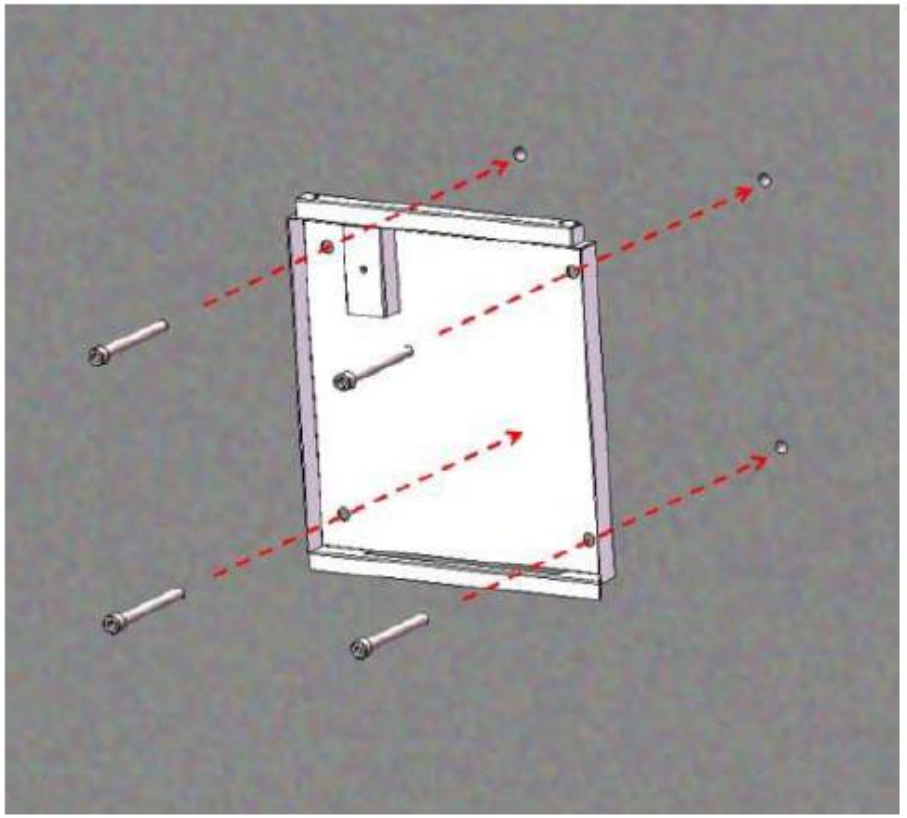


Installation - Workflow

Wall mounted installation

Step 2: Choose Ø 10 drill bit in the marked position and then put the M6 * 100 of bolts to hole. After that, tighten the bolts.

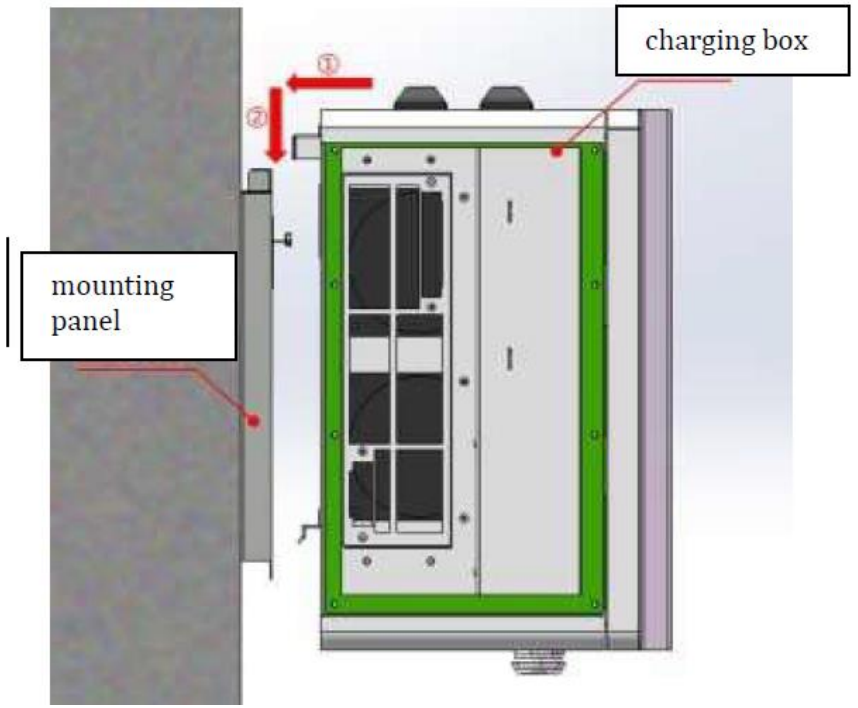




Installation - Workflow

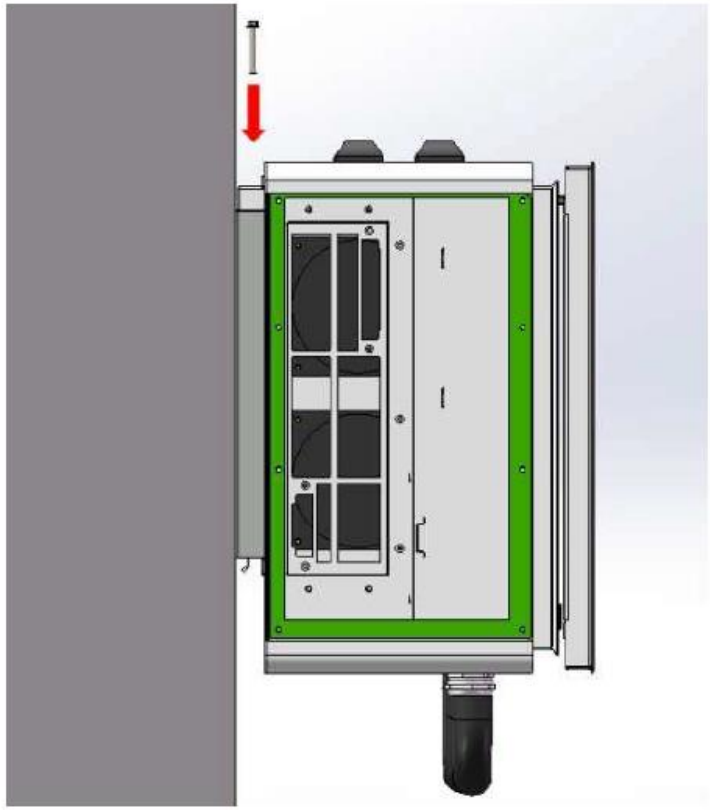
Wall mounted installation

Step 3: Lift the charging box slightly higher than the wall mounting panel and moves towards the wall until the wall mounting panel is in contact with the rear of the charging box;
Move the charging box down until the charging box is clamped with the wall mounting plate.



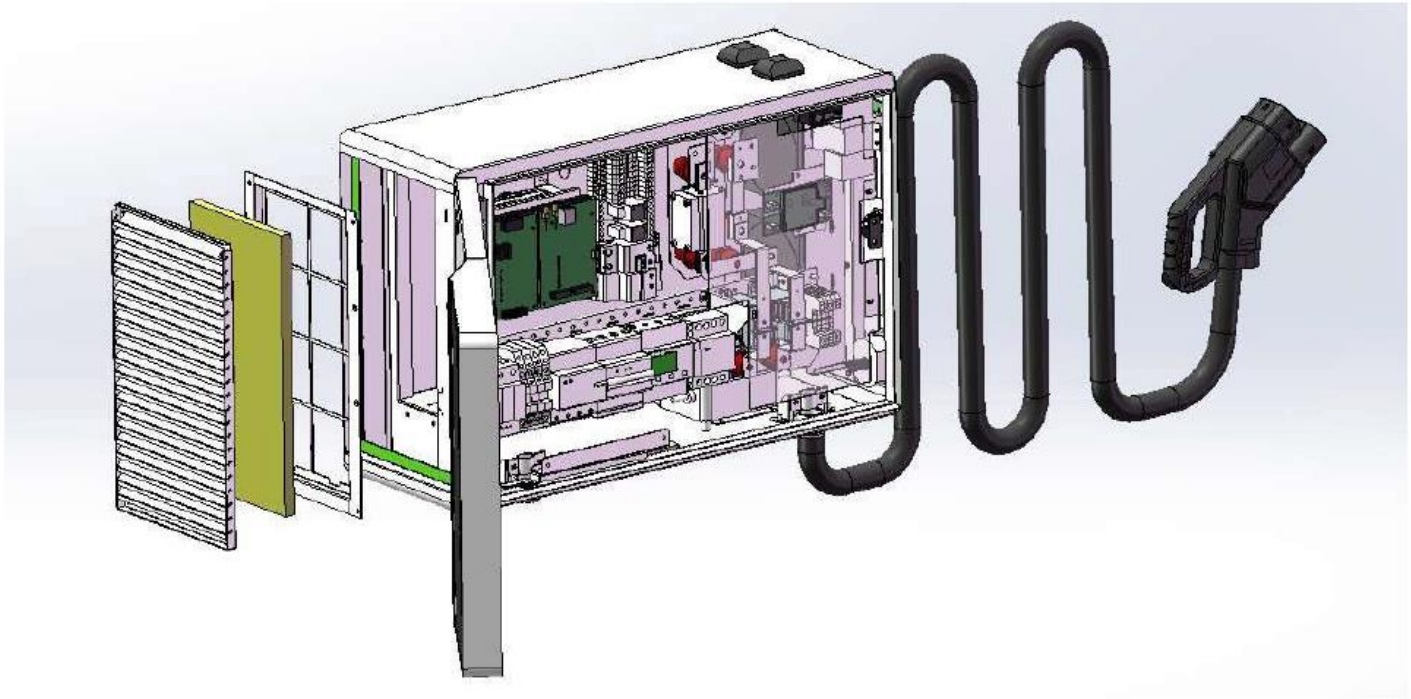
Wall mounted installation

Step 4: Fasten the screw on the top of the mounting panel.



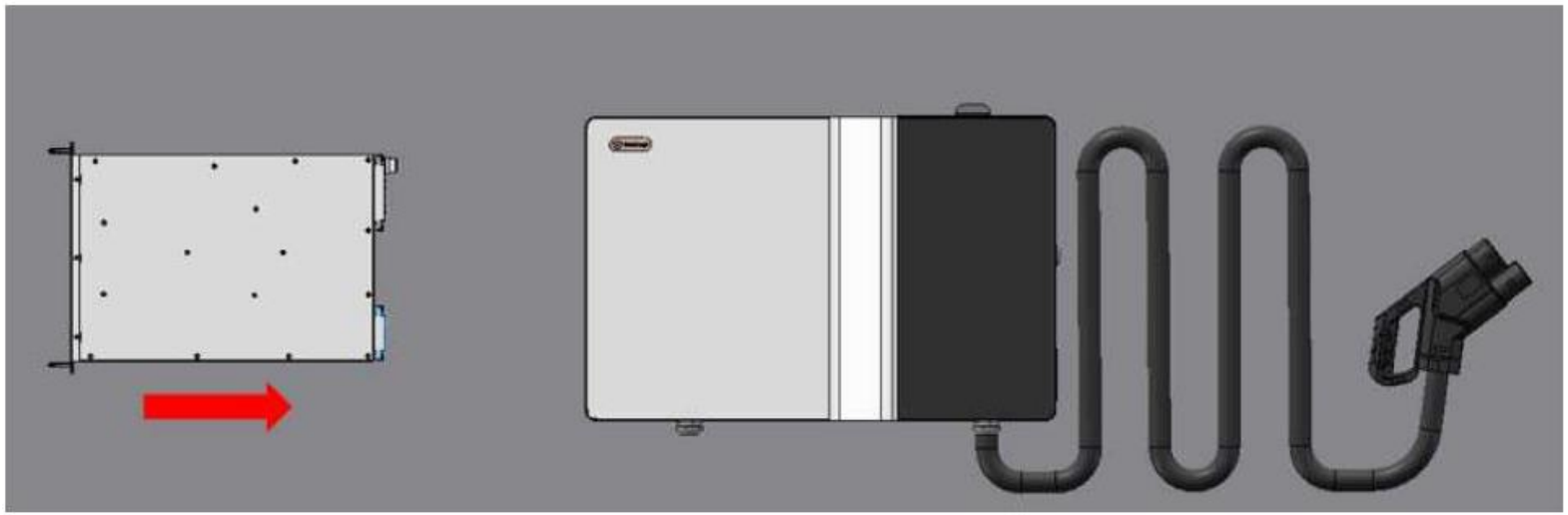
Wall mounted installation

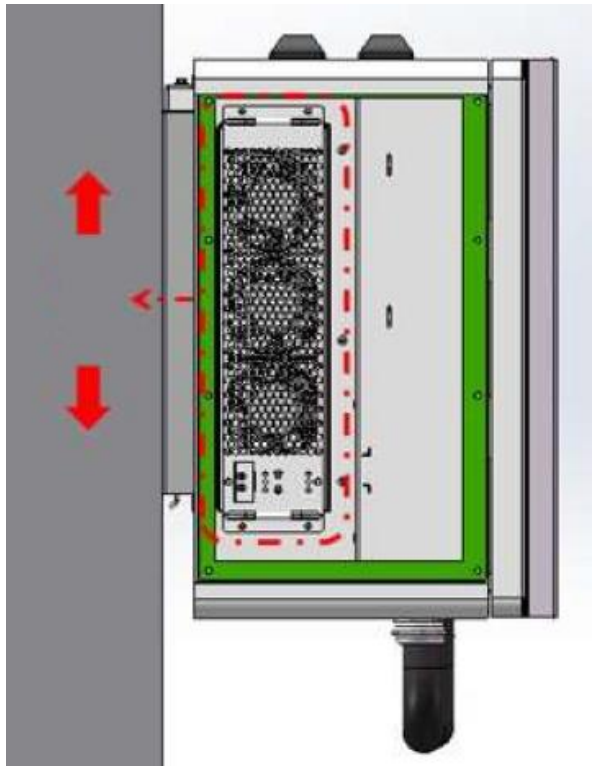
Step 5: remove the left shutter and dust proof cotton. Put the power module into the charging box and then tighten the four screws to fix the module.



Wall mounted installation

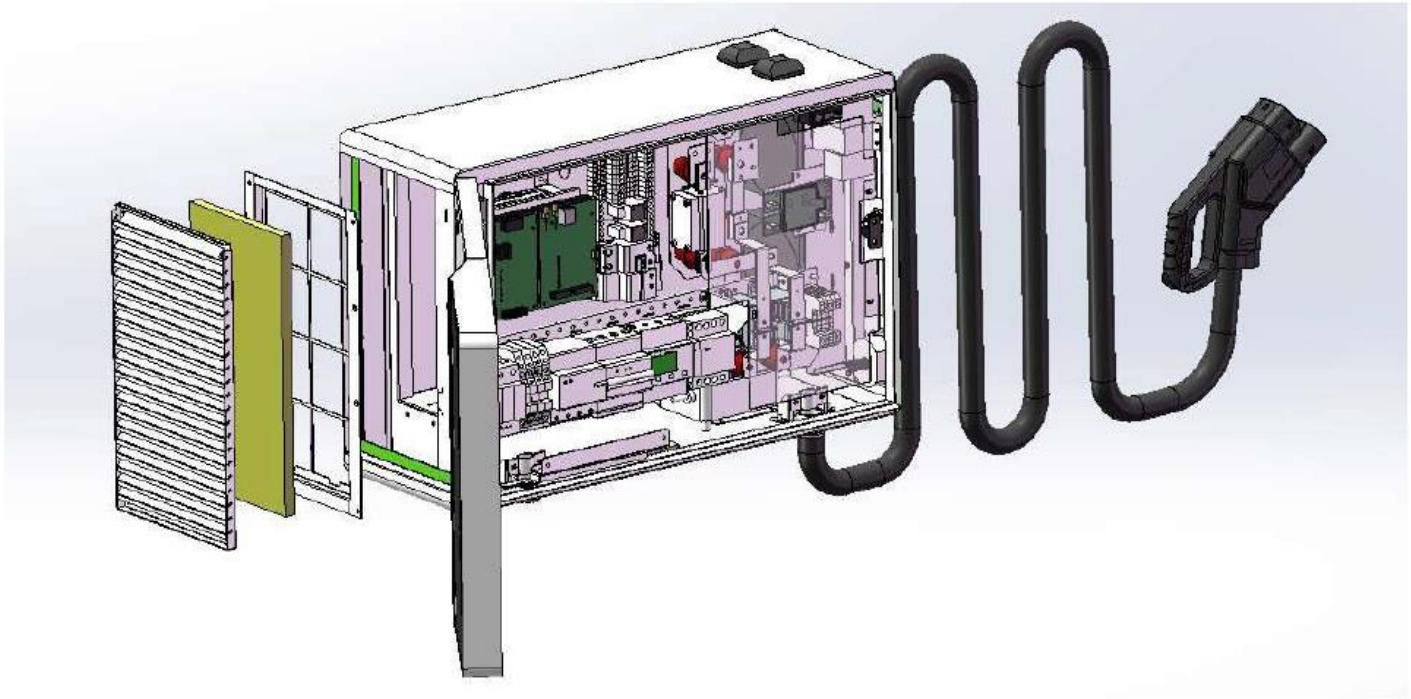
Step 5: remove the left shutter and dust proof cotton. Put the power module into the charging box and then tighten the four screws to fix the module.





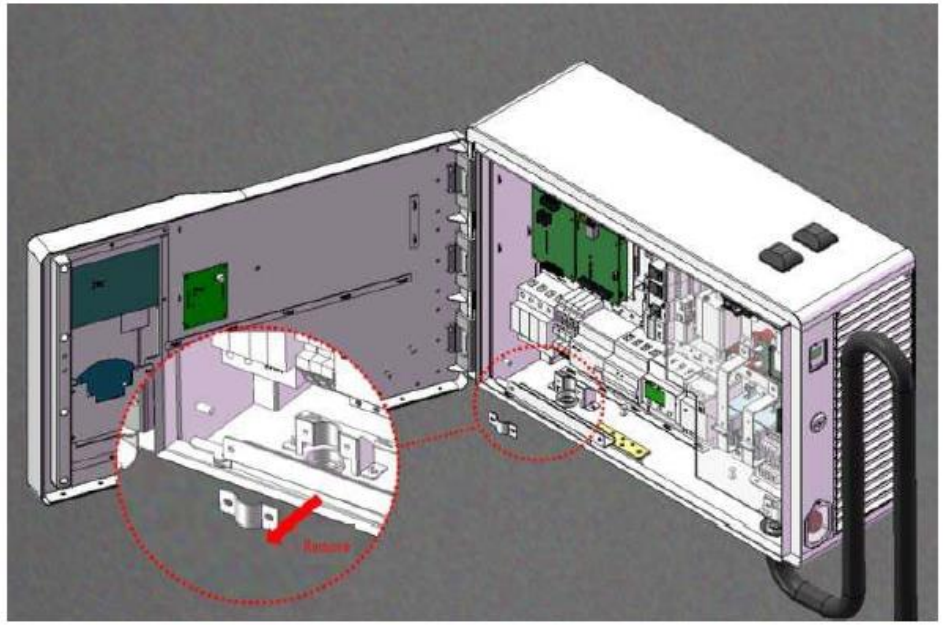
Wall mounted installation

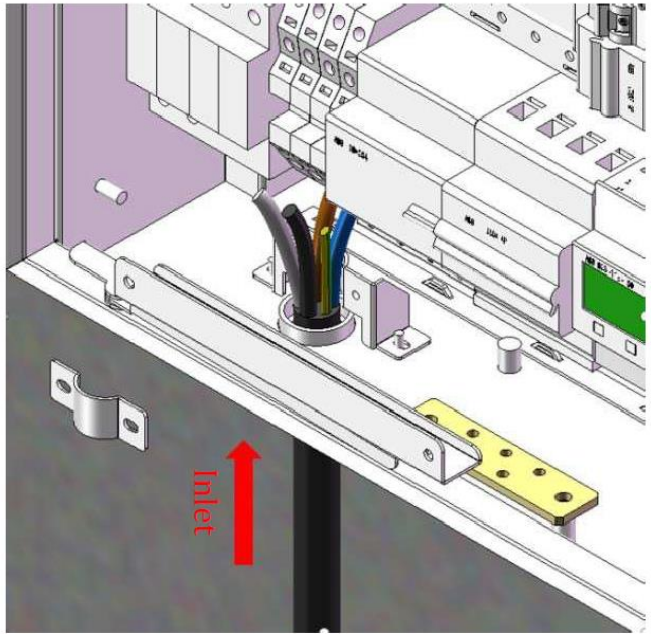
Step 6: Install the left shutter and dust proof cotton back to charger.



Wall mounted installation

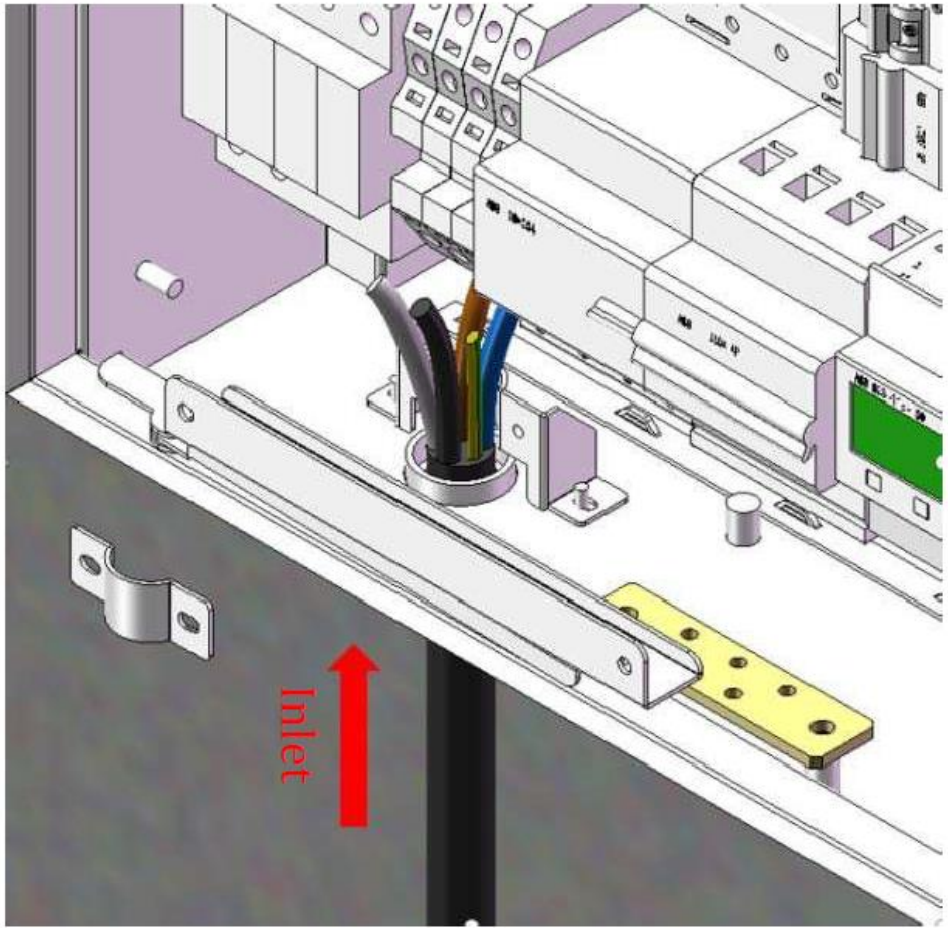
Step 7: Open the front door and remove the cable clamp. Thread the prepared cable (the cable has been stripped) into the charging box from the port at the bottom.
Connect the ground wire to the ground copper bus, then connect the three phases of L1, L2, L3 and the neutral line to the corresponding terminals.
After the completion of wiring, fix the removed cable clamp is with the removed screws.

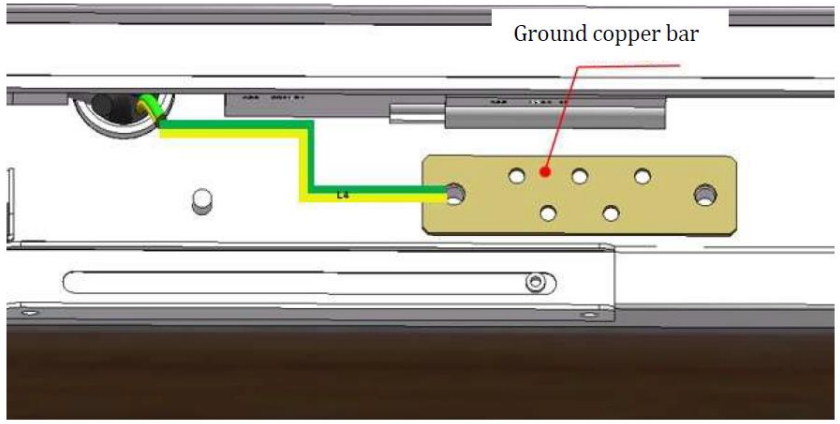


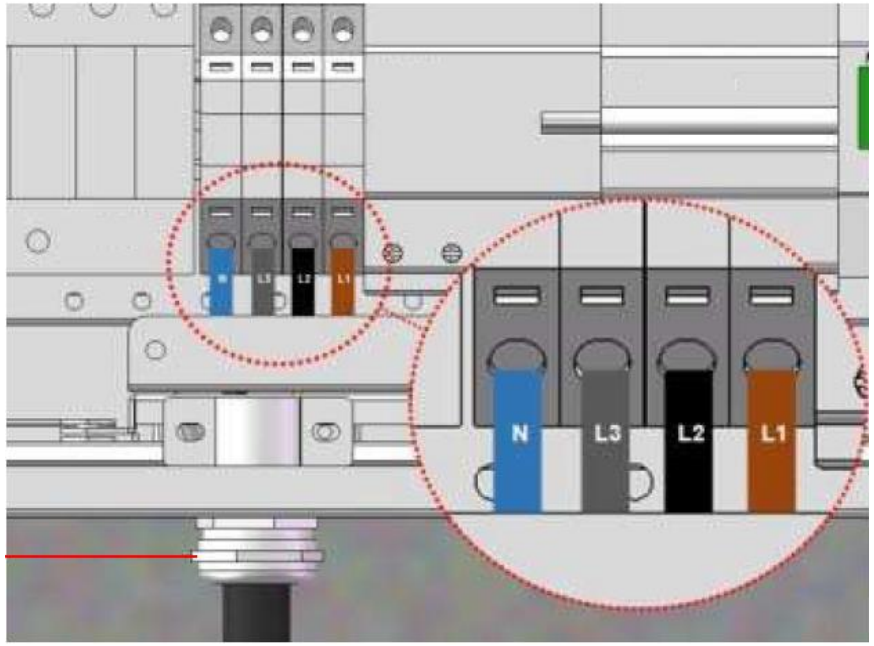


Installation - Workflow

Wall mounted installation

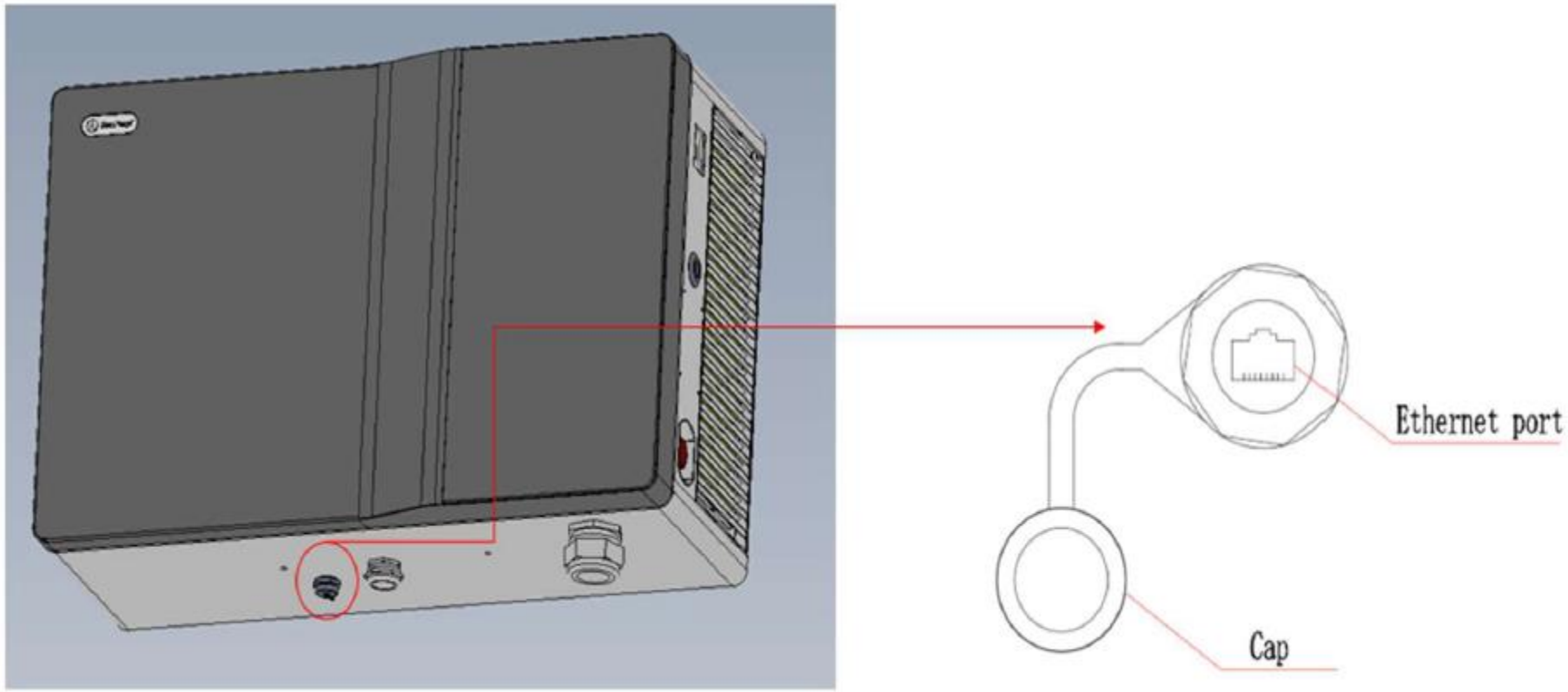






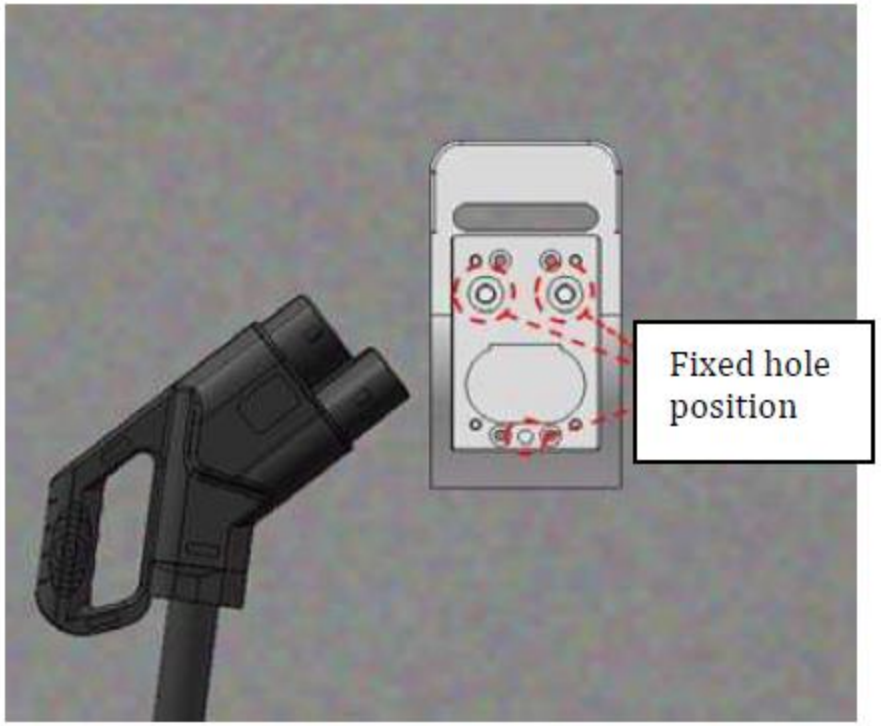
Wall mounted installation

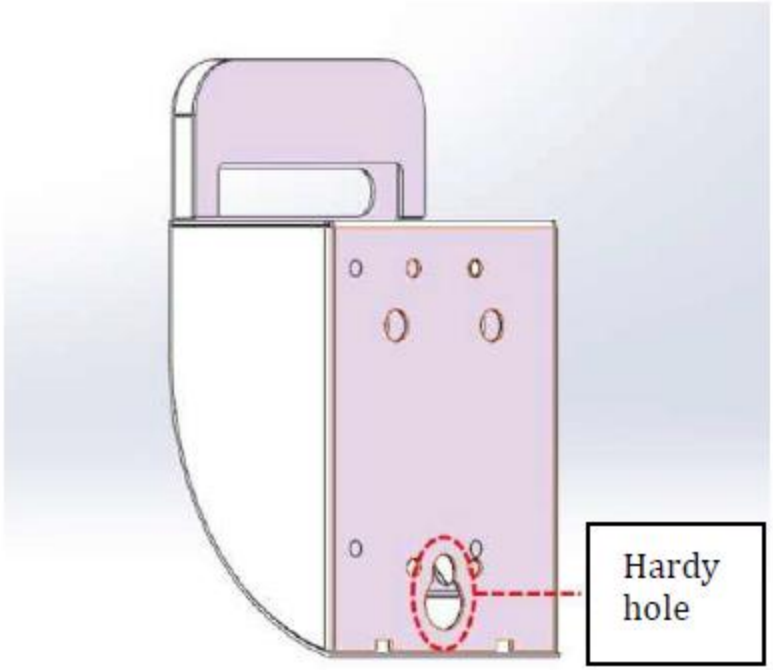
Step 8: If Ethernet communication is required, remove the cap of Ethernet port and connect the network cable in the Ethernet port.



Wall mounted installation

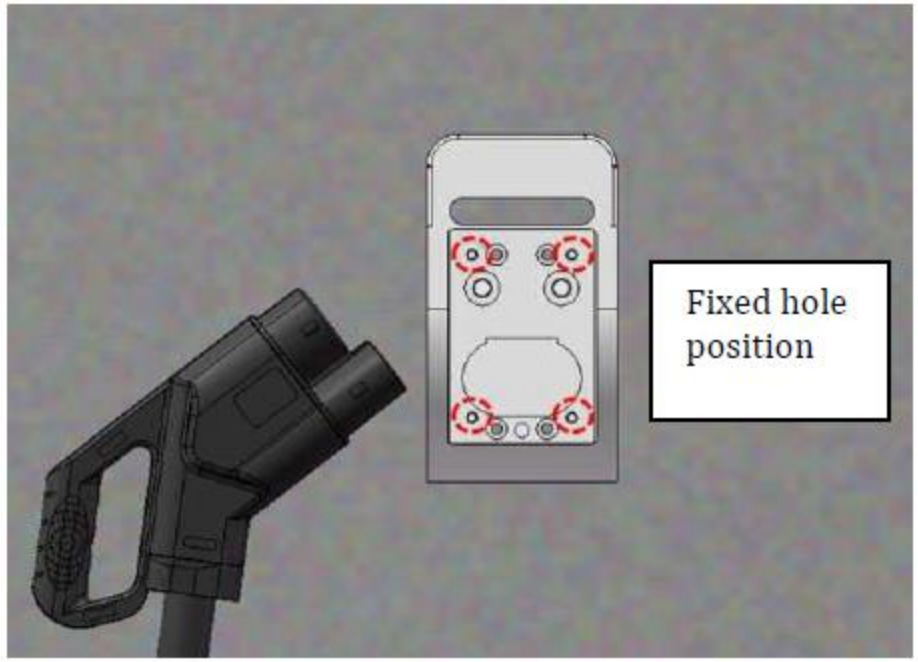
Step 9: Install the gun holder. It is recommended that the lower edge be 900mm away from the ground. First fix the assembly1 with three M6*100 bolts.

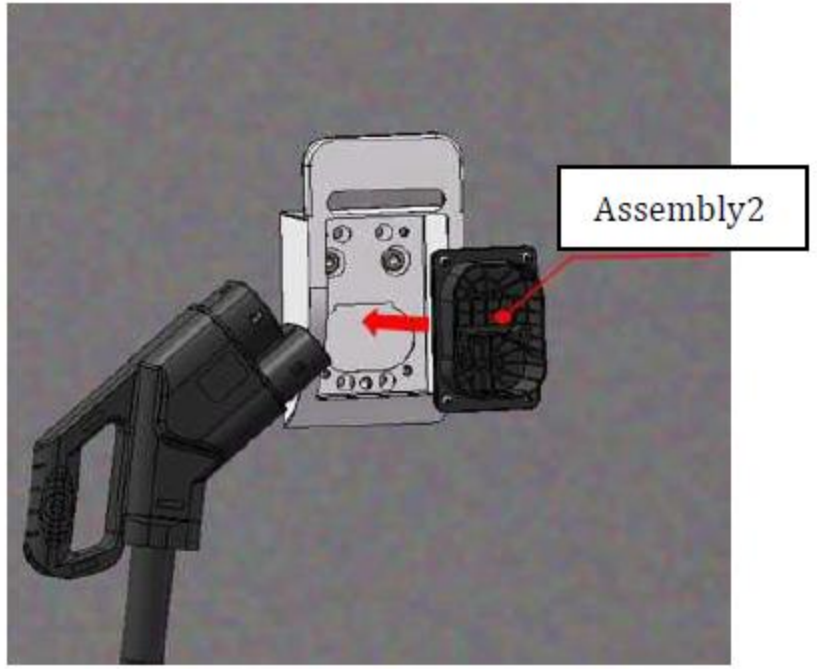




Wall mounted installation

Step 10: Install the gun holder assembly2 by the fixing hole with M6*16 screws





Installation - Workflow

Wall mounted installation

Installation finished

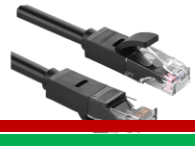
Installation - Workflow

Column mounted installation

Commissioning

Tools & Workflow

Commissioning - Tools

Item	Tools	Usage	Example
1	Laptop	Configure the settings, read the log, Troubleshooting	
2	Ethernet cable	Connect laptop to charger	
3	J – LINK tool	Firmware update (for complex troubleshooting)	
4	RS232 tool	Firmware update (for first commissioing & complex troubleshooting)	
5	TF Card and reader	Firmware update (for complex troubleshooting)	
6	Screwdriver set	Assemble and disassemble the screws	

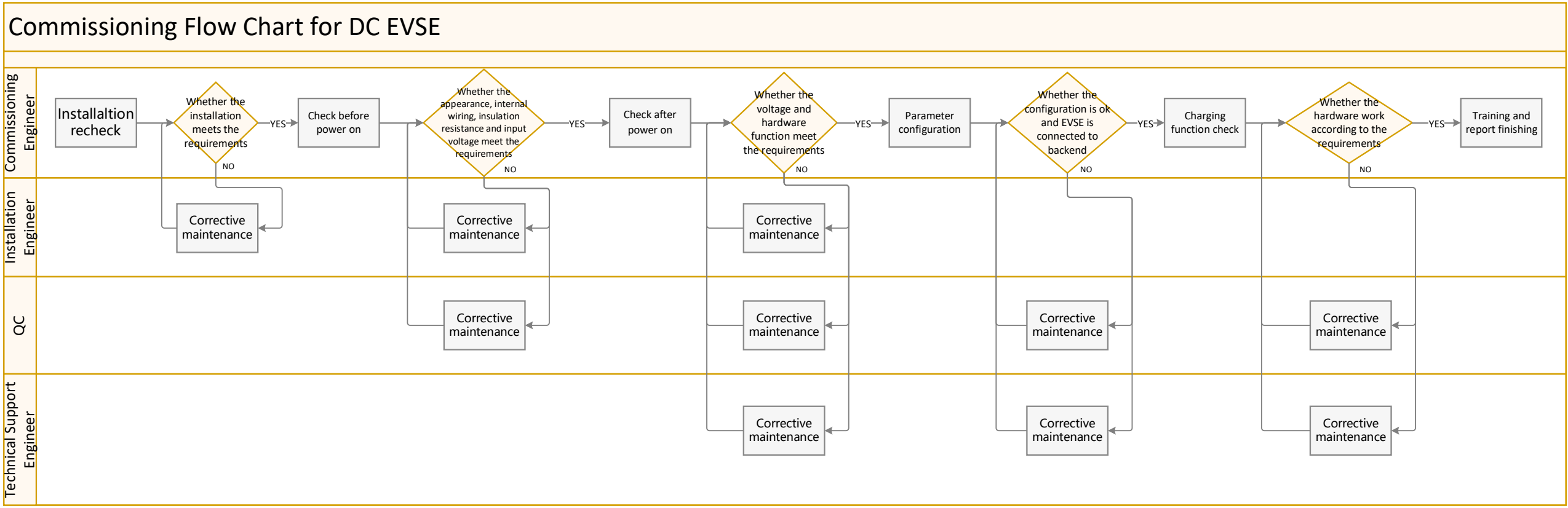
Must have

Recommended to have, only needed for complex trouble-shooting

Commissioning - Tools

Item	Tools	Usage	Example
7	Wrench set	Standby	
8	Electrical multimeter	Electric measurement	
9	Safety Sign	Warn potential danger on site	
10	Electrician protective gloves	Safety protection	
11	Electrician protective Shoes		

Commissioning - Workflow



Commissioning - Workflow

1. Installation Recheck

1. Pedestal of charger should be fixed and sealed well.
2. Outside appearance of cabinet should be intact
3. Power supply cables should be intact and tightened well.
4. Grounding/Insulation resistance should in compliance with the local regulation
5. Read information on nameplate and sign: confirm the rated output power.

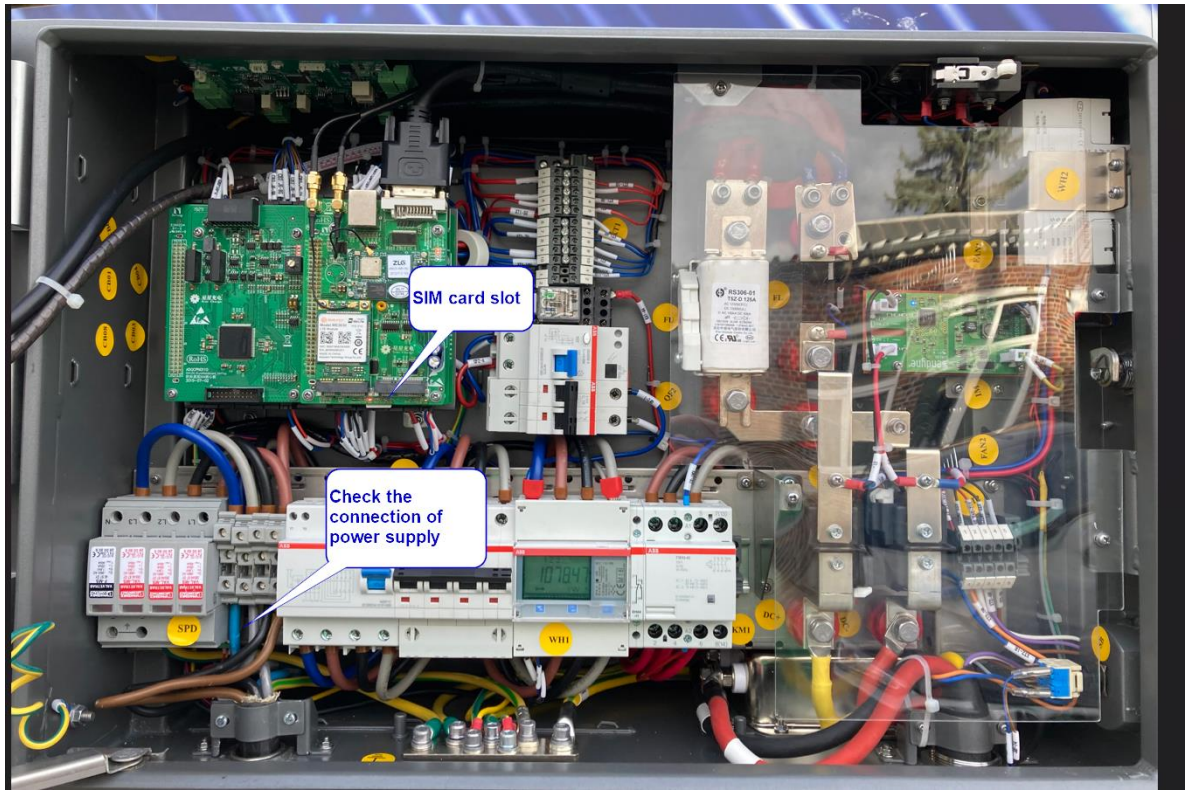
Commissioning - Workflow

2. Check before power on charger

1) Fasten screws : Check whether the screws on power supply connection are fastened.

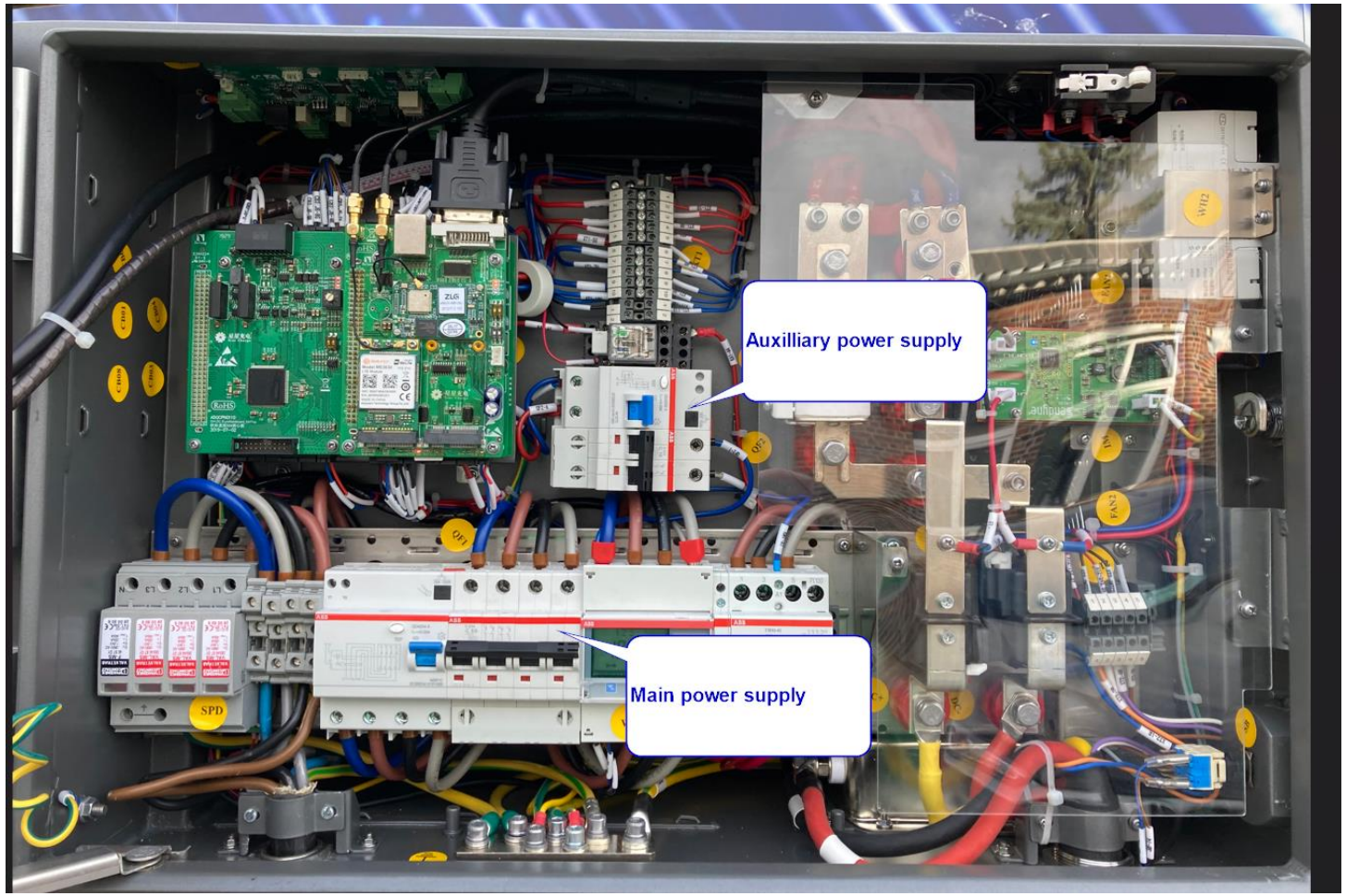
2) Check the input power voltage: make sure there’ s no fault such as phase loss, overvoltage, undervoltage and wrong phase sequence.

3) If SIM card is used for the internet connection, please insert the SIM card into the slot of A7 control board.



3. Check after power on charger

Circuit breakers inside Venus



Commissioning - Workflow

3. Check after power on charger

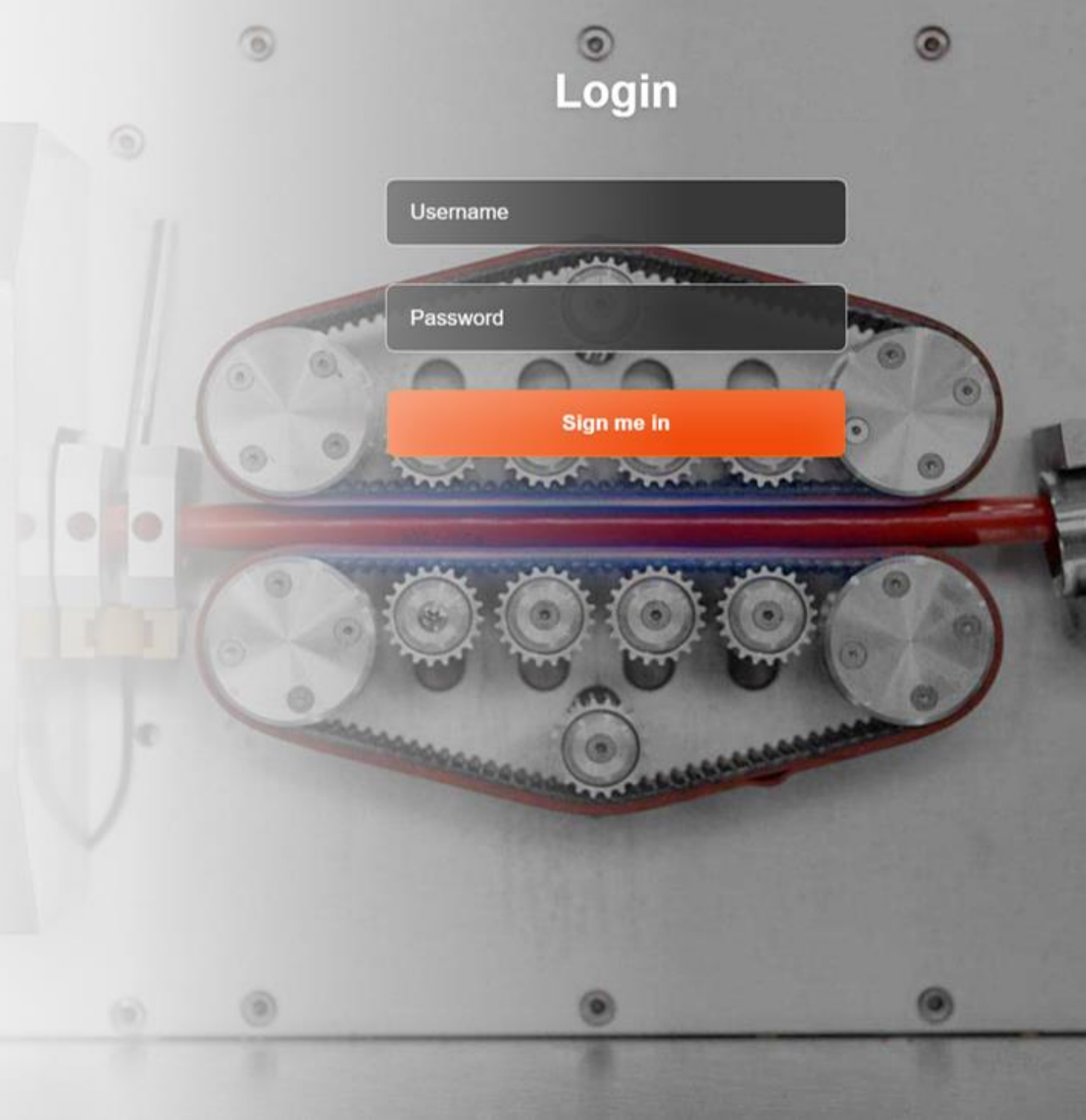
1. Touch screen: Check whether the touch screen displays normal. The display image should be clear.
2. LED indicator light: Check whether the LED indicator light on the charger. The LED light should be green.

Commissioning - Workflow

4. Parameter configuration

Software settings needs to be configured:

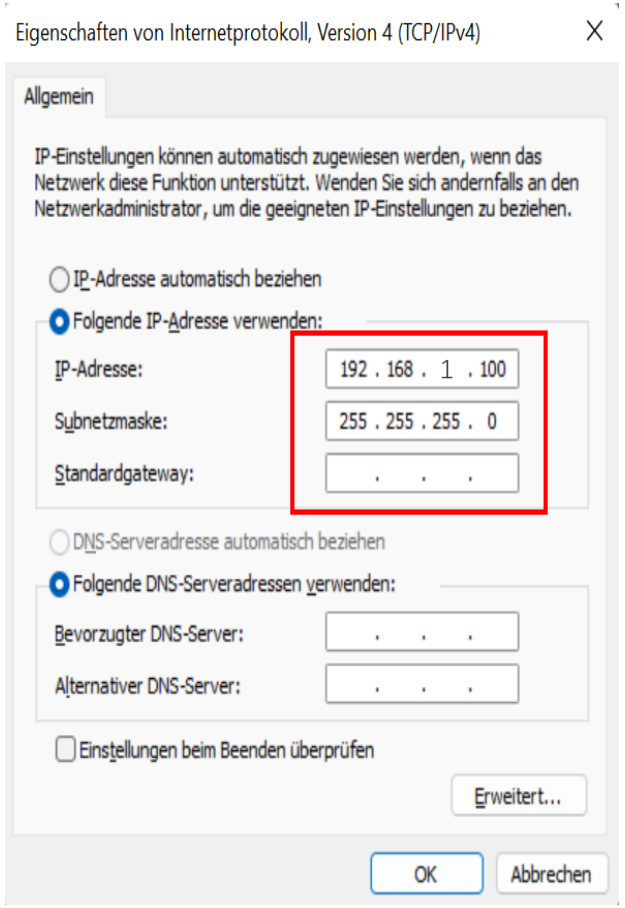
- Internet communication (4G, Ethernet, WIFI)
- OCPP backend
- Charger authentication method
- Connector & output power configuration
- Power module configuration

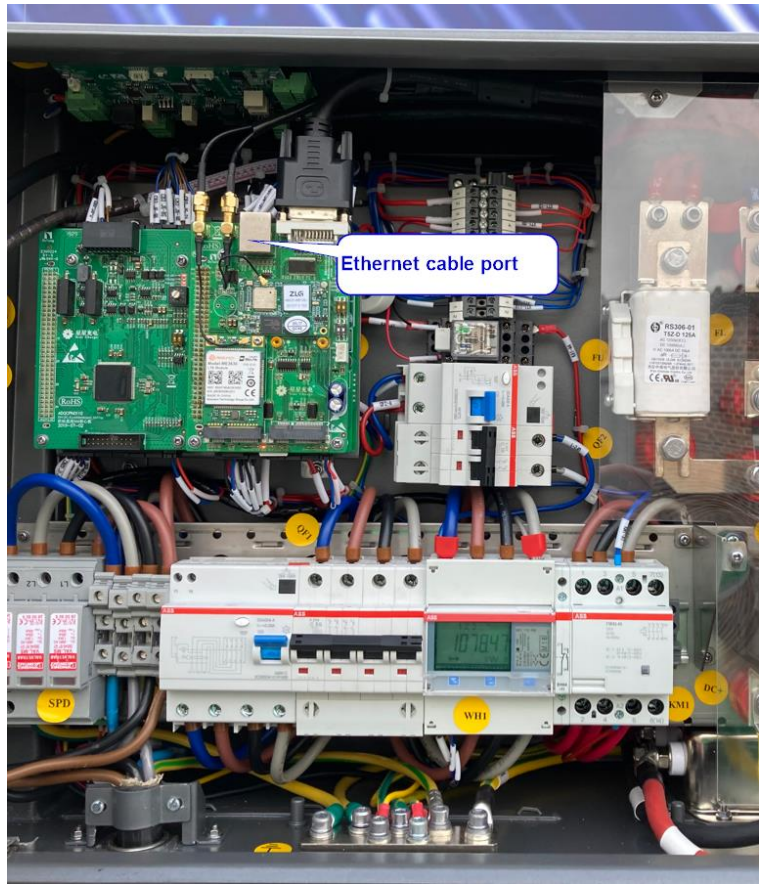


4. Parameter configuration

Preparation:

Connect laptop to router via Ethernet cable and set laptop IP address as shown below (e.g. 192.168.1.xxx, xxx can be any number except 136)





4. Parameter configuration

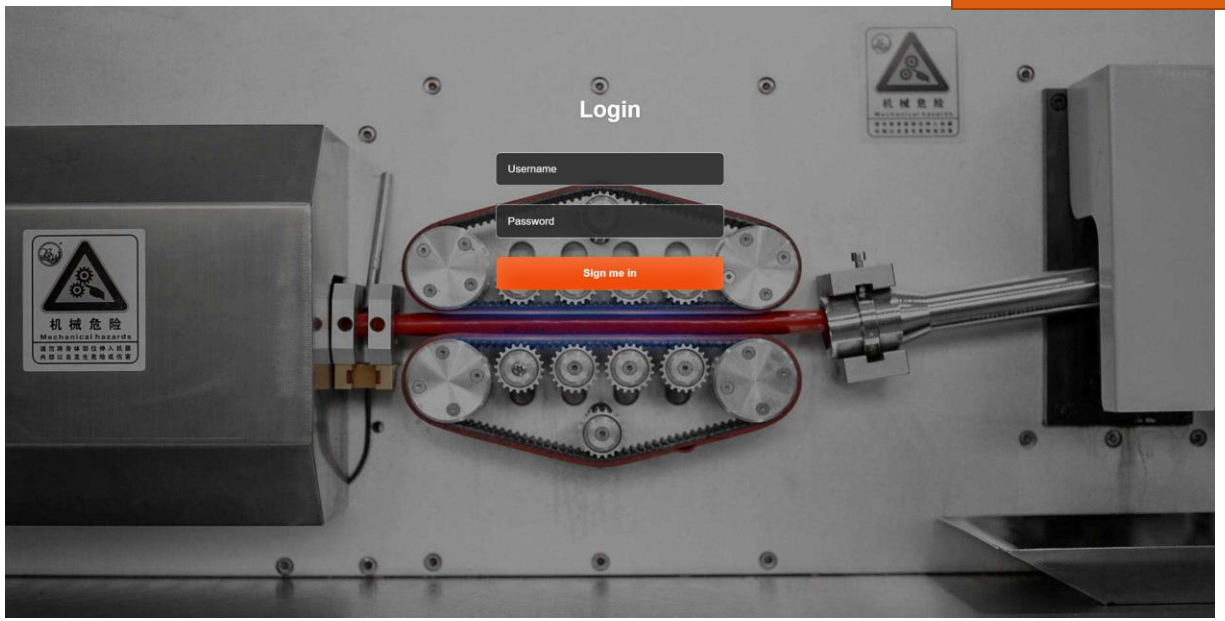
Log in:

Open a browser (e.g. chrome, edge) and enter IP address of charger 192.168.1.136

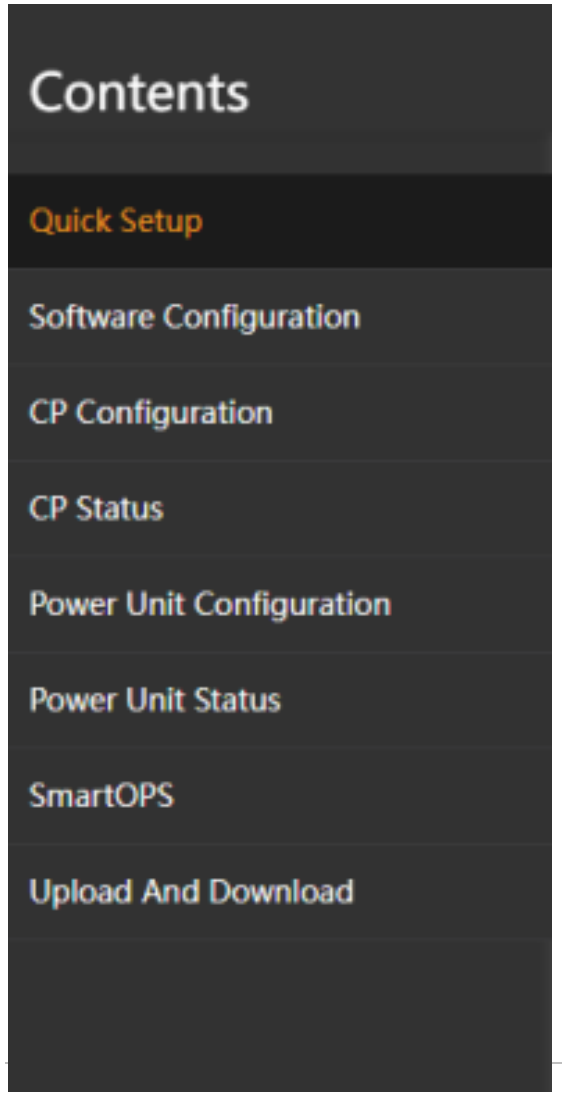
Username wbdh

Password 26835941

The username and password may change in new firmware version. If you have issue during log in, please contact StarCharge service tam



4. Parameter configuration



Collection of the most used settings

Settings for 4G, Ethernet, WIFI, OCPP and authentication methods

Charger connector settings for connector type, output power limit, etc.

Check the internet and backend connection status

Settings for power unit assignment

Check the status of power unit status

This function is still under development…

Firmware update and log download

4. Parameter configuration

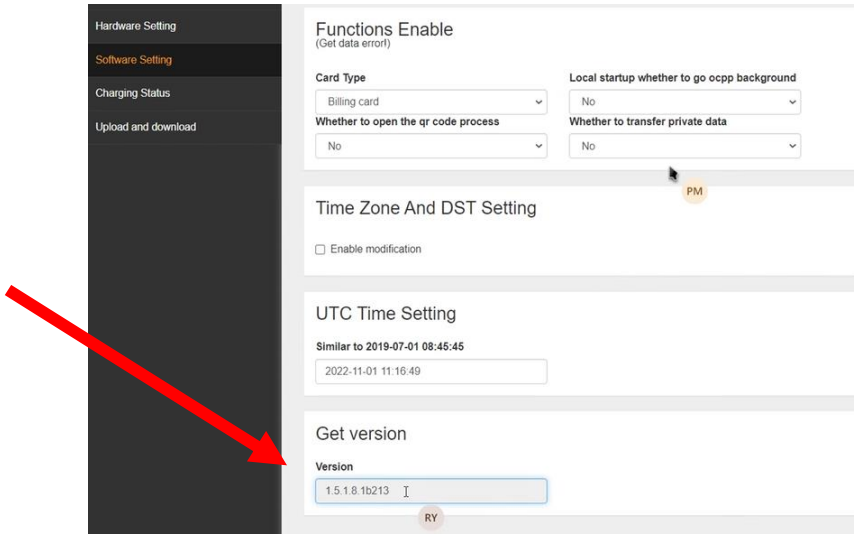
Firmware update:

In the first commissioning of a new charger, the firmware of the charger is usually relative old and needs to be updated to newest version to optimize the charger performance.

To check the firmware version, go to "Software setting " and find "version" data.

Star Charge engineer will provide you the newest firmware version and guide you do the update.

About how to update the firmware, it will be explained in a separate training session video.

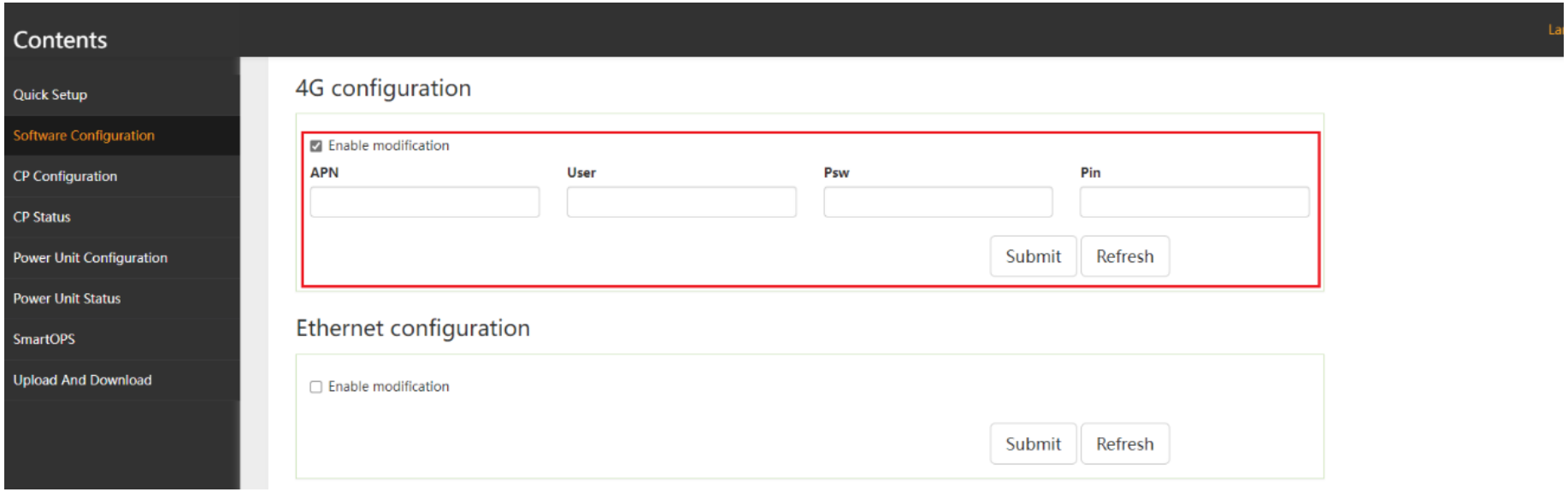


Commissioning - Workflow

4. Parameter configuration

Internet communication (4G, Ethernet, Wifi)

1. Click "Enable modification"
2. Enter data for APN, User, Psw and Pin
3. Click "Submit"

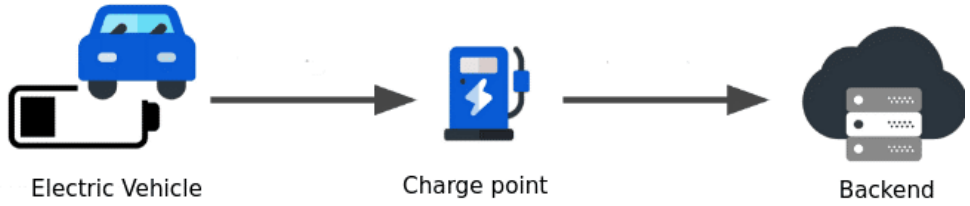


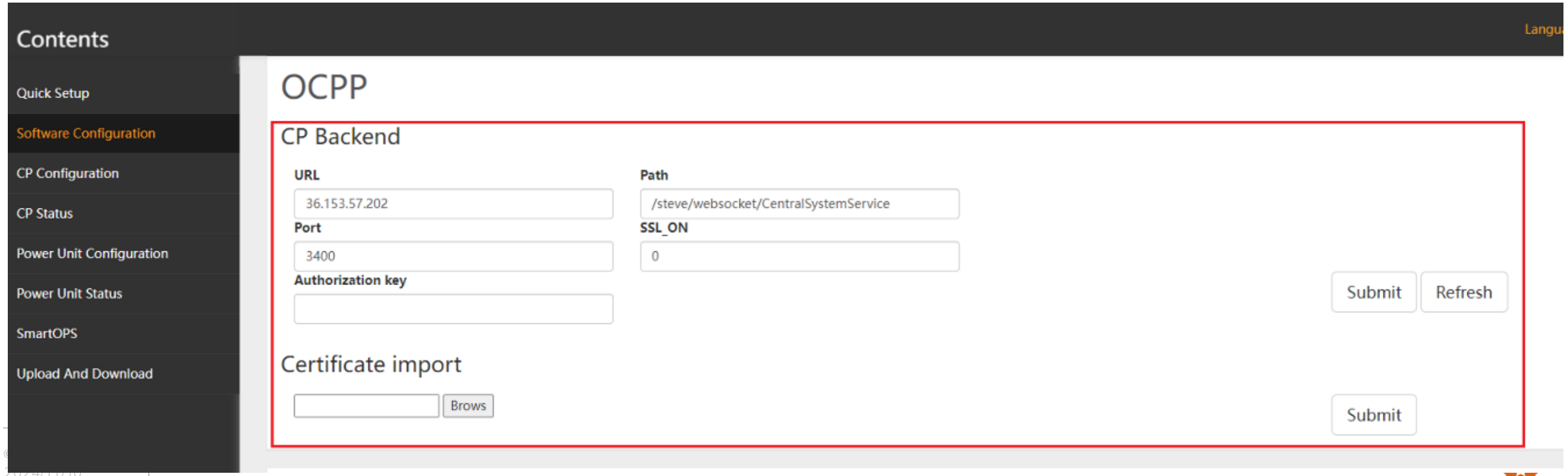
Commissioning - Workflow

4. Parameter configuration

For OCPP backend

Set CP backend: Enter data for URL, Path, Port and SSL_ON according to OCPP backend address



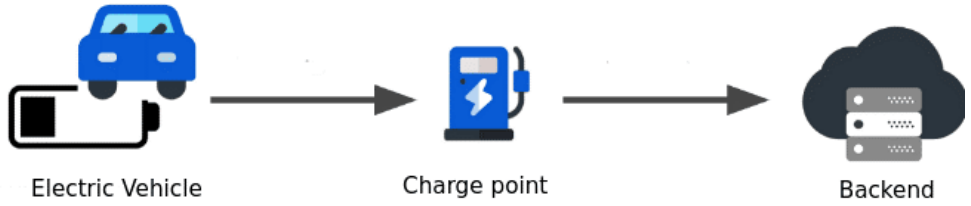


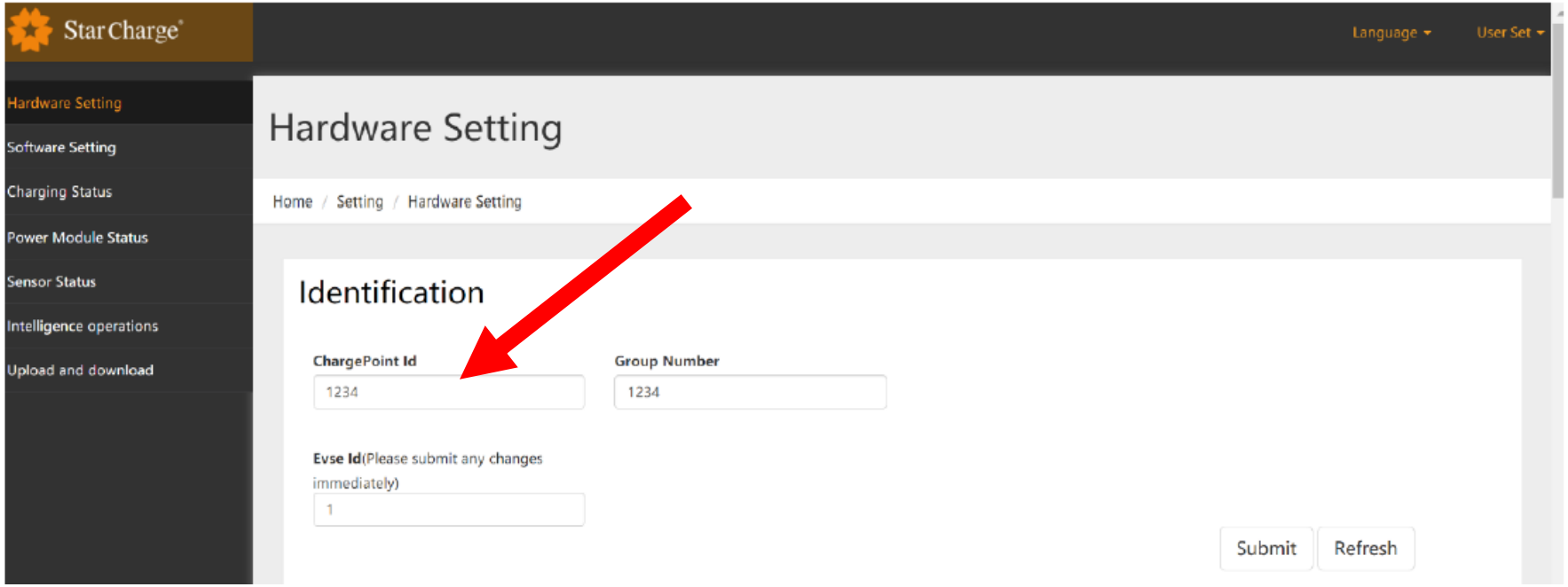
Commissioning - Workflow

4. Parameter configuration

For OCPP backend

Set CP Identity: Enter the charger ID number which is registered in the OCPP backend.

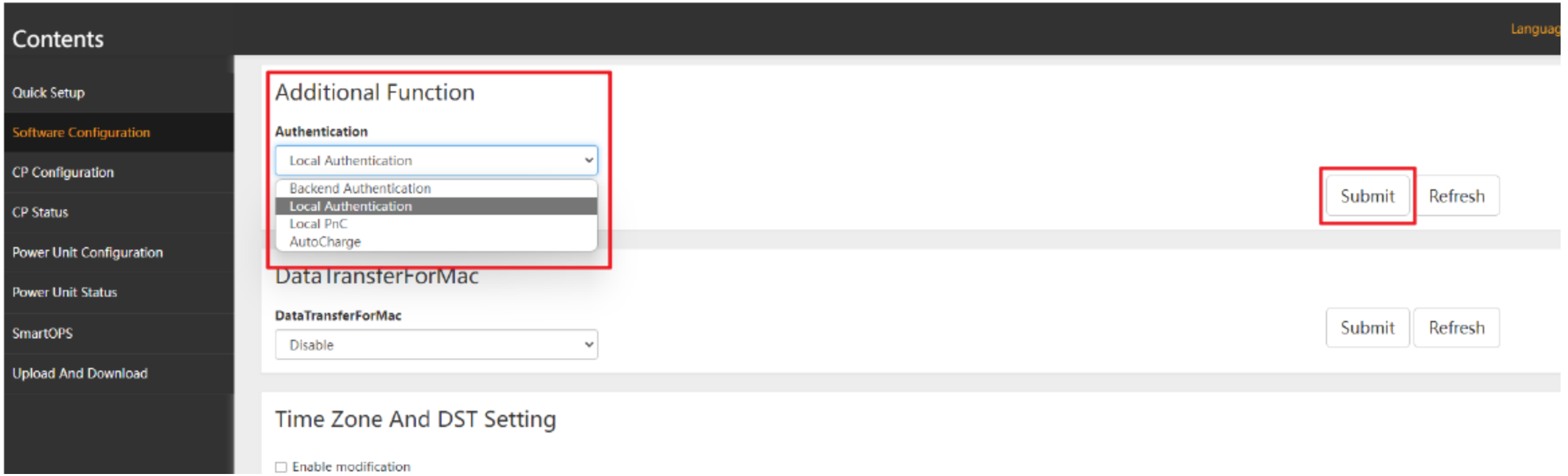




4. Parameter configuration

Charger authentication method

Following authentication method can be selected:



4. Parameter configuration

Charger authentication method

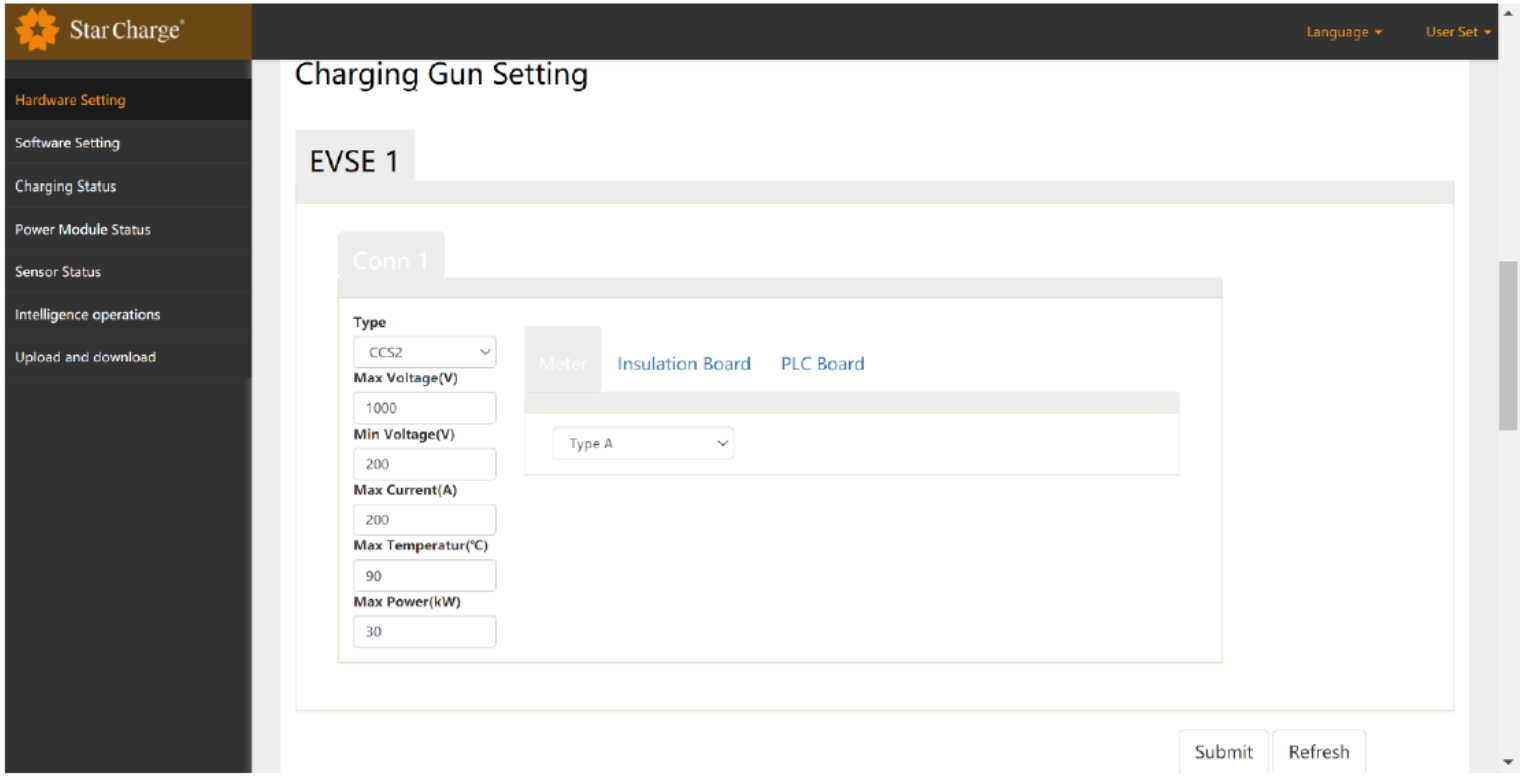
Authentication method	Principle
Card Authentication	Use authenticated IC card to start charging session card. The IC card must be whitelisted in backend platform and EVSE must always connect to the backend
Card Not Authentication	Use the IC cards from charger accessories to start charging session. No authentication.
Local PnC	Once plug in the charger connector, the charging session automatically begins without any authentication.
AutoCharge	Similar to PnC mode, but with MAC code authentication. The MAC Code of the EV must be registered in backend.

4. Parameter configuration

Connector and Output power configuration

According to the use scenarios and grid capacity, output power of DC connector can be individually configured .

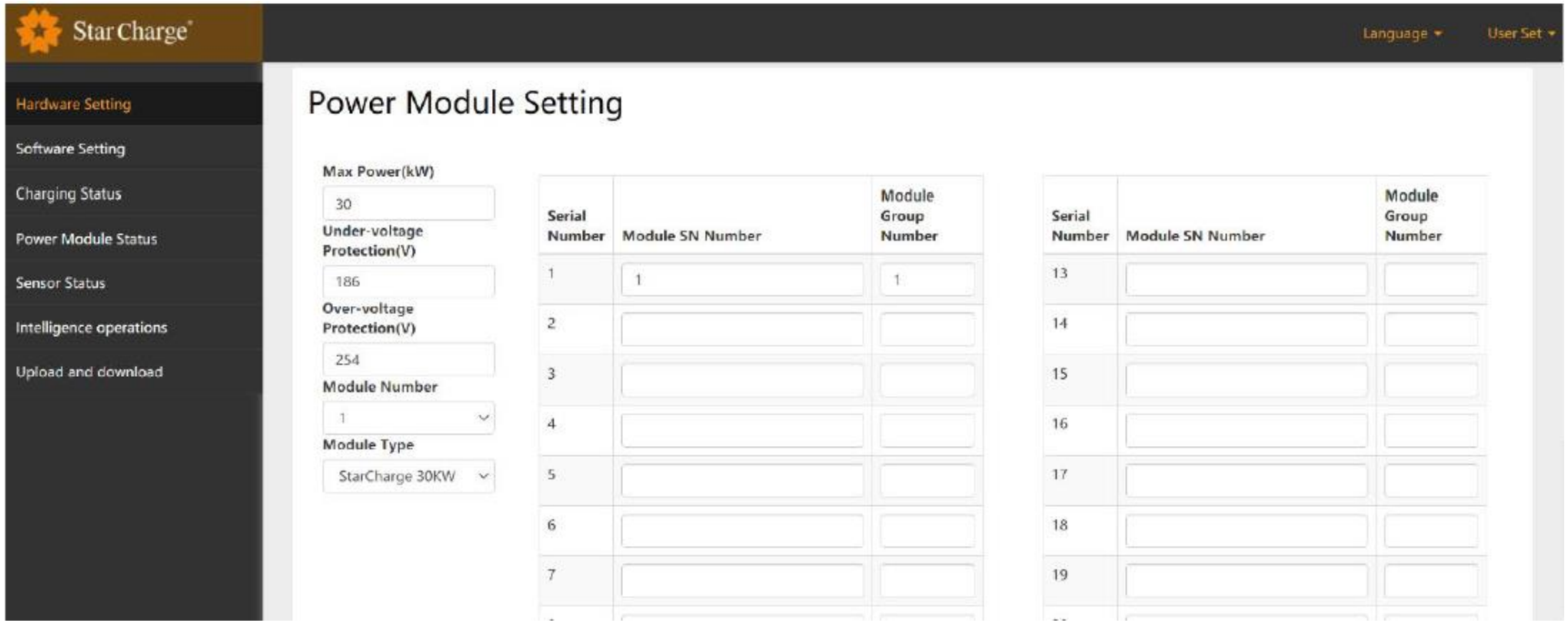
- Maximum Voltage
- Minimum voltage
- Maximum current
- Maximum power



4. Parameter configuration

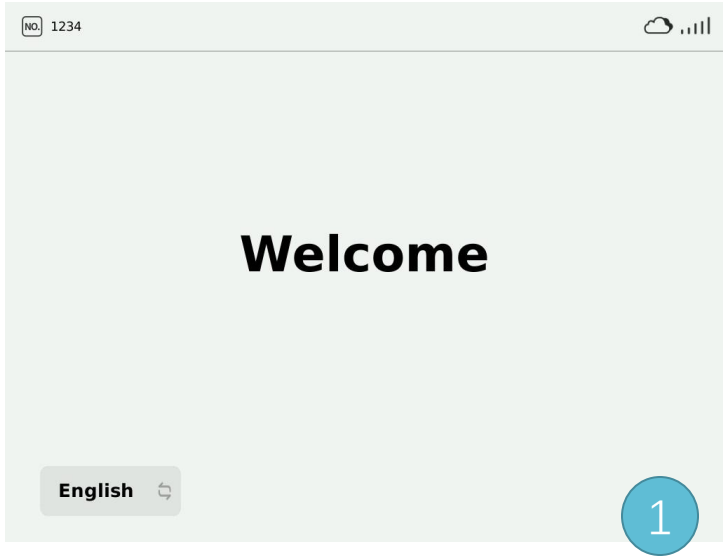
Power module configuration

Configure the Power Unit as follow:

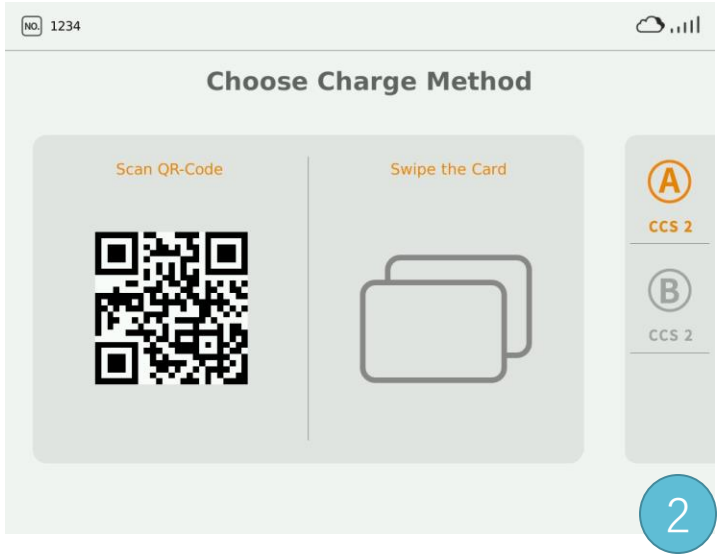


Commissioning - Workflow

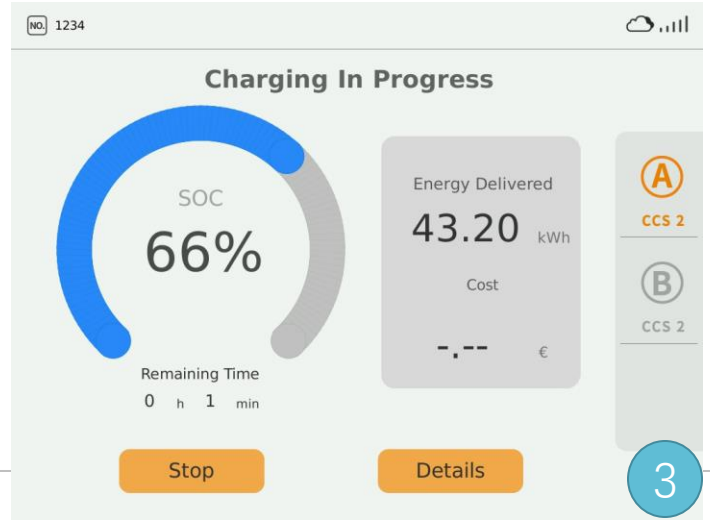
5. Charging test



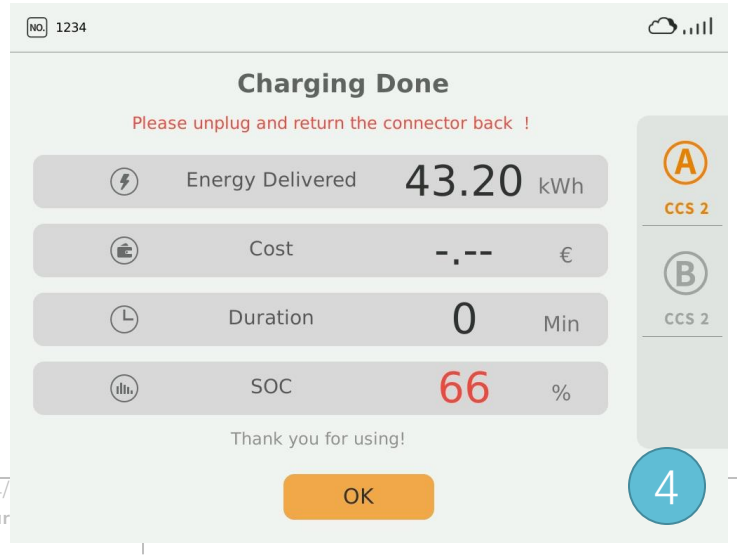
Plug charger gun into EV



Swipe RFID card or use App to start



Swipe RFID card or use App to stop



5. Charging test

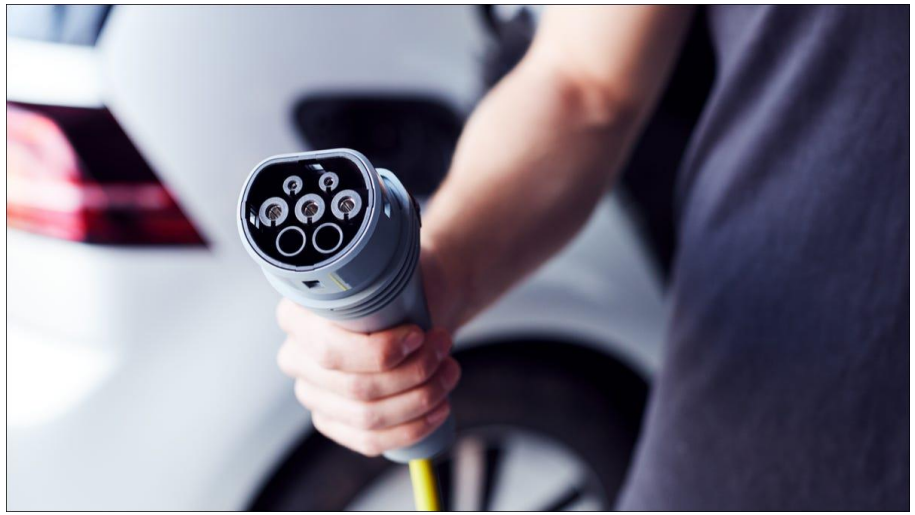
During the charging session, check / test following items

1. Door sensor: Open the door of EVSE when charging, the EVSE should stop charging.
2. Emergency stop: Press the emergency stop button on the EVSE when charging, the EVSE should stop charging.
3. Ventilator: Check the wind speed and direction of fan of inside.
4. Meter: Check whether the meter measures accurately during charging.
5. Connector cable: There is no sharp edges, no overheating, no loosen insulation cap of the charger cable. The charging cable is neither too tight nor too loose when inserting and pulling out the charging cable.

Commissioning - Workflow

6. Customer Training and finishing commissioning report

- After the commissioning work for the EVSE, engineer should give a basic training related to the main characteristics of the EVSE to guide the customer how to use EVSE. The training content should cover safety knowledge, basic charging procedure etc.
- Last and not least, the commissioning report needs to be finished after whole work. (Template refers to appendix 2 of commissioning manual)



Thank You.

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Star Charge

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