

August 13, 2023

Basic Training for Venus V1

Star Charge Europe GmbH

Ruo Yi, Technical Support Engineer

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Brief Introduction

Appearance & Specification



- [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



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



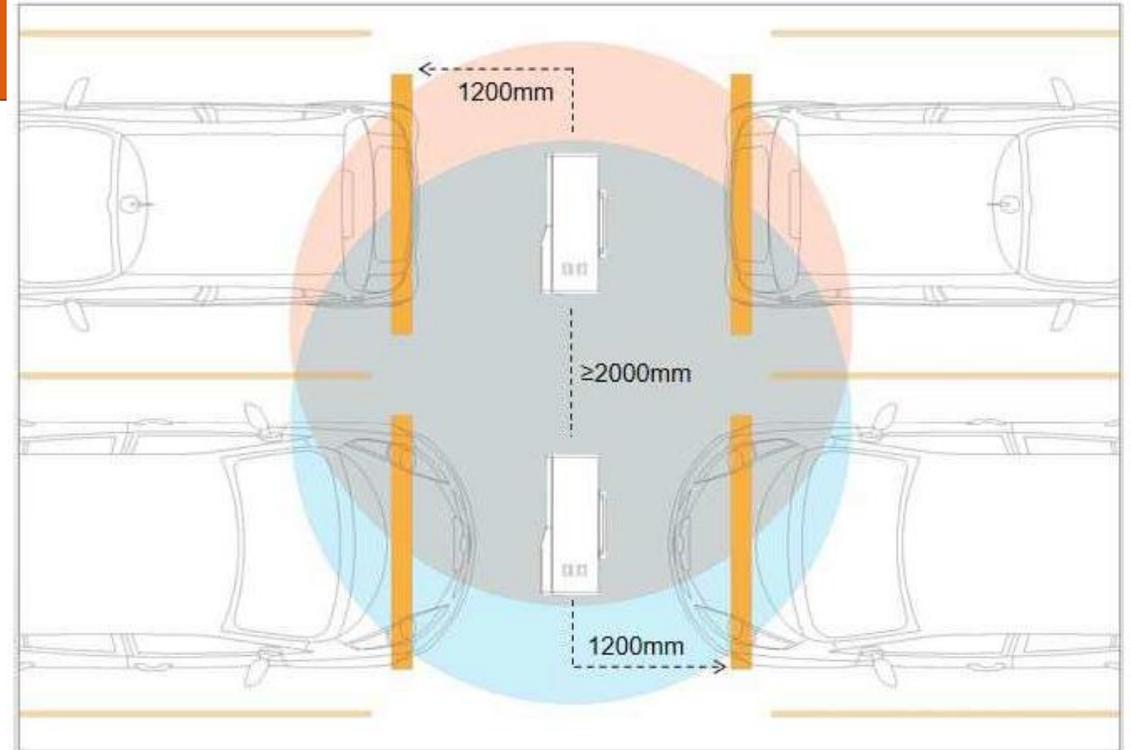
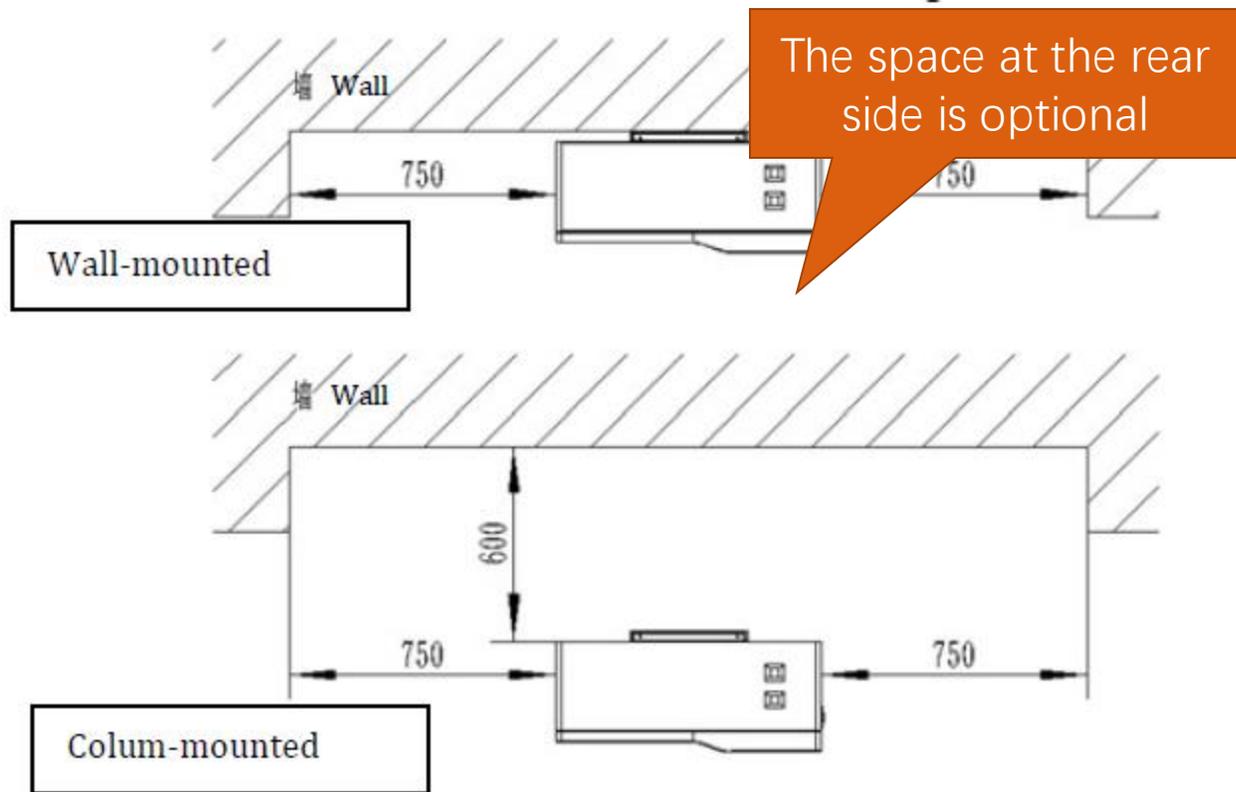
1. Requirements for grid capacity

- If the charger operates at full power, the grid capacity shall be $\geq 35\text{kW}$
- Three-phase input, phase to phase voltage $400\text{V} (\pm 10\%)$
- Earthing system: TN/TT
- Recommended parameters of superior circuit breaker $U_e = 400\text{V}$, $I_n \geq 80\text{A}$, thermal magnetic type, $I_{cu} \geq I_{cs} \geq 25\text{ kA}$, 3Poles
- Grounding resistance $\leq 4\Omega$ or follow local regulation
- Insulation resistance $\geq 1\text{M}\Omega$ or follow local regulation



Installation - Requirements

2. Maintenance distance

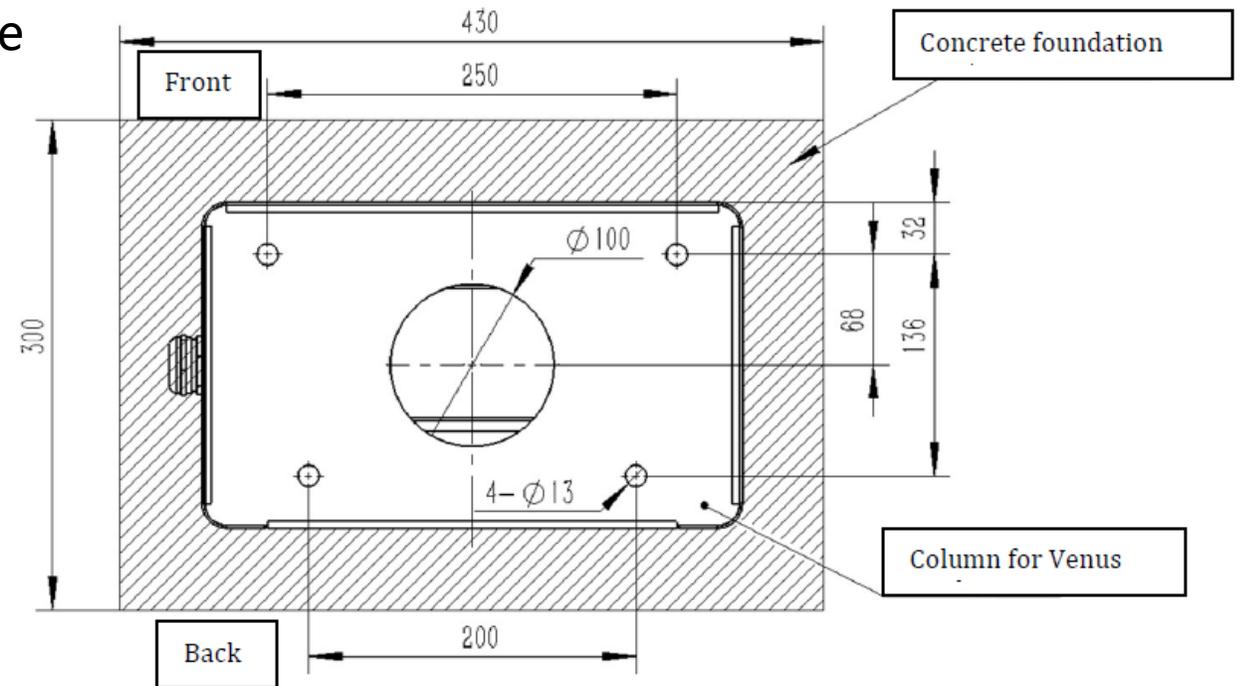


Installation - Requirements

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.

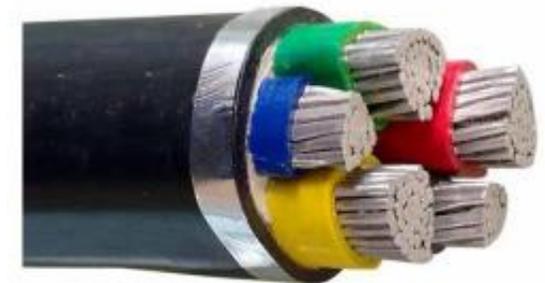
- Size 430mm * 300mm * 600mm
- Depth of the foundation 400mm
- Height above the ground 200mm.
- The foundation is filled with C20 concrete



Installation - Requirements

4. Power cable specification

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

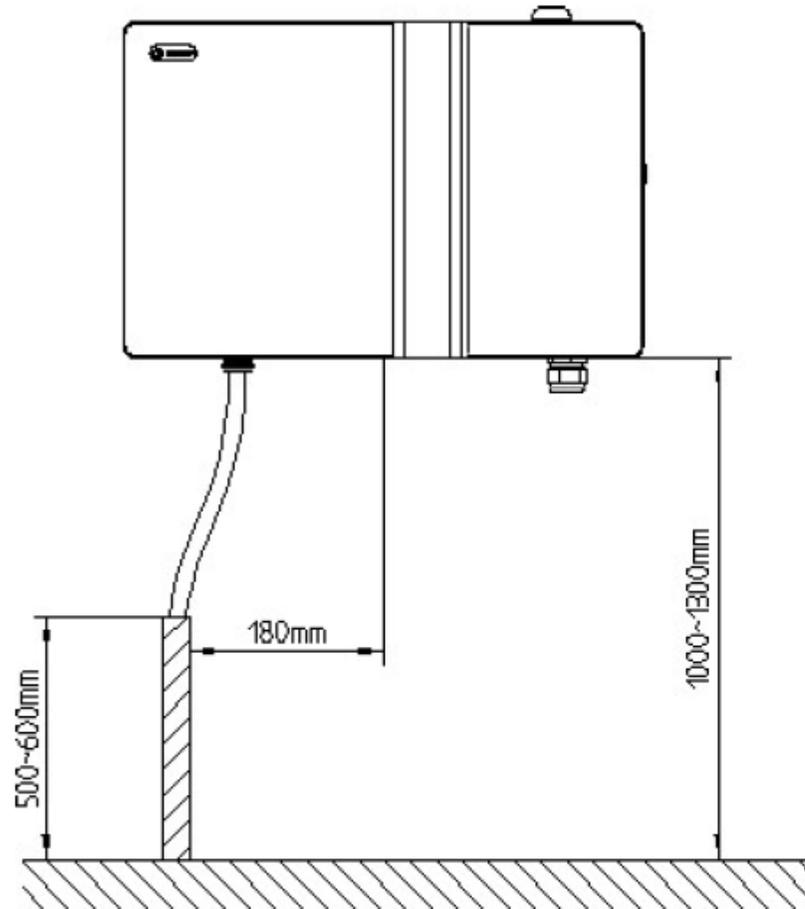
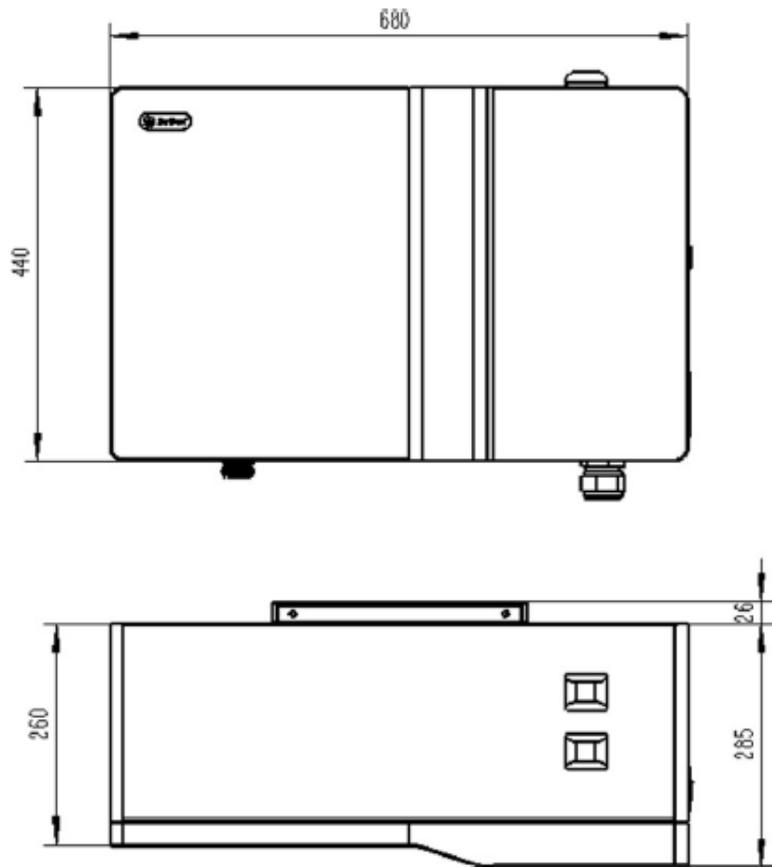


1. Unpacking check

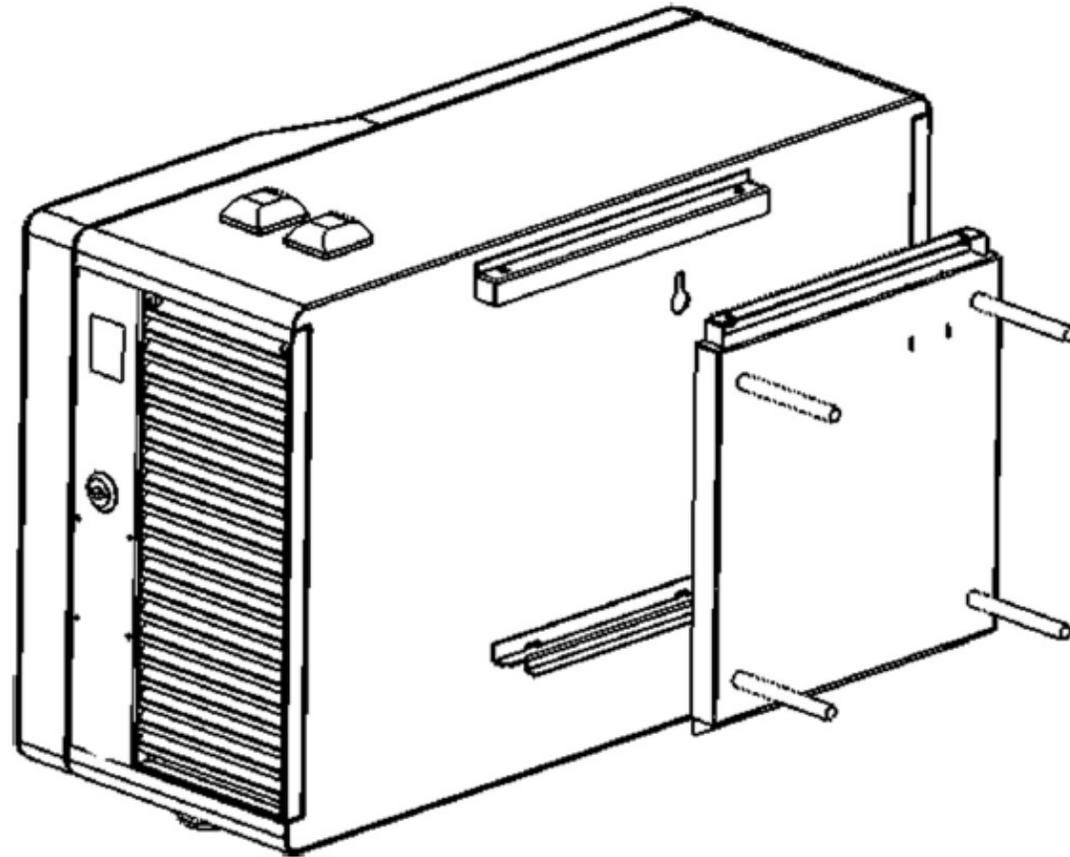
Name	Package	Configuration	Package size (mm)	Weight (with package)	Attachment paper	Accessories list
Charger	Wooden box	Standard	770*680*646	55kg	1. Certification approval *1 2. User manual*1 3. Delivery inspection report*1	1.Charging socket*1 2.Charger*1 3.M6-screw*7 4.IC card*2 5.Key*2
Module	Carton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



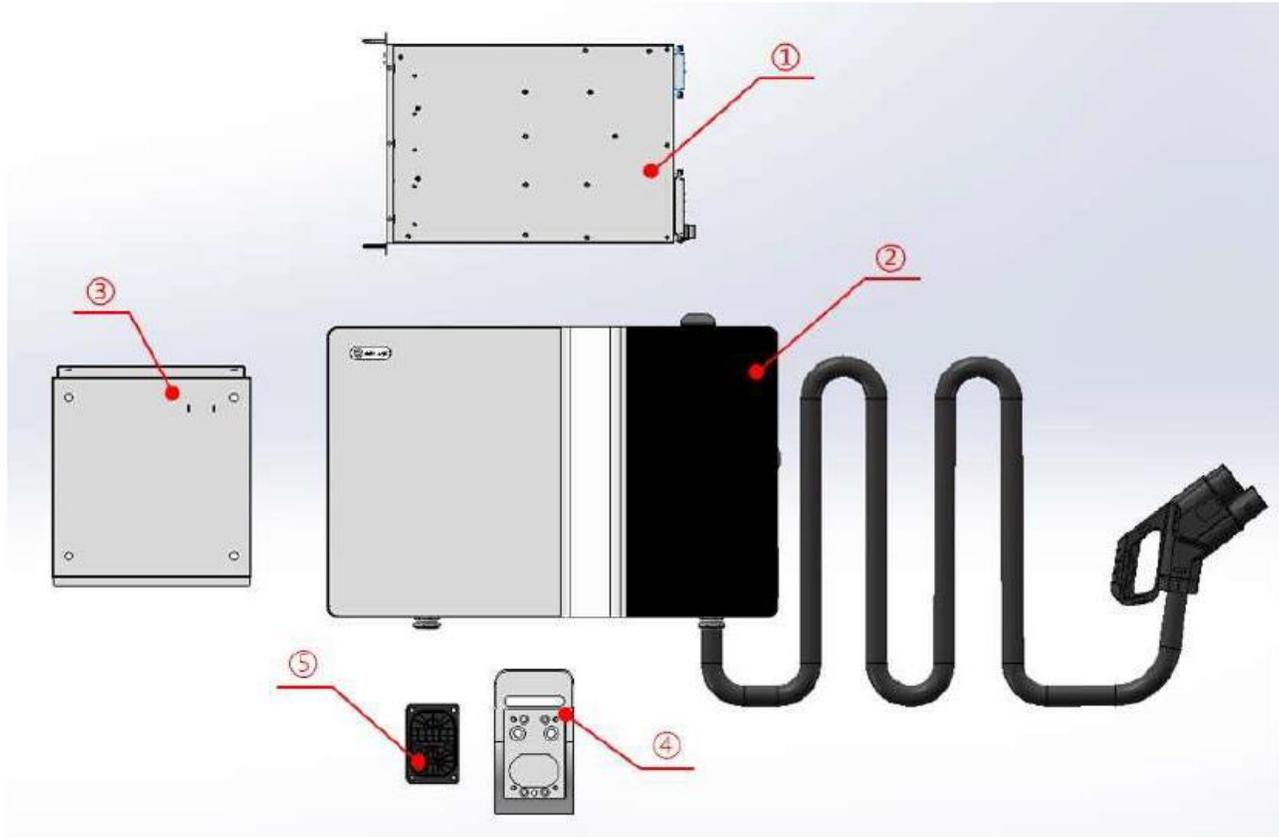
Wall mounted installation



Wall mounted installation



Wall mounted installation

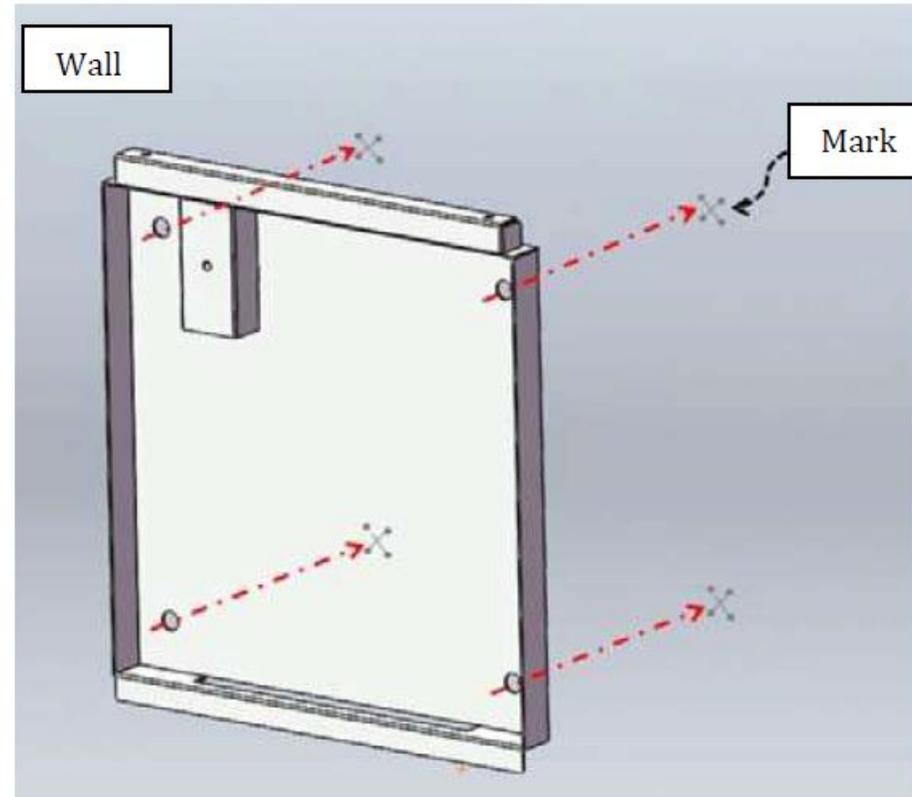


- ① : 30kW charging module
- ② : Charging box
- ③ : Wall mounted mounting panel
- ④ : Gun holder assembly 1
- ⑤ : Gun holder assembly 2



Wall mounted installation

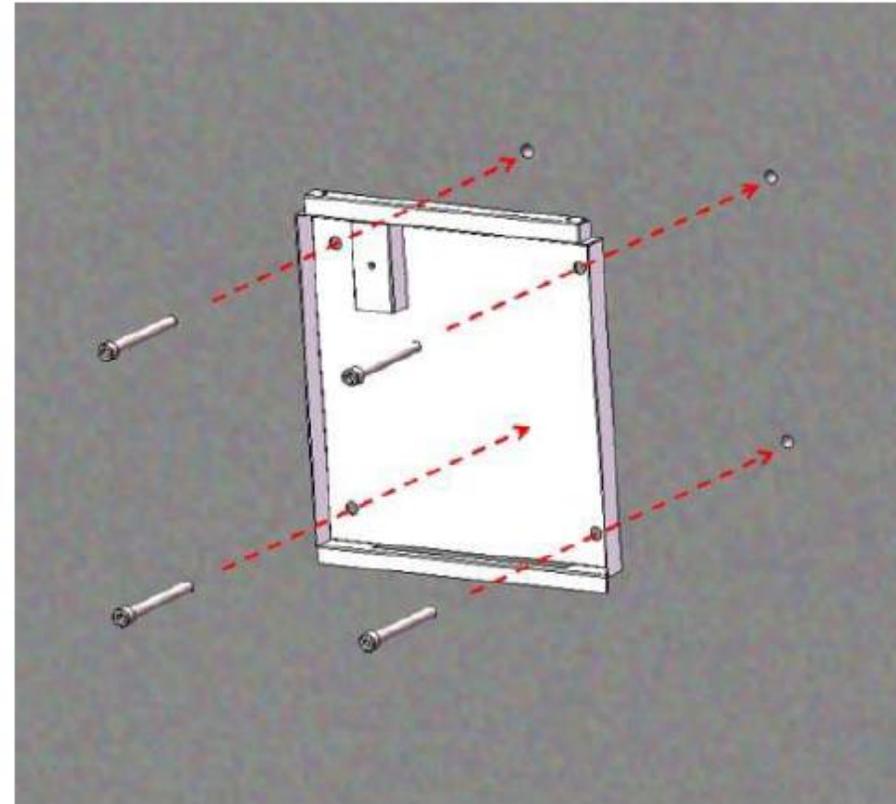
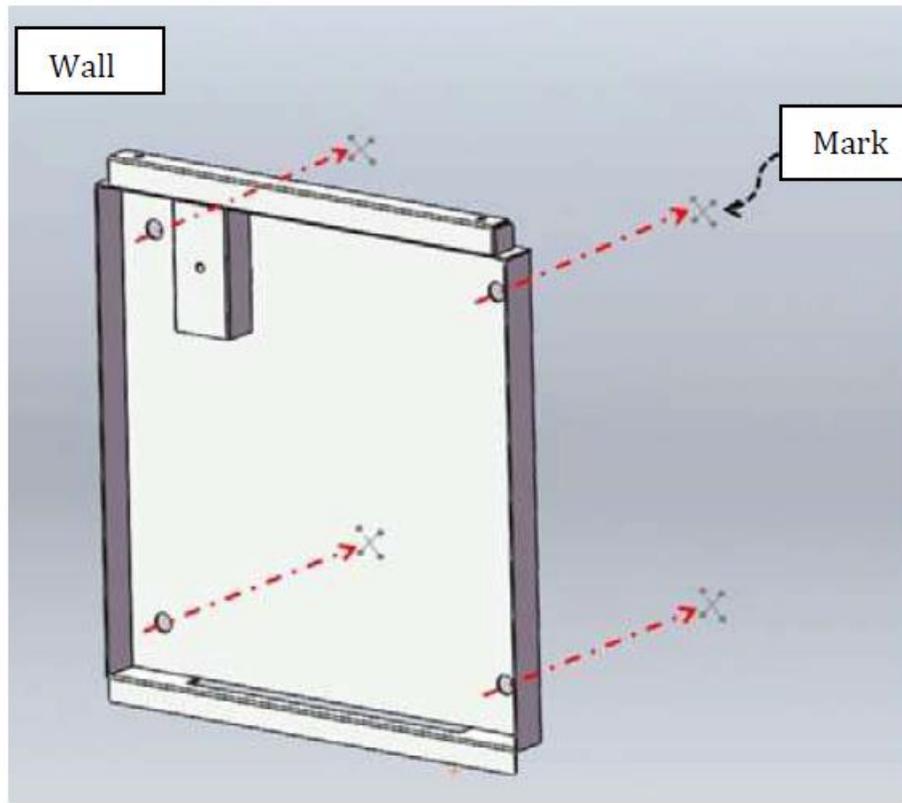
Step 1: Locate the four holes of mounting plate in the wall



Installation - Workflow

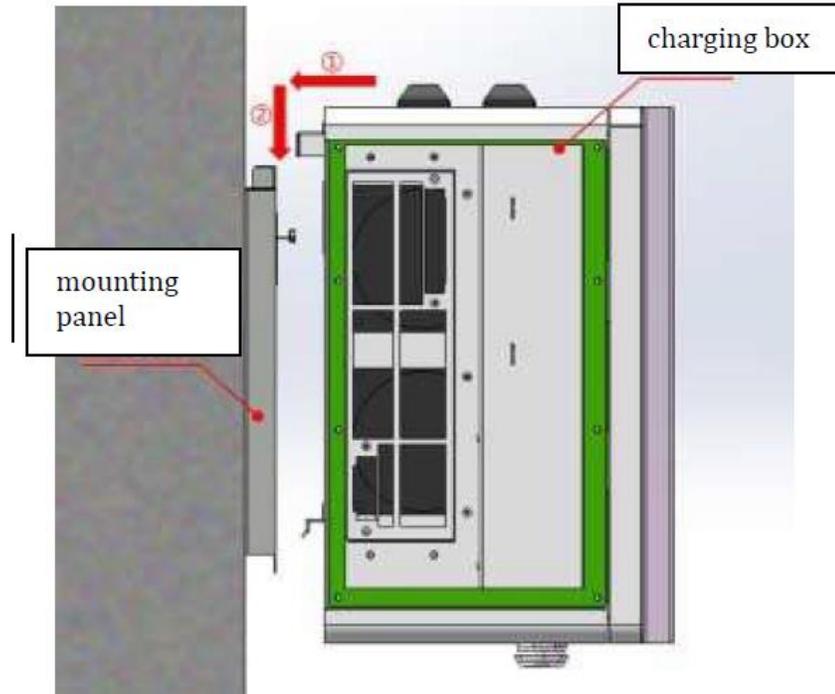
Wall mounted installation

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



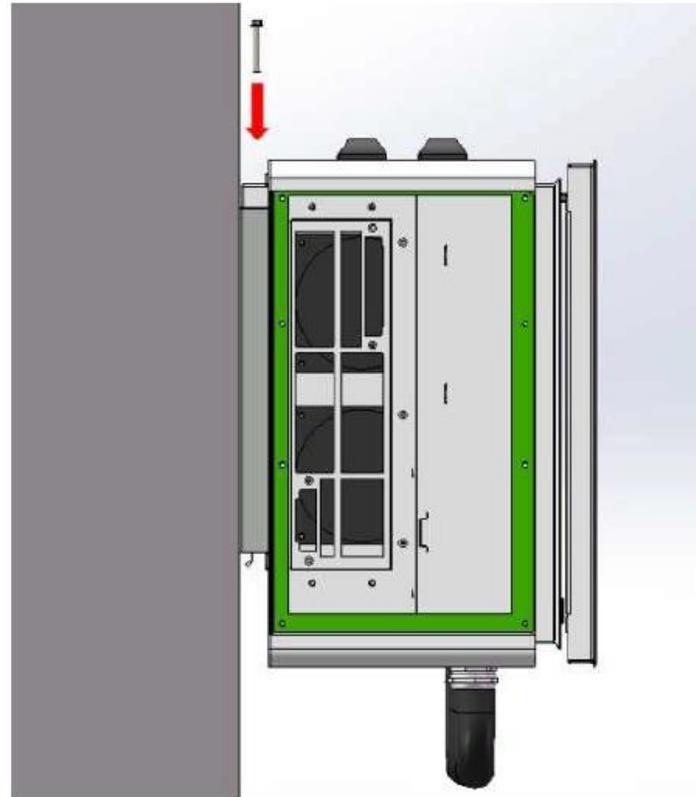
Wall mounted installation

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.



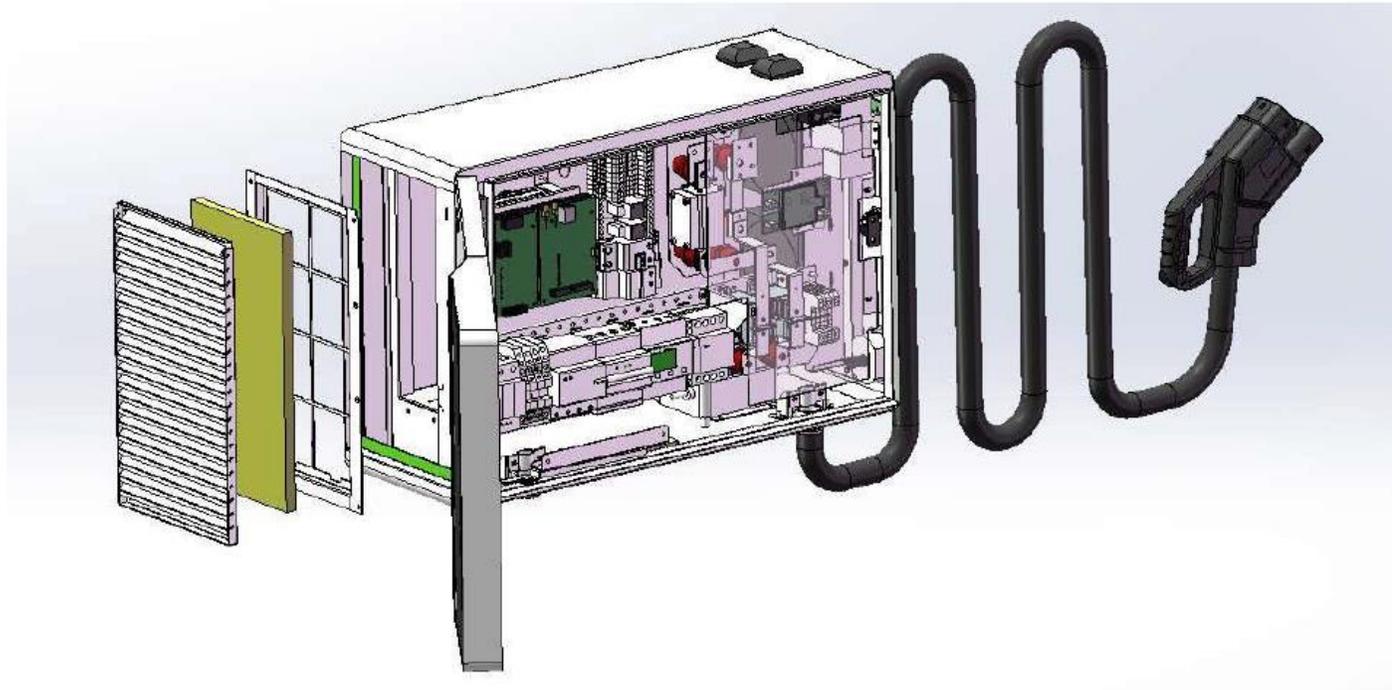
Wall mounted installation

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



Wall mounted installation

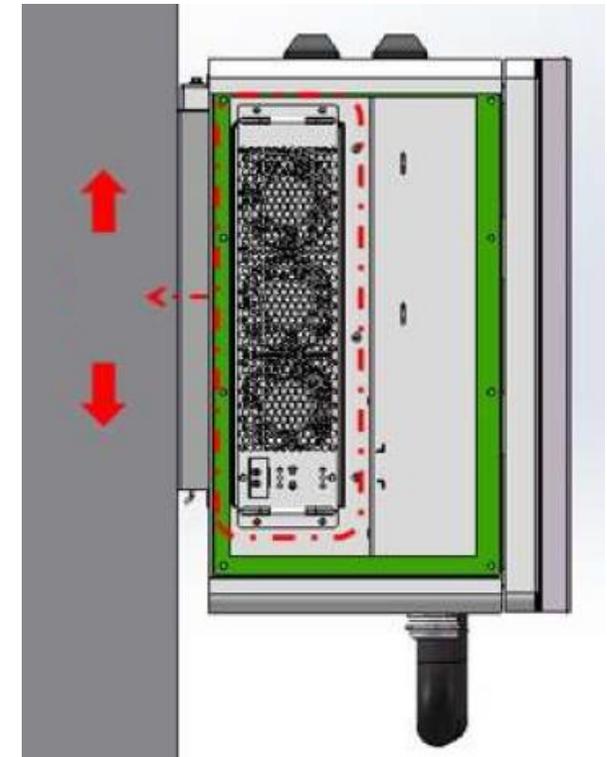
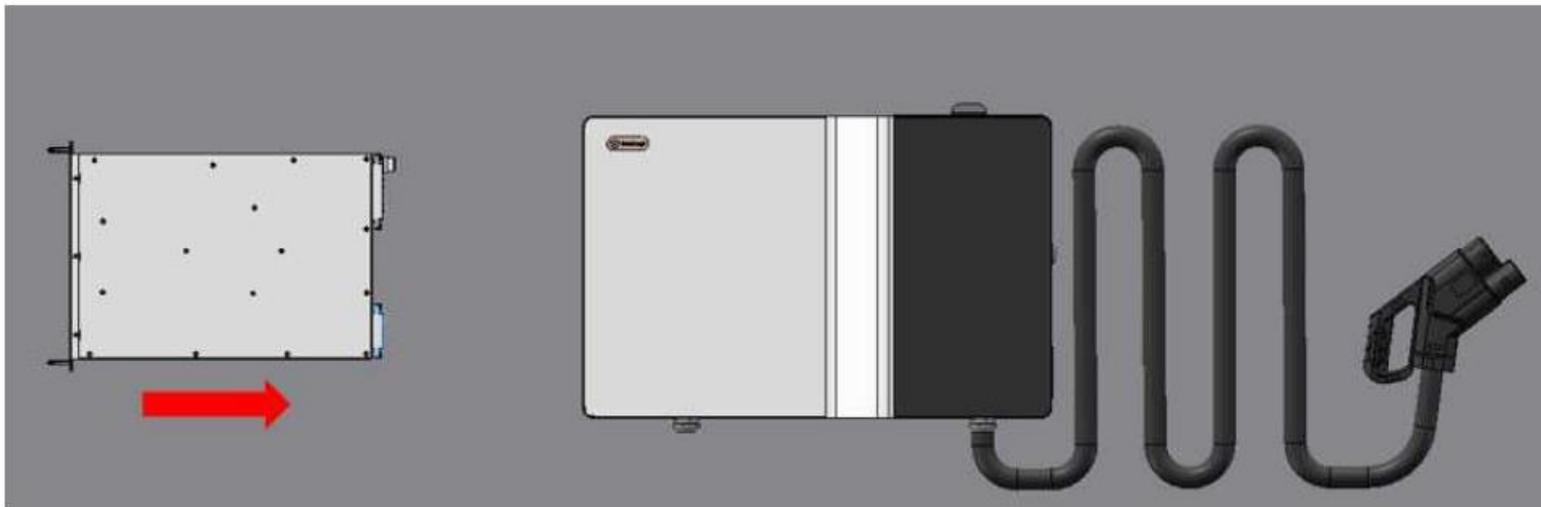
Step 5: remove the left shutter and dust proof cotton. Put the power module into the charging box and then tighten the four screws to fix the module.



Installation - Workflow

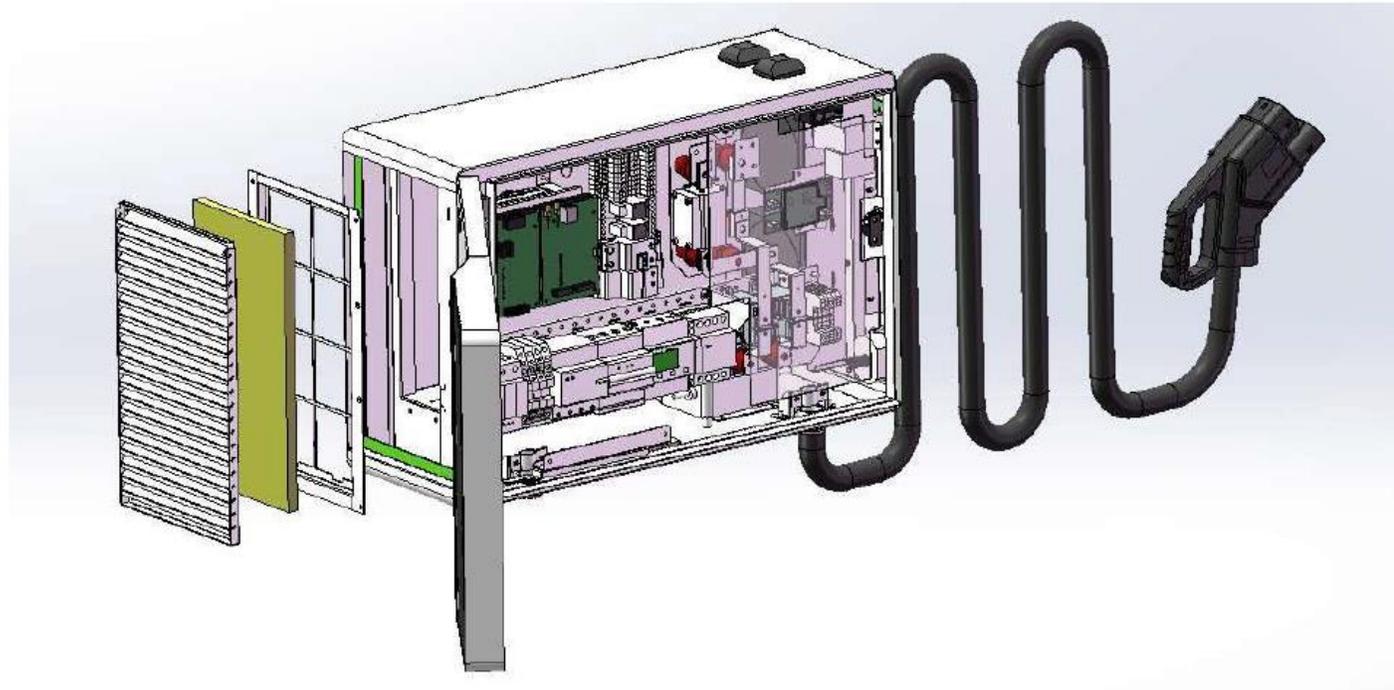
Wall mounted installation

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.



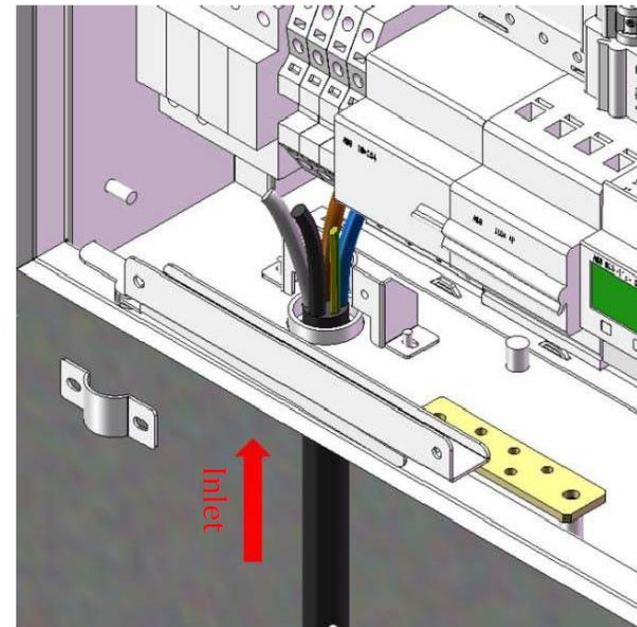
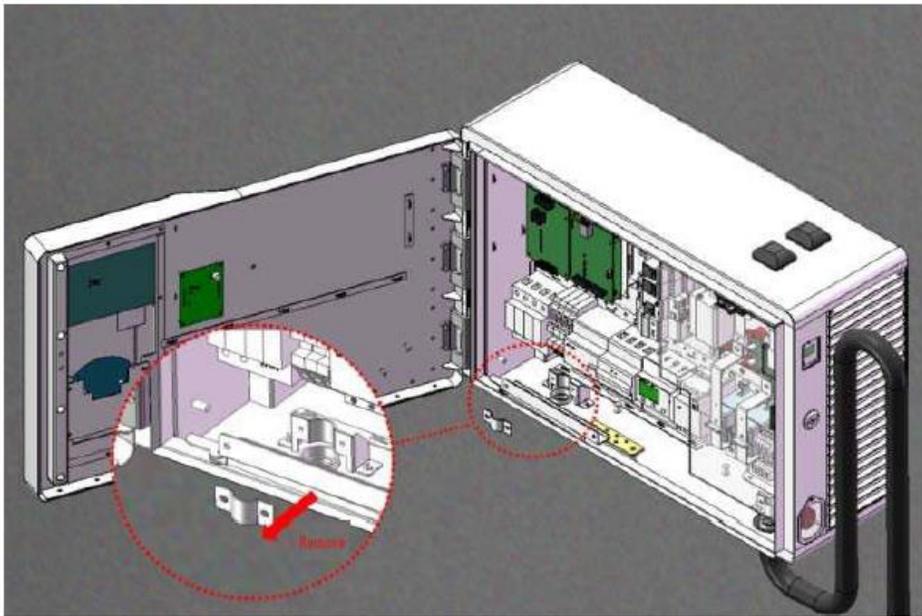
Wall mounted installation

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

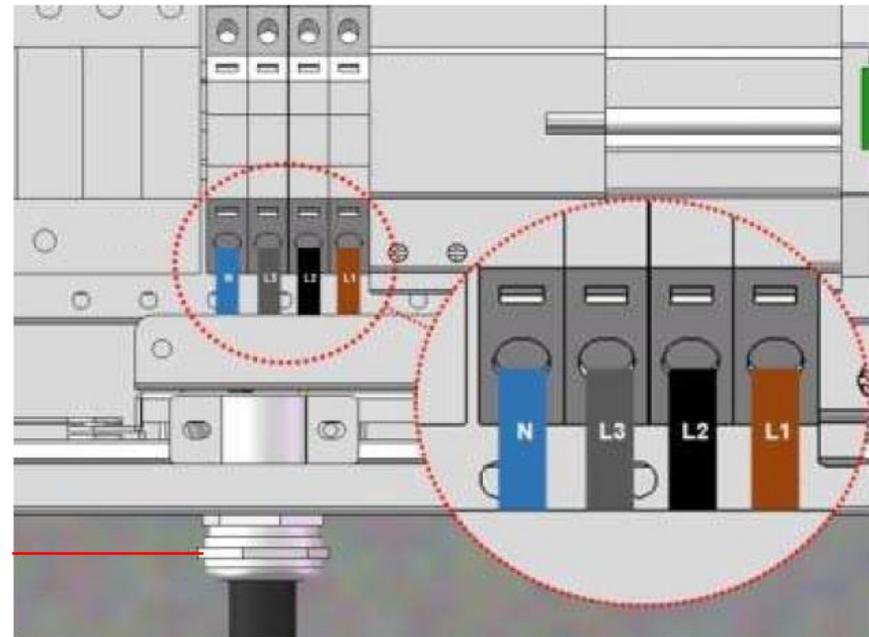
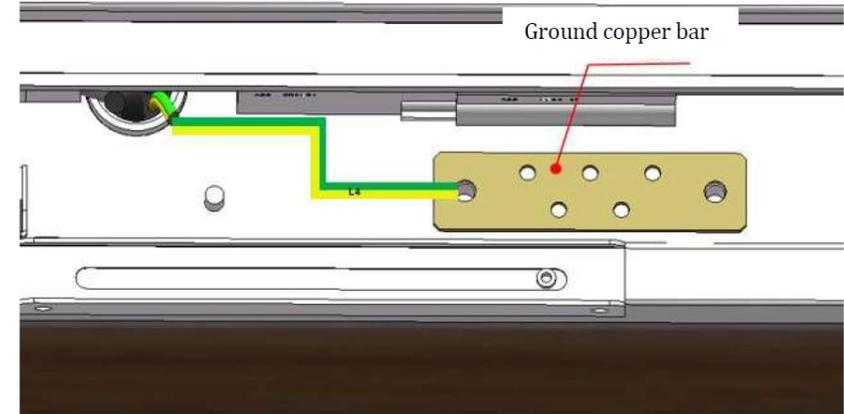
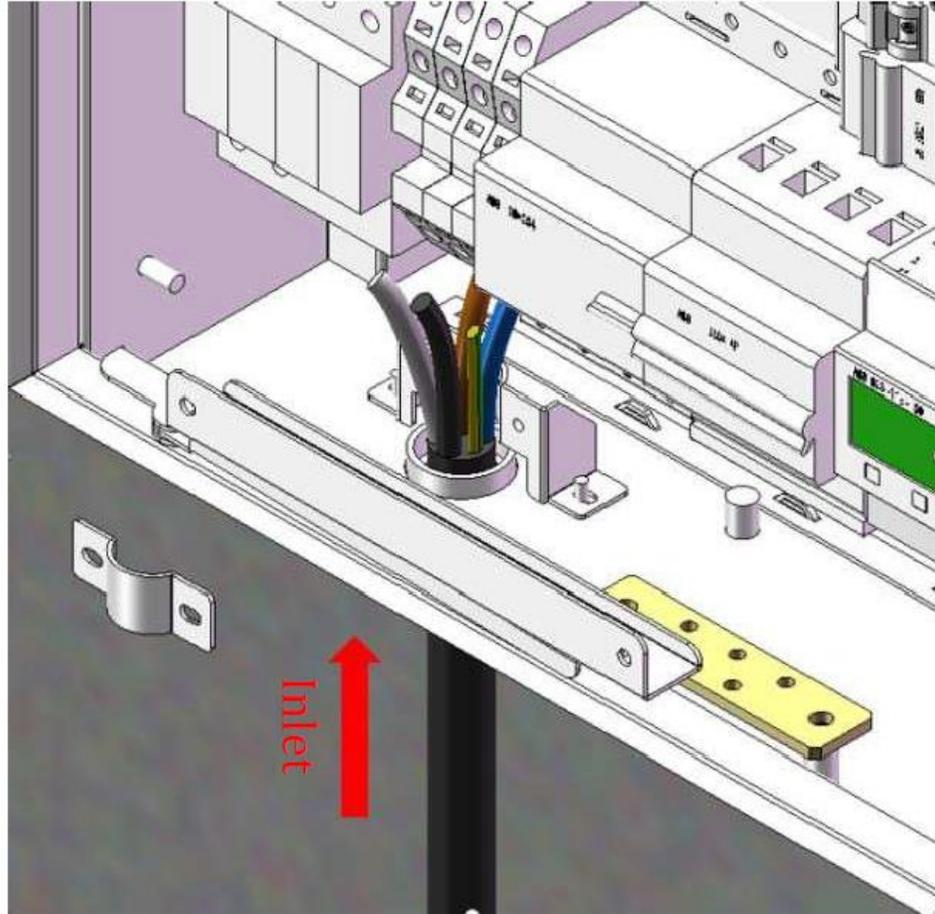


Wall mounted installation

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.

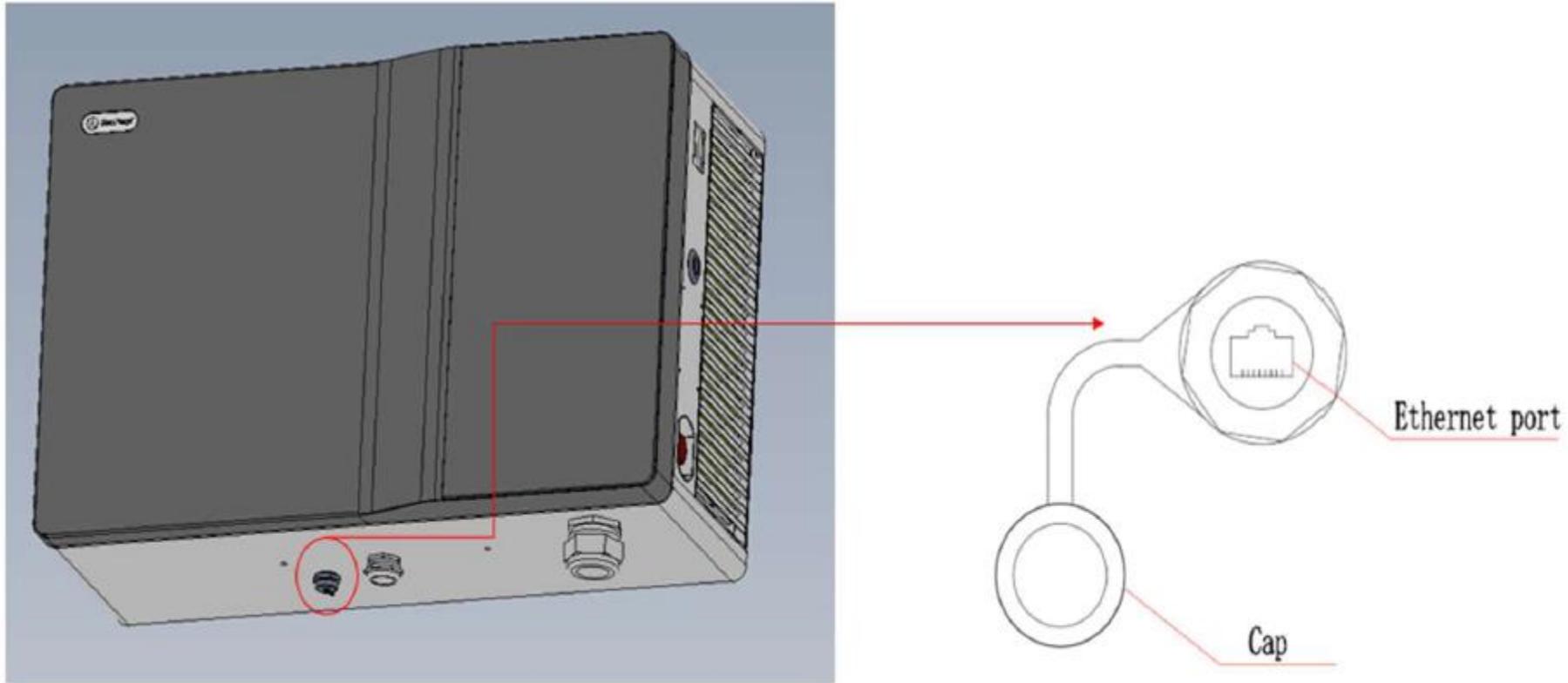


Wall mounted installation



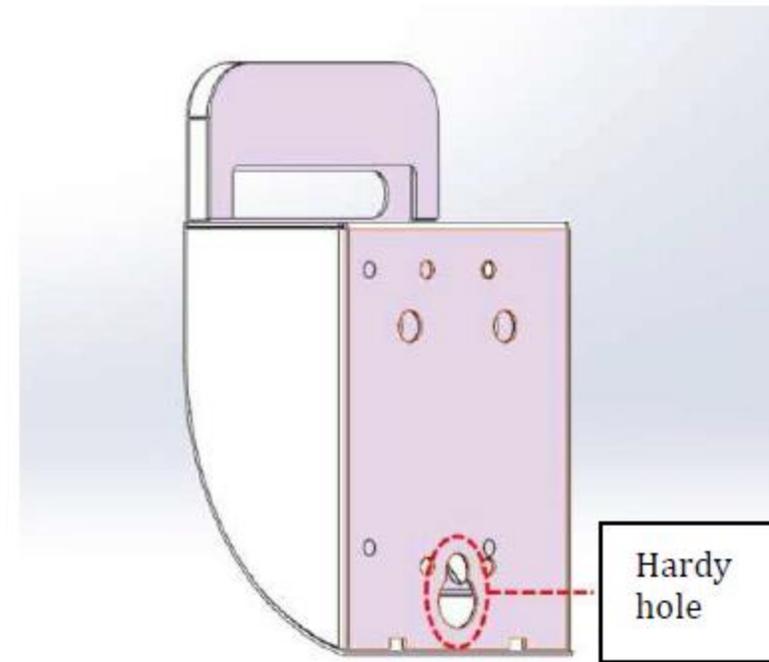
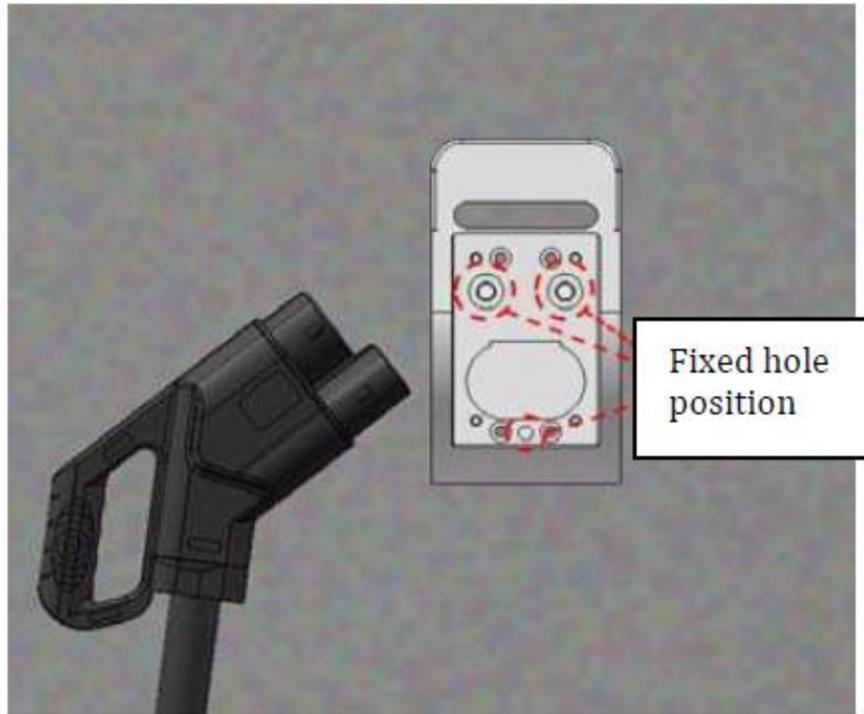
Wall mounted installation

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



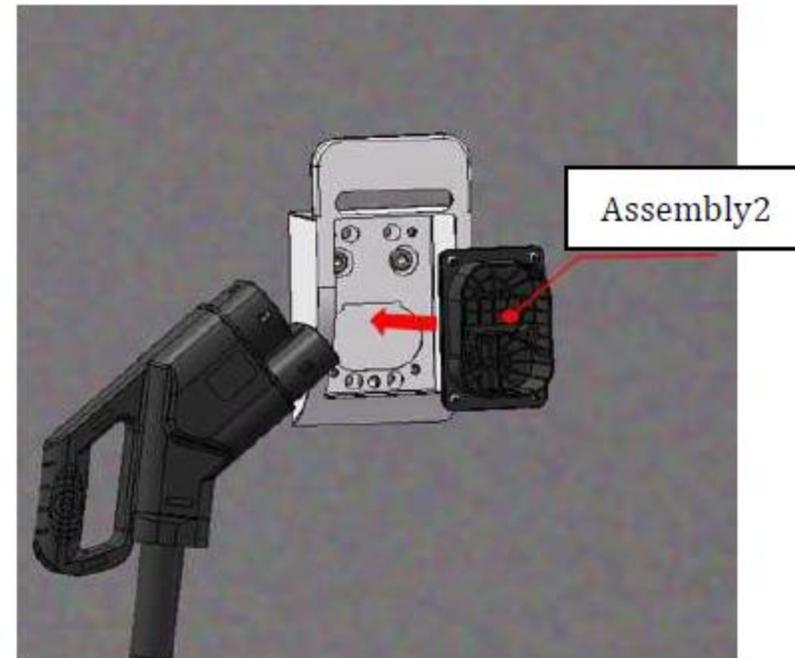
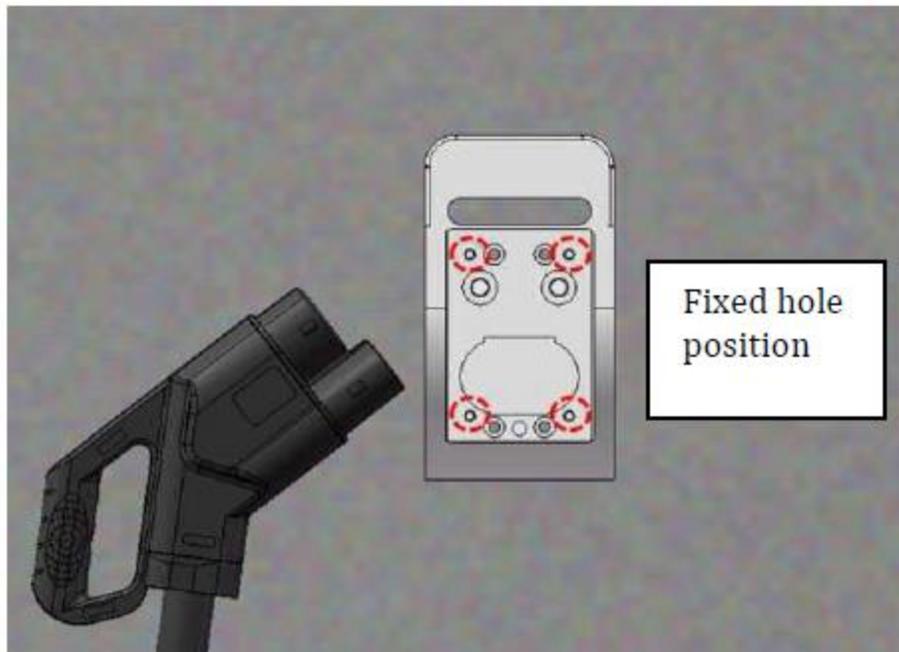
Wall mounted installation

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



Wall mounted installation

Installation finished



Column mounted installation



Installation Instruction for Venus 30





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



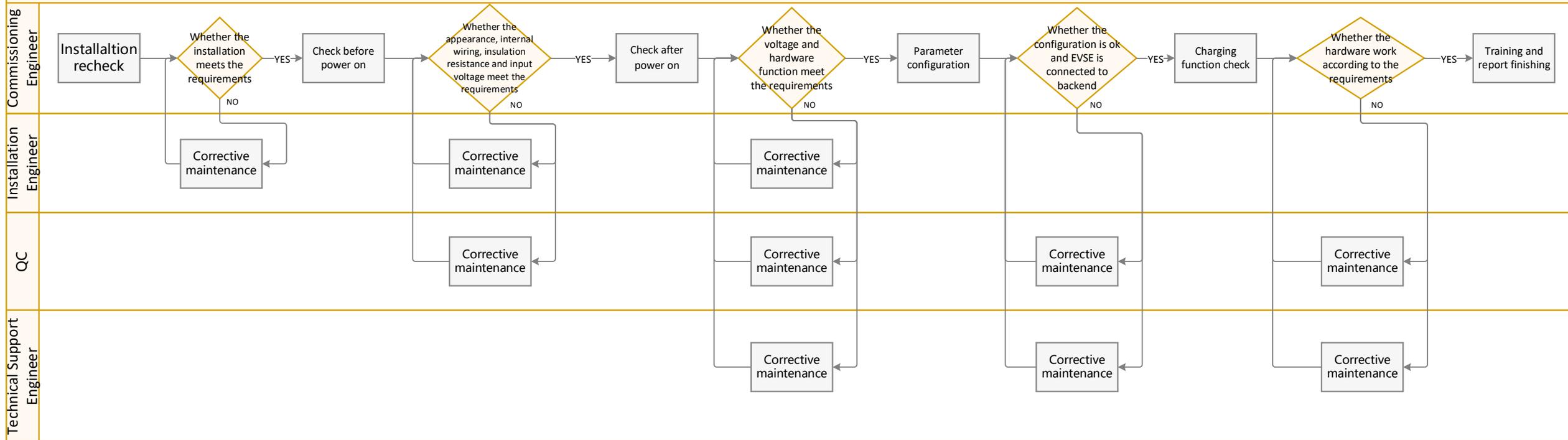
Commissioning - Tools

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 Flow Chart for DC EVSE



1. Installation Recheck

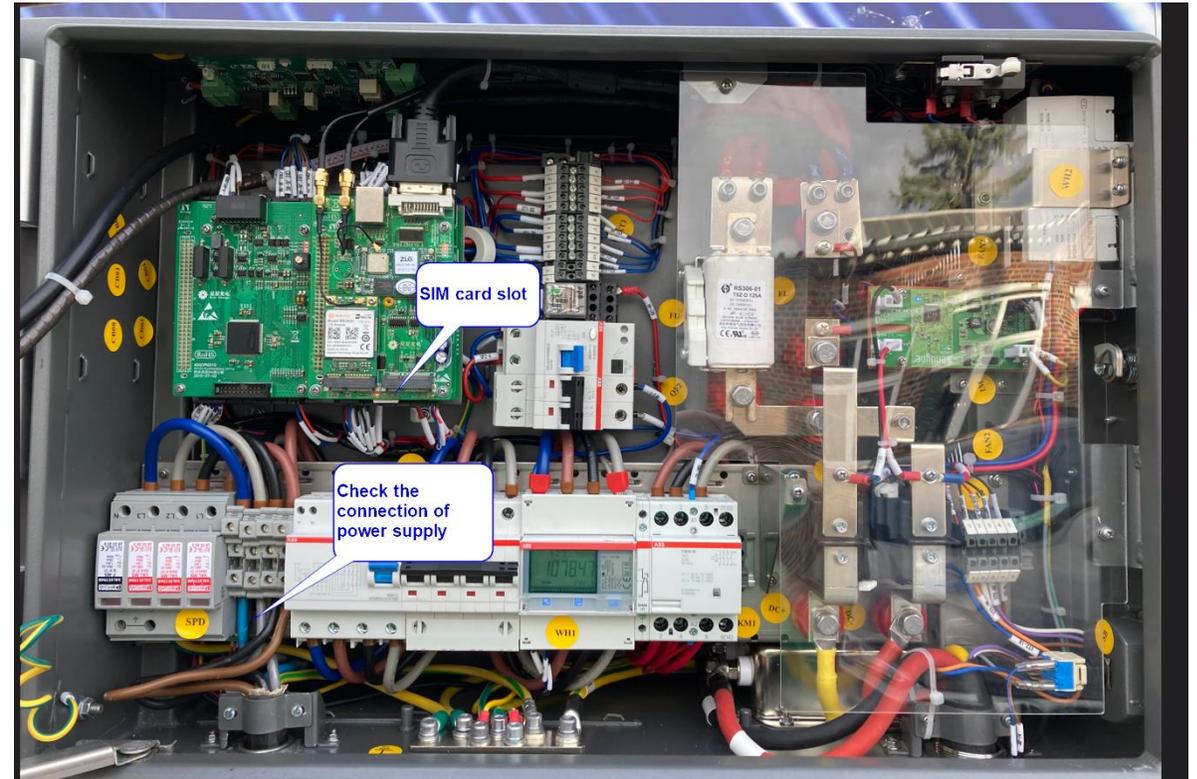
1. Pedestal of charger should be fixed and sealed well.
2. Outside appearance of cabinet should be intact
3. Power supply cables should be intact and tightened well.
4. Grounding/Insulation resistance should in compliance with the local regulation
5. Read information on nameplate and sign: confirm the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



Commissioning - Workflow

2. Check before power on charger

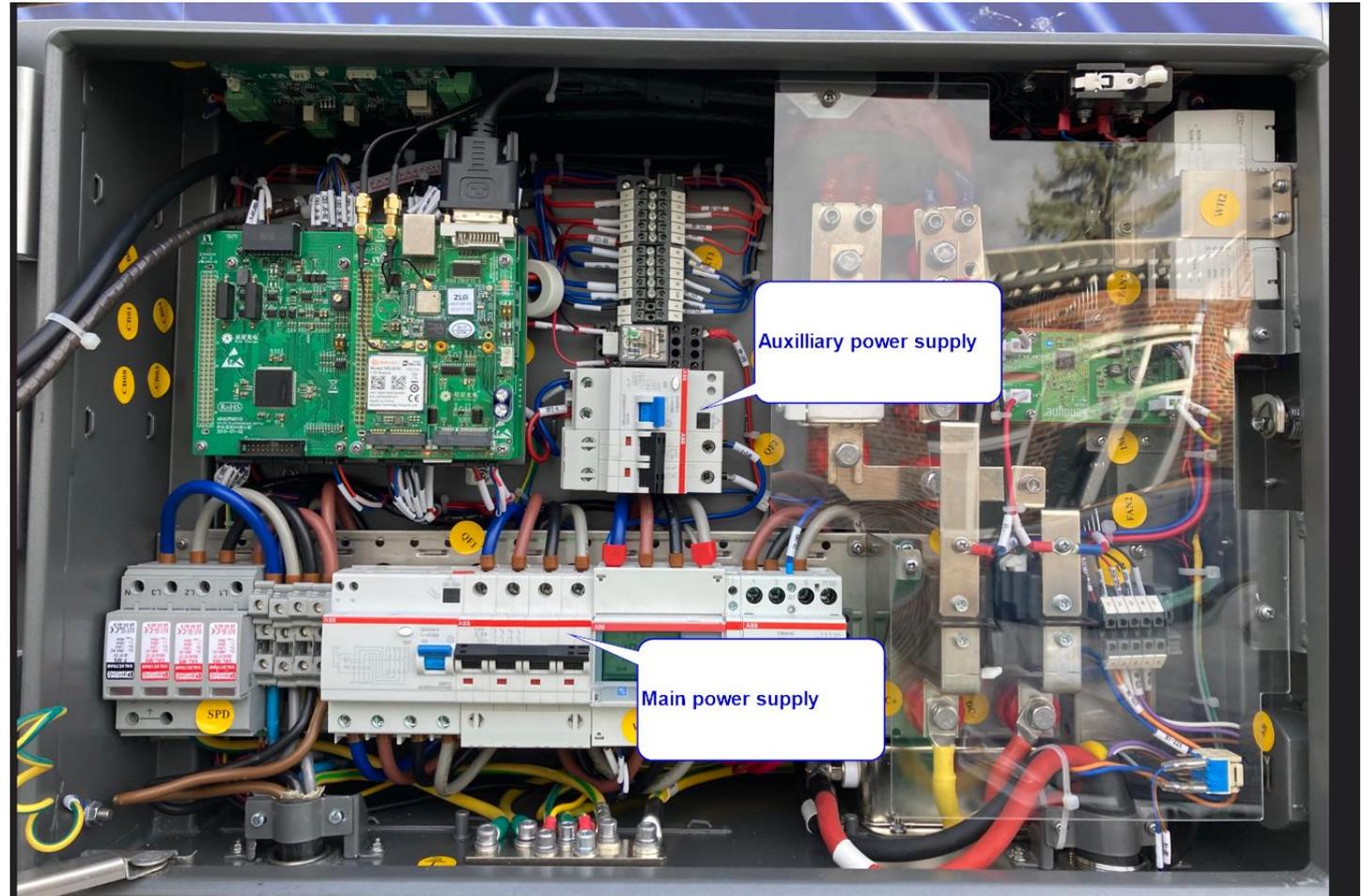
- 1) Fasten screws : Check whether the screws on power supply connection are fastened.
- 2) Check the input power voltage: make sure there' s no fault such as phase loss, overvoltage, undervoltage and wrong phase sequence.
- 3) If SIM card is used for the internet connection, please insert the SIM card into the slot of A7 control board.



Commissioning - Workflow

3. Check after power on charger

Circuit breakers inside Venus



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

Login

Username

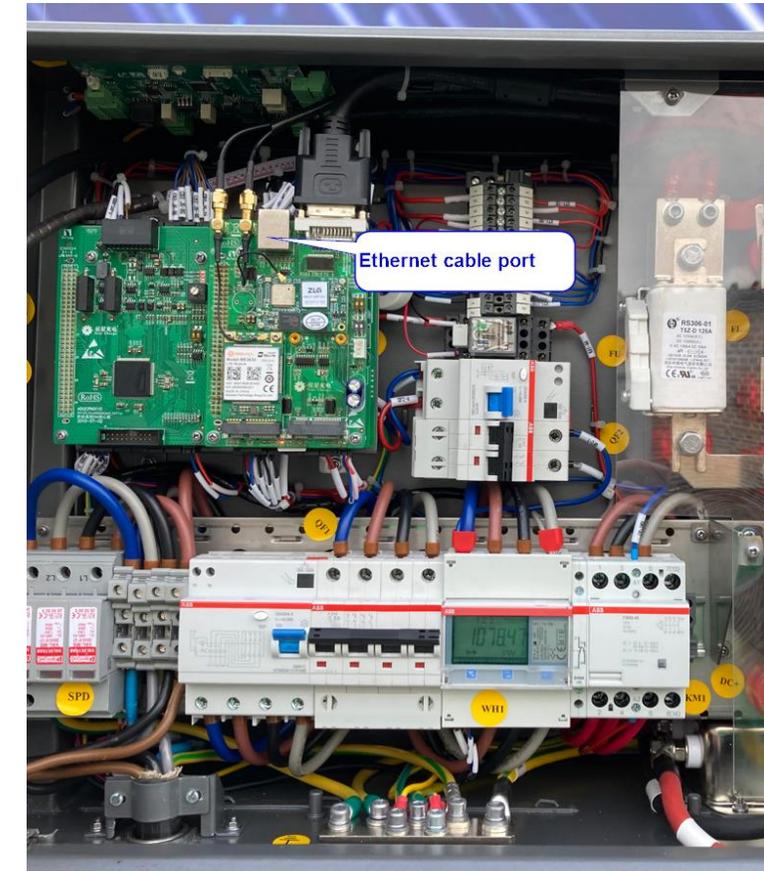
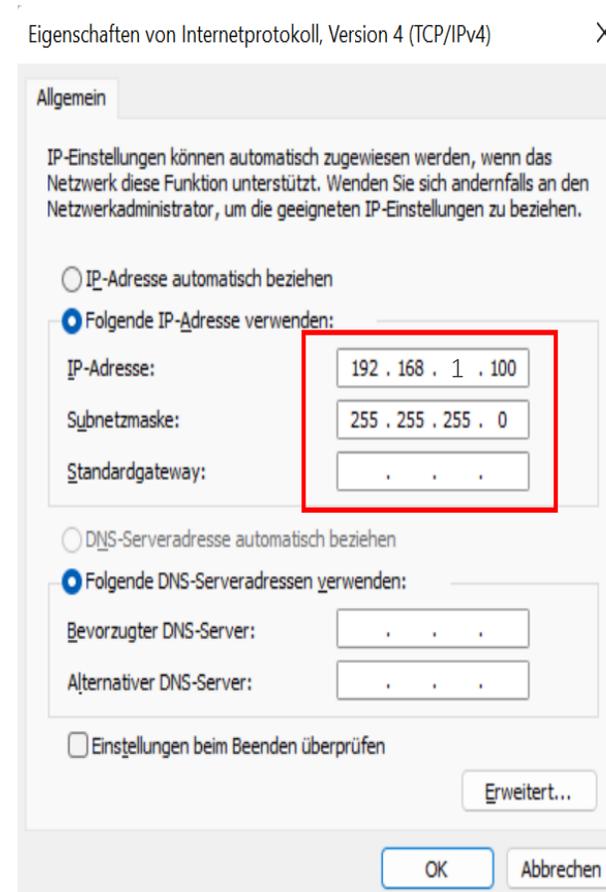
Password

Sign me in

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)



Commissioning - Workflow

4. Parameter configuration

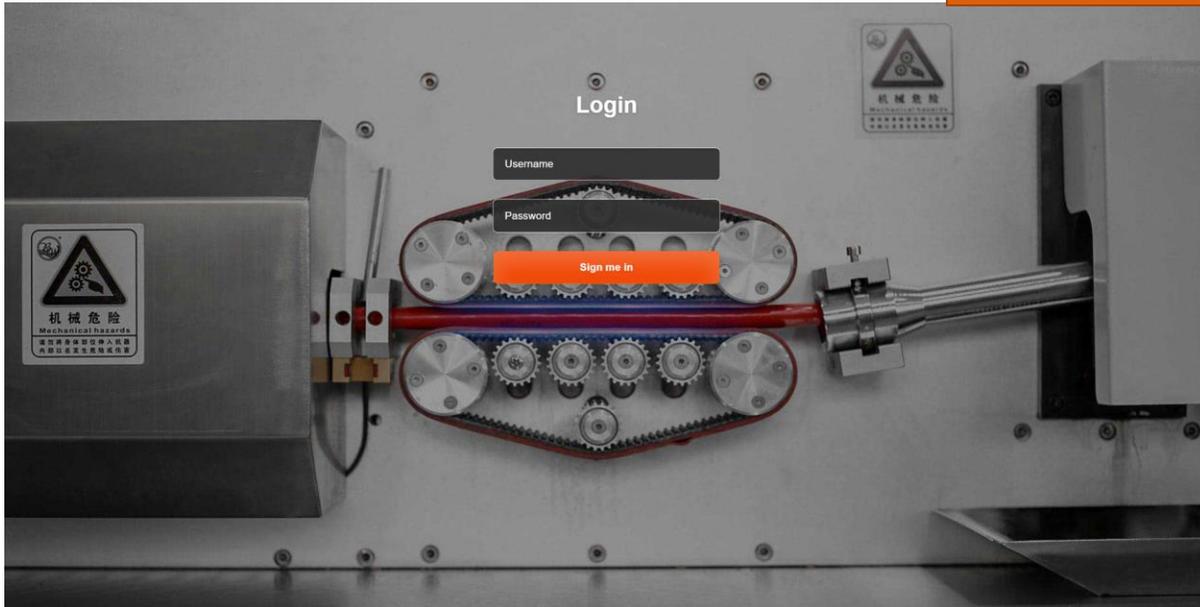
Log in:

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 team



4. Parameter configuration

Contents

Quick Setup

Collection of the most used settings

Software Configuration

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

CP Configuration

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

CP Status

Check the internet and backend connection status

Power Unit Configuration

Settings for power unit assignment

Power Unit Status

Check the status of power unit status

SmartOPS

This function is still under development...

Upload And Download

Firmware update and log download



4. Parameter configuration

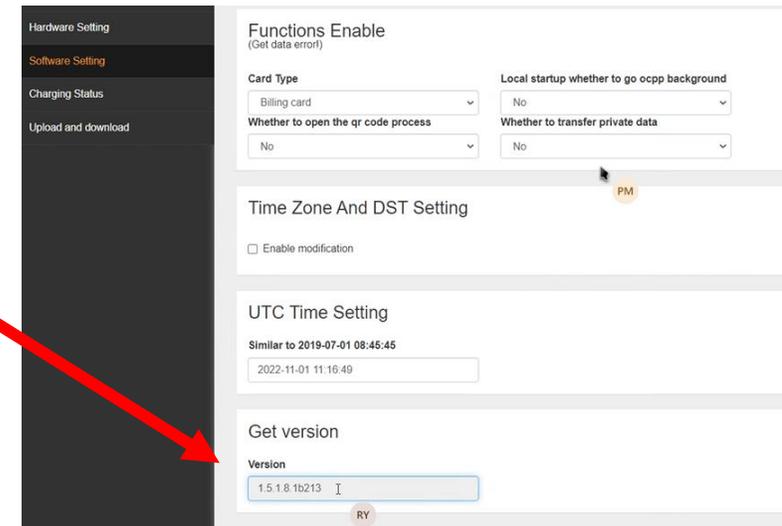
Firmware update:

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.



The screenshot shows a web interface for software settings. On the left is a dark sidebar with menu items: 'Hardware Setting', 'Software Setting' (highlighted in orange), 'Charging Status', and 'Upload and download'. The main content area is titled 'Functions Enable (Get data error!)' and contains several sections: 'Card Type' with a dropdown menu set to 'Billing card'; 'Local startup whether to go ocpp background' with a dropdown set to 'No'; 'Whether to open the qr code process' with a dropdown set to 'No'; and 'Whether to transfer private data' with a dropdown set to 'No'. Below these is a 'Time Zone And DST Setting' section with an unchecked 'Enable modification' checkbox. The 'UTC Time Setting' section shows a date '2022-11-01 11:16:49'. The 'Get version' section has a 'Version' label and a text input field containing '1.5.1.8.1b213'. A red arrow points from the bottom left towards the 'Get version' section.



4. Parameter configuration

Internet communication (4G, Ethernet, Wifi)

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

The screenshot displays a web application interface for configuration. On the left is a dark sidebar menu with the following items: 'Contents', 'Quick Setup', 'Software Configuration' (highlighted in orange), 'CP Configuration', 'CP Status', 'Power Unit Configuration', 'Power Unit Status', 'SmartOPS', and 'Upload And Download'. The main content area is titled '4G configuration' and features a form with a red border. This form includes a checked checkbox labeled 'Enable modification', followed by four input fields labeled 'APN', 'User', 'Psw', and 'Pin'. Below these fields are 'Submit' and 'Refresh' buttons. Underneath the 4G configuration form is an 'Ethernet configuration' section, which contains an unchecked checkbox labeled 'Enable modification' and 'Submit' and 'Refresh' buttons.

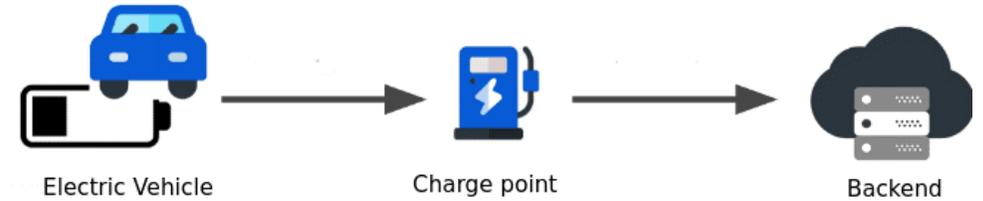


Commissioning - Workflow

4. Parameter configuration

For OCPP backend

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



The screenshot shows a web-based configuration interface for OCPP. On the left is a dark sidebar with a 'Contents' menu. The main area is titled 'OCPP' and contains a 'CP Backend' configuration section. The 'CP Backend' section has several input fields: 'URL' (36.153.57.202), 'Path' (/steve/websocket/CentralSystemService), 'Port' (3400), and 'SSL_ON' (0). There is also an empty 'Authorization key' field. To the right of these fields are 'Submit' and 'Refresh' buttons. Below the 'CP Backend' section is a 'Certificate import' section with an empty input field and a 'Brows' button. A 'Submit' button is also present at the bottom right of the certificate section. A red border highlights the 'CP Backend' configuration area.

Contents

- Quick Setup
- Software Configuration
- CP Configuration
- CP Status
- Power Unit Configuration
- Power Unit Status
- SmartOPS
- Upload And Download

OCPP

CP Backend

URL	<input type="text" value="36.153.57.202"/>	Path	<input type="text" value="/steve/websocket/CentralSystemService"/>
Port	<input type="text" value="3400"/>	SSL_ON	<input type="text" value="0"/>
Authorization key	<input type="text"/>		

Certificate import

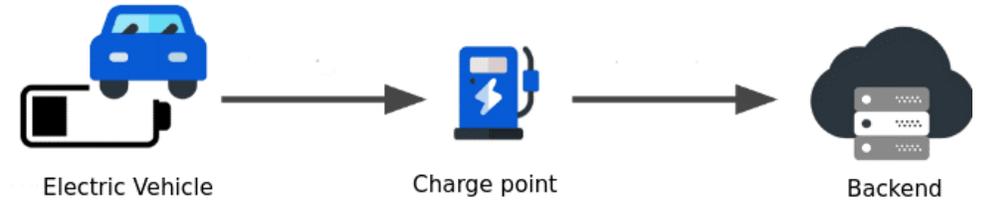


Commissioning - Workflow

4. Parameter configuration

For OCPP backend

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



Star Charge

Language User Set

Hardware Setting

Software Setting

Charging Status

Power Module Status

Sensor Status

Intelligence operations

Upload and download

Home / Setting / Hardware Setting

Identification

ChargePoint Id

Group Number

Evs Id (Please submit any changes immediately)

Submit Refresh



4. Parameter configuration

Charger authentication method

Following authentication method can be selected:

Contents

Quick Setup

Software Configuration

CP Configuration

CP Status

Power Unit Configuration

Power Unit Status

SmartOPS

Upload And Download

Language

Additional Function

Authentication

Local Authentication

Backend Authentication

Local Authentication

Local PnC

AutoCharge

Submit Refresh

Data Transfer For Mac

DataTransferForMac

Disable

Submit Refresh

Time Zone And DST Setting

Enable modification



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

The screenshot displays the 'Star Charge' web interface for 'Charging Gun Setting' under 'EVSE 1'. The left sidebar contains navigation options: Hardware Setting (highlighted), Software Setting, Charging Status, Power Module Status, Sensor Status, Intelligence operations, and Upload and download. The main content area shows 'Conn 1' configuration. Under the 'Type' dropdown (set to 'CCS2'), there are three tabs: 'Meter', 'Insulation Board' (selected), and 'PLC Board'. The 'Insulation Board' tab contains a 'Type A' dropdown menu. Below the tabs are input fields for: Max Voltage(V) (1000), Min Voltage(V) (200), Max Current(A) (200), Max Temperatur(°C) (90), and Max Power(kW) (30). At the bottom right, there are 'Submit' and 'Refresh' buttons.



4. Parameter configuration

Power module configuration

Configure the Power Unit as follow:

Star Charge Language User Set

Power Module Setting

Max Power(kW)
30

Under-voltage Protection(V)
186

Over-voltage Protection(V)
254

Module Number
1

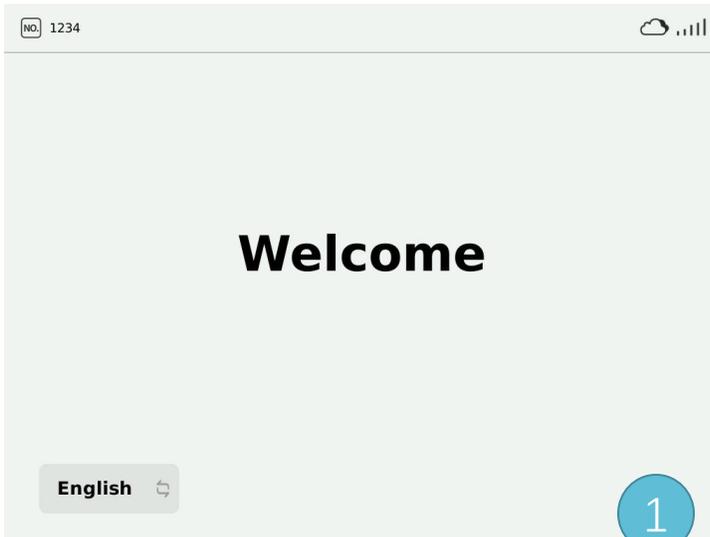
Module Type
StarCharge 30KW

Serial Number	Module SN Number	Module Group Number
1	1	1
2		
3		
4		
5		
6		
7		

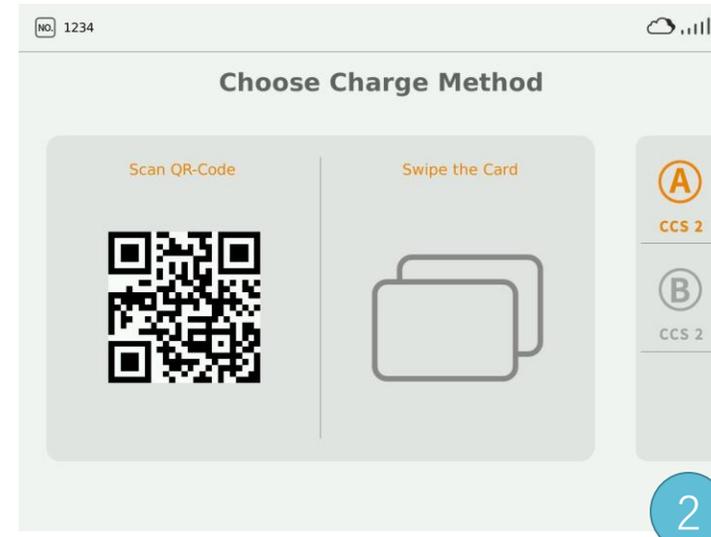
Serial Number	Module SN Number	Module Group Number
13		
14		
15		
16		
17		
18		
19		



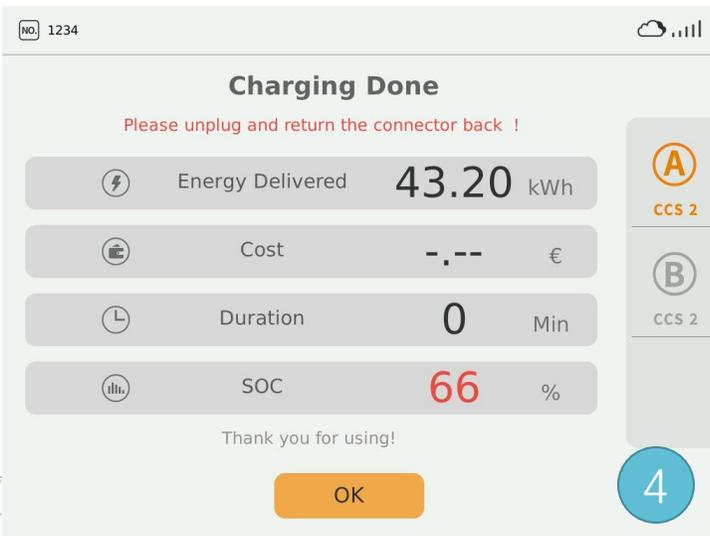
5. Charging test



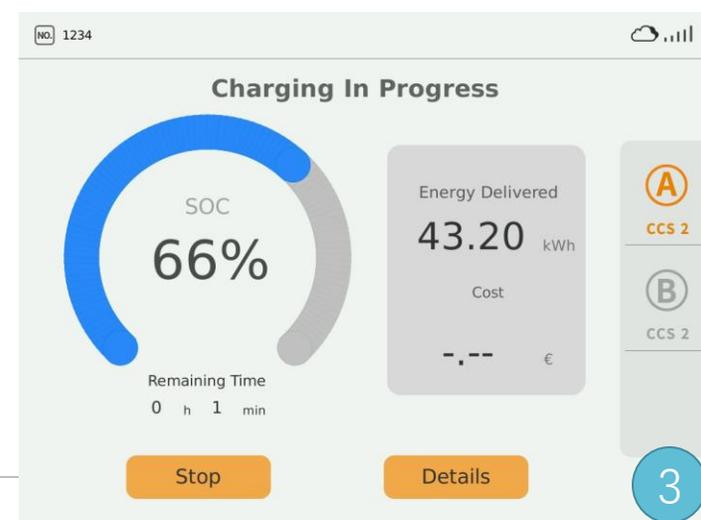
Plug charger gun into EV



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.



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.

Connect the World. Connect the People.



Headquarter: No. 39 Longhui Road, Wujin High-tech Zone, Changzhou, Jiangsu, China

China Office: Building 5, Innovation and Research Port, Changzhou, Jiangsu, China

Europe Office: Rugbyring 12, 65428 Rüsselsheim, Germany

APAC Office: 2 Kung Chong Road, #05-01 AA Centre, Singapore 159140

America Office: 46571 Fremont Blvd, Fremont, CA 94538

www.starcharge.com