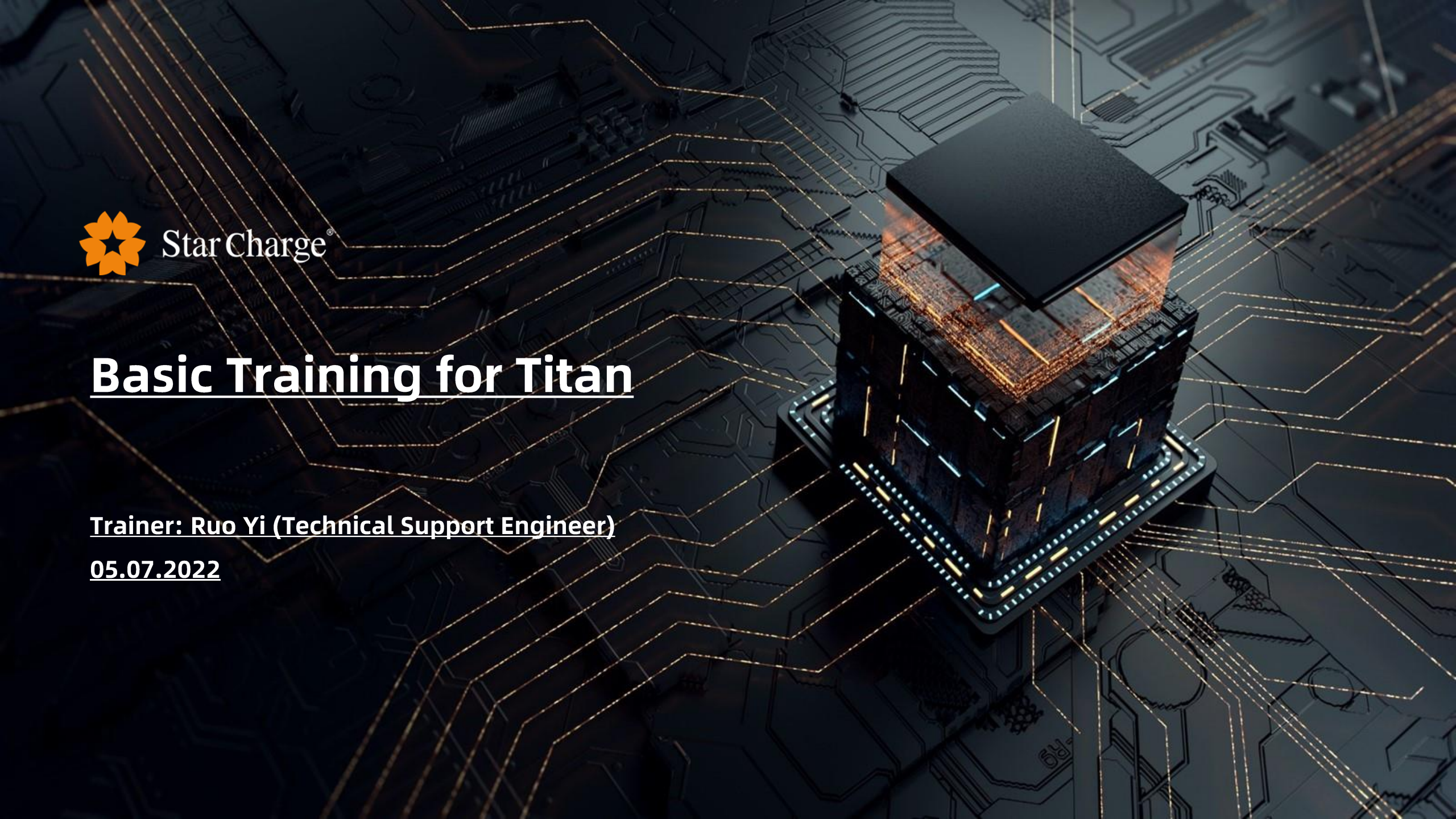


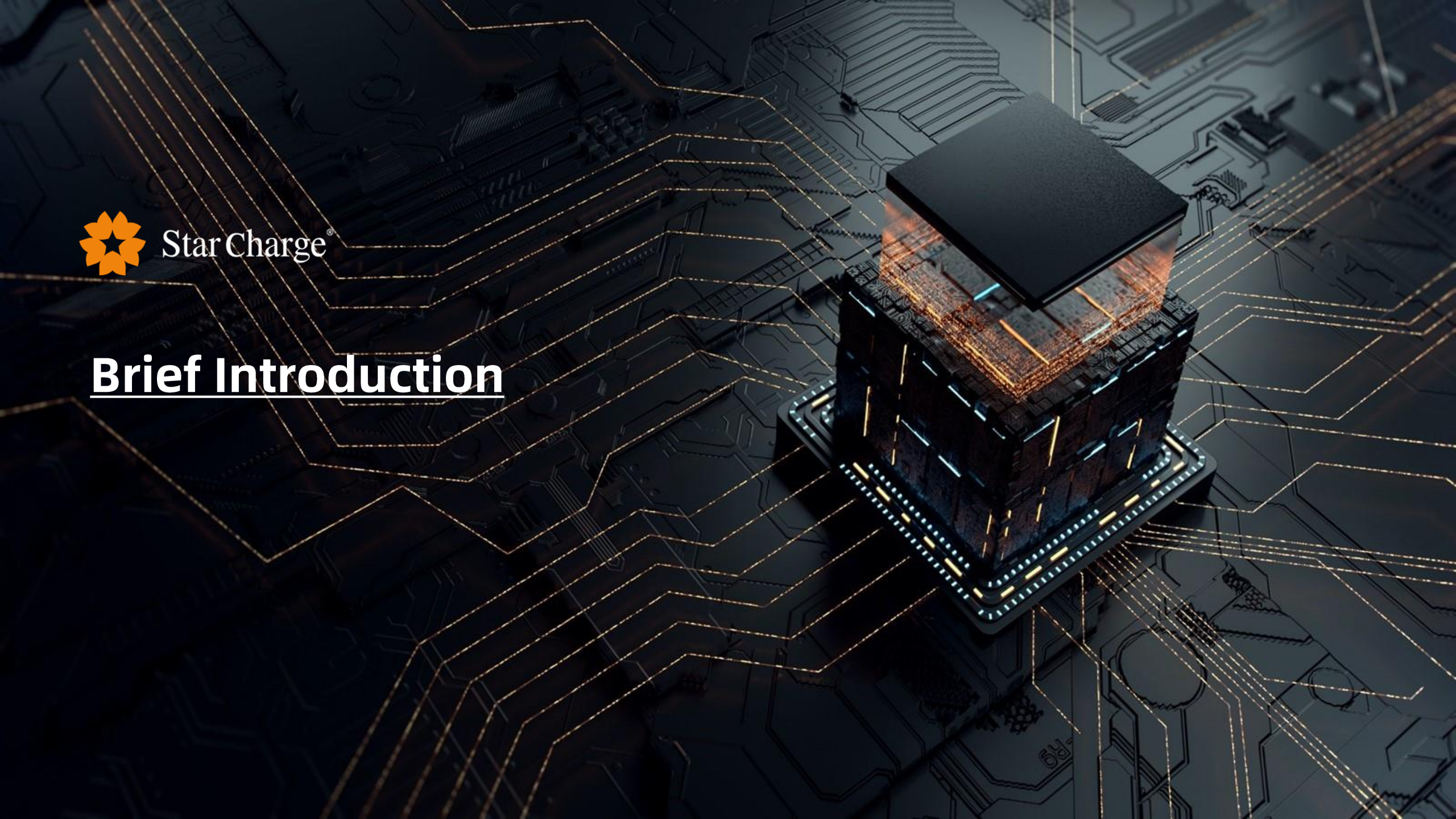
Basic Training for Titan

Trainer: Ruo Yi (Technical Support Engineer)

05.07.2022

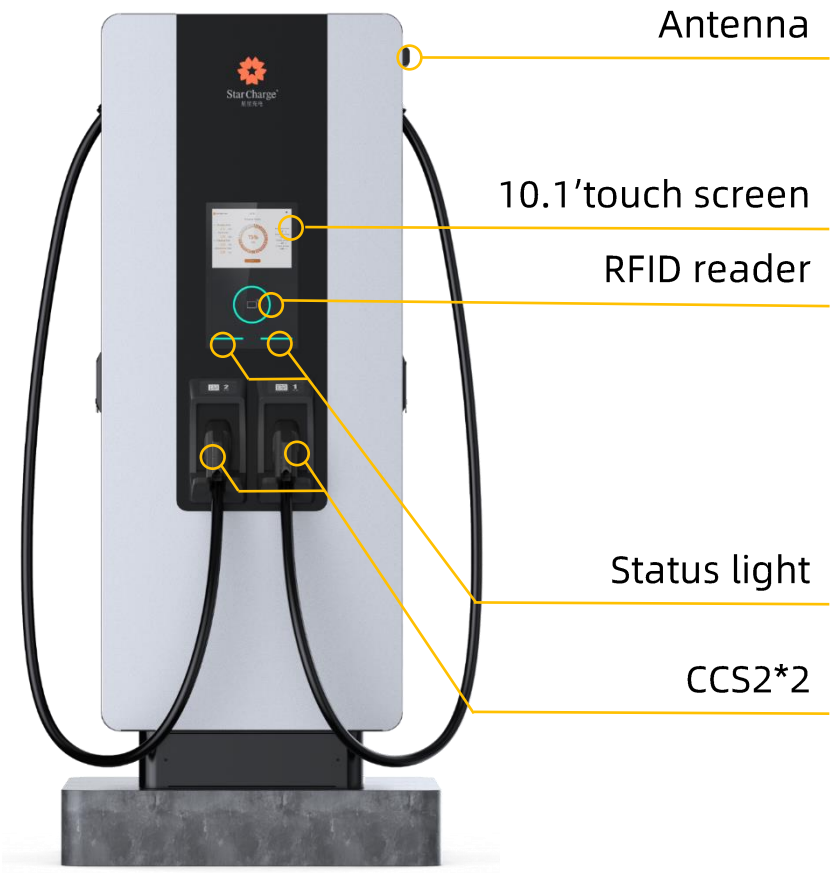
Agenda

- Brief Introduction of Titan
- Installation
- Commissioning
- Q&A



Brief Introduction

Overview



- High efficiency >95%
- Dual connector (each could be up to 180kW max. output)
- Automatic load balance
- Simultaneous charging
- CCS2*2 (200A 1000V)
- Wide output voltage 200-1000Vdc
- Modular design, easy upgrade.

Overview


DC meter window #1
Antenna
DC meter window #2
Emergency button

Specifications

Titan 180 Premium		
Power Input	Input Rating	400Vac±10%, 3-Phase, 50/60 Hz, L1+L2+L3+N+PE
	Power Factor	0.99 at nominal output power
	Current THD	≤5% at nominal output power
	Efficiency Rectifier	≥95% at nominal output power
Power Output	Output Interface	Configuration1: 2 x CCS2 Configuration2: CCS2 + CHAdeMO
	Output Power	CCS2: 180kW max., CHAdeMO: 62.5kW max.
	Output Voltage	CCS2: 200-1000Vdc, CHAdeMO: 200-500Vdc
	Output Current	CCS2: 200A max., CHAdeMO: 125A max.
User Interface & Control	Display	10.4'' LCD Touch Panel
	Support Language	Simplified chinese, English, Other languages available upon request
	Push Buttons	Emergency stop button
	RFID Reader	ISO/IEC 14443 A/B Mifare RFID reader
Communication	Network Interface	4G, Wi-Fi, Ethernet
	Protocol	OCPP1.6J
Environmental	Operating Temperature	-30℃ - 50℃
	Storage Temperature	-40℃ - 70℃
	Humidity	5%-95% no condensation
	Altitude	≤2000m
Mechanical	Ingress Protection	IP55
	Enclosure Protection	IK10
	Cooling	Forced air
	Charging Cable Length	5m
	Dimension (WxHxD)	800*2050*750mm (depth without connector holder)
	Weight	approx. 395kg (excluding power modules)
	Installation	Ground-mounted
Regulation	Certificate	CE, TR25

Installation

Installation Requirements

1.Site conditions

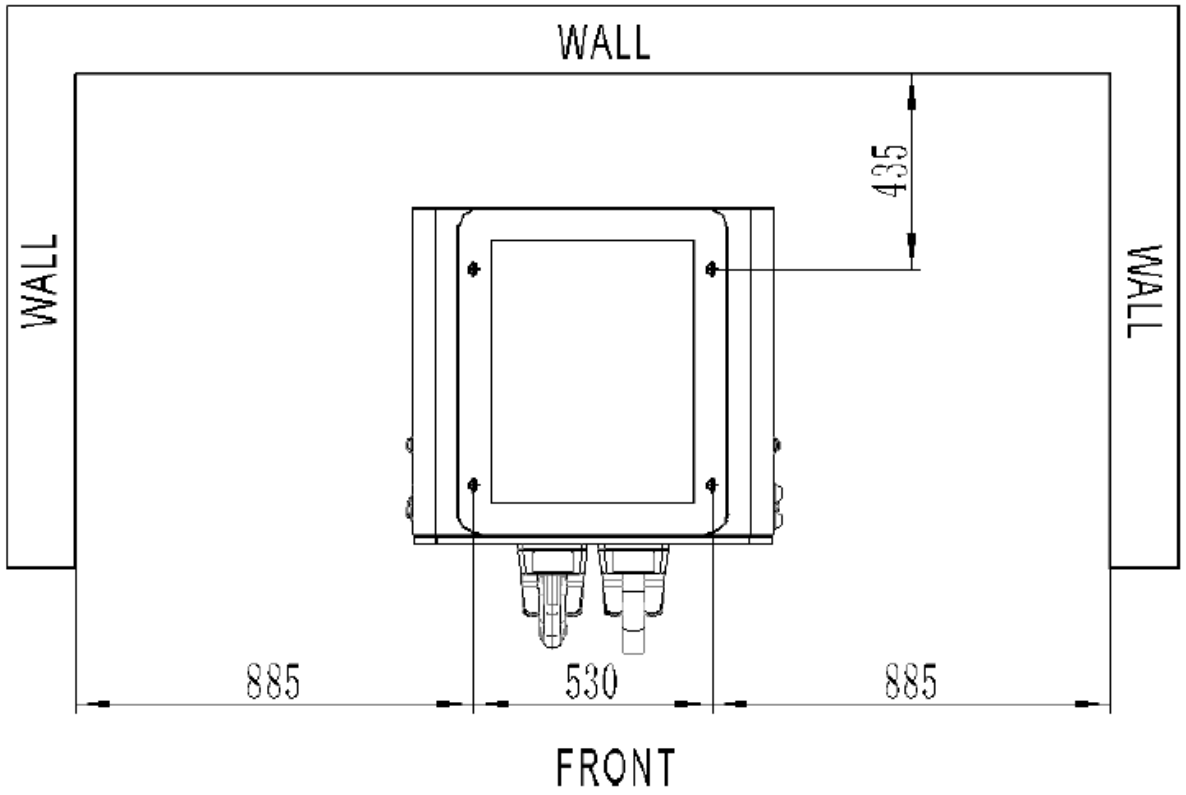
- Altitude ≤ 2000m
- Historical maximum ponding water depth ≤ 200mm
- Keep distance from the gas station and other highly flammable and explosive facilities

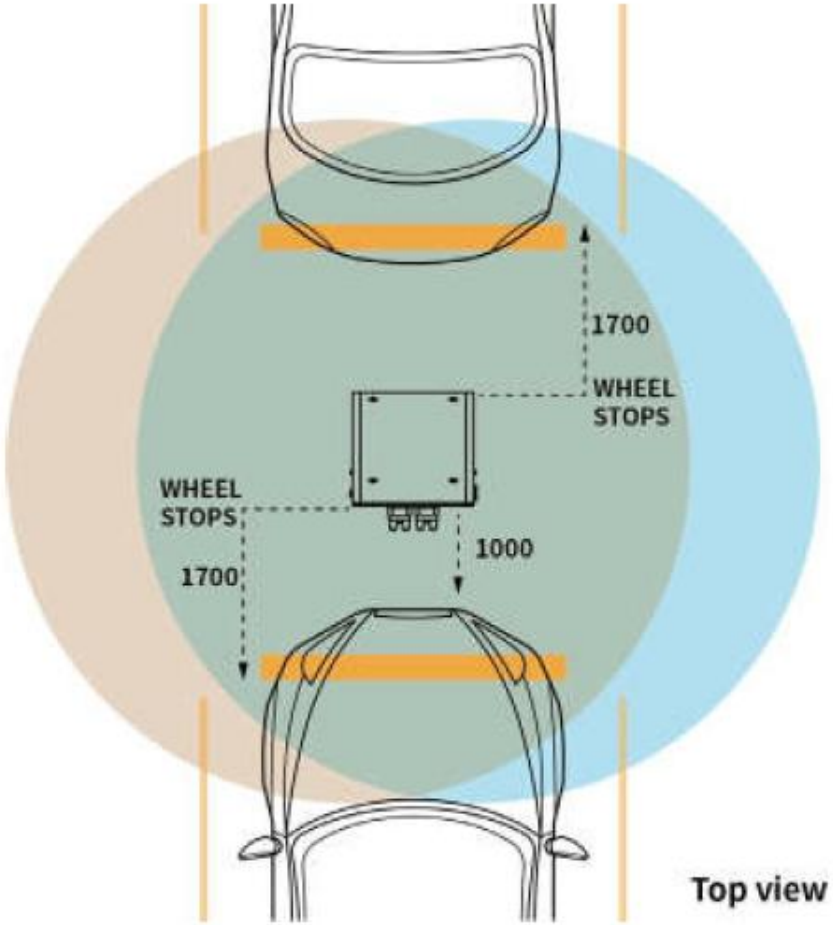
2.Requirements for grid capacity

- If the charging pile operates at full power, the grid capacity shall meet 200KVA, the rated current parameter shall be 280A.
- Recommended parameters of superior circuit breaker UE = 400VAC, In = 400A, thermal magnetic type, Icu = Ics = 40KA, 4Poles

Star Charge®

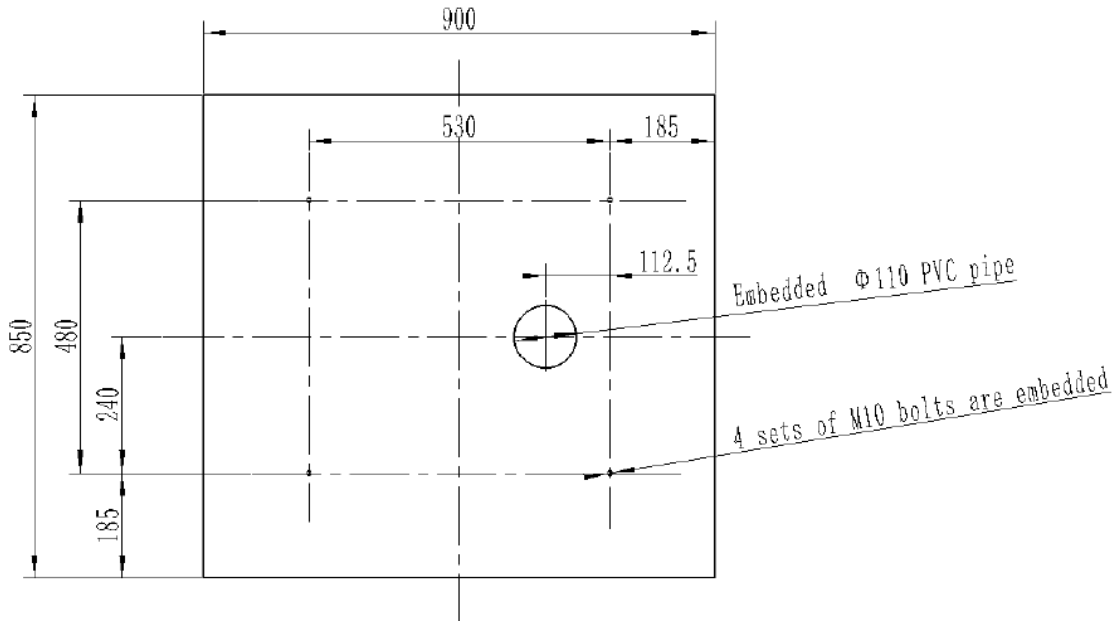
3.Maintenance distance

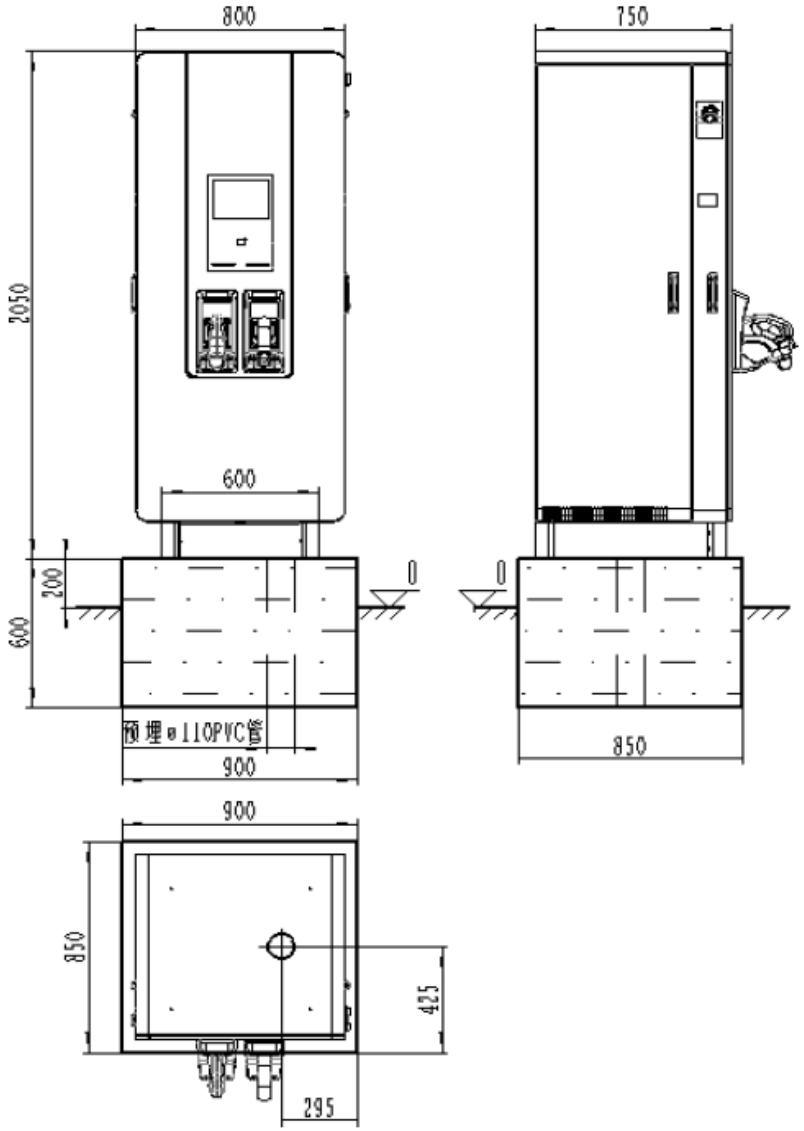




4.Dimension of concrete base

The size of the cement base is 900mm*850mm*600mm mm, the depth of burial of the base is 400 mm and the height of the ground is 200 mm.





5.Power cable specification

For full output power (180kW) , the charger's power cable to be laid is not less than 3 * 150mm² + 2 * 70mm², the core material is copper, and the length above the base is about 1m.

Installation Process

1. Unpacking inspection

Name	Photo description (before unpacking)	Configuration	Attached file	Accessories list
180kW DC charger		1	Certificate of approval Delivery inspection report The user manual	Key*6 Start&Stop card*2
Module		6		Screws*4

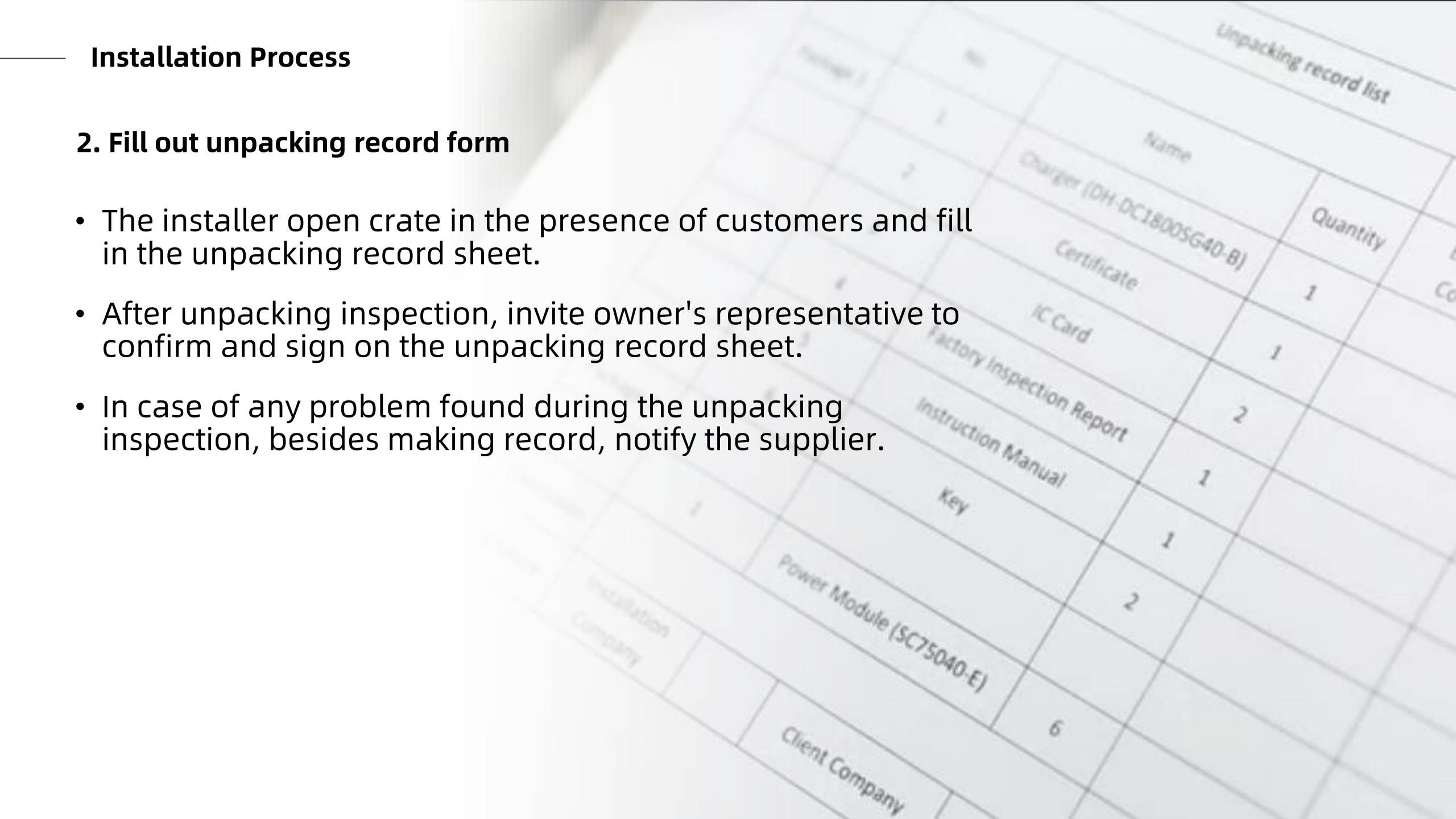
Check the following items:

- packing list number and equipment quantity.
- equipment nameplate information.
- whether the documents are complete.
- whether spare parts and accessories are complete
- Factory inspection report and certificate.
- whether the appearance of equipment is in good condition

Installation Process

2. Fill out unpacking record form

- The installer open crate in the presence of customers and fill in the unpacking record sheet.
- After unpacking inspection, invite owner's representative to confirm and sign on the unpacking record sheet.
- In case of any problem found during the unpacking inspection, besides making record, notify the supplier.



Star Charge®

3.Drill holes in concrete base

- Positioning and punching with mould. The depth of drilling shall be not less than 100 mm.
- Tap the M10*120 expansion bolt into the positioning hole.

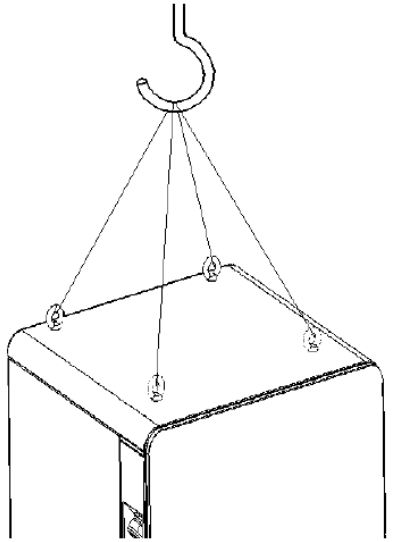
Star Charge®

4.Lifting preparation

First remove the front and rear sealing plates of the base by screwdriver.

4.Lifting & Fixing

- Lift the charger by using a crane (more than 3 tons) and two 6m slings (each 1.5T) through the sealing hole
- Align the fixing hole at the bottom of the charge with the fixing bolt on the foundation, lower it slowly.
- Fix the nut with a wrench .
- Install the base sealing plate after the charger is fixed.

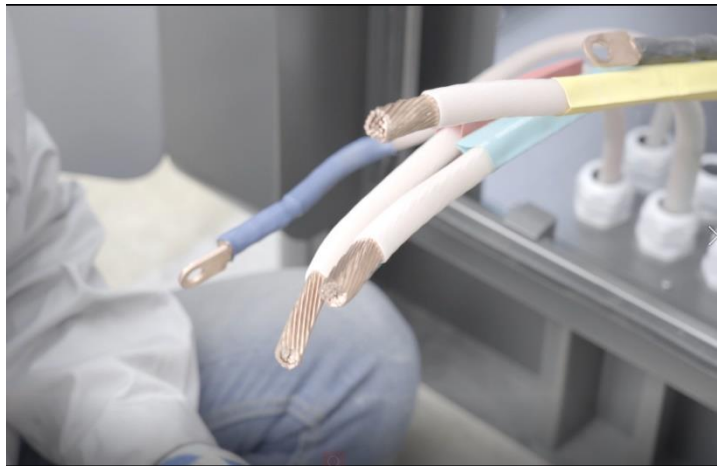


5.Input cable handling

a) Remove the outermost cable insulation layer and pass each phase line through the cable gland

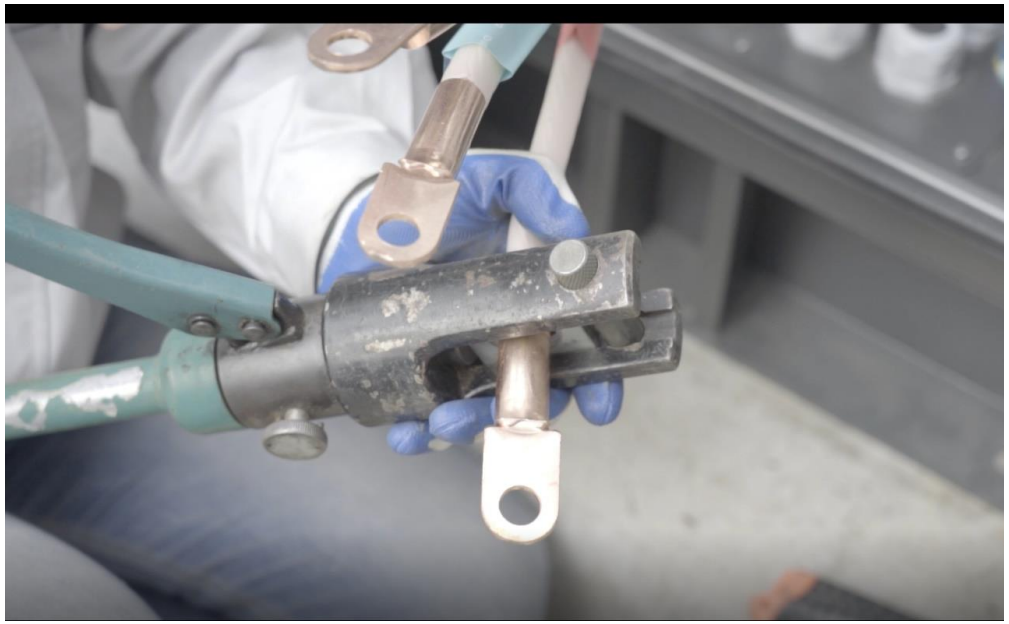
5.Input cable handling

b) Use heat shrinkable tubing that meets the withstand voltage level to strengthen the insulation of the cable.



5.Input cable handling

c) Crimping copper nose.(more than 5 times).



5.Input cable handling

d) heat the shrinkable tubing and deal with the exposed part of the copper nose.

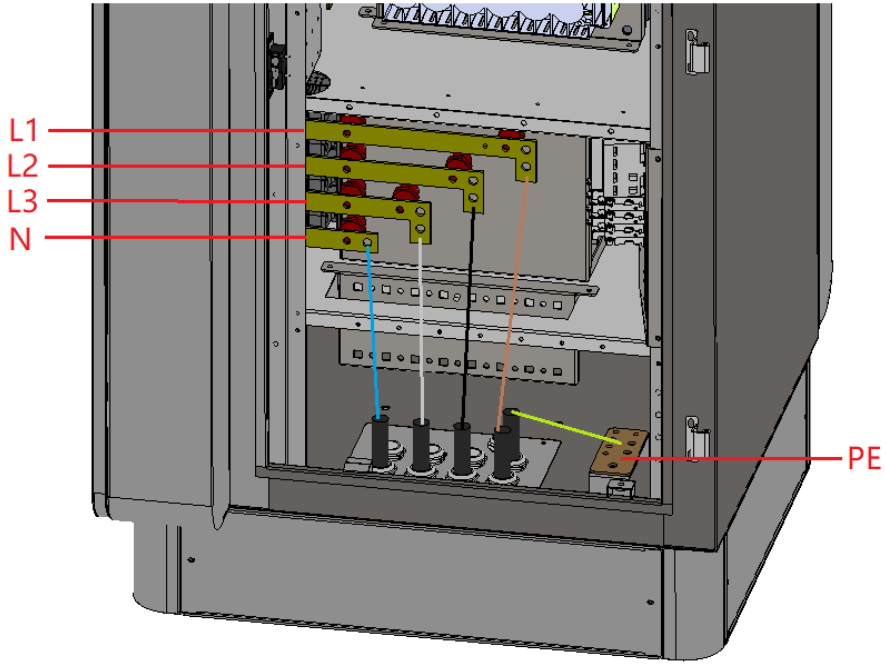
Star Charge®

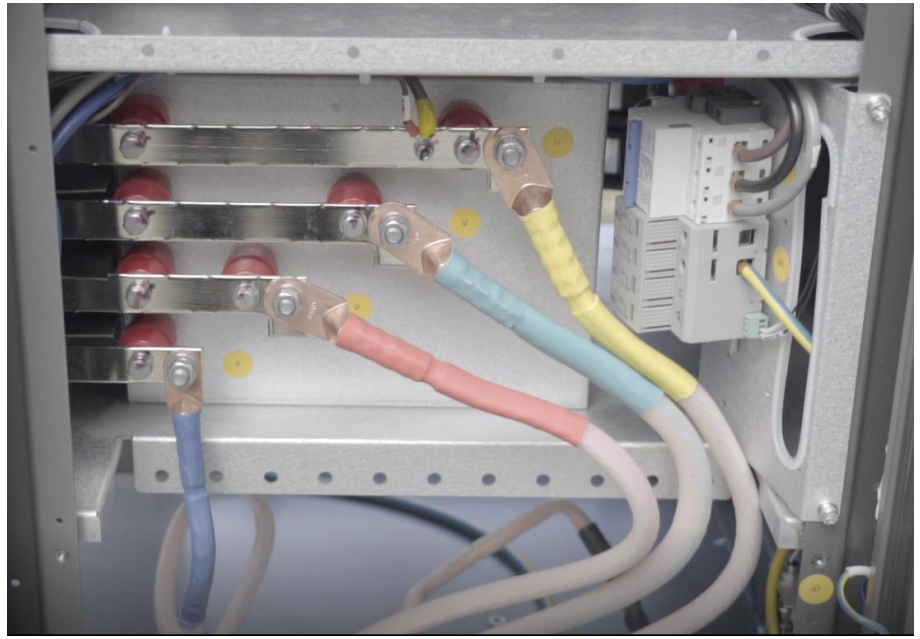
6. Grounding/Insulation testing

- Check the civil grounding resistance, must be ≤ 4Ω.
- Check the civil insulation resistance, must be ≥10MΩ.

7. Electrical wiring

- Connect the power cable to the terminal.
- Make sure the screws of the wiring are fastened. When installing and connecting, avoid the damage of the cable insulation.
- Add label to cables



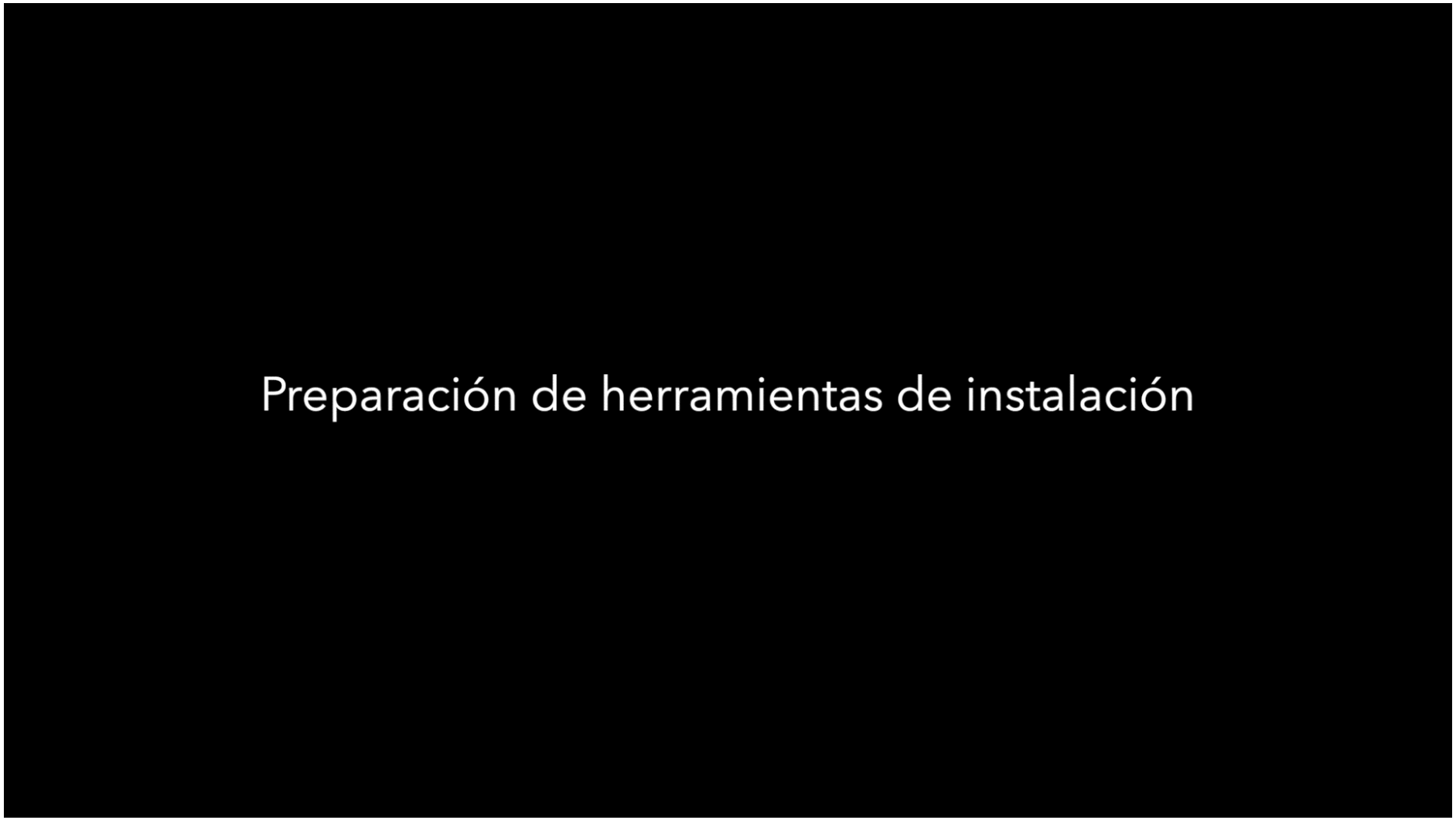


8. Insert power modules

Insert 6 power modules and fix each module with 4 screws

Installation Process

Demo video



1. Check before power-on

(1) Short circuit: check the power supply line in the low voltage distribution cabinet, there should no short circuit between the three-phase wire, neutral wire and ground wire.

(2) Power supply voltage : Check whether the power supply voltage on upper end of MCCB in the low-voltage distribution cabinet is normal, ensure there are no lack-phase, over voltage, under voltage, phase sequence abnormality and other abnormalities.

2. Check after power-on

(1) The line voltage at the outlet terminal of the distribution box is about 400V (±5%), phase voltage is 230V(±5%)

(2) The line voltage of charger inlet terminal is measured to be about 400V (±5%), phase voltage is 230V(±5%)

Fill in the installation information

Unpacking record					
Name of distribution store				Date of unpacking	
	No.	Name of commodity	Quantity	Inspection status	Note
Box1	1	DC	1		
	2	Certificate of approval	1		
	3	IC card	2		
	4	Delivery inspection report	1		
	5	The user manual	1		
	6	Key	6		
Box 2					
	1	Module	6		
	2	Screw	24		
	3				
Unpacking result					
Signature block	Installation unit		owner's unit		


Star Charge®
Commissioning

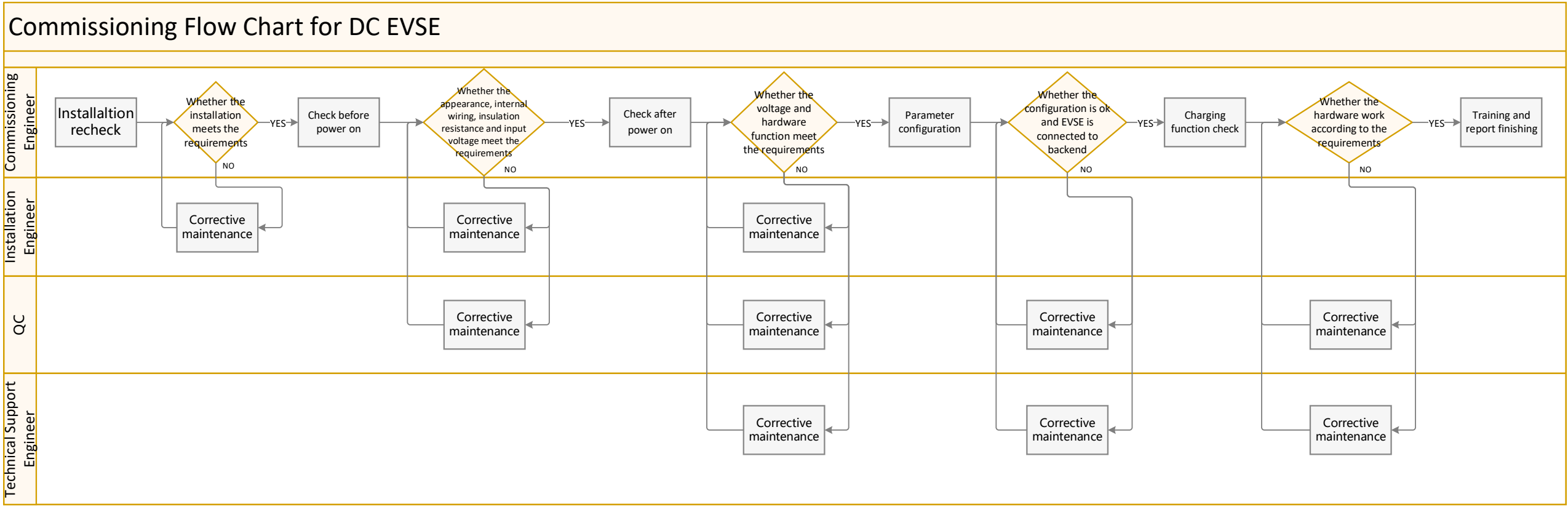
Commissioning Tools

Item	Tools	Usage	Example
1	Laptop	Configure the settings, And read the log	
2	Ethernet cable	Parameter Configuration	
3	J – LINK tool	Programming	
4	5/6 pin adaptor	Programming	
5	TF Card and reader	Programming	
6	Screwdriver set	Assemble and disassemble the screws	

Commissioning Tools

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

Commissioning Flowchart



Installation Recheck
Basic Check

1. Pedestal: whether fixed and sealed well.

2. Inlet cable: whether the specification of all the cable used meet the requirement of EVSE, whether there is any break, damage, or scratch, whether the electrical connection is correct and complete, whether the connection is stable and solid, whether the grounding is reliable.

3. Grounding/Insulation resistance: The external grounding resistance must be ≤4Ω, the internal grounding resistance must be ≤0.1Ω. The inlet cable insulation resistance must be ≥10MΩ. The outlet cable insulation resistance must be ≥1MΩ.

4. Outside appearance of cabinet: The surface of cabinet is intact without any dirt, and the charging cable is not broken or damaged. All doors of cabinet can be opened, closed and locked. The cabinet is not tilting, shaking or reverse assembling.

5. Nameplate and sign: Check whether nameplate and other signs are printed correct and complete, whether the safety sign is posted in correct place.

6. Documents with EVSE: Check with the customer whether the configuration information of the EVSE on site complies with the contract requirements and whether the accessories are complete.

Check before Power on
Internal Wiring

1. Short circuit: Check the inlet cable to the EVSE. Check whether there’s any short circuit between 3-phase live wire, neutral wire and grounding wire and whether the phase sequence is correct.

2. Fasten screw: Check whether the fastening torque of each line connection, connector, terminal with screw and brass plate can meet the requirement, and whether there’s any looseness, poor connection and etc.

3. Input Voltage : check whether the input voltage of the main breaker inside of the EVSE is correct, and make sure there’s no fault such as phase loss, overvoltage, undervoltage and wrong phase sequence.

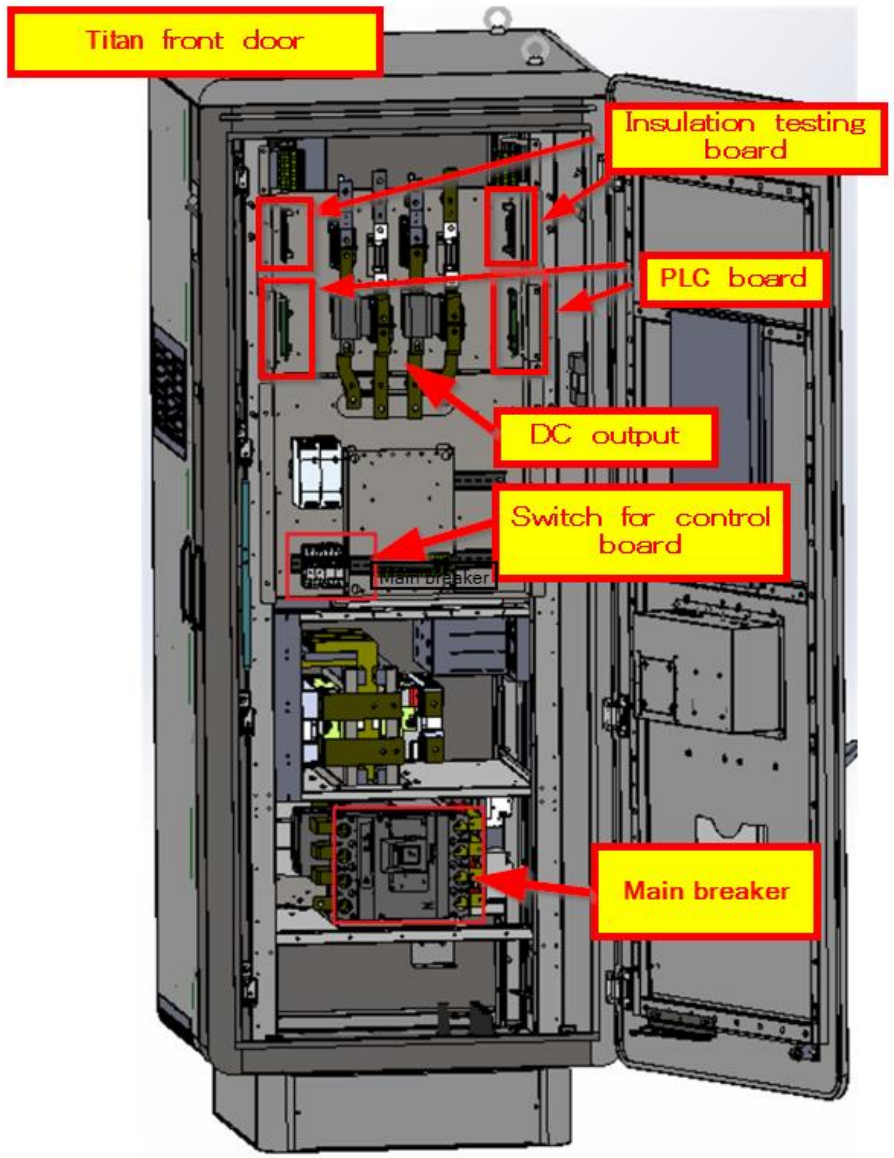
Check after Power on
Basic Check

1. Voltage check after power on: Check whether the output voltage of the mainbreaker inside of the EVSE is correct, and make sure there's no fault such phase loss, overvoltage, undervoltage and wrong phase sequence.

2. Touch screen: Check whether the touch screen displays normal, has obvious dead pixel, displays words clearly, is operated well and clear UI.

3. LED indicator light: Check whether the LED indicator light on the EVSE works as the design requirement.

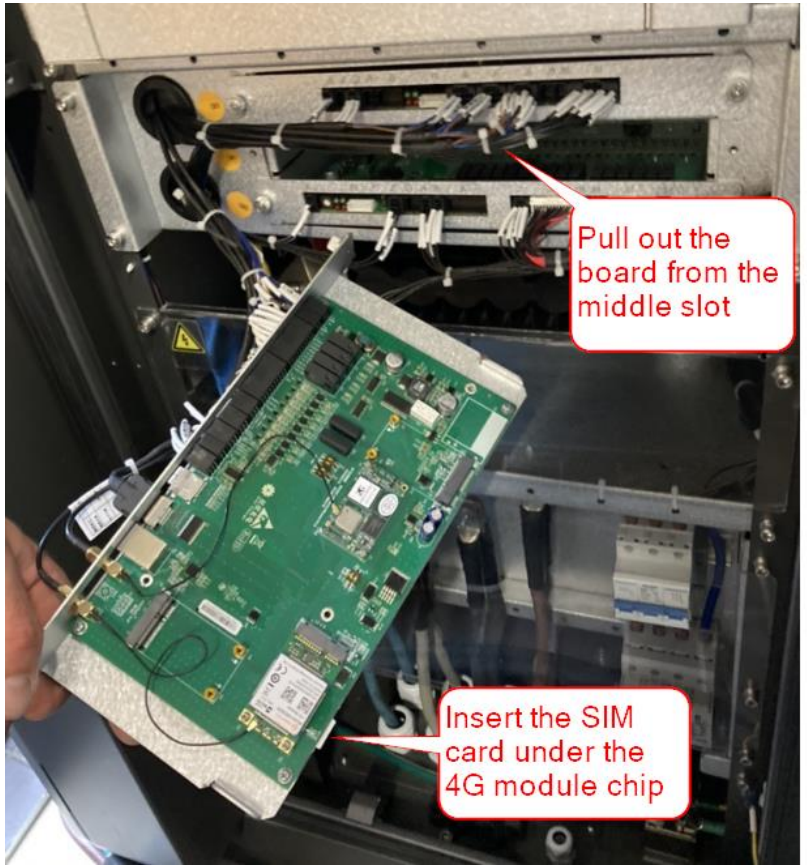
4. Switching power supply: Switch power supply can provide stable voltage power. Use electrical multimeter to check whether the output voltage of switching power supply inside of the EVSE meets the requirement.



Parameter Configuration
Establish 4G Connection

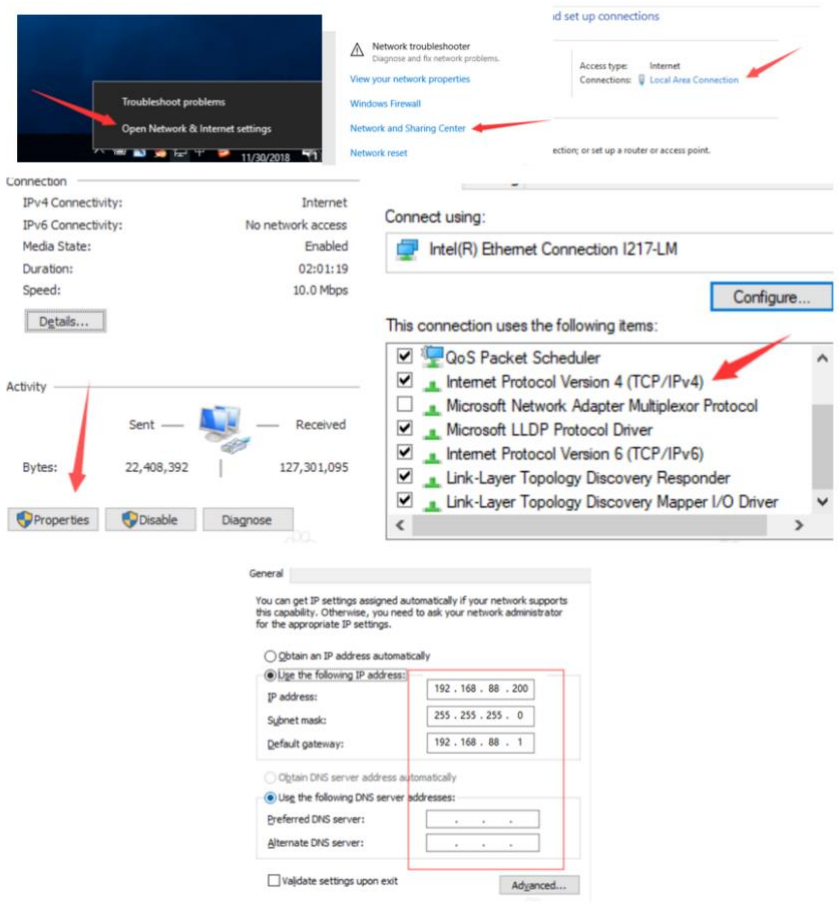
To connect to the network, insert the SIM (mini SIM) according to the location of 4G communication module.

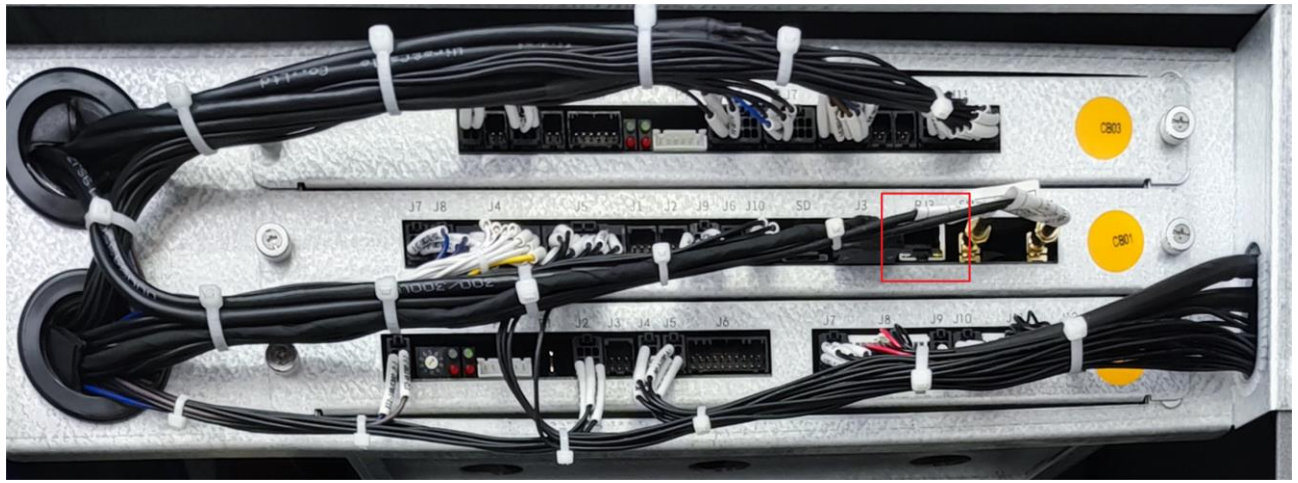
Before inserting the SIM, the charger needs to be switched off.



Parameter Configuration
Establish the Ethernet Connection

Connect the main board to the laptop by an Ethernet cable, and set the IP address as shown in the following picture (192.168.88.xxx, xxx can be any number but 206)





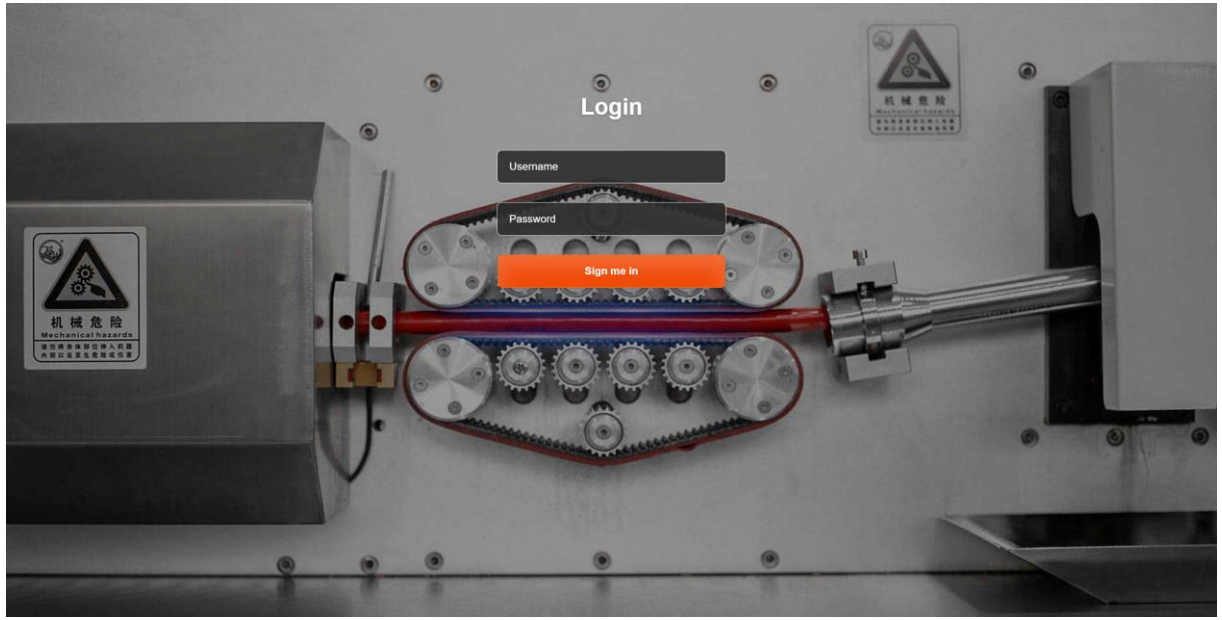
Parameter Configuration
Log into configuration website of charger

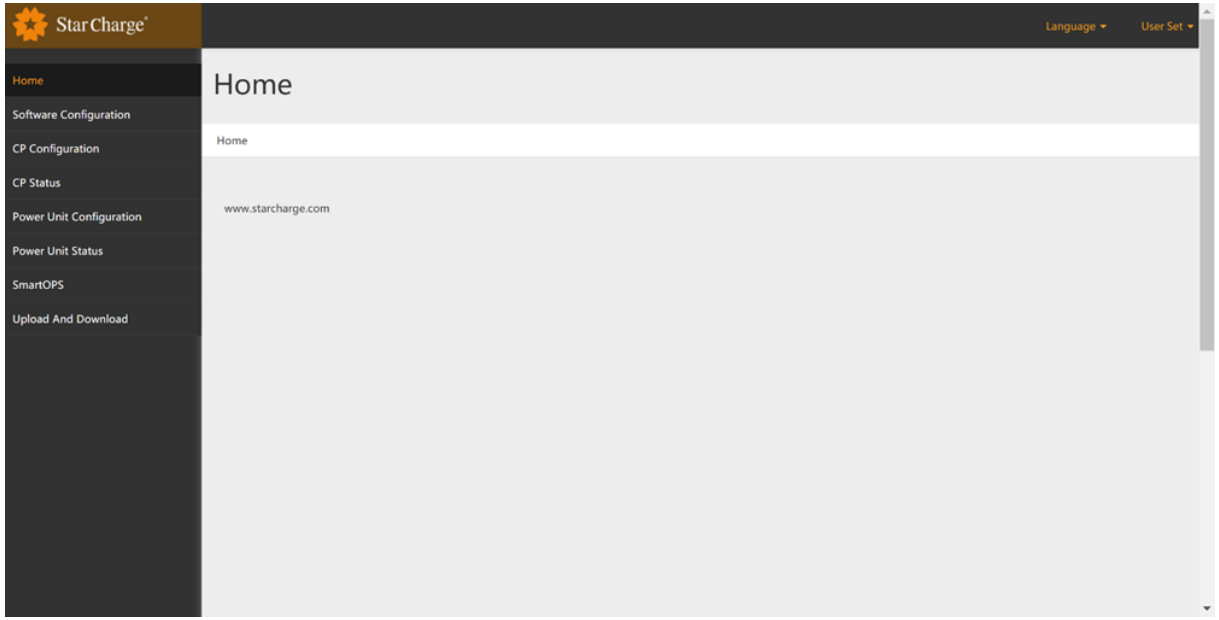
Open the browser and enter IP address 192.168.88.206,

log in with

username xxcd and password 28912891

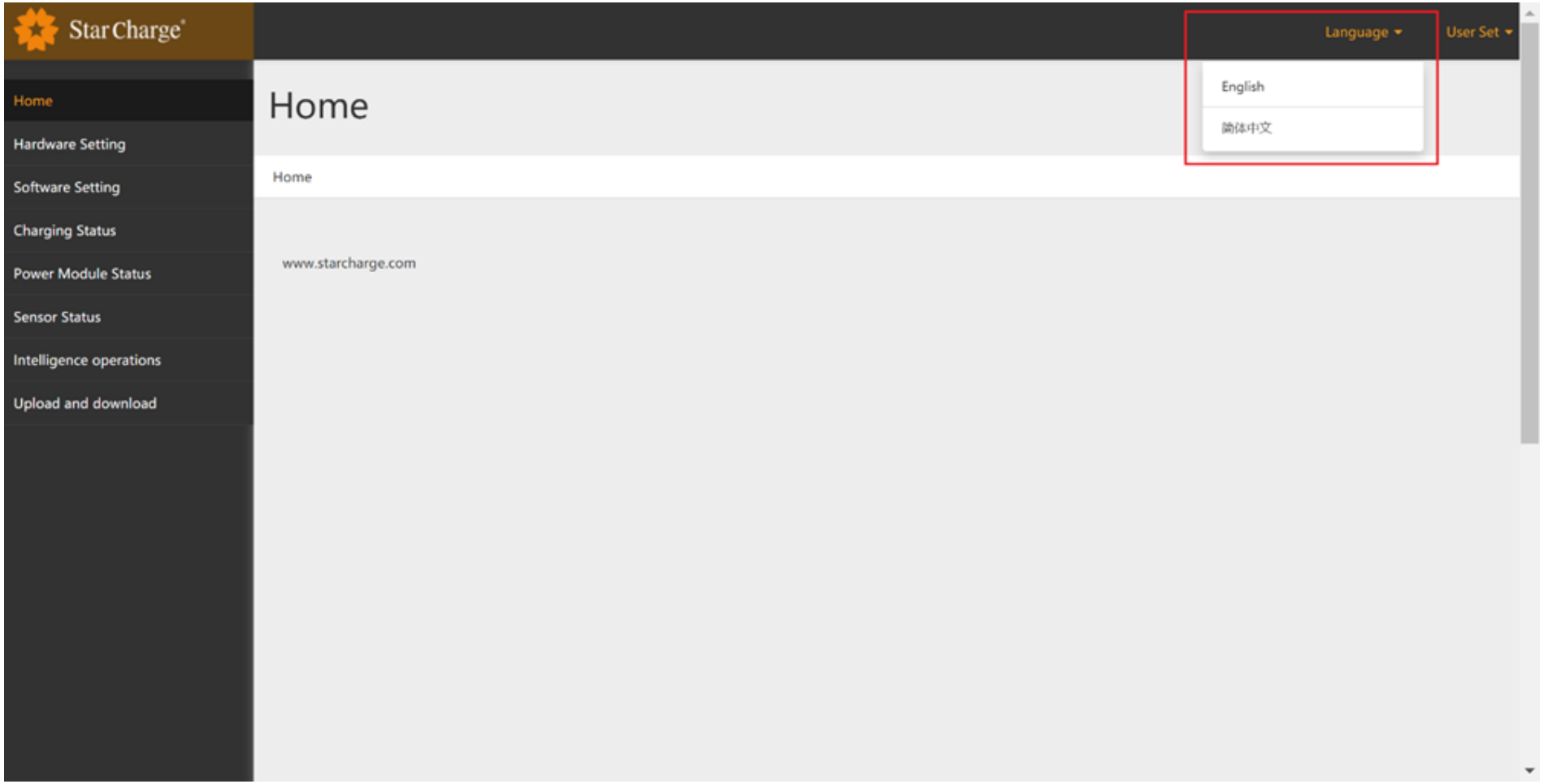
Or username wbdh and password 26835941





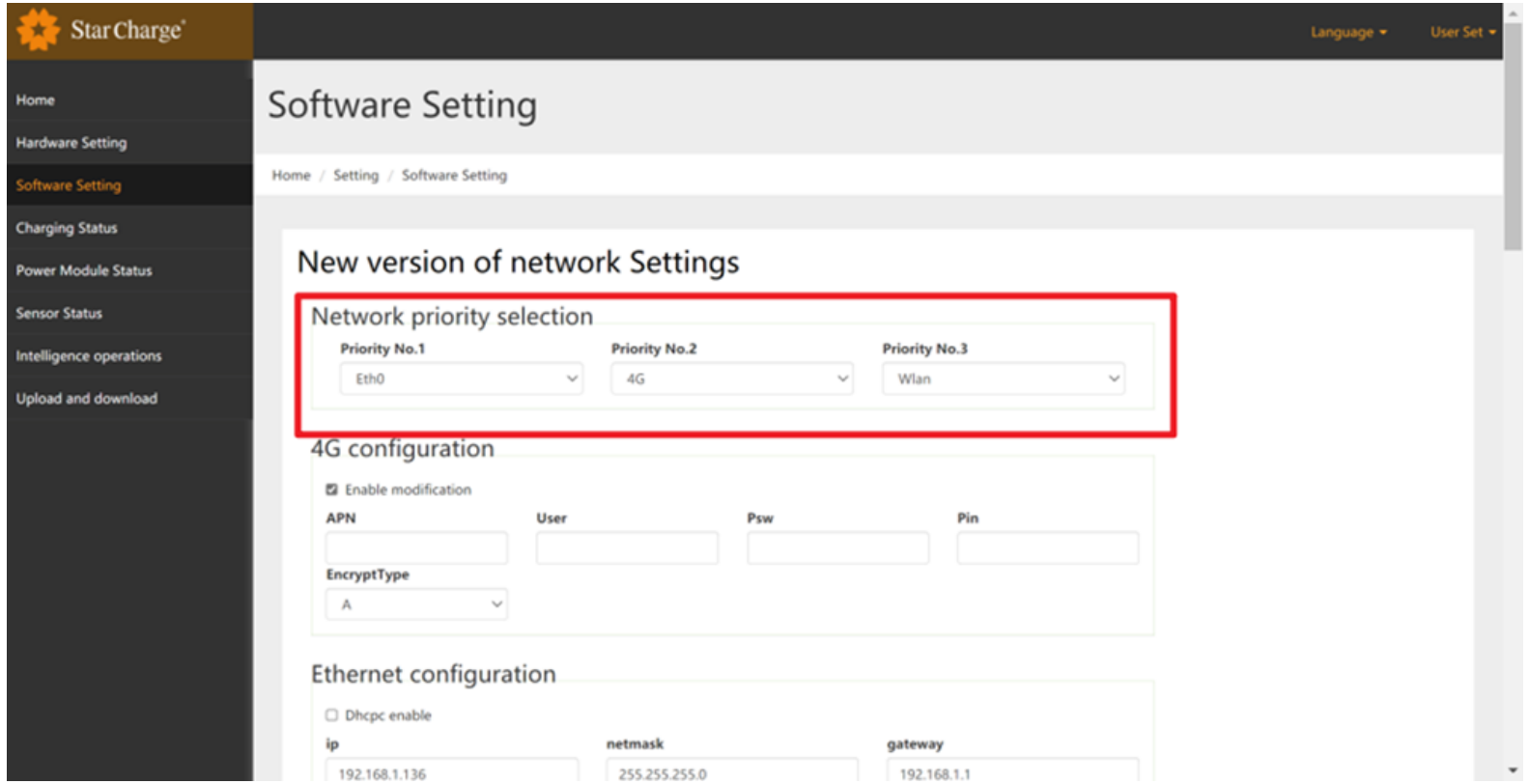
Parameter Configuration
Change the Language

Change the language according the picture below.



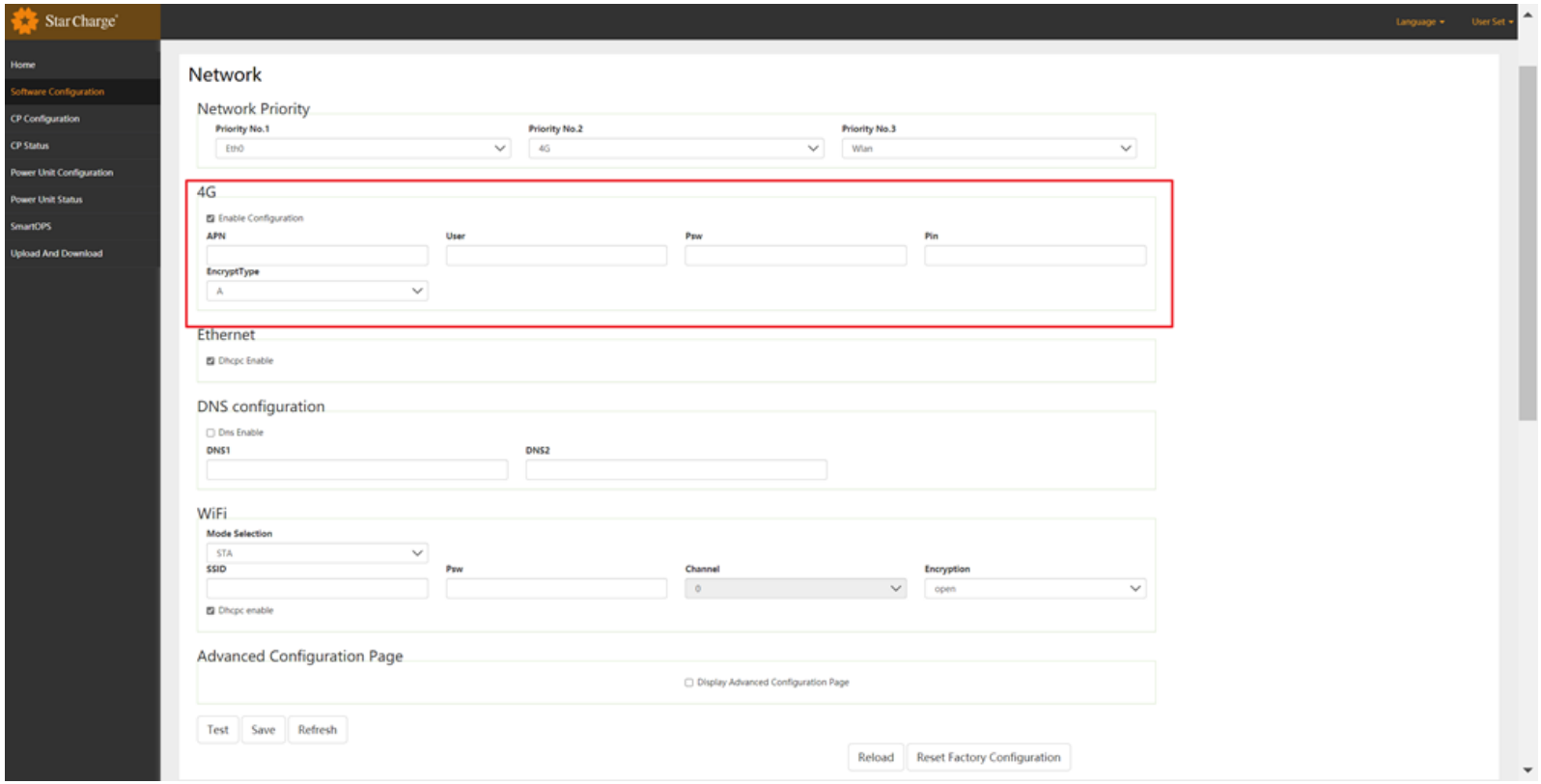
Parameter Configuration
Software Setting: Network Priority:

1. Find “Network priority selection”
2. Set the priority, Ethernet>4G>WIFI for default



Parameter Configuration
Software Setting: 4G

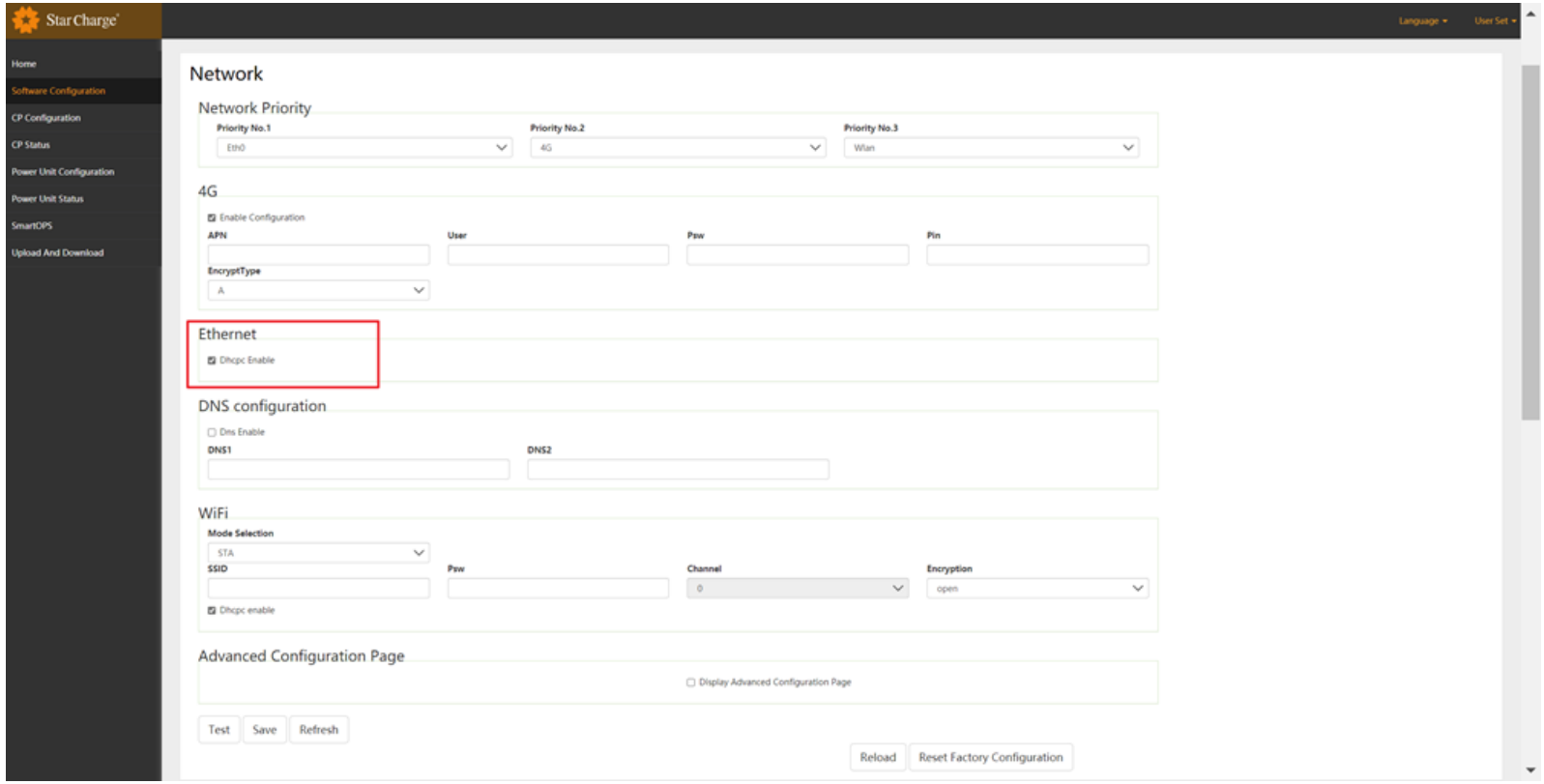
1. Find “4G”
2. Click “Enable modification”
3. Set APN, User, Psw, Pin according to actual usage
4. Click “Save”
5. Click “Test”
6. Click “Reload configuration”



Parameter Configuration-Software Setting

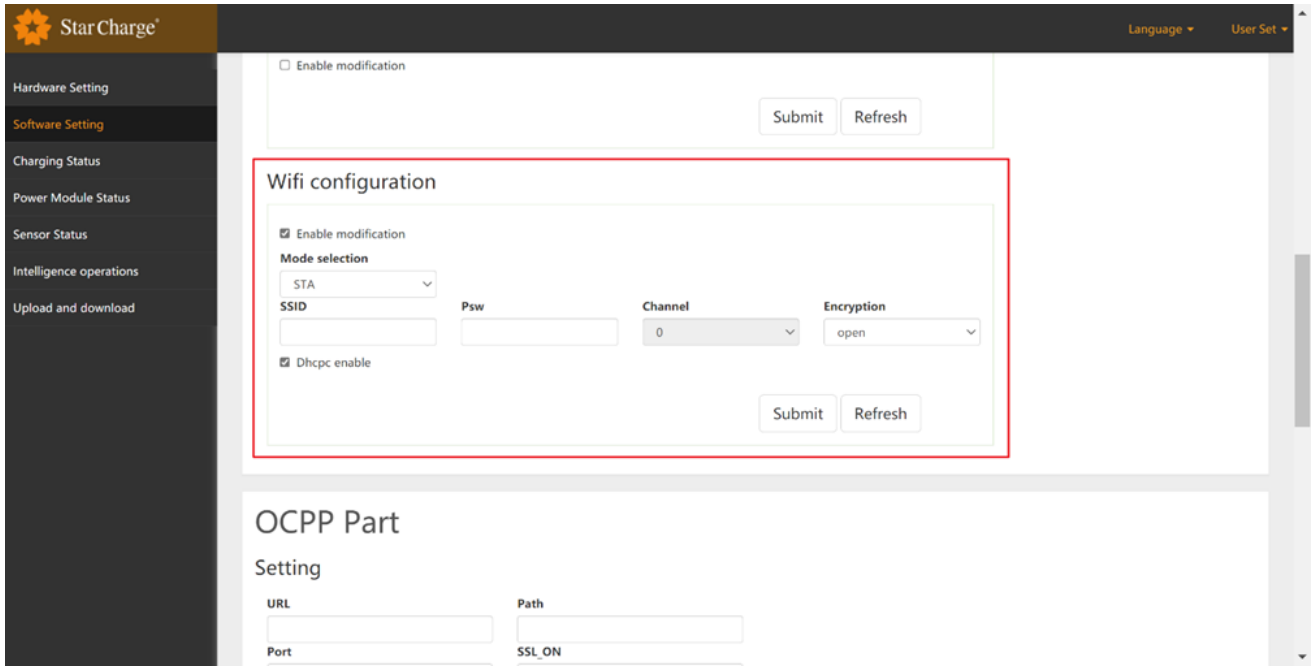
Ethernet:

1. Connect Ethernet cable
2. Find “Ethernet configuration”
3. Click “Dhcpc enable”
4. Click “Save”
5. Click “Test”
6. Click “Reload configuration”



Parameter Configuration-Software Setting
Software Setting: WIFI

1. Find “WiFi”。
2. “Mode selection” choose “STA”
3. Fill in “SSID”(WIFI ID) “Psw”(WIFI pasword) “Encryption”(EncryMode, generally choose wpa2)
4. Click “Dhcpc enable”
5. Click “Save”
6. Click “Test”
7. Click “Reload configuration”
8. Finish setting, wait for 1 minute to check whether the WIFI connection works



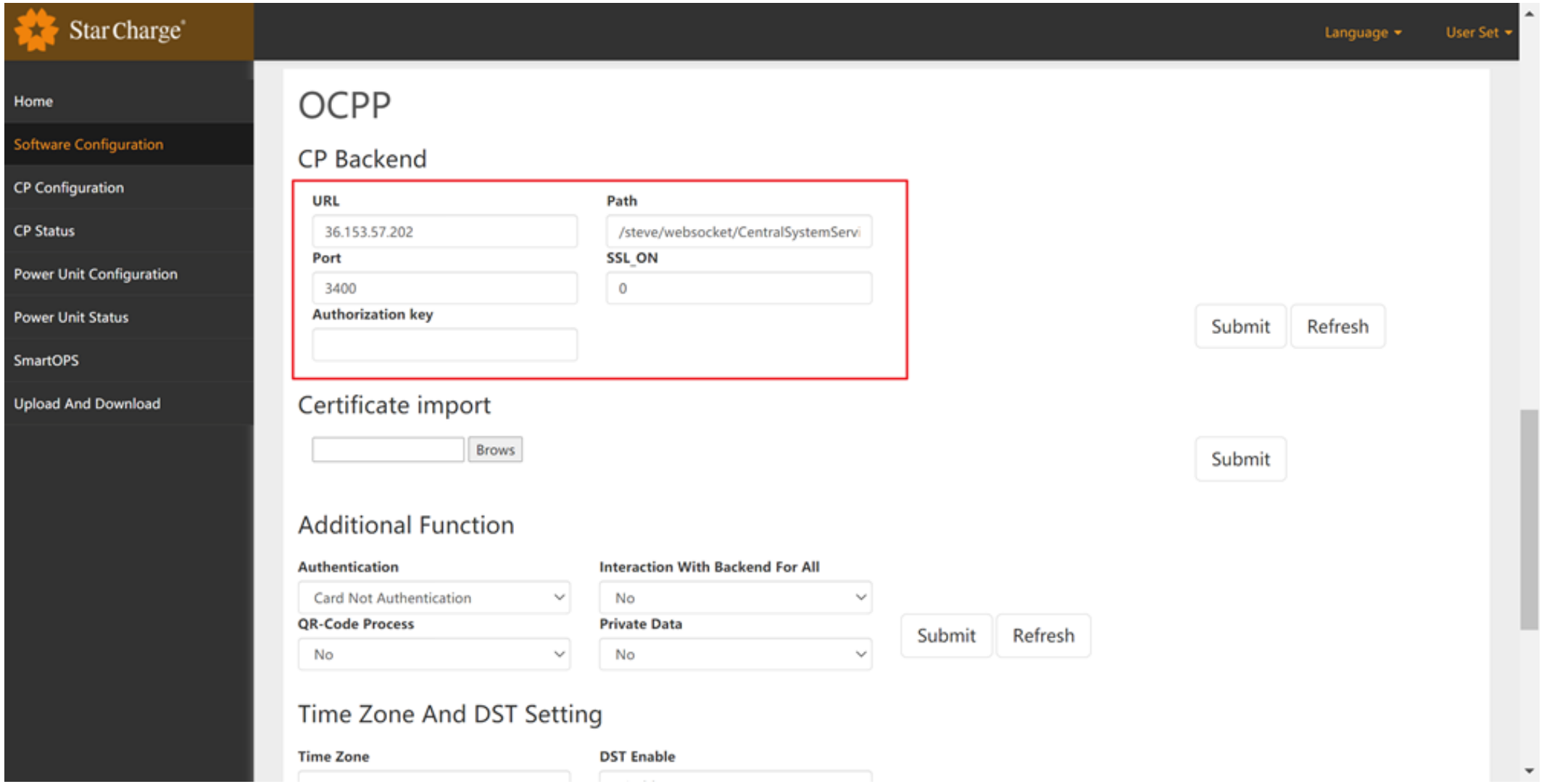
Parameter Configuration-Software Setting

OCPP:

Take http://36.153.57.202:3400/steve/websocket/CentralSystemService as an example. The information need to be filled in is shown as below:

1. Find “OCPP”
2. “URL”: Enter IP address or domin name of the backend;
3. “Path”: Enter the path after IP in “Path”
4. “Port”: Enter Port number of backend
5. “SSL_O”: The value is 1 when the backend uses TLS for access, otherwise the value is 0.
6. “Authorization key”: If the backend doesn’t use Basic authorization, just leave it blank. (no need to fill in most cases)
7. Click the “Submit” in OCPP Part to confirm delivering the setting information to the backend.
8. “Certificate Import”: Load in the CA certificate offered by customer when using TLS; otherwise, leave it blank.
9. Click “Submit” to deliver certificate if loading in the certificate.

Parameter Configuration-Software Setting

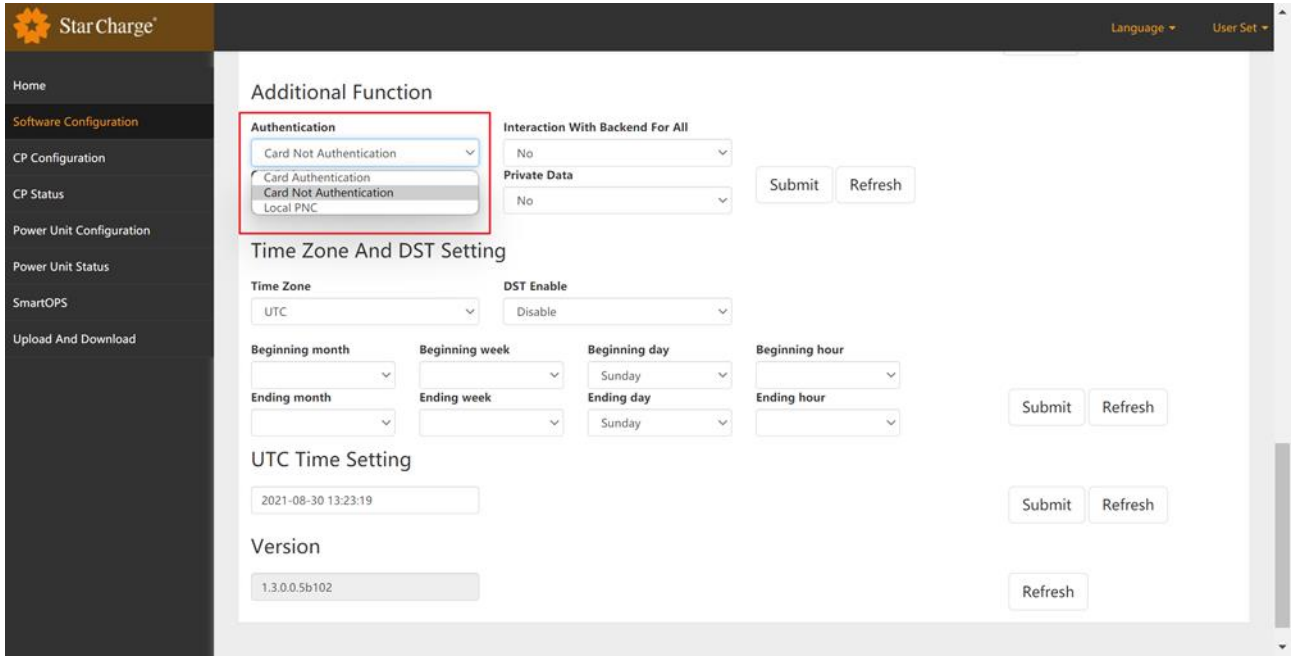


Parameter Configuration-Software Setting

Card type:

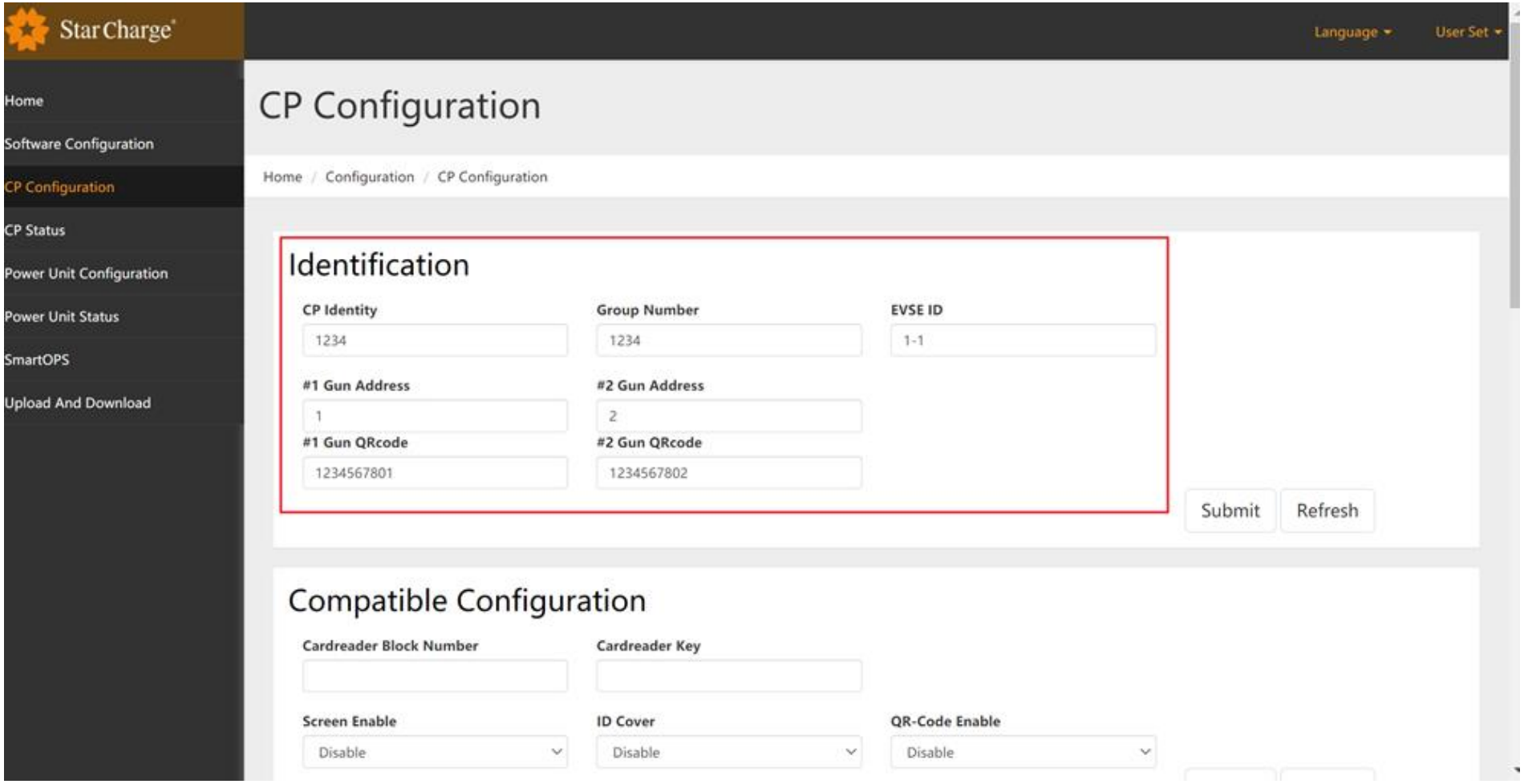
1. “Card Not Authentication”：Local start-stop card, the EVSE can work by swiping the card without connecting to the backend.
2. “Card Authentication”：Authentication card, the UID of RFID card must be entered into backend before using, and EVSE must connect to the backend
3. “Local PNC”：plug in and charge

Click “Submit” after the configuration.



Parameter Configuration-CP Configuration

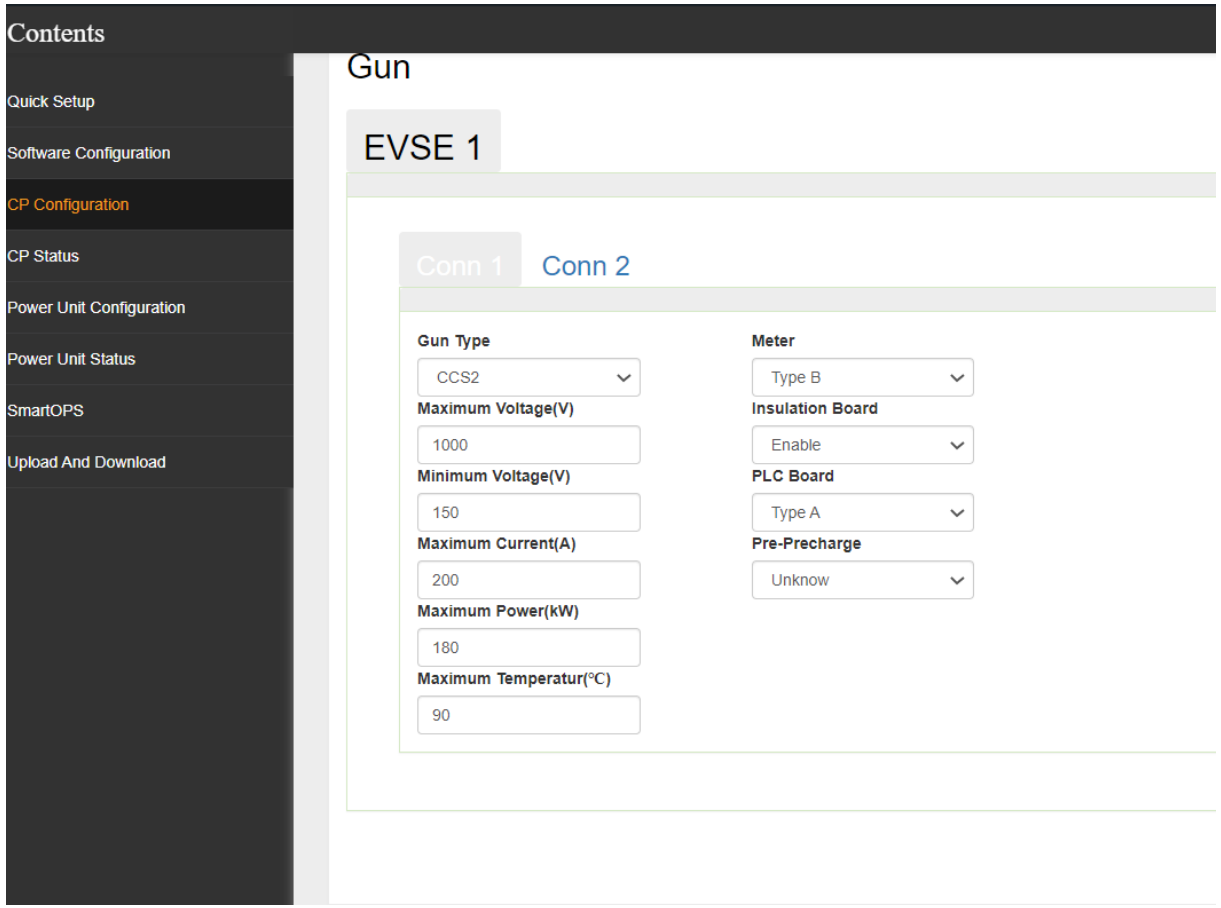
Enter ChargerPoint ID (if no, default is 1234), Group Number (if no, default is 1234), EVSE ID: 1-1
#1 Gun Address:1, #2 Gun Address:2
Enter QR code for the two charging cables.



Parameter Configuration-CP Configuration

The default settings are shown as below (Maximum power is set according to the requirements. If you want to change the value of current, voltage and power, administrator account is required, pls contact the local service engineer):

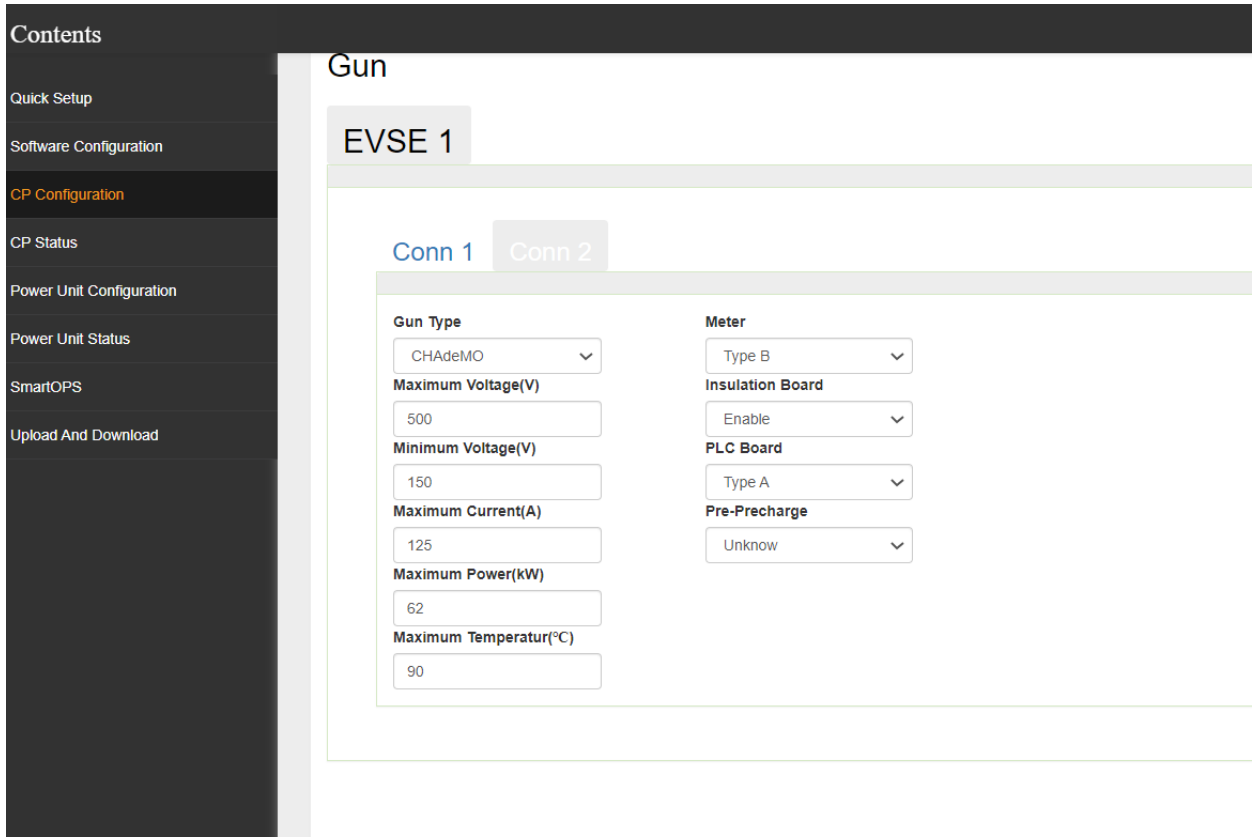
If the gun type of the Titan is CCS2, you can configure it with the following default parameter.



Parameter Configuration-CP Configuration

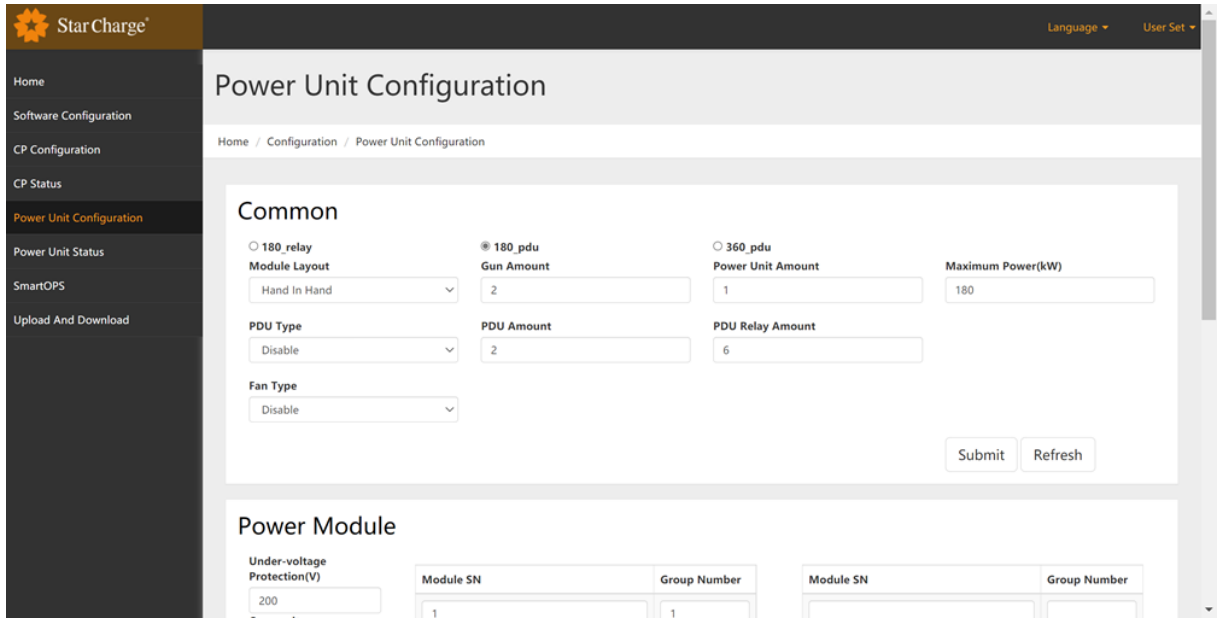
The default settings are shown as below (Maximum power is set according to the requirements. If you want to change the value of current, voltage and power, administrator account is required, pls contact the local service engineer):

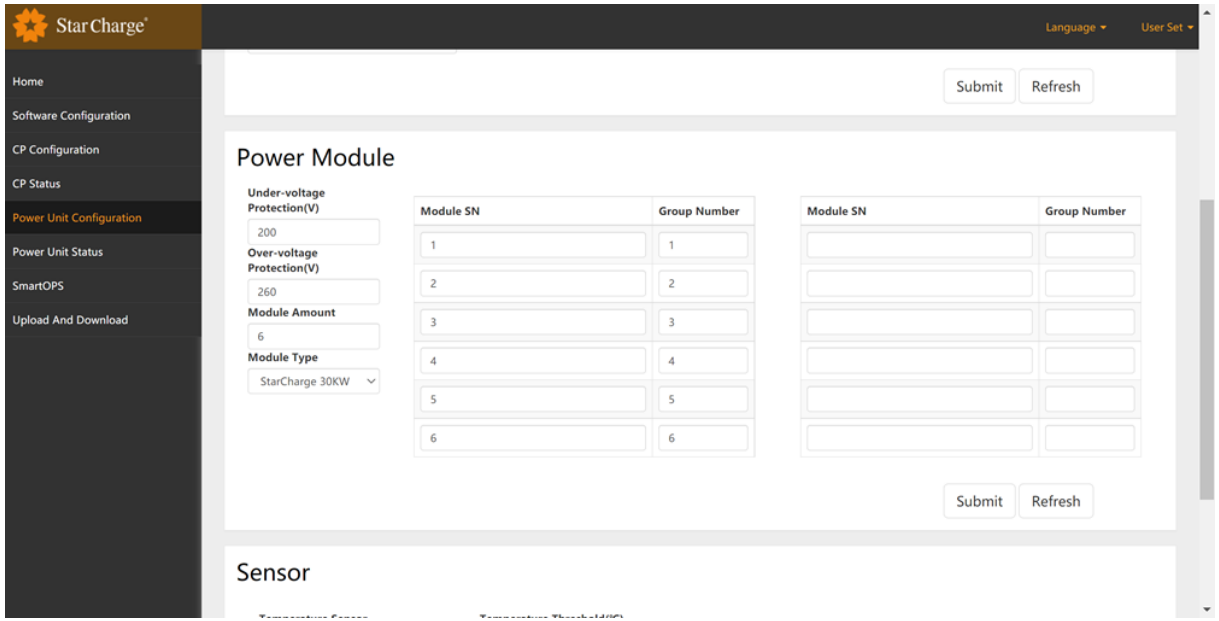
If the gun type of the Titan is CHAdeMO, you can configure it with the following default parameter.



Parameter Configuration-Power Unit Configuration

The default settings are shown as below (Maximum power is set according to the requirements. If you want to change the value of current, voltage and power, administrator account is required, pls contact the local service engineer):



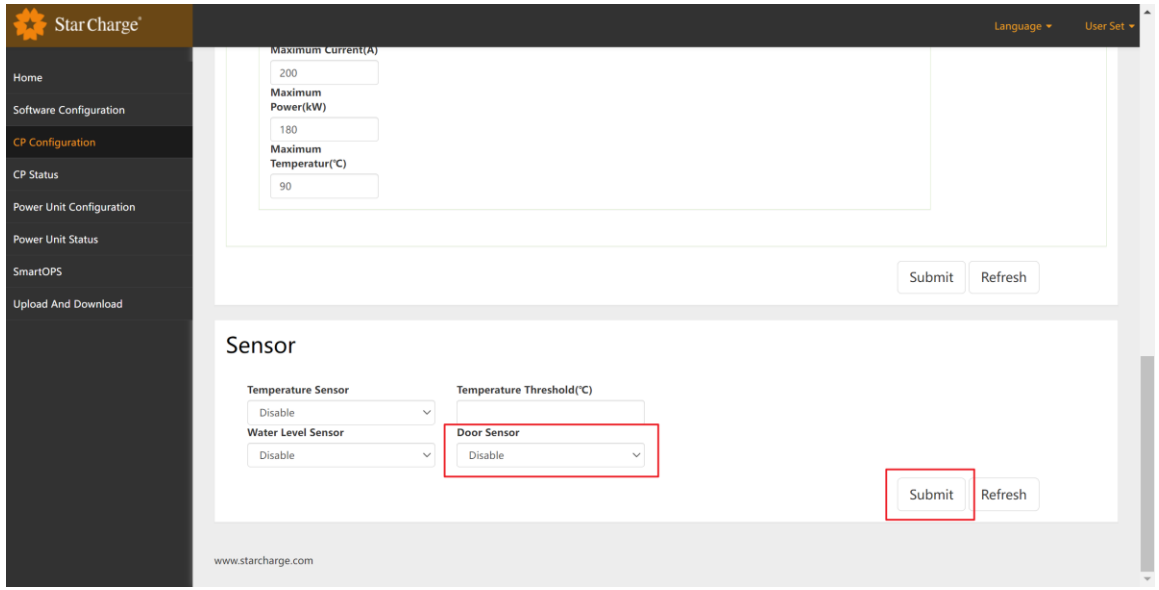


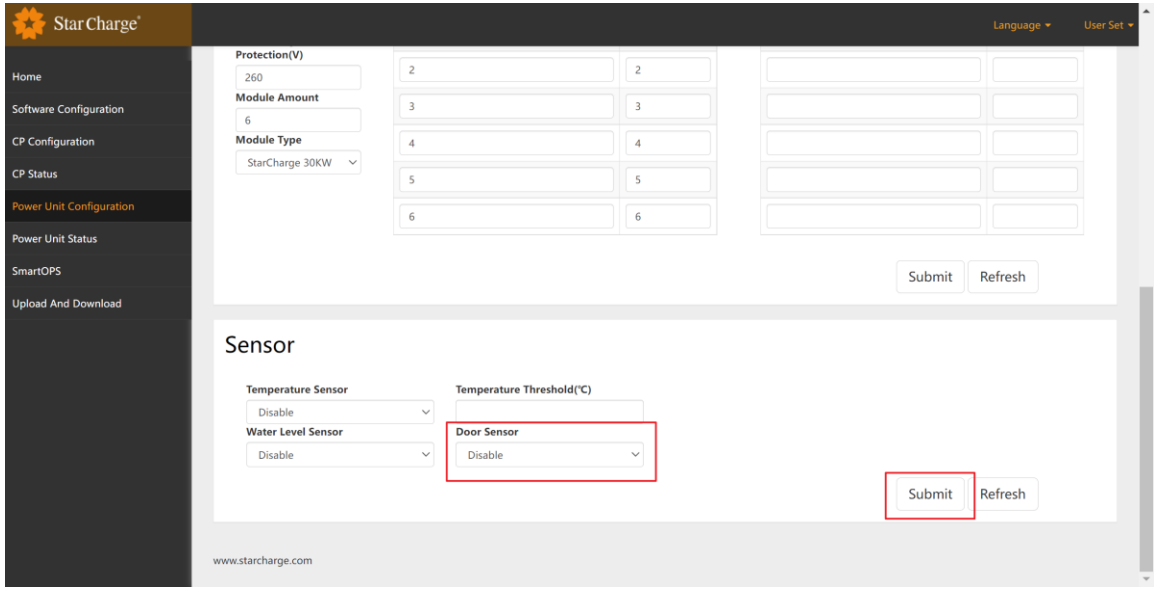
Power Module Address Configuration

Set the power address as the picture below. Workflow refers to the following slides.

Power Module Address Configuration

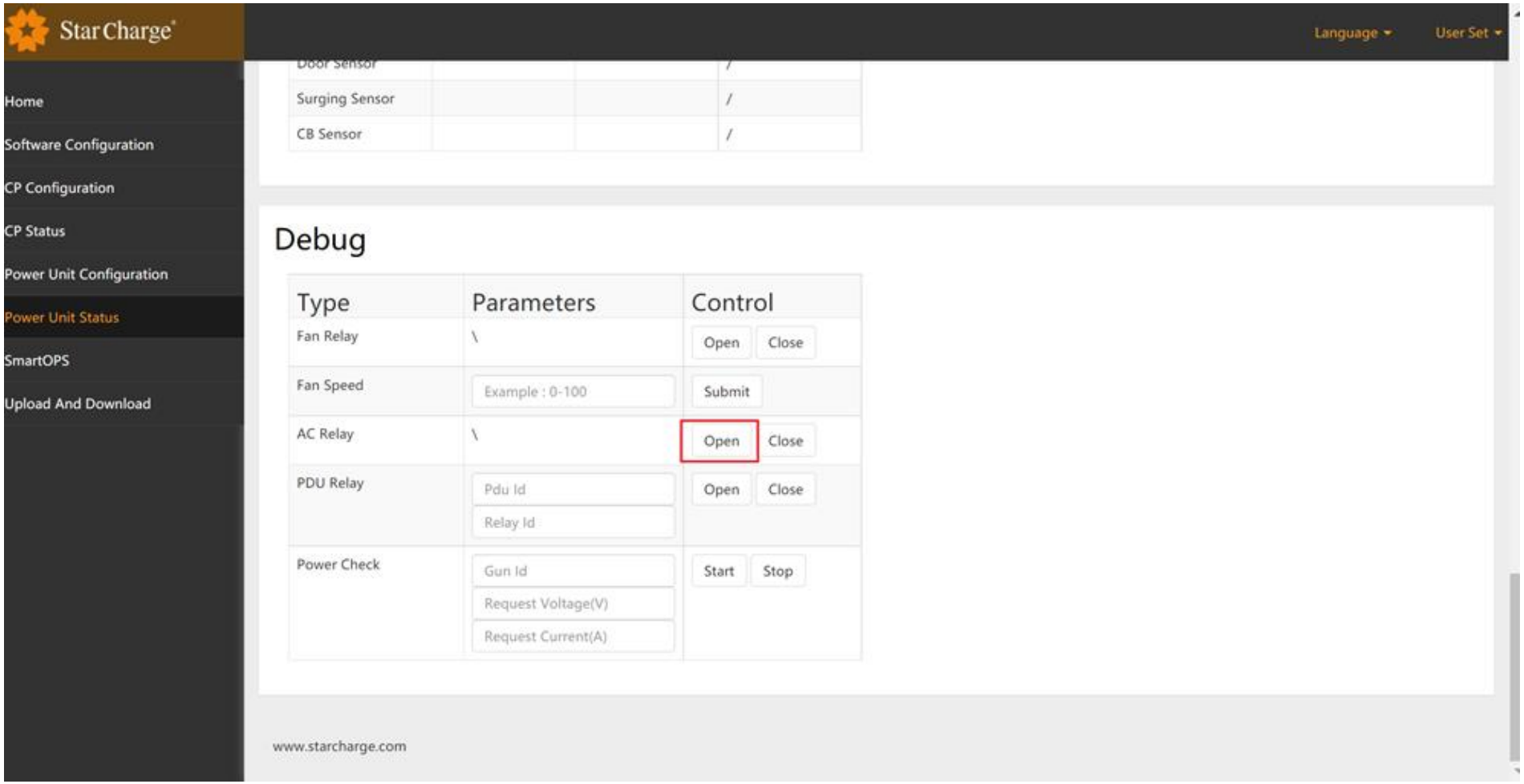
Turn off the door sensor(administrator account is required).





Power Module Address Configuration

Turn on the AC contactor.

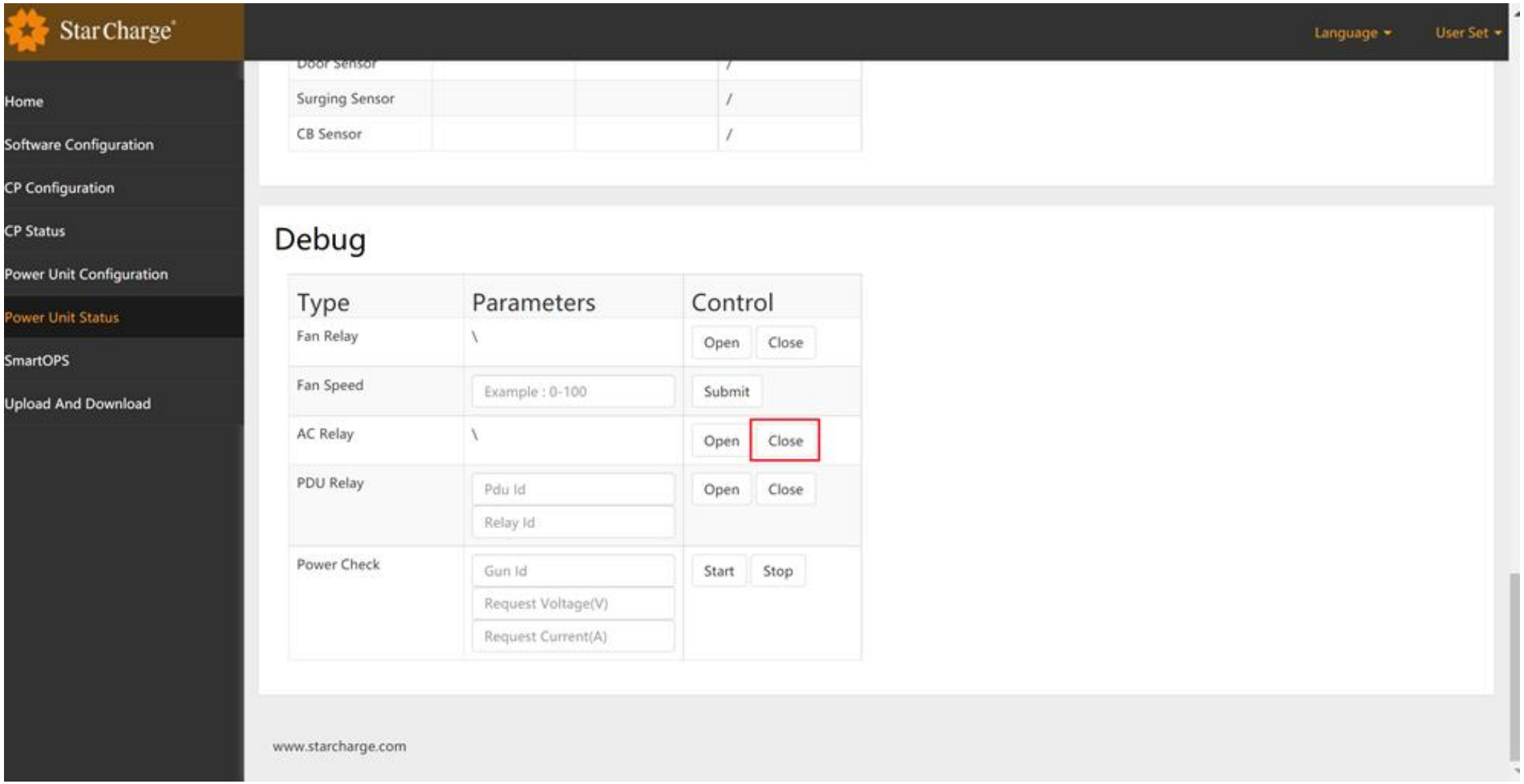


Power Module Address Configuration

1. Press ▲ or ▼, change the interface;
2. Press ▲ or ▼ for about the 2.5s, the value will be flashing;
3. Press ▲ or ▼ to change the value;
4. Press ▼ for about 2.5s to save the value.

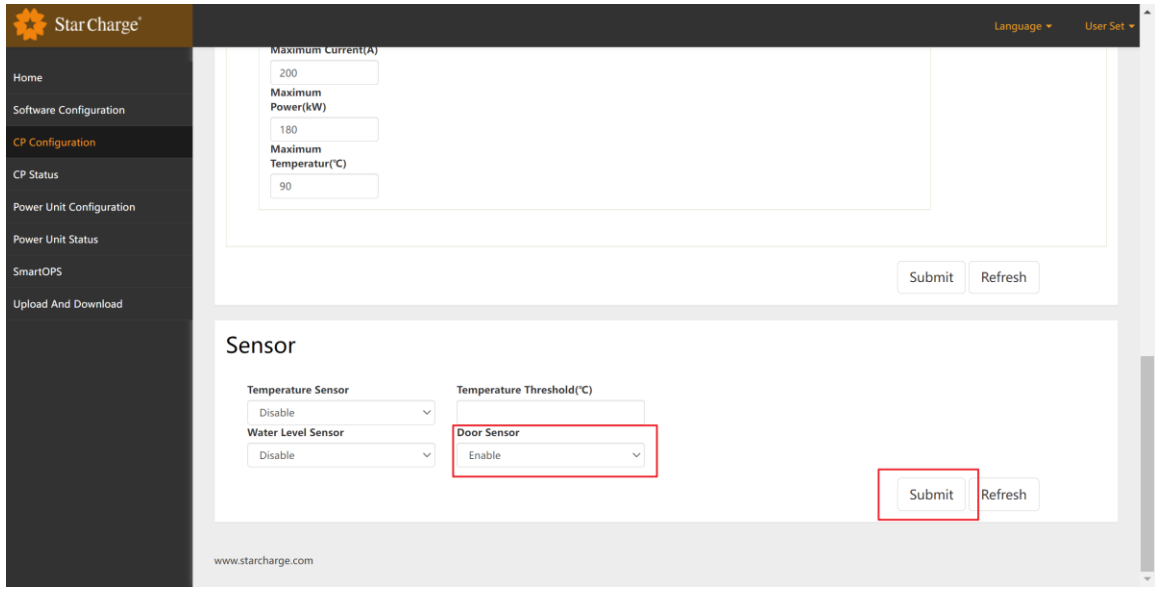
Power Module Address Configuration

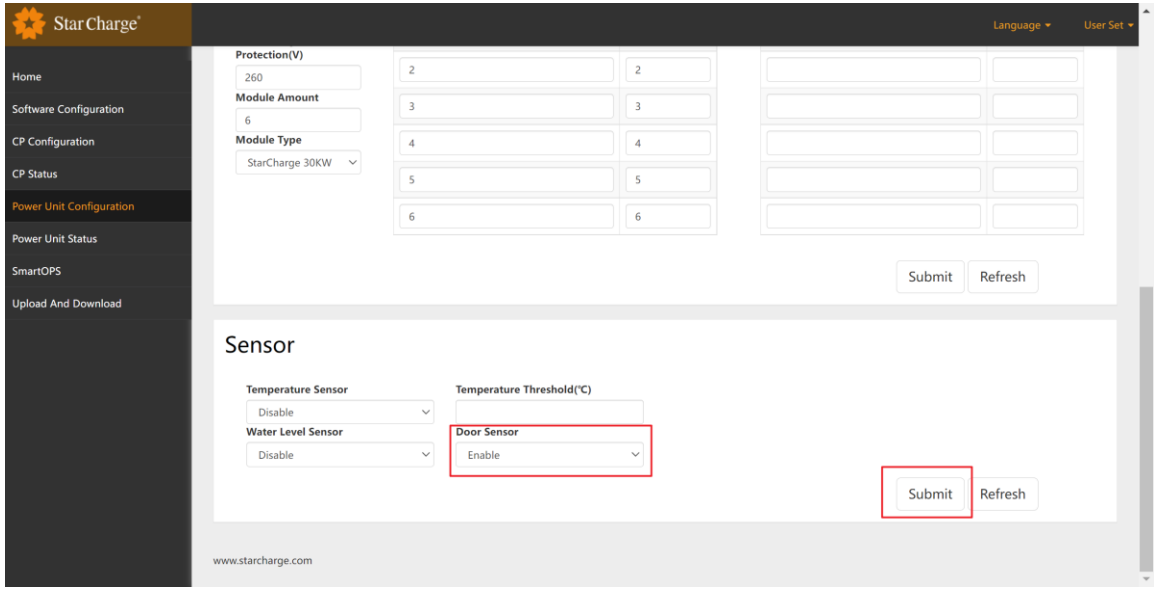
Turn off the AC contactor.



Power Module Address Configuration

Turn on the door sensor (administrator account is required).





Charging Function Check

Charging Test

1. Swipe the RFID card
2. Scan QR Code

Hardware Function Test

1. Limit switch: 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. Fan: Check whether the fan inside of EVSE and fan of power module during charging.
4. Meter: Check whether the meter measures accurately during charging.
5. Charging cable: There’s no burrs, no sharp edges, no ignition or burning, no loosen insulation cap on the easy touch surface of the charging cable. It’s neither too tight nor too loose when inserting and pulling out the charging cable.

Commissioning Report

Commissioning Report

After the commissioning work for the EVSE, the engineer should give a basic training relating to the main characteristics of the EVSE to guide the customer on using and some basic knowledge. The training form can be through either document or practical explanation on-site. The training content should cover safety knowledge, basic charging procedure and etc.

After confirming customer's satisfaction, get the training file signed and recorded properly. Refer to Appendix 1 "Customer training record sheet" for details.

Fill in the "Commissioning Report" after all the items have passed.


Mobile Power Grid Ecosystem
Future has Come
WeChat
APP
Star Charge, Faster and Smarter!
No,39 Longhui Road, Wujin, Changzhou, Jiangsu, China
Hot Line: 400 8280 768
WWW.STARCHARGE.COM