



Main Features

- Over 94% peak efficiency & 100A high output current.
- 7 inches LCD Touch Panel & RFID card reader.
- Connect to any backend based on OCPP 1.6J protocol.
- Robust all-weather enclosure for indoor and outdoor use.



Specifications

General Information	
Input Rating	408Vac-528Vac, 3 phases, 50/60Hz, L1+L2+L3+N+PE
Input Current Rating	AC 45A
Power Factor	≥0.98 @ Full Load
Efficiency	≥94% @ Full Load (Peak)
Output Interface	1 x CCS1
Output Power	30kW max.
Output Voltage	200-1000Vdc
Output Current	100A max.
User Interface	
Display	7-inch touch screen
Support Language	English (Other languages available upon request)
Button and Switch	Emergency button
User Authentication	RFID card, QR code, Credit card(Optional)
RFID Reader	ISO/IEC 14443 A/B, ISO/IEC 18092, IEC/ISO 15693
Communication	
Network Interface	4G, Wi-Fi, Ethernet
Protocol (EVSE&Backend)	OCPP 1.6J
Protocol (EVSE&EV)	DIN 70121, ISO 15118
Environmental	
Operating Temperature	-22°F to 131°F(Derating from 122°F)
Storage Temperature	-40°F to 158°F
Humidity	5% to 95% no condensation
Altitude	≤6561.28' above sea level
Mechanical	
NEMA enclosure	Type 3R
IK Rating	IK10 (Screen is IK08)
Cooling	Forced Air
Charging Cable Length	16.4'
Dimensions (WxHxD)	2.23*1.44*0.94'
Weight	Approx. 66.14 lb (excluding power modules)
Installation	Wall mounting, Pole mounting (Pole is optional)
Certification and standards	
Standards and compliance	FCC part 15 Class A, UL 2202, UL 2231-1, UL 2231-2, Energy Star
Certification	CSA, FCC, Energy Star, CTEP

Note: Pictures are for reference only, please prevail in kind.



Charging Infrastructure

Venus 30kW DC EVSE

User Manual



Legal Notice

Company: Star Charge Americas Corp.

Company address: 46571 Fremont Blvd, Fremont, CA, 94538

Customer service: 400 828 0768

Website: www.starchargeamericas.com

Star Charge Americas Corp. All rights reserved.

This document is part of the Electric Vehicle Supply Equipment technical document and is protected by copyright. Without written consent, any use outside the strict limits of copyright law is prohibited.

This also applies to files that are copied, translated, and photographed and files processed using electronic media.

Any party who violates this regulation is obliged to compensate for the loss!

FCC Notice

Information to the user (FCC Part 15.105)

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modification warning (FCC Part 15.21)

Warning: Please note that changes or modifications of this product is not expressly approved by the party responsible for compliance (Star Charge Americas Corp) could void the user's authority to operate the equipment.

Contents

Legal Notice	1
FCC Notice	2
1 Important information	4
1.1 Safety tips	4
1.2 Specified use	4
1.3 About this manual	5
2 Product Description	6
2.1 Product Overview	6
2.2 Specifications.....	8
2.3 LED status indicator description	9
3 Instructions	10
3.1 Charging connection operation	10
3.2 Start charging operation	11
3.2.1 Select startup Type	11
3.2.2 Charging process	14
3.3 Stop charging	15
3.4 Fault information.....	16
4 Trouble shooting	17
5 Routine maintenance	18
6 Customer service	18
6.1 Preparation work.....	18
6.2 Contact information of equipment manufacturer	18

1 Important information

1.1 Safety tips

Table1 Definition of warning symbols

Table1 Related symbols and meanings		
No.	Sign	Definition
1		“Warning” indicates danger. Please pay attention to the operation sequence. Any incorrect operation or practice will lead to personal injury or death. Operations marked “Warning” symbol can only be performed if the indicated conditions are fully understood and met.
2		“Attention” indicates danger. Please pay attention to the operation. Any incorrect operation or practice will lead to the product damaged. Operations marked “Attention” can only be performed if the indicated conditions are fully understood and met.
3		“Notice” indicates useful operation skills or information. The operation will be marked “Notice” symbol if any useful skill and information is available. No warning or attention
4		“Garbage disposal”, which indicates electrical and electronic waste. This symbol is located on the product, in the instruction manual or on the packaging, indicating that the electrical and electronic equipment and its accessories should be disposed separately from ordinary household waste. Materials can be reused based on their markings. By reusing old equipment, materials and other forms of reuse, you can make a significant contribution to the environment.

1.2 Specified use

- This product is Electric Vehicle Supply Equipment that can charge electric powered vehicles (for example, an electric car) in indoor and outdoor areas.
- When installing and connecting Electric Vehicle Supply Equipment, please follow the regulations of each country.
- The intended use of the equipment includes observing the environmental regulations for this equipment in all cases.
- The storage of the charger should meet the following requirements: Before receiving and

- installing the equipment, Electric Vehicle Supply Equipment and its components need to be stored in a dry and ventilated warehouse. The temperature of the warehouse should be
- around $-40\text{ }^{\circ}\text{C} \sim +70\text{ }^{\circ}\text{C}$ ($-104\text{ }^{\circ}\text{F} \sim +158\text{ }^{\circ}\text{F}$), and monthly average relative humidity of the warehouse should not be more than 90%, no corrosive or explosive gases in the warehouse. Avoiding rain, exposure to the sun, condensation and frost during storage.
- After the equipment is installed, the door of the charger should be kept closed to avoid raining and soaking.
- The equipment is developed, produced, inspected and filed according to relevant safety standards. Therefore, if the instructions and safety technical instructions for the intended use are observed, the product will not cause damage to property or endanger the health of the person under normal circumstances.
- This equipment complies with radiation exposure limits set forth for an uncontrolled environment and it has a built-in wireless transmitter (4G/ WiFi). This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.
- The instructions contained in this manual must be strictly followed, otherwise potential safety hazards or safety devices may fail. Although the relevant safety tips are described in this manual, attention must be paid to the safety regulations and accident prevention regulations of the corresponding application.

1.3 About this manual

This manual applies to equipment type: DC integrated charging equipment

This manual is suitable for the following people:

- Customer (Charger user).
- Commissioning and service technicians.

2 Product Description

2.1 Product Overview

■ Wall mounting:

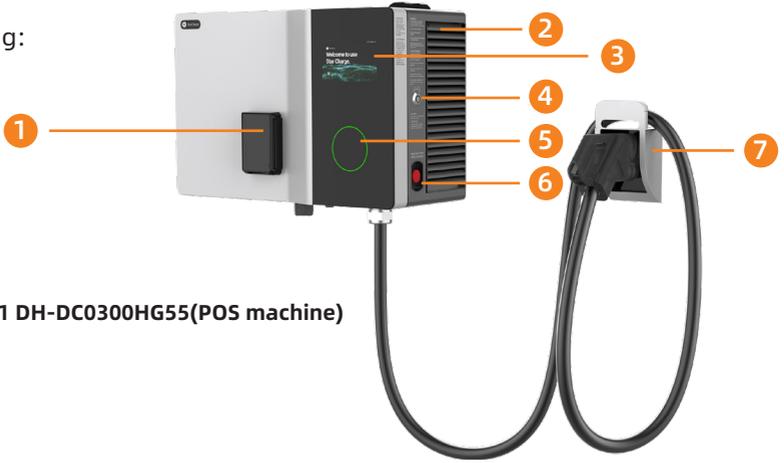


Figure2-1 DH-DC0300HG55(POS machine)

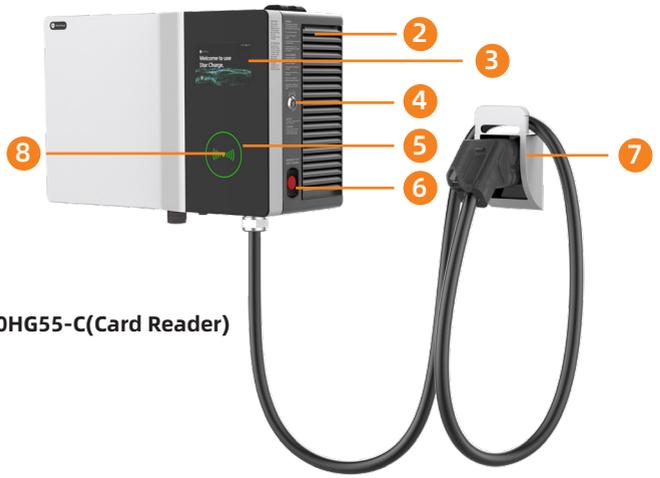


Figure2-2 DH-DC0300HG55-C(Card Reader)

Appearance of wall-mounted charging equipment (wall mounting)

- [1] — POS machine
- [2] — Air outlet
- [3] — Touch screen
- [4] — Door lock
- [5] — Status indicator
- [6] — Emergency button
- [7] — Charging connector placement and cable bracket
- [8] — Card reader

■ Column mounting

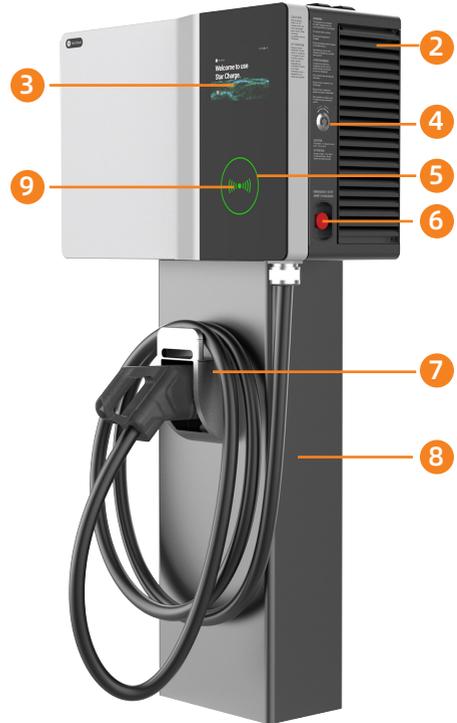
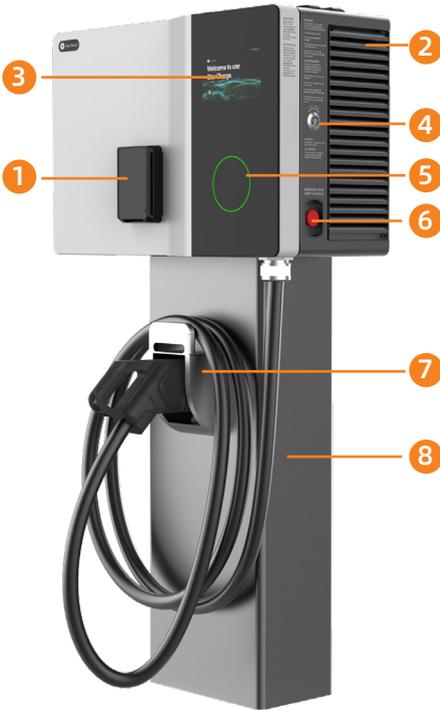


Figure2-3 DH-DC0300HG55(POS machine)

Figure2-4 DH-DC0300HG55-C(Card Reader)

Appearance of wall-mounted charging equipment (Column mounting)

- [1] —— POS machine
- [2] —— Air outlet
- [3] —— Touch screen
- [4] —— Door lock
- [5] —— Status indicator
- [6] —— Emergency button
- [7] —— Charging connector placement and cable bracket
- [8] —— Column
- [9] —— Card reader

NOTICE



- The pictures are reference only.
- When charging is completed, insert the connector into slot [7] for safe storage.

2.2 Specifications

Table2 Parameter specification table

Conventional parameters	Product brand	Star Charge
	Product name	Venus 30kW DC EVSE
	Product model	DH-DC0300HG55/ DH-DC0300HG55-C
Input parameters	Rated input	480Vac-15%/+10%, 3-Phase, 60Hz, L1+L2+L3+N+PE
	Power factor	≥ 0.99
	Rectification efficiency	≥ 94%@Full load
Output parameters	Output interface	CCS1
	Output voltage	150-1000V DC
	Output current	100A max
	Output power	30kW max
User interface & control	Display	7-inch touch screen
	Language support	Chinese, English, other language available upon request
	Mechanical button	Emergency button
	RFID reader	In POS integration, support outside the chip card, magnetic stripe CARDS, ISO/IEC14443 type A, type B card, support IEC14443-4 and ISO/IEC15693, ISO/IEC18092 type card read and write.
	Start method	QR code /RFID card
Communication	Network interface	4G/WiFi/Ethernet
	protocol	OCPP1.6j

Environment	Working Ambient temperature	-35°C ~+50°C (-95 °F ~+122 °F)
	Storage temperature	-40°C ~+70°C (-104 °F ~+158 °F)
	Working humidity	5%-95%
	Working altitude	≤ 2500m (8202 ft) ,For reducing capacity above 2500m
Mechanical	Protection level	Type 3R、IP55、IK10(Except for the screen)
	Cooling method	Forced air cooling
	Dimensions (WxHxD)/ weight	680*440*286mm/approx 26.77*17.32*11.26in/approx 45kg(with power module) 99.2lb (with power module)
	Installation method	Wall mounting / Column mounting(Columns to be ordered separately)
Regulation	Compliance	UL2202、UL2231-1、UL2231-2、CSA C22.2 NO.1071、CSA C22.2 NO.281.1-12、CSA C22.2 NO.281.2-12、FCC、ENERGY STAR

2.3 LED status indicator description

Table3 LED status indicator description table

LED status indicator	Status meaning
Steady green	Free
Flashing green	RFID card detected
Steady yellow	Fault but could use
Steady blue	Charging
Steady red	Fault

3 Instructions

The charger operation has two parts, the charging connection operation and the equipment operation. The user must connect the charger to the vehicle firstly, and then carry out relevant charging operations through the HMI.

In the standby state, when the connector is not connected, the touch screen is shown in Figure3-1. The button for switching languages is displayed in the bottom of left, as shown in Figure3-2.



Figure3-1 Main charging interface

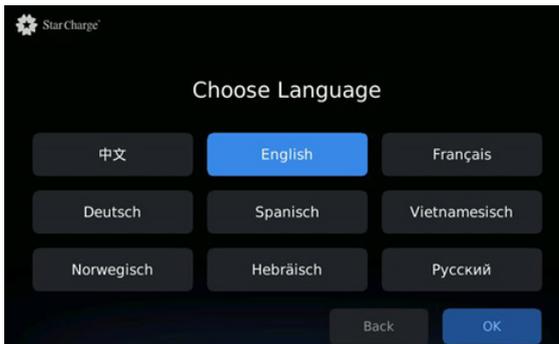


Figure3-2 Language selection interface

3.1 Charging connection operation

Step 1: Confirm that the charging device is normal, and the status indicator light is steady green.

Step 2: Confirm that the vehicle meets the charging conditions, remove the charging connector from the connector base, and insert it into the corresponding charging port of the vehicle.

Step 3: Confirm that the above connection is intact and start the next step.

3.2 Start charging operation

After the connector is inserted, the display screen jumps to the startup interface. There are two startup modes: Scan QR code and Swipe, as shown in Figure3-3.



Figure3-3 Charging method selection

3.2.1 Select startup Type

- MF card to start _____

No POS version: Place the card in the swipe area to start charging.



Figure3-4-1 Mifare card swipe interface

POS version: Click the Mifare Card button as shown in Figure3-3, and a yellow border will be displayed after it is selected. At this time, the interface of POS machine as shown in Figure3-4-2. Then put M1 Card into the POS machine area to start charging.

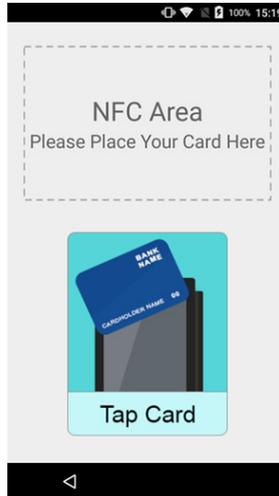


Figure3-4-2 Mifare card swipe interface

- **Credit card to start**

POS version: Click the credit card button as shown in Figure3-3, and the yellow border will be displayed after selection. At this time, the POS machine interface is shown in Figure3-5. Then insert the credit card into the POS machine card slot, wait for the POS machine to show that the authentication is successful, and then pull out the credit card to start charging.

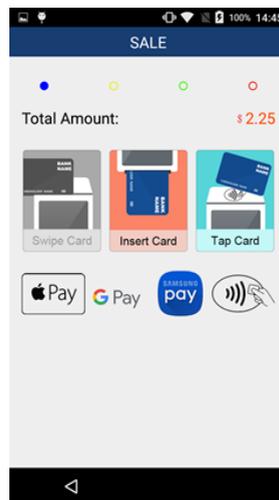


Figure3-5 Mifare card swipe interface

Note 1: If the user selects the Credit Card swiping type but does not insert the Credit Card within 30 seconds, the POS machine will report an error code Auth Timeout, and then wait for the POS machine to resume to the interface as shown in Figure3-5 to continue swiping the Card.

Note 2: If the user's credit card is not a magnetic stripe card, please follow the correct way of swiping the credit card.(Refer to MF card to start)

- **Scan code to start**

Open “Star Charging” or other mobile clients, click the button in the red box as shown in Figure3-6, to scan the QR code on the charging device interface.



**Figure3-6 Mobile phone client interface
(take the Star Charge interface as an example)**

3.2.2 Charging process

During the charging process, the charging status interface is displayed on the charging device screen. Tap Charge Details to view the charging details, as shown in Figure3-7, 3-8.

Note: In case of emergency or abnormal situation, please press the emergency stop button on the right side of the equipment. After the fault is removed, turn the emergency stop button clockwise to recover.



Figure3-7 Charging interface



Figure3-8 Charging Details interface

3.3 Stop charging

1. If you need to stop charging during charging process, click the “Stop” button in Figure3-8 to enter the stop charging interface, as shown in Figure3-9.



Figure3-9 Stop charging interface

There are three ways to stop charging:

- ① If you start charging through app, you can stop charging through app;
- ② If you start charging through MF card, you can stop charging by brushing the same MF card;
- ③ To start charging through a credit card, you need to wait until the pre-sale amount of the credit card is consumed or fully charged before stopping charging.

2. After the charging is stopped, the charging result is displayed on the screen, as shown in Figure3-10.

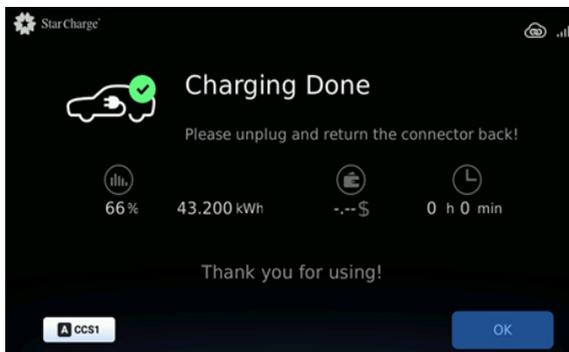


Figure3-10 Details of charging Results

3. Pull out the charging connector on the vehicle, pack up the charging cable and place it in the equipment support.

3.4 Fault information

- When the LED status indicator of the charging device is red, it indicates that the charging device is faulty, and an exclamation mark is displayed in the bottom of right, in Figure3-11.



Figure3-11 Abnormal charging interface

- You can click an exclamation mark (!) to view the fault information. Contact after-sale technical support, as shown in Figure3-12.

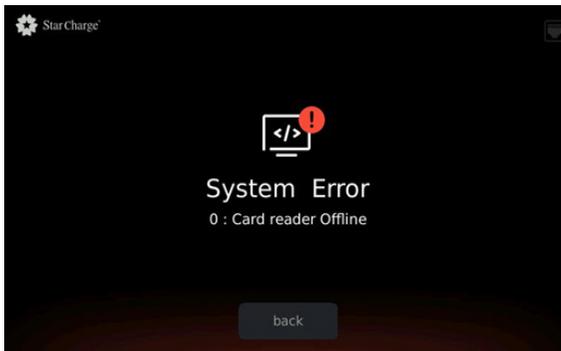


Figure3-12 Fault Details interface

- If the charging device or vehicle stops due to an abnormality, an error message is displayed as shown in Figure3-12. You are advised to contact after-sales technical support.

4 Trouble shooting

When the charging equipment is abnormal, please troubleshoot according to the following tips. If the fault cannot be eliminated, please contact your local service partner or contact the product manufacturer by referring to the <Customer Service> section.

Table4 Troubleshooting table

Abnormal performance	Possible causes and Solutions
Power LED is off	<ul style="list-style-type: none"> ■ No power supply. <ul style="list-style-type: none"> • Please check whether the upper switch of the charging device is closed, if not, please close it. • Please contact the installation or operation and maintenance personnel.
Power LED is red	<ul style="list-style-type: none"> ■ Failure of charging equipment. <ul style="list-style-type: none"> • Please check whether the emergency stop button is pressed. If it is pressed, please turn it out according to the prompt. • Please check that the operating door is closed correctly. If not, close it. • Please contact the operation and maintenance personnel.
The screen shows that the charging cable is not connected	<ul style="list-style-type: none"> ■ The charging connector is not properly plugged in. please reconnect the charging connector. ■ There is a foreign objects in the charging connector. please clean up after the power is cut off and try again. ■ Communication failures. please contact operation and maintenance personnel.
The screen shows that the device is offline	<ul style="list-style-type: none"> ■ Communication failure. <ul style="list-style-type: none"> • Please confirm the signal status of the venue. If the signal is not good, please optimize the signal environment. • Please contact the operation and maintenance personnel.
The screen shows that the card reader is faulty	<ul style="list-style-type: none"> ■ POS communication fails. <ul style="list-style-type: none"> • If the device has just started, wait for 2 minutes. • If it has been started for a period of time, contact operation and maintenance personnel. • If you want to continue to use the charging pile, please start charging in any of the following ways: ① ConFigurethe plug and play mode ② background start ③ Sweep start.
The screen displays an overvoltage fault	<ul style="list-style-type: none"> ■ The AC input voltage of the power module is abnormal. Check whether the overvoltage threshold on the Web is 304.7V. If the threshold is lower, change it to 304.7V. Otherwise, contact operation and maintenance personnel.
The screen shows that the power module is faulty	<ul style="list-style-type: none"> ■ The power module is abnormal. <ul style="list-style-type: none"> • Check whether the power module is properly inserted. • Check whether the address of the power module is A01 or G01. • Contact operation and maintenance personnel.

The screen shows that obtaining terminal information has timed out

- **Vehicle end communication is abnormal (possibly the vehicle end is not awakened).**
Insert the gun again and try again. If not, operation and maintenance personnel .

5 Routine Maintenance

The following Table is the recommended maintenance cycle. According to the environment of the country where the charging equipment is located and relevant laws and regulations, the cycle needs to be changed. For details, please refer to the <Venus 30kW DC EVSE Maintenance Manual>.

Table 5 Maintenance schedule

Check Item	Cycle	Handling method
Fan	Every month	Clean
Dustproof cotton	Every season	Change
Charging connector	Every month	Clean
Module	Every month	Clean
Line check	Every season	Fasten
Emergency stop	Every month	Test
Motherboard	Every month	Fasten

6 Customer service

6.1 Preparation work

If you have any questions or problems, please contact the customer service department of the installer or equipment manufacturer.

Before contacting the customer service department of the equipment manufacturer:

- Please check the troubleshooting measures in the “Troubleshooting” chapter.
- Please check the troubleshooting measures in the vehicle manufacturer’s manual.
- Please record the model and serial number of the device (the nameplate of the device).

6.2 Contact information of equipment manufacturer

Company Address: 46571 Fremont Blvd, Fremont, CA, 94538

Company website: <http://www.starchargeamericas.com>

Tel: +1 (510) 573-2957

ABOUT US

Company: Star Charge Americas Corp.

Company address: 46571 Fremont Blvd, Fremont, CA, 94538

Customer service: 400 828 0768

Website: www.starchargeamericas.com

Star Charge Americas Corp. All rights reserved.

www.starcharge.com





Charging Infrastructure

Venus 30kW DC EVSE

Installation manual



Legal Notice

Company: Star Charge Americas Corp.

Company address: 46571 Fremont Blvd, Fremont, CA, 94538

Customer service: 400 828 0768

Website: www.starchargeamericas.com

Star Charge Americas Corp. All rights reserved.

This document is one of the “charging infrastructure” technical documents of Star Charge and is protected by copyright. Without written consent, any use outside the strict limits of copyright law is prohibited.

This also applies to files that are copied, translated, and photographed, and files that are stored and processed using electronic media.

Any party who violates this regulation is obliged to compensate for the loss!

FCC Notice

Information to the user (FCC Part 15 .105)

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful

interference in which case the user will be required to correct the interference at his own expense.

Modification warning (FCC Part 15 .21)

Warning: Please note that changes or modifications of this product is not expressly approved by the party responsible for compliance(Star Charge Americas Corp) could void the user's authority to operate the equipment.

Contents

Legal Notice	1
FCC Notice	2
1 General	5
1.1 Document purposes.....	5
1.2 Scope of application.....	5
1.2.1 Types of equipment applicable to this manual	5
1.2.2 Personnel applicable to this manual	5
1.3 Definition of warning symbols	5
2 Preparation before installation	6
2.1 General construction tools	6
2.2 Construction materials	7
2.2.1 Cable connection terminals	7
2.2.2 Other materials	7
2.3 Installer requirements	7
2.4 Handover of construction drawings	8
2.5 Inspection of electric power cables	8
2.6 Requirements for concrete base(column mouted)	8
2.7 Equipment spacing requirements.....	9
2.8 Current and distribution capacity requirements	10
2.9 Ground/insulation resistance requirements	11
3 Installation procedure	12
3.1 Unpacking and unpacking inspection.....	12
3.1.1 Equipment unpacking list	12
3.1.2 Inspection of unpacking.....	12
3.1.3 Notes of unpacking	13
3.1.4 Check before installation.....	13

3.2 Equipment installation and connection.....	13
3.2.1 Wall mounted installation.....	13
3.2.2 Column mounted installation	26
4 Post-installation inspection	
(Live parts shall be operated by local qualified engineer)	33
4.1 Installation wiring inspection	33
4.1.1 Equipment and equipment fixation inspection	33
4.1.2 Cable laying and connection inspection.....	33
4.2 Check before power-on	33
4.3 Check on power-on	34
5 Installation environment.....	35
6 Completion information.....	35
Appendix 1	36
Appendix 2	37

1 General

1.1 Document purposes

The purpose of this document is to guide the installer to complete the on-site installation of Venus 30kW DC EVSE.

1.2 Scope of application

- **1.2.1 Types of equipment applicable to this manual**

Venus 30kW DC EVSE.

- **1.2.2 Personnel applicable to this manual**

Installer of Venus 30kW DC EVSE.

1.3 Definition of warning symbols

Table1 Definition of warning symbols

No.	Sign	Definition
1		“Warning” indicates danger. Please pay attention to the operation sequence. Any incorrect operation or practice will lead to personal injury or death. Operations marked “Warning” symbol can only be performed if the indicated conditions are fully understood and met.
2		“Attention” indicates danger. Please pay attention to the operation. Any incorrect operation or practice will lead to the product damaged. Operations marked “Attention” can only be performed if the indicated conditions are fully understood and met.
3		“Notice” indicates useful operation skills or information. The operation will be marked “Notice” symbol if any useful skill and information is available. No warning or attention
4		“Garbage disposal” symbol indicates electrical and electronic waste This symbol is located on the product, in the instruction manual, or on the packaging. It indicates that electrical and electronic equipment and its accessories should be separately disposed from ordinary household waste. Materials can be reused according to this symbol. You can make a huge contribution to environmental protection by reusing old equipment, materials, or other forms of reuse.

2 Preparation before installation

2.1 Conventional construction tools

Table 2 list of conventional construction tools

No.	Category	Name	Use	Picture
1	Fabricating traverse tool	Electrician knife	Stripping of insulation sheath	
2	Installation tool	Wire stripping pliers	The stripping of the insulating layer	
3	Installation tool	Line pressing pliers	Terminal joint	
4	Installation tool	Percussion drill	Drill hole	
5	Installation tool	Cutting machine	Cut the pipe	
6	Installation tool	Heat gun	Thermal shrinkage of insulating materials	
7	Installation tool	Allen wrench (full set)	Install and remove screws	
8	Installation tool	Open end wrenches (full set with size 13)	Install and remove nuts	
9	Installation tool	Angle grinder	Polishing of materials	
10	Installation tool	Cross screwdriver (full set)	Installation and removal screw	
11	Measuring instrument	Laser level	Level measurement	
12	Measuring instrument	Measuring tape	Distance measurement	
13	Measuring instrument	Spirit level	Level measurement	

14	Measuring instrument	Multimeter	Measure voltage, current, etc.	
15	Measuring instrument	Megger	Measure resistance	
16	Auxiliary appliance	Insulation mat	Place the parts under disassembly	

NOTE

The above tools should be selected according to the actual situation on site.

2.2 Construction materials

• 2.2.1 Cable connection terminals

- (1) 6AWG wire corresponding terminals.
- (2) RJ45 connector (if Ethernet communication is required) .

• 2.2.2 Corrugated conduit

- (1) Corrugated conduit for power cable: 1-1/4 inch.
- (2) Corrugated conduit for network cable: 1/2 inch. (If 4G or Wi-Fi is used to connect the network, the network cable is not needed.)

• 2.2.3 Other materials

- (1) Fireproof mood or polyurethane foam sealant (only for the column mounted type);
- (2) Heat shrinkable tube, electric tape and other accessories.

2.3 Installer requirements

1. The safety management regulations of construction site shall be observed when entering the construction site.
2. When entering the construction site, the safety helmet must be properly worn (tie the lower jaw belt, the safety helmet is in good condition), do not wear loose clothing, slippers or other unsafe clothing, do not drink to work, and do not smoke at the construction site.
3. Operators at high altitude must wear safety helmets, hang up safety belts, wear non-slip shoes, and fasten labor tools.
4. If the work site is dusty or has spray paint work, protective masks must be worn.
5. Do not enter dangerous areas such as the hoisting area and below the vertical operation to

prevent objects from striking.

6. Keep as far away as possible from various mechanical equipment, electrical circuits, and prevent mechanical and electrical injuries.
7. The user of mobile power tools must master the skills and precautions. Wear insulation shoes, insulation gloves, metal shell must be grounded.
8. Temporary on-site electricity: electrical box should be kept intact, damaged electrical components must be replaced in time.
9. Rubber cable should be used for temporary electric wire on site. No plastic spline is allowed. No wire shall be directly inserted into the socket.
10. Try to avoid living work.
11. Enter the edge of foundation pits, roofs, and other openings, and concentrate to prevent falls from falling.
12. Pay attention to the ground environmental conditions such as nails and steel bars, and prevent sticking, bumping, hanging, falling and other injuries.
13. The on-site construction protective facilities, safety signs, warning signs, etc. cannot be removed without authorization.
14. Strengthen on-site maintenance of construction equipment to maintain intact rate, and prohibit operation with problems and overloading.

2.4 Handover of construction drawings

After the installer arrives at the site, first ask the store staff for a drawing of the installation location of the equipment, and check that the cables and concrete foundation of each equipment meet the requirements.

2.5 Inspection of power cables

The recommended type of power cable to be laid in the 30kW wall box of UL standard is 6AWG, 5C, (90°C, copper wires), and the length over base surface is about 1.5m. Please check and verify the cable type before installation.

2.6 Requirements for concrete foundation (Column mounted)

Before the charger is installed, the concrete foundation needs to be poured. The size of the concrete foundation is 430mm*300mm*600mm, the buried depth of the foundation is 600mm, and not above the ground. The top view is shown in figure 1. The design of concrete foundation can be adjusted according to the user's requirements and the actual situation on site.

The inspection requirements for concrete foundation are as follows:

1. Pay attention to the correction level when foundation pouring.
2. The foundation installation is higher than the ground level, and the necessary maintenance channels are reserved on the site depending on the specific space.
3. The drainage outlet on the foundation surface is slightly inclined to avoid ponding.
4. The foundation is filled with C20 concrete.
5. The Cable inlet hole is reserved on the foundation, as shown in FIG. 1.
6. Test the flatness with a level after the foundation is completed.
7. 4 anchor bolts of M10 are embedded in the concrete foundation in advance and expose 30-40mm on the upper surface of the concrete foundation.

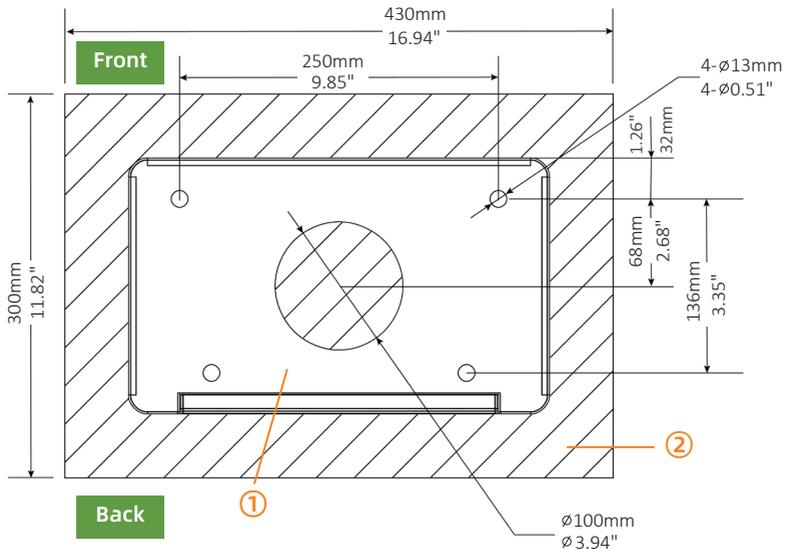


FIG. 1 top view concrete foundation

- ① Column
- ② Concrete foundation

2.7 Equipment spacing requirements

1. Maintenance distance requirements.

When the charger needs to be installed against the back or side of the wall or other obstacles, a certain maintenance distance should be set aside. Please refer to FIG. 2 below:

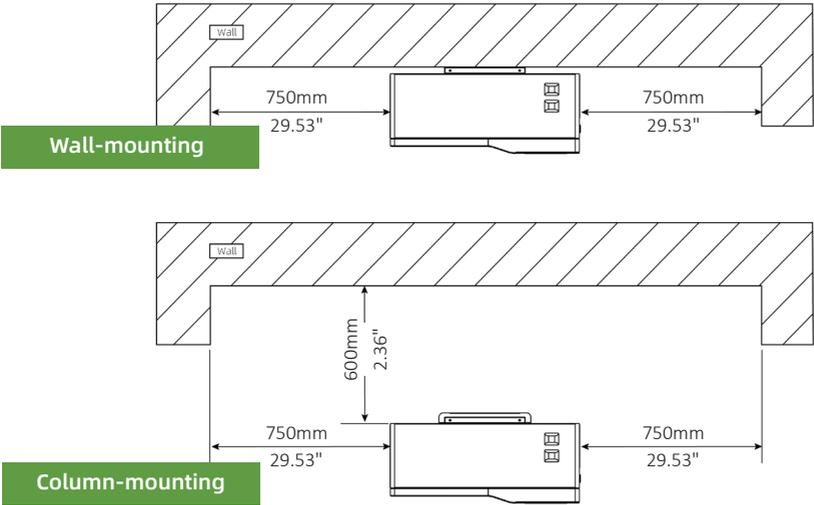


FIG. 2 maintenance distance diagram of the charger

2. Charger back to back installation distance requirements

When chargers are installed back-to-back, it is recommended that the minimum distance between chargers back-to-back is 1200mm, as shown in FIG. 3.

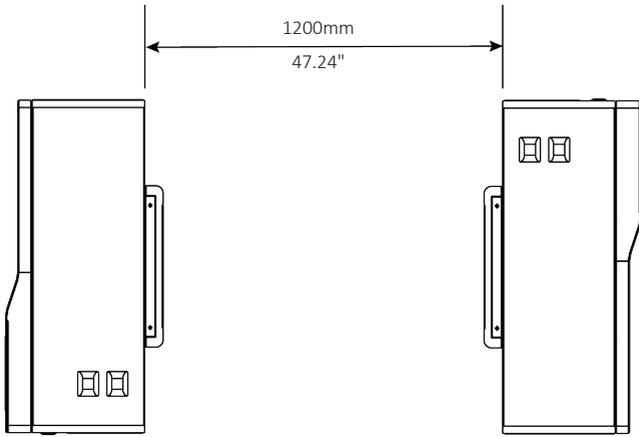


FIG. 3 installation distance diagram of charger back-to-back

3. Single or back to back parking space installation distance

When charger is installed in a single parking space or back-to-back parking space, it is recommended that the distance between the two chargers should not be less than 2000mm, and the distance between the wheels and the center of the charger should not be less than 1200mm, as shown in FIG. 4.

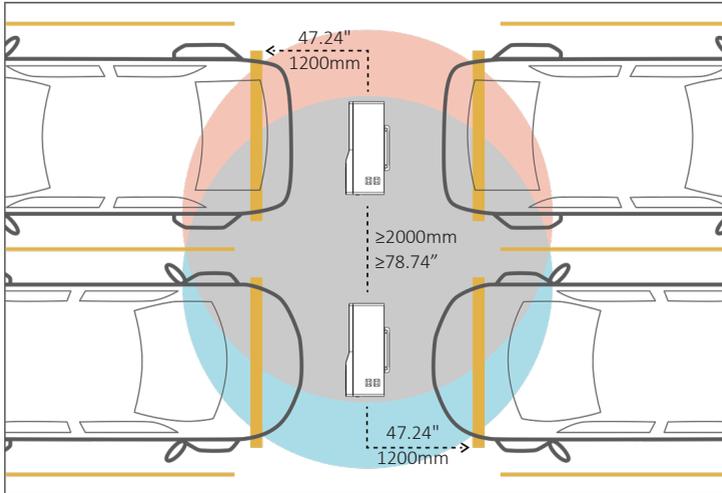


FIG. 4 installation distance of single or back-to-back parking Spaces

2.8 Current and distribution capacity requirements

If the charger runs at full power, the power grid capacity shall $\geq 35\text{kVA}$. It is recommended that the power supply MCCB: $U_e=480\text{V}$, $I_e \geq 50\text{A}$, thermo-magnetic, $I_{cu} \geq I_{cs} \geq 25\text{kA}$, 3P.

2.9 Ground/insulation resistance requirements

1. Check grounding resistance test report, ensure the resistance of the grounding grid produced on site must be $\leq 4\Omega$.
2. Check construction insulation resistance test report, ensure the insulation resistance of cable $\geq 10\text{M}\Omega$.



- The above requirements are the minimum requirements of the equipment.
- The specific standards are subject to the local laws and regulations.

3 Installation procedure

3.1 Unpacking and unpacking inspection

- 3.1.1 Equipment unpacking list

Table 3 equipment unpacking list

Name	Package	Configuration	Package size (mm)	Weight (with package)	Attached paper	Accessories list
Charger	Wooden box	Standard	770*680*646	30kg	1.Certification approval *1 2.User manual*1 3.Delivery inspection report*1	1.Charging socket*1 2.Charger*1 3.M6- expansion screw*8 4.IC card*2 5.Key*2
Module	Carton	Standard	540*405*200	15kg	NA	M4-Screw*4
Column (only for column mounting)	Carton	Optional	1327*292*250	29kg	NA	M6-Screw*7

- 3.1.2 Inspection of unpacking

- (1) Check the packing list number and equipment quantity.
- (2) Check the device nameplate information.
- (3) Check that the attachment papers are complete.
- (4) Check whether the spare parts and accessories are complete.
- (5) Check factory inspection report and certificate.
- (6) Check the appearance of the equipment is good, whether there is deformation, bump, stains and other conditions.

- **3.1.3 Notes for unpacking**

- (1) The installer shall unpack the container in the presence of the owner and fill in the unpacking record in detail. See appendix 1 for the unpacking record.
- (2) After unpacking, please ask the owner's representative to confirm and sign on the equipment unpacking record sheet.
- (3) If any problem is found in the process of unpacking and acceptance of the equipment, it shall not only record the accident, but also wait for the negotiation between the owner and the supplier.

- **3.1.4 Check before installation**

The installer needs to complete the pre-installation confirmation check before installation, see Appendix 2.

3.2 Equipment installation and wire connection

- **3.2.1 Wall mounted installation**

The dimensions of wall-mounted installation are shown in FIG.5.

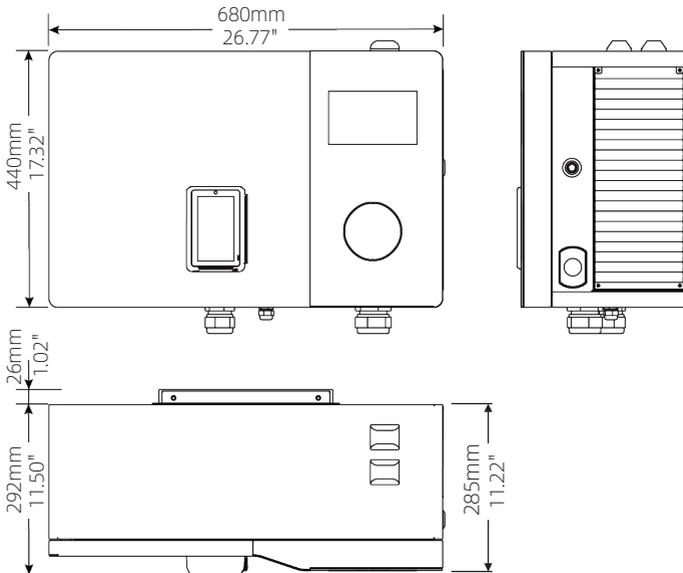


FIG. 5 wall-mounted mounting dimensions

The schematic diagram of installation height is shown in FIG. 6.

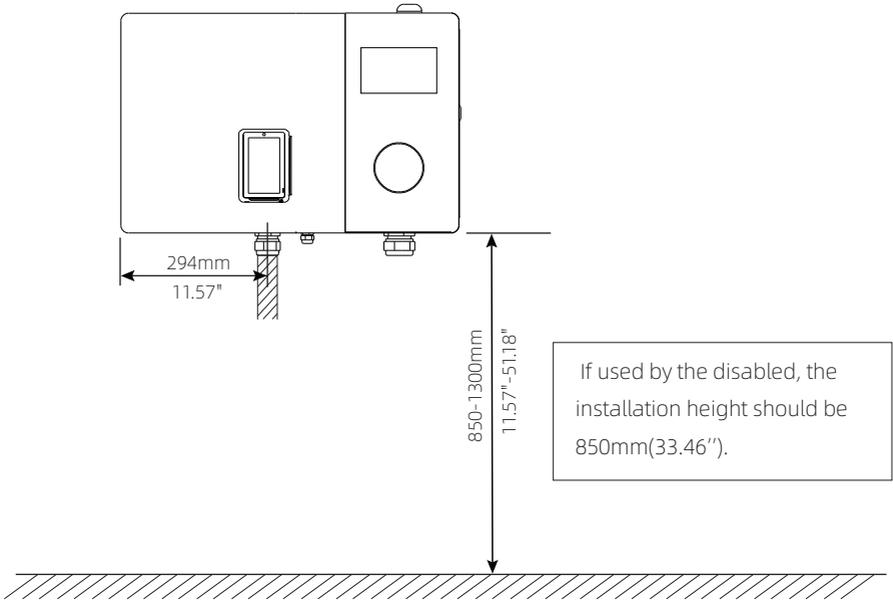


FIG. 6 wall mounted installation height

The diagram of wall mounting panel is shown in FIG.7.

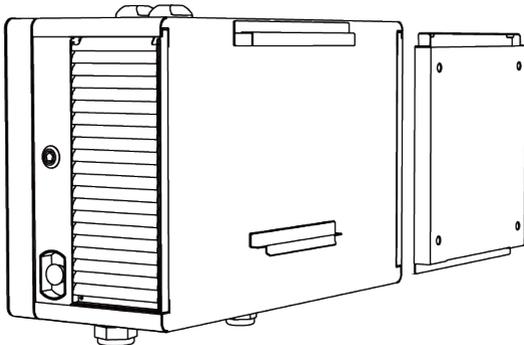


FIG. 7 wall mounting panel diagram

Wall mounted mounting accessories are shown in FIG. 8.

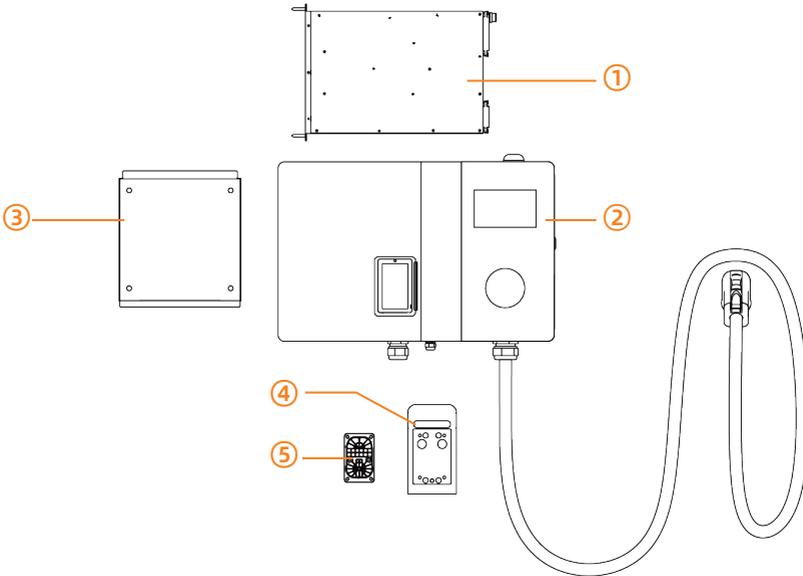


FIG. 8 wall mounted installation accessories

- ① 30kW charging module
- ② Charging box
- ③ Wall mounting panel
- ④ Charging connector placement assembly 1
- ⑤ Charging connector placement assembly 2

• Installation steps

- Step 1:** Open the front door of the charging box, remove the left shutter and dust proof cotton, as shown in FIG. 9.

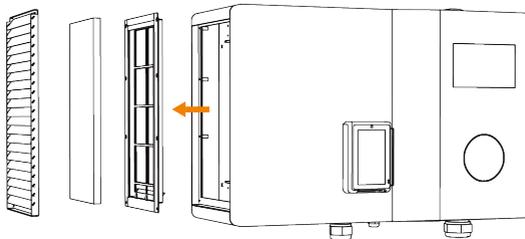


FIG. 9 removal of louver and dustproof cotton

Step 2: Locate the wall where the charger is to be installed, locate the four holes in the wall mounting panel (it is recommended that the lower edge of the mounting plate is 1250mm from the ground, the screen is about 1500mm from the ground, which is convenient for use), and mark the holes with a pencil, as shown in FIG. 10.

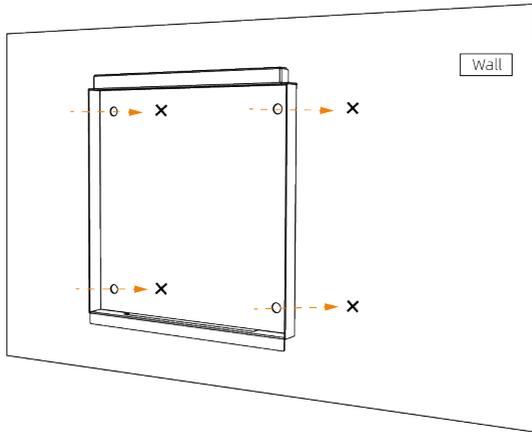


FIG. 10 hole marking diagram

Step 3: Use an electric hand drill to make holes with the diameter of 10mm at the marked position. (**note:** the drilling depth is more than the length of bolts), and then put the M6 * 100 of bolts to hole, as shown in FIG. 11.

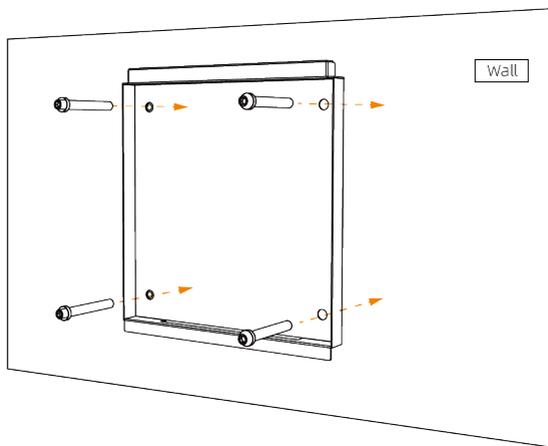


FIG. 11 punching diagram

Step 4: Align the four holes of the wall mounting panel with the four screws on the wall and tighten them, as shown in FIG. 12.

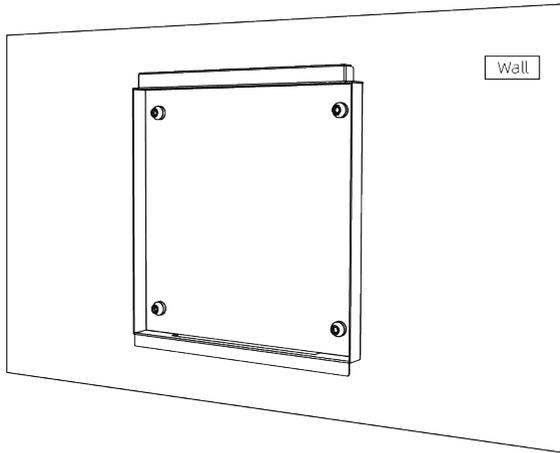


FIG. 12 wall mounting panel fixing diagram

Step 5: Mount the charging box on the wall mounting panel, and fix the charging box, shown as FIG. 13 :

The rear of the charging box is 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.

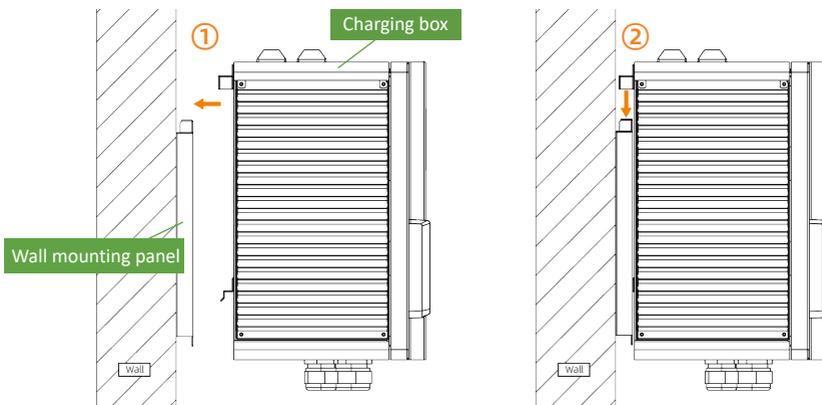


FIG. 13 diagram of wall-mounted charging box fixing

Step 6: Screw on the top of the mounting panel, and the mounting panel is completely fixed with the charging box, as shown in FIG. 14.

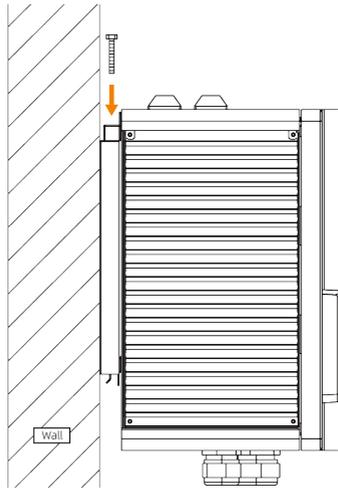


FIG. 14 wall mounted top screw fixation

Step 7: Put the charging module into the charging box (remove the louver from the left side), and then tighten the four screws fixing the module and the charging box, as shown in FIG. 15 and FIG.16.

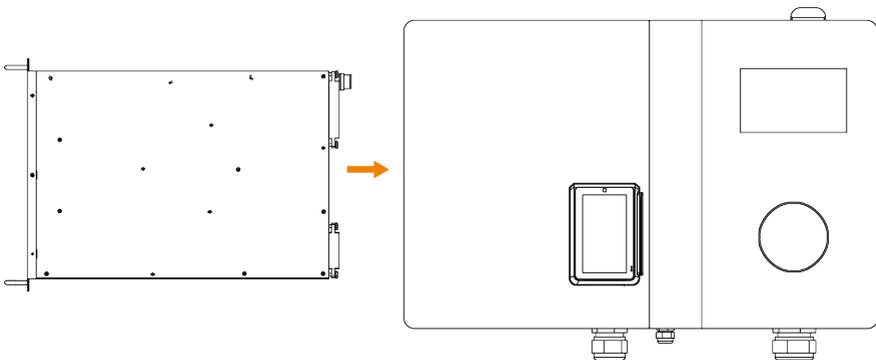


FIG. 15 module installation diagram

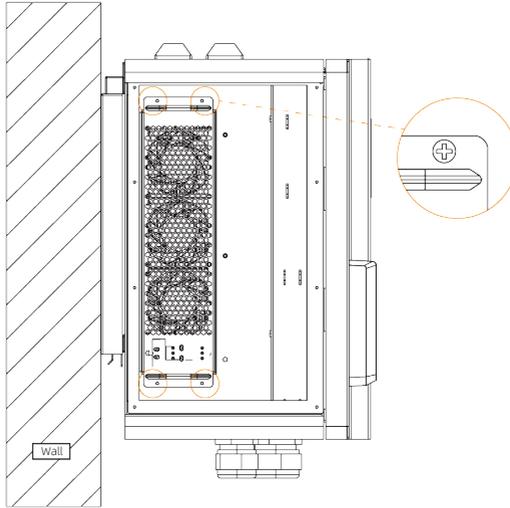


FIG. 16 module screw fixing diagram

- **Step 8:** Install each part of louver in turn, tighten the corresponding screws and fix the louver, as shown in FIG. 17.

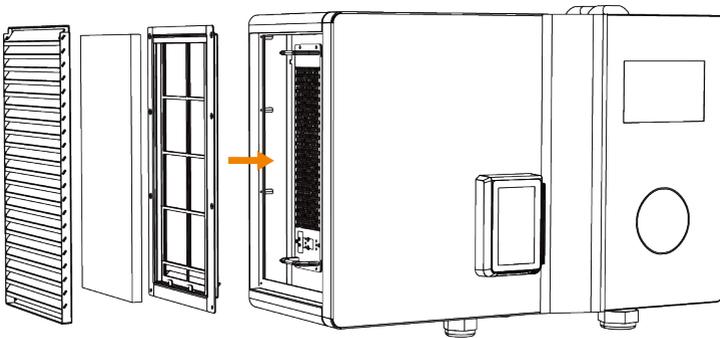


FIG. 17 installation diagram of each component of louver

Step 9: Open the front door, remove the cable clamp and PC cover plate as shown in FIG. 18.

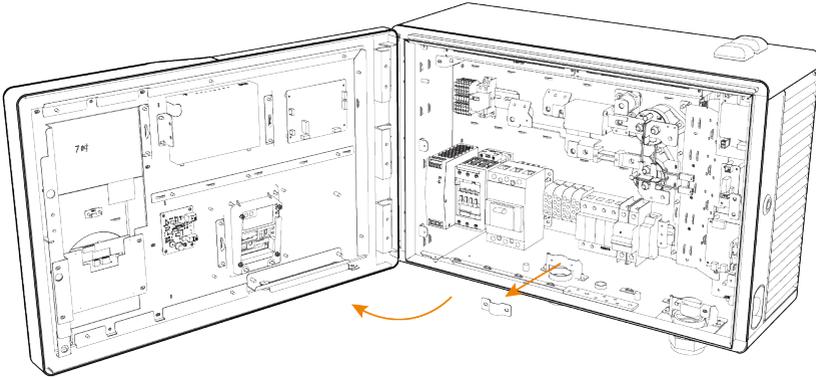


FIG. 18 remove the cable clamp and PC cover plate

Step10: For wiring, thread the power cable into the corrugated conduit (1-1 / 4 inch), then introduce the cable into the charging box through the inlet gland at bottom of the charging box, and then fix the corrugated conduit on the inlet gland, refer to FIG. 19. Connect the ground wire to the ground copper bus, refer to FIG. 20. Then connect the three phases of L1, L2, L3 and the N line to the corresponding terminals from left to right. The phase sequence cannot be connected wrong, as shown in FIG. 21. After the completion of wiring, fix the cable with removed cable clamp via removed screws.

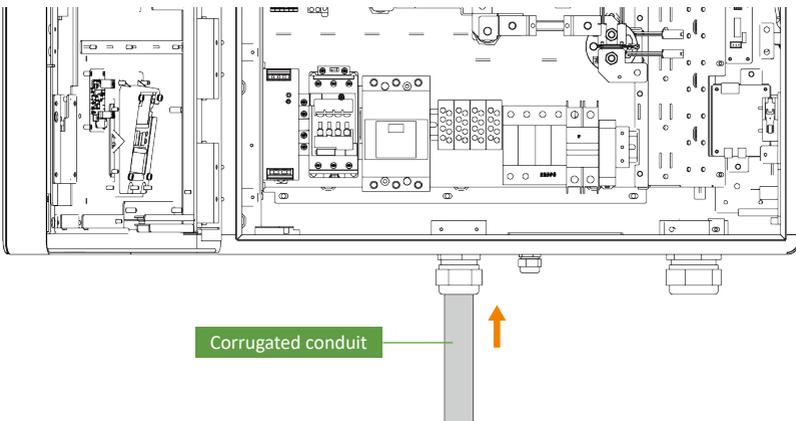


FIG. 19 cable installation diagram

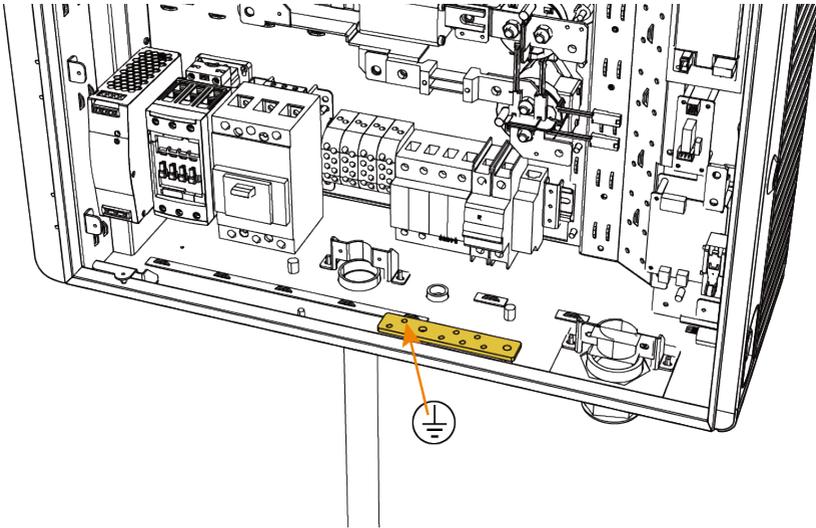


FIG. 20 schematic diagram of ground copper bar

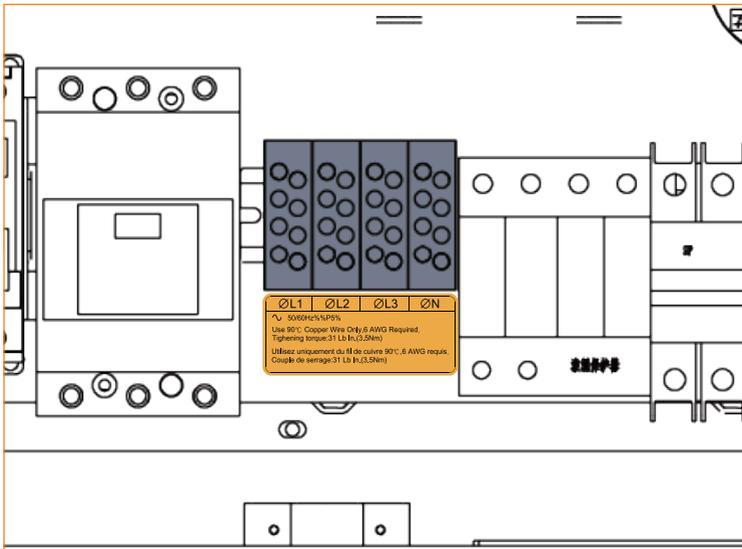


FIG. 21 schematic diagram of terminals

Step11: If Ethernet communication is required, thread the network cable into the corrugated conduit (1 / 4 inch), then introduce the network cable into the charging box through the inlet gland at bottom of the charging box and connect the network cable in the Ethernet port. The Ethernet port refer to figure 22. If Ethernet communication is not required, use plugging materials such as fireproof mud or polyurethane foam to block the inlet gland.

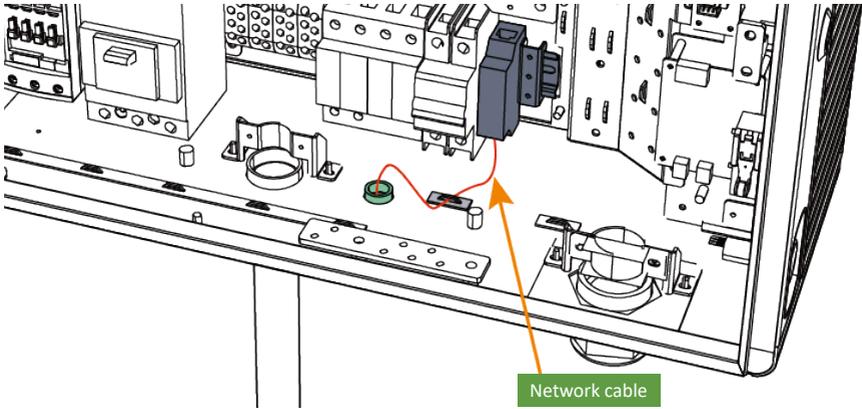


FIG. 22 schematic diagram of Ethernet port

Step12: Install the charging connector placement after installing the charging box. Select the appropriate position on the wall (It is recommended that the lower edge be 900mm away from the ground to facilitate the use of the charging connector), and mark the punching position according to the three holes on the charging connector placement assembly1, as shown in FIG23.

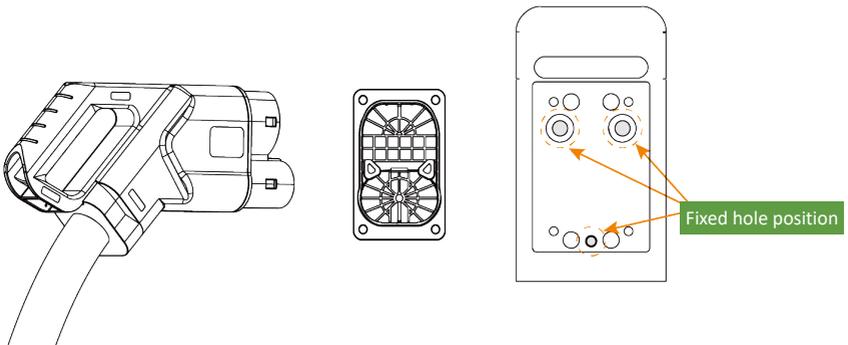


FIG. 23 schematic diagram of hole location of charging connector placement assembly1

- Step13:** Select a drill bit with the diameter of 10mm, mark the position in the previous step with a hand drill to drill a hole with a depth of about 110mm, and then insert an M6*100 expansion screw (note: the expansion screw should not be completely inserted into the hole) into the lower hole, as shown in FIG. 24.

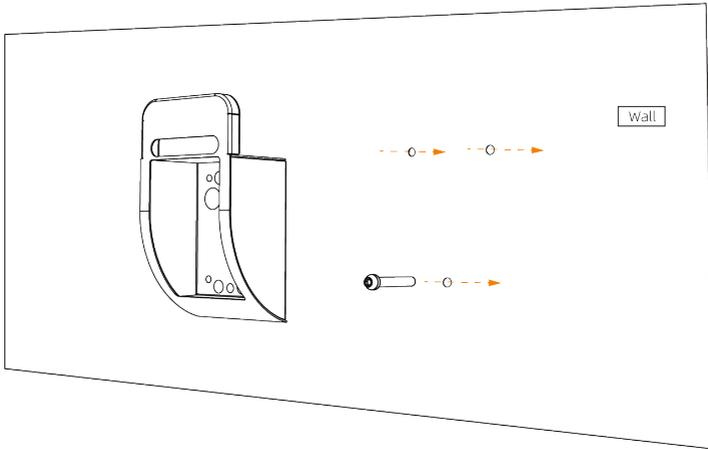


FIG. 24 schematic diagram of expansion screw insertion

- Step14:** Attach the charging connector placement assembly1 to the expansion screw inserted into the wall hole in the previous step through the hardy hole at the back of the charging connector placement assembly1 (see FIG. 26), then insert the other two holes into the corresponding expansion screws, and tighten the three expansion screws completely, as shown in FIG. 25.

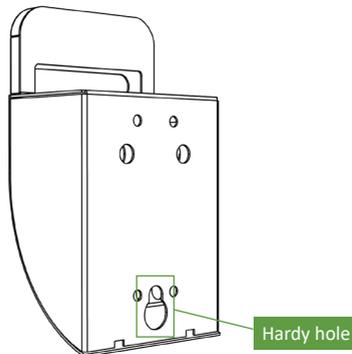


FIG. 25 schematic diagram of hoist hole at the rear of charging connector placement assembly1

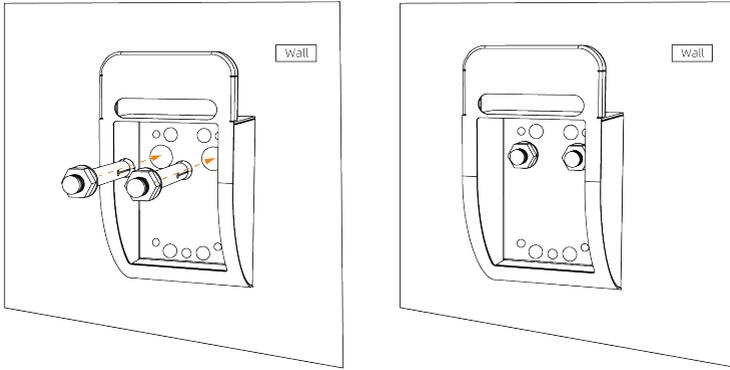


FIG. 26 mounting diagram of expansion screw of charging connector placement assembly1

Step15: Install the charging connector placement assembly2, fix the charging connector placement assembly2 on the charging connector placement assembly1 via the fixing hole with M6*16 screws, as shown in FIG. 27 and 28.

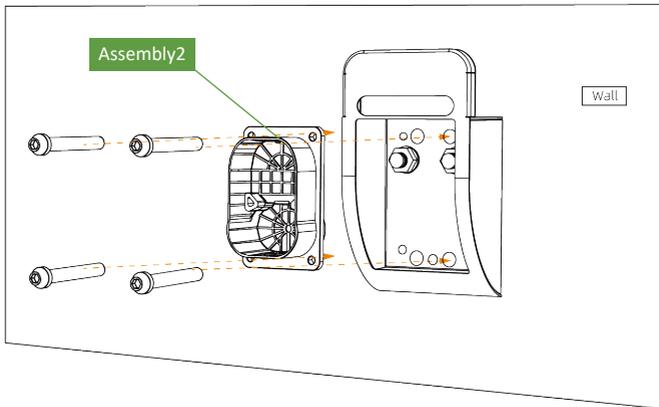


FIG. 27 schematic diagram of corresponding holes of charging connector placement assembly2

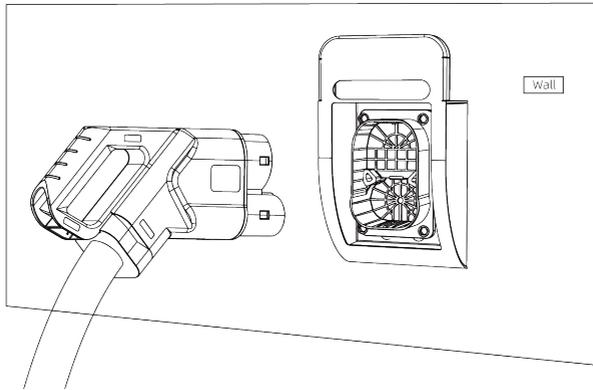


FIG. 28 installation diagram of charging connector placement assembly2

- Step16:** Installation of the wall mounted charging box is done and the installation effect is shown in FIG. 29.

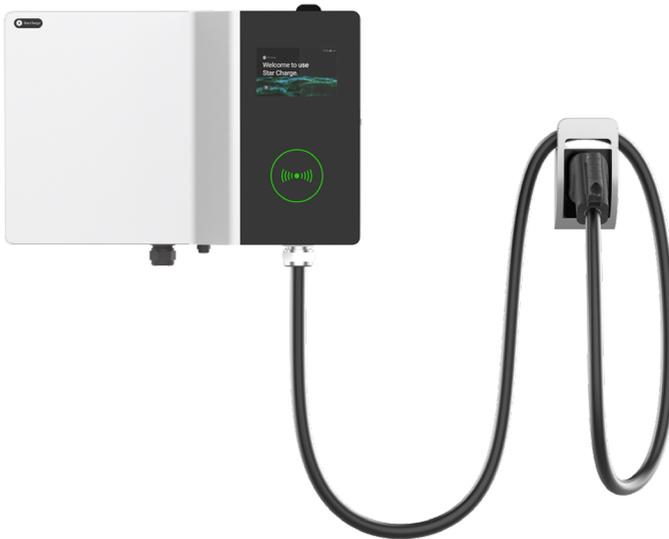


FIG. 29 wall mounted charger installation effect diagram

• 3.2.2 Column mounted installation

Column installation size is 680mm*328.3mm*1292mm, the appearance size is shown in figure 30, the installation figure is shown in figure 31, and the installation parts are shown in figure 32.

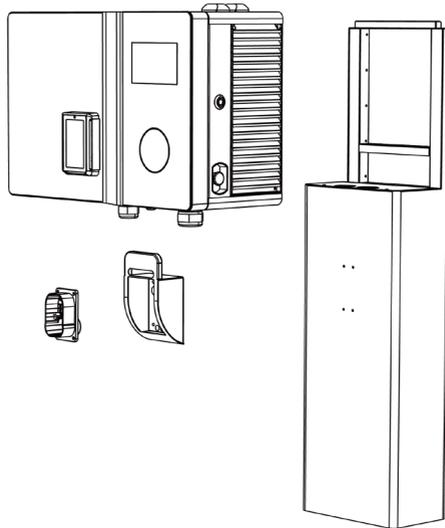
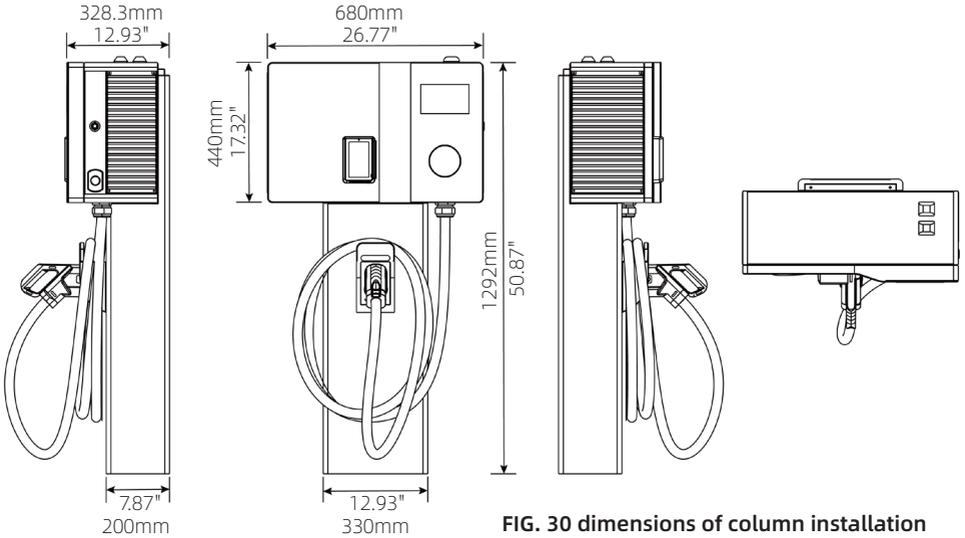


FIG. 31 column installation schematic diagram

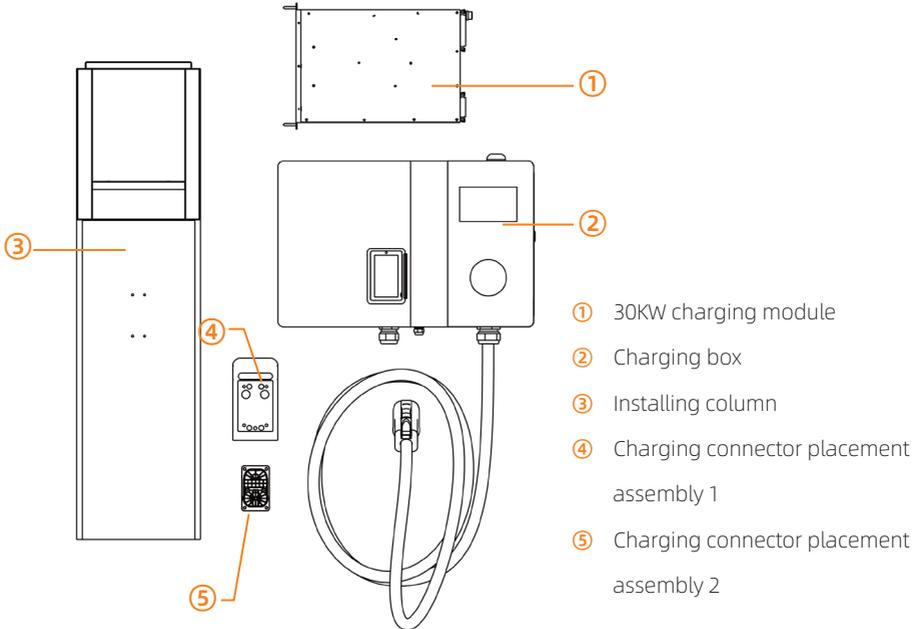


FIG. 32 column mounting parts

• **Installation steps**

Step 1: Refer to the wall mounting steps to remove the shutter and dust proof cotton. Then remove the cover plate of the column, as shown in figure 33.

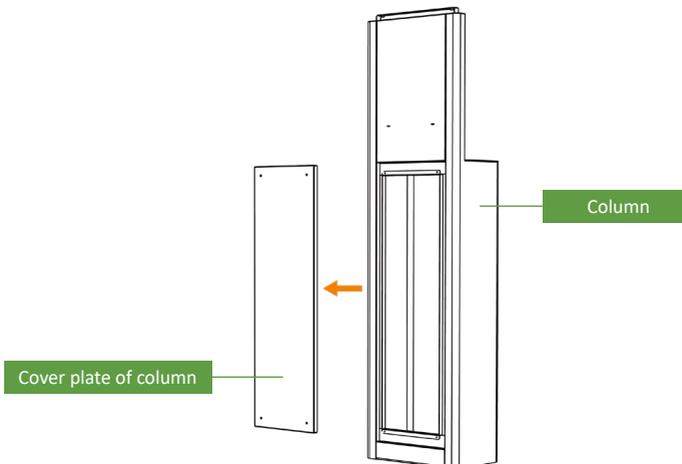


FIG. 33 schematic diagram of cover plate of column

Step 2: Four M10 anchor bolts are used to fix the column to the concrete foundation through four holes at the bottom, as shown in FIG. 34.

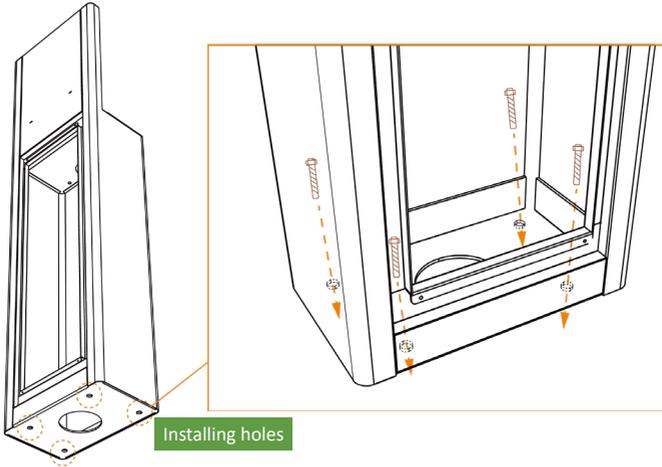


FIG. 34 installing holes of column bottom

Step 3: Insert the cables into the column through the hole at the bottom of the column, and then the cable passes through the column into the charging box, as shown in FIG. 35. Cables can only be introduced into the column through the existing hole at the bottom of the column, do not make new holes on the column as the cable inlet holes.

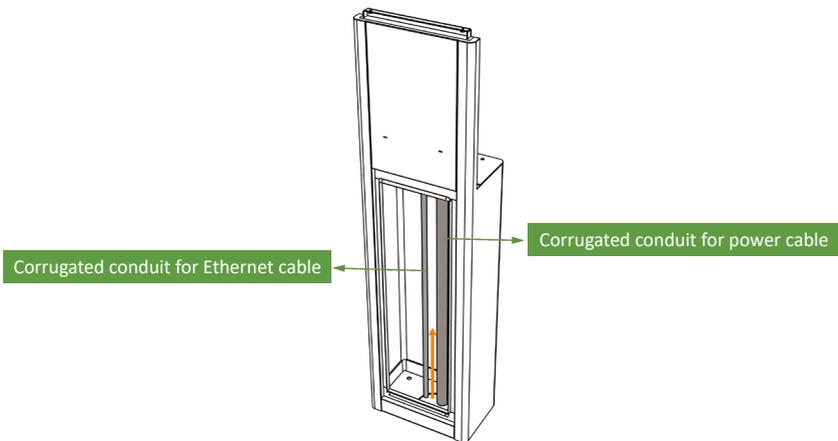


FIG. 35 cable routing in column

- **Step 4:** Fix the charging box with the column. Pay attention to align the cable inlet hole of the charging box with the corresponding hole on the column. The steps of fixing refer to the wall mounted installation, as shown in FIG. 36.

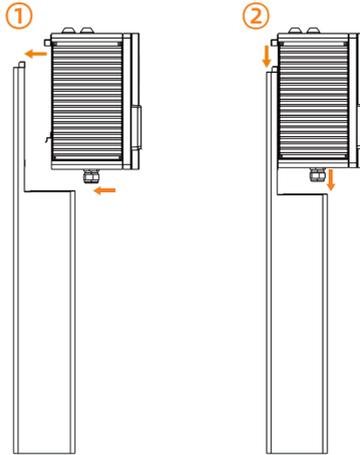


FIG. 36 fixing diagram of column mounted charging box

- **Step 5:** Tighten the screws on the top of the installing column, and fix the upper part of the installing column and charging box, as shown in FIG. 37.

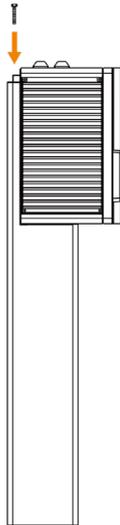


FIG. 37 fixing diagram of column and charging box upper part

Step 6: The bottom of the charging box is fixed with the column, and the M6*16 screws are punched into the two mounting holes respectively inside of the column, as shown in FIG. 38.

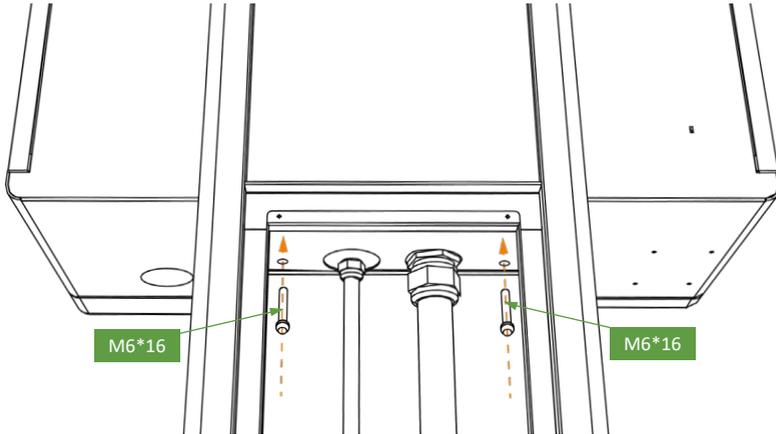


FIG. 38 schematic diagram of mounting hole at the bottom of charging box

Step 7: Use materials such as fireproof mud or polyurethane foam in the entry hole to prevent moisture or insects entering the equipment, as shown in FIG. 39.

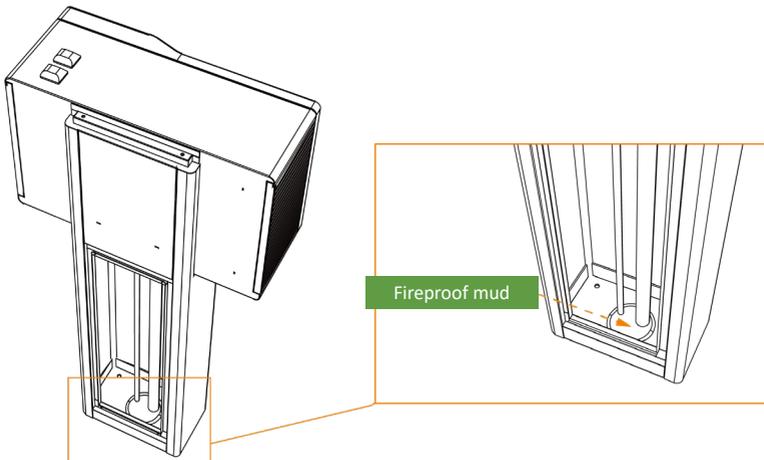


FIG. 39 fireproof mud sealing effect diagram

Step 8: Reinstall the cover plate on the column, as shown in FIG. 40.

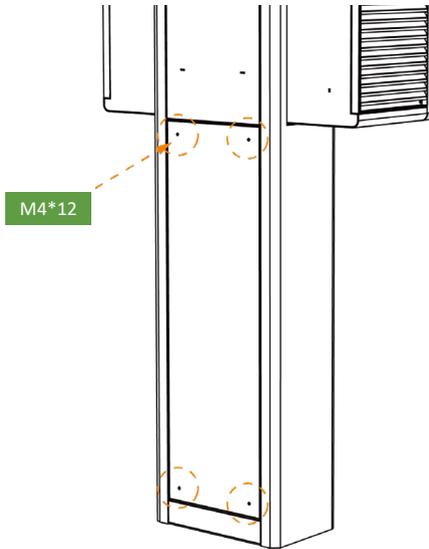


FIG. 40 installation diagram of cover plate of column

Step 9: Module installation steps refer to wall mounted charger.

Step 10: Wiring refer to the connection of wall-mounted charging box.

Step 11: Fix the charging connector placement on the column, and fix the charging connector placement assembly1 on the column with M6*16 screws, as shown in FIG. 41.

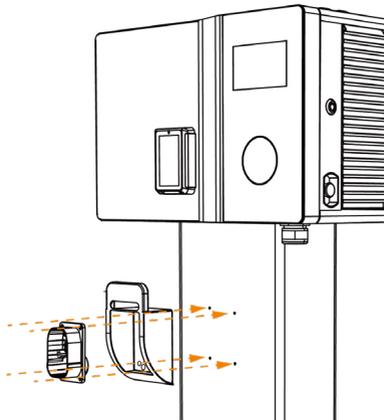


FIG. 41 diagram of column mounted charging connector placement installation

- Step 12: Install the gun mounted assembly², refer to the wall mounted installation.
- Step 13: Column mounted charger is installed. The effect picture is shown in FIG 42.



FIG. 42 wall mounted charger installation effect diagram

WARNING



- It must be carried out according to the standard and correct operating procedures. Improper execution may result in personal injury or death.

4 Post-installation inspection

(Live parts shall be operated by local qualified engineer)

4.1 Installation wiring inspection

- **4.1.1 Equipment and equipment fixation inspection**

1. The charger is clean in appearance, free from knock damage, consistent with the position of the base and secure without looseness.
2. Equipment orientation meets installation standards.
3. No missing installation of equipment accessories.
4. Measure the levelness of equipment by spirit level, ensure it meets the requirements.

- **4.1.2 Cable laying and connection inspection**

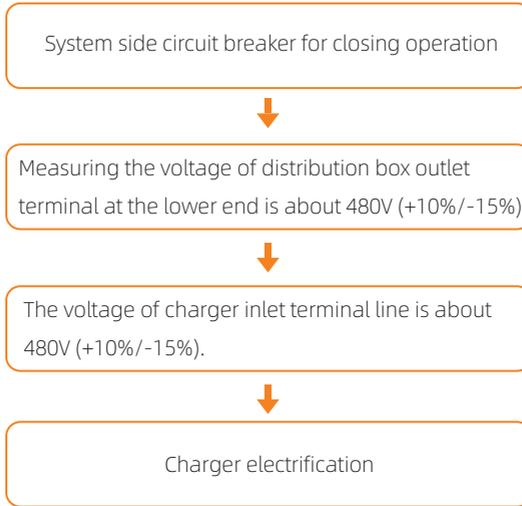
1. Check whether the cable insulation is damaged.
2. Check whether the wire terminals of power cable is in compliance with requirements and whether the wiring is reliable.
3. Check the connection terminals of communication cable are correct and not loose.
4. Check for hanging cable tags.
5. Check whether the bending radius of cable meets the requirements.
6. Check whether each box leads the ground wire into the ground grid.

4.2 Check before power on

1. Check the power supply line of the low voltage distribution cabinet connected to the charger, and check whether there is a short circuit between the three-phase hot wire, neutral wire and ground wire.
2. Power supply voltage before power on: before power on of equipment, please check whether the power supply voltage on upper end of MCCB in low-voltage distribution cabinet is normal, ensure there are no lack-phase, over voltage, under voltage, phase-sequence anomaly and other abnormalities.

4.3 Check on power-on

1. After confirming that the wiring of the equipment is complete and correct, power the equipment. The power operation is as follows:



2. Complete the overall installation.

5 Installation environment

The environmental conditions listed in the table below should be considered when selecting the installation site of the charger.

Table 3 installation environment

Environmental conditions	Recommended range
Ambient temperature	-35°C ~ + 50°C
Altitude	≤ 2500m
humidity	5% ~ 95%RH, no condensation inside the product
Degree of dust	≤ 1mg/m ³
Corrosive substance	No pollutants, such as salt, acid, smoke, etc.
Vibration	≤ 1.5mm/s ²
Insects, pests, vermin, termites	No
Mold	No
Damp	Rainproof
Fireproof	No inflammable material at the top and bottom of the cabinet

6 Completion information

Number	Name	Number of pages	Document necessity
1	Unpacking record sheet	1	√
2	Pre-installation checklist	1	√

Appendix 1

Unpacking record sheet					
Name of dealership			Unpacking date		
No.	Name of the Equipment	Quantity	Qualified number	Equipment situation	Remark
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
Unpacking conclusion					
Signature block	Installation unit			Owner unit	

Appendix 2

Pre-installation checklist				
Project name:				
Civil construction unit:			Equipment installation unit:	
Sub-project	No.	Main acceptance items	Acceptance record	Treatment measures
Installation plan	1	Whether the on-site equipment installation complies with the construction plan design drawings		
Distribution box circuit breaker	1	Meet the equipment installation requirements in section 2.8		
Cable type	1	6AWG,5C,(90°C, copper wires)		
	2	Network cable cat6a (if Ethernet communication is required)		
Concrete foundation (Column-mounted)	1	Dimensions meet requirements refer to section 2.6		
	2	Foundation bolts meet the requirements in section 2.6		
Maintenance distance	1	The maintenance distance meets the equipment spacing requirements in section 2.7		
In conclusion:				
Note: (1) In the acceptance record, fill in "√" or "×" according to the on-site situation; (2) At the conclusion, fill in "qualified" or "need to rectify" according to the on-site situation				
Signature of person in charge of inspection: _____				

ABOUT US

Company: Star Charge Americas Corp.

Company address: 46571 Fremont Blvd, Fremont, CA, 94538

Customer service: 400 828 0768

Website: www.starchargeamericas.com

Star Charge Americas Corp. All rights reserved.

www.starcharge.com

