



# **C6EU SERIES**

## **Installation and Operation**

### **Manual**

ENGLISH



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## Changelog

Date	Changed by	Version	Changes
2020-02-20	Alex Sheng	0.1	
2020-04-06	Benjamin Tange	0.9	Minor changes and formatting
2020-06-30	Benjamin Tange	0.91	Minor changes, corrections in tech data
2020-07-10	Alex Sheng	1.0	Change the rendered picture compatible with credit card payment. Corrections in tech data
2020-09-22	Heather Xue	1.1	Installation instruction with stainless steel frame (Section 4.3.2)
2021-01-22	Alex Sheng	1.2	Minor changes in 3.8 curve
2021-02-07	Ethan Sun	1.3	Edit Fault diagnosis and error code
2021-02-07	Alex Sheng	1.4	Minor changes in stainless steel frame (Section 4.3.2)
2021-02-09	Stephan Nusseck	1.5	Updated optional 250 A CCS cable and minor corrections in tech data
2022-05-24	Alex Zhang	1.6	Updated optional 300 A CCS cable and 200kW power output

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## 1. Introduction and Safety Information

### 1.1 Preface

This manual describes the features and functions as well as installation, operation and maintenance of the XCHARGE C6EU hyper charger.

Due to the high technical modularity and the different customer requirements there are various variants, which differ in the maximum output power, the installed charging cables and connectors as well as display. The components shown in this guide are all example graphics. The illustrations and explanations refer to a typical version of the device. The design of your device may differ from description in manual. Please read this document carefully and adapt to the realistic.

### 1.2 Proper Usage

This product is a high-power EV supply equipment (EVSE) for recharging electric vehicles (EVs) using the fixed cable and CCS Combo 2 (CCS2) and/or CHAdeMO connectors.

When any loss or damage occurs due to improper use or unauthorized modification of the product, XCHARGE SHALL NOT be liable for the product, the purchaser or third parties. The same is also valid if the maintenance provided by XCHARGE is not strictly complied.

The installation requires a planning with care and can only be carried out by qualified personnel (electricians).

### 1.3 Intended document user

This document is intended for:

- Customers who purchased a C6EU, or are in the process of ordering and want to know in more detail about installation and maintenance;
- Contractors who are responsible for site preparation and/or installation of a C6EU  
Contractors who, as a qualified electrician, perform the installation, commissioning, maintenance or repair of the XCHARGE C6EU charging station.

#### **Requirements for the electrician:**

- Knowledge of the relevant safety and accident prevention regulations;
- Knowledge of electrotechnical regulations;
- knowledge of national regulations;
- Ability to recognize risks and avoid dangers.

## 1.4 Important safety instructions

### **WARNING**

(Safety instructions on a risk with medium risk level! Failure to comply can result in death or serious injury)

1. Please confirm the voltage and current level before installation.
2. The entire installation process needs to be conducted by qualified personnel.
3. Please do not operate in the cloudy, rainy weather or similar conditions may causing possible leakage.
4. DC charging station must be earthed properly.
5. Do not install or use the charging station closed to flammable, explosive materials or steam.
6. Without qualified personnel, do not try to open, disassemble, or modify the charging station.
7. The use of charging stations may affect or damage some medical or implantable electronic equipment, such as cardiac defibrillators, pacemakers, etc.

### **ATTENTION**

(Safety instructions on a risk with a low degree of risk! Non-compliance can lead to minor to moderate injury)

1. Please use this product in cool and ventilated environment.
2. Before installing or cleaning the charging station, power supply must be shut down.
3. Please use the charging station within the parameters range as specifications addressed.
4. Do not use the charging station with non-charging purpose or others not supporting CCS2 or CHAdeMO charging standard vehicles.
5. If defectives are found, such as cracking, wear, inoperable parts or other damage, stop using the charging station immediately and call the customer service.
6. Do not use the charging station when exposing to heavy rain, thunder, heavy snow or other severe weather conditions may causing damage to station and personal property.
7. Please be careful when transporting the charging station. Avoid strong external shocks. Do not drag, twist or step on the charging station to prevent damage to any parts. At any time, avoid and prevent damage to the charging station from moisture, liquids and foreign objects. Do not use if water is present or station is suspected of being damaged or corrosive. Do not touch the charging station, charging cable and charging connector with wires, tools, or other sharp objects.
8. If EV is covered by external protection hood, do not use charging station.
9. Do not start and drive your EV when socket is still connected. The user is responsible for the damage to the EV and charging station caused by former addressed case.

## 1.5 Important signs

According to ISO7010 and other similar standards, the operating, warning and prohibition signs below are stuck to the C6EU and are also used in the manual.

Warning Signs	Description
	<p>Earthing</p> <p>Connect an earth terminal to the ground</p>
	<p>General Warning Sign</p> <p>Identify a hazard which could result in damage to the operator, machinery, other equipment and/or pollution</p>
	<p>Electricity Hazard</p> <p>Warning of electrical voltage</p>
	<p>Crushing of Hands</p> <p>Touching the device may result in hand injury</p>
	<p>No access for people with active implanted cardiac devices</p>

Table 1.5.1 Warning Signs



These signs below are also used on the nameplate of C6EU.




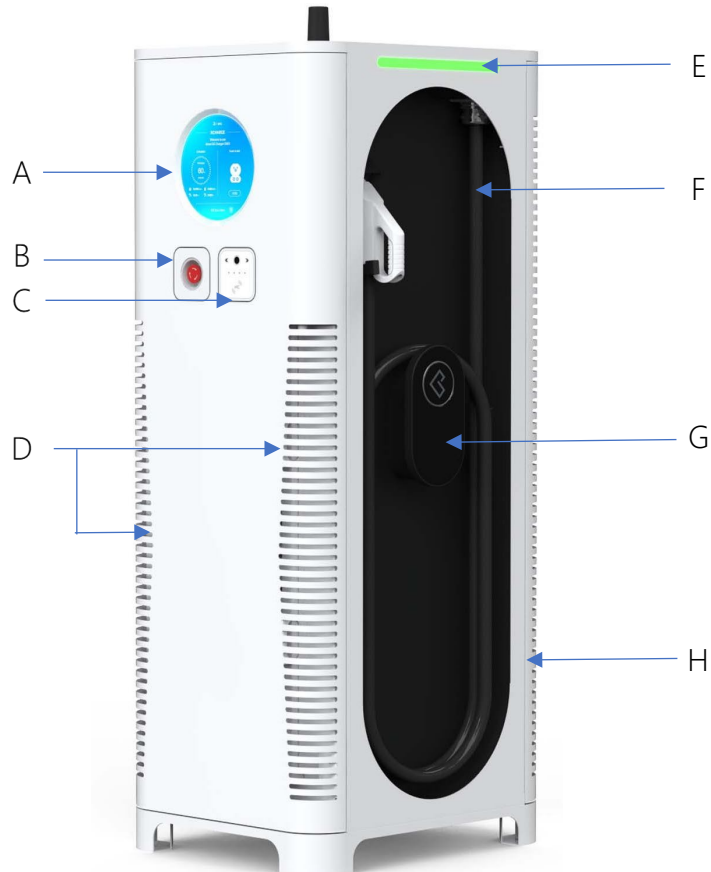
Signs	Description
	<p>Note Documentation</p> <p>Note all documentation, which are supplied with the product</p>
	<p>WEEE Symbol</p> <p>Do not dispose of the product with domestic waste. Please follow the valid disposal regulations in the installation site for electronic waste.</p>
	<p>CE Mark</p>

Table 1.5.2 Other signs on the nameplate

## 2. Product Description

### 2.1 System overview



A	HD/Touch screen, diameter 22.5 cm (HMI)	E	LED Indicator
B	Emergency button	F	Charging connector
C	Control panel with RFID/Credit card reader	G	Cable management system
D	Air inlet	H	Air outlet

Table 2.1.1 Housing and exterior elements

This manual is valid for all the C6EU Versions, which are shown below in Table 2.1.2. and Table 2.1.3.

Type	Max. output power	Max. output DC current	Power module (30kW)	CCS Combo 2 connector	CHAdeMO connector
C6EU-060-JC	60kW	200A	2	200/250Ax1	125Ax1
C6EU-120-JC	120kW	400A	4	200/250Ax1	125Ax1
C6EU-120-CC	120kW	400A	4	200/250Ax2	N/A
C6EU-150-JC	150kW	500A	5	200/250Ax1	125Ax1
C6EU-150-CC	150kW	500A	5	200/250Ax2	N/A

Table 2.1.2 Type of C6EU in 30kW steps

Type	Max. output power	Max. output DC current	Power module (40kW)	CCS Combo 2 connector	CHAdeMO connector
C6EU-080-CC	80kW	250A	2	200/250/300Ax2	N/A
C6EU-120-CC	120kW	500A	3	200/250/300Ax2	N/A
C6EU-160-CC	160kW	500A	4	200/250/300Ax2	N/A
C6EU-200-CC	200kW	500A	5	200/250/300Ax2	N/A

Table 2.1.3 Type of C6EU in 40kW steps

**Notes:**

- All the double-connector versions work in the smart mode: the whole output power of charger is distributed over two connectors averagely or by one connector at the proper charging voltage level. For each side the output current can also be limited as requested;
- You can recognize the different types of C6EU through the first eight letters in its SN number, for example in SN number “C6E12JC20IQBHUVPW” the type is C6EU-120, up to 120kW output with CCS and CHAdeMO connector;
- Touch or non-touch screen is optional for all these kinds of C6EU.



Figure 2.1 Rendering of C6EU

## 2.2 Charging connector system

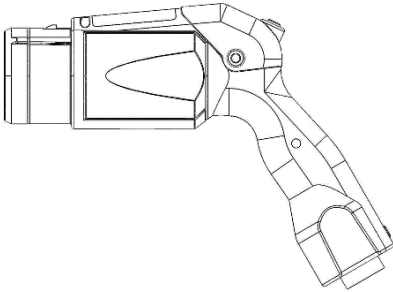
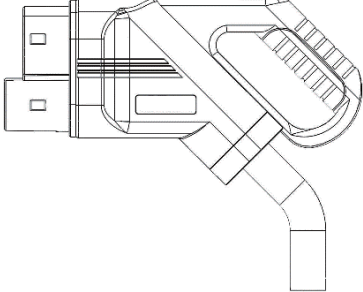
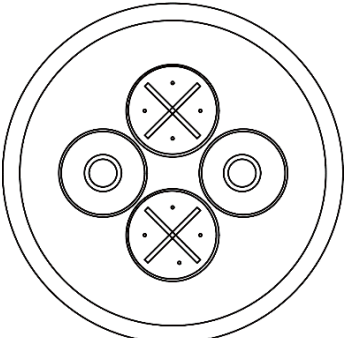
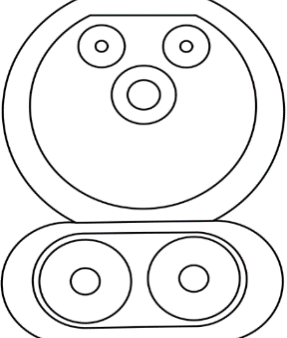
CHAdeMO	CCS Combo 2 (CCS2)
	
	

Table 2.2 Structure sketch of charging connectors: CHAdeMO and CCS 2

## 3. Technical Data

### 3.1 Nameplate

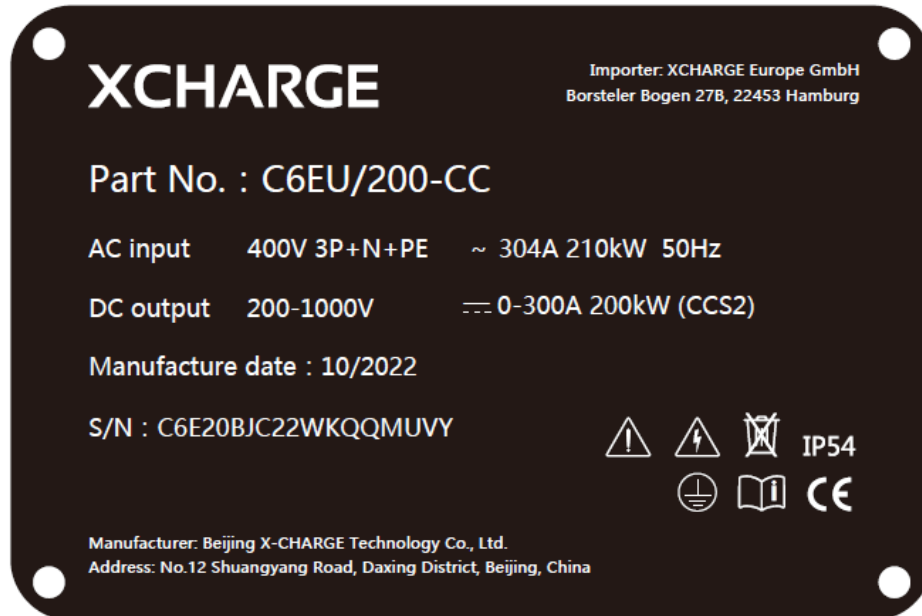


Figure 3.1.1 Nameplate template

Nameplate contains all the necessary information includes:

- Product type and serial number;
- Input power and wiring parameter;
- DC rated output voltage, current and power;
- Manufacturing date;
- Markings.

### 3.2 Electrical data

Input	
Input voltage range	3 phase 400 V <sub>AC</sub> ± 10% 50 Hz
Power factor	> 99% at nominal output power
Efficiency	95% at nominal output power
DC output CCS2 (C)	
Maximum output power	200 kW
Output voltage range	200 – 1000 V <sub>DC</sub> (Combo-2)
Maximum output current	200 A <sub>DC</sub> or 250 A <sub>DC</sub> or 300 A <sub>DC</sub> continuously (CCS 2)
THD	< 5 % (50-100% of rated output power)

DC output CHAdeMO (J)	
Maximum output power	60 kW
Output voltage range	50 – 500 V <sub>DC</sub> (CHAdeMO)
Maximum output current	125 A <sub>DC</sub> (CHAdeMO)
THD	< 5 % (50 -100% of rated output power)
General	
DC connection standard	IEC 61851-1:2011, IEC 61851-23:2014, IEC 61851-24:2014, IEC 62196-3:2014, ISO 15118, DIN 70121-2014, CHAdeMO 2.0
DC cable length	3.2m; optional 5 / 7 / 10 m (with cable management system)
DC connector type	CCS 2 / CHAdeMO
RFID system	ISO 14443 A&B / ISO 15693 / ISO18092 / ECMA-340

Table 3.2.1 Electrical data of C6EU

### 3.3 Mechanical data

Mechanical Data	
Dimensions (H x W x D)	1750 mm x 615 mm x 740 mm 1981 mm x 764 mm x 872 mm (with cable management system)
Weight	325 (60 kW) - 395 kg (200 kW)
Volume	0.75m <sup>3</sup>
Dimensions including packaging	2100 mm x 850 mm x 900 mm
Weight including packaging	375 (60 kW) - 450 kg (200 kW)
Weight concrete foundation	Min. 450 kg
Mechanical impact protection	IK10

Table 3.3.1 Mechanical data of C6EU

## 3.4 Environmental data

Environmental Data	
Ground load bearing	At least 450 kg
Ingression protection	IP 54
Temperature range – Operation	- 25 °C to + 50 °C, - 40 °C to 55 °C (optional, with additional heat pump)
Temperature range – De-rating	+ 50 °C to +70 °C
Temperature range – Storage	- 40 °C to + 80 °C
Operating Relative Humidity	5 % to 95 %, no condensing on the surface
Storage Relative Humidity	95 %, no condensing on the surface
Humidity	Up to 95% no condensation on the surface
Operational noise level	<65 dB in rated output power
Atmospheric Pressure	79 KPa - 106 KPa
Altitude	2000 m (maximum altitude without power derating)
Network	GSM/WCDMA/LTE/4G/LAN

Table 3.4.1 Environmental data of C6EU

## 3.5 Technical Standards

The C6EU products were already approved by TÜV Rheinland according to the technical standards below:

Technical Standards	
Healthy, safety and general requirements	EN 50385: 2017 EN 61851-1: 2011 EN 61851-23: 2014 EN 61851-24: 2014
EMC	IEC 61851-21:2018 EN 301 489-1 V2.2.0 (2017-03) EN 301 489-3 V2.1.1 (2017-03) EN 301 489-52 V1.1.0 (2016-11)
Radio	EN 300 330 V2.1.1 (2017-02) EN 301 511 V12.5.1 (2017-03) EN 301 980-1 V11.1.1 (2016-07) EN 301 980-2 V11.1.2 (2017-08)

Table 3.5.1 Technical standard of C6EU

## 3.6 Electrical Diagram

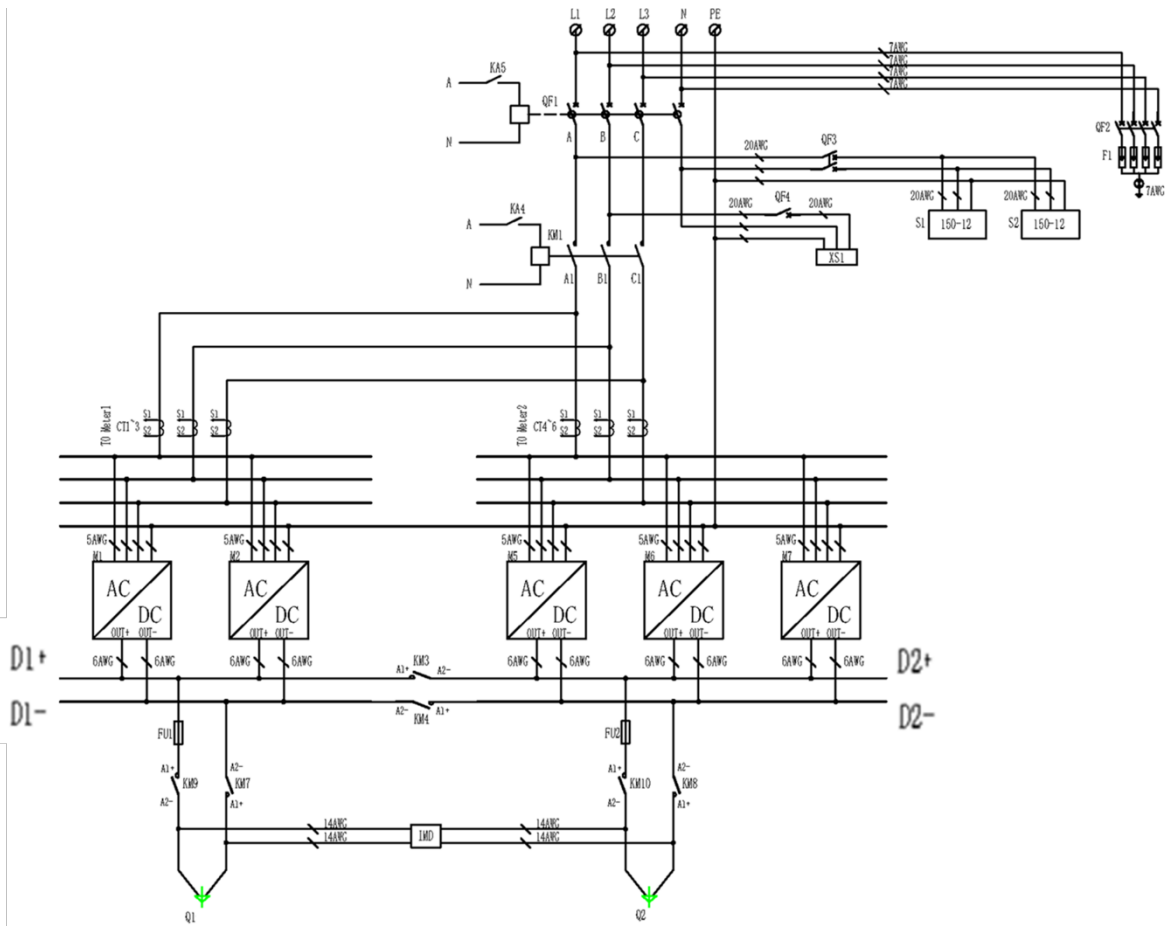


Figure 3.6.1 Electrical connection diagram

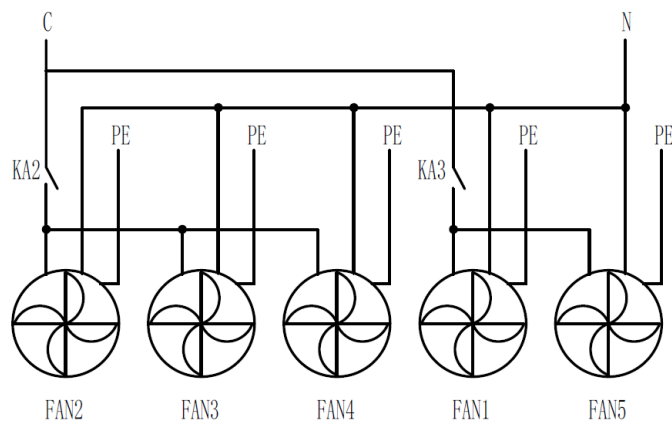


Figure 3.6.2 Fans' control diagram

### Notes:

The diagram was already approved by TÜV Rheinland according to Standard EN 61851-23. For different types of C6EU the size of cable in the electrical connection diagram is variable.



## 3.7 Function Structure of C6EU

The Figure 3.7.1 below introduces the structure of C6EU from basic to sophisticated functions.

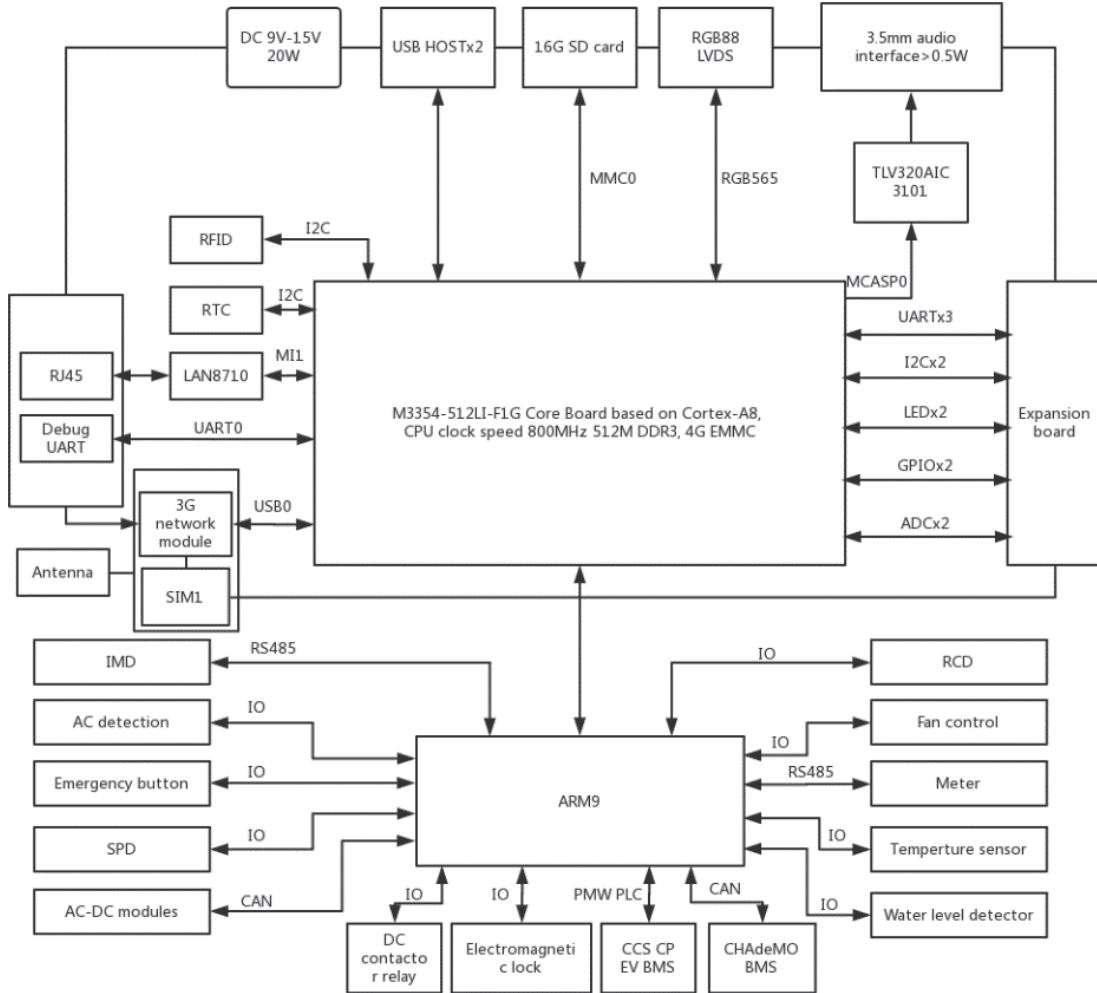


Figure 3.7.1 C6EU function structure

## 3.8 C6EU Power Curve

Type	Power Curve (V/I)																																																		
C6EU 60kW	<p><b>60kW C6EU power curve</b></p> <table border="1"> <caption>Approximate data for 60kW C6EU power curve</caption> <thead> <tr> <th>Voltage (V)</th> <th>200A CHARGING CURRENT (A)</th> <th>200A CHARGING POWER (kW)</th> </tr> </thead> <tbody> <tr><td>200</td><td>200</td><td>40</td></tr> <tr><td>300</td><td>200</td><td>60</td></tr> <tr><td>400</td><td>150</td><td>60</td></tr> <tr><td>500</td><td>120</td><td>60</td></tr> <tr><td>600</td><td>100</td><td>60</td></tr> <tr><td>700</td><td>85</td><td>60</td></tr> <tr><td>800</td><td>75</td><td>60</td></tr> <tr><td>900</td><td>65</td><td>60</td></tr> <tr><td>1000</td><td>60</td><td>60</td></tr> </tbody> </table>	Voltage (V)	200A CHARGING CURRENT (A)	200A CHARGING POWER (kW)	200	200	40	300	200	60	400	150	60	500	120	60	600	100	60	700	85	60	800	75	60	900	65	60	1000	60	60																				
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C6EU 120kW	<p><b>120kW C6EU power curve</b></p> <table border="1"> <caption>Approximate data for 120kW C6EU power curve</caption> <thead> <tr> <th>Voltage (V)</th> <th>250A CHARGING CURRENT (A)</th> <th>200A CHARGING CURRENT (A)</th> <th>250A CHARGING POWER (kW)</th> <th>200A CHARGING POWER (kW)</th> </tr> </thead> <tbody> <tr><td>200</td><td>250</td><td>200</td><td>50</td><td>40</td></tr> <tr><td>300</td><td>250</td><td>200</td><td>75</td><td>60</td></tr> <tr><td>400</td><td>250</td><td>200</td><td>100</td><td>80</td></tr> <tr><td>500</td><td>250</td><td>200</td><td>125</td><td>100</td></tr> <tr><td>600</td><td>200</td><td>200</td><td>125</td><td>120</td></tr> <tr><td>700</td><td>175</td><td>175</td><td>120</td><td>120</td></tr> <tr><td>800</td><td>150</td><td>150</td><td>120</td><td>120</td></tr> <tr><td>900</td><td>130</td><td>130</td><td>120</td><td>120</td></tr> <tr><td>1000</td><td>120</td><td>120</td><td>120</td><td>120</td></tr> </tbody> </table>	Voltage (V)	250A CHARGING CURRENT (A)	200A CHARGING CURRENT (A)	250A CHARGING POWER (kW)	200A CHARGING POWER (kW)	200	250	200	50	40	300	250	200	75	60	400	250	200	100	80	500	250	200	125	100	600	200	200	125	120	700	175	175	120	120	800	150	150	120	120	900	130	130	120	120	1000	120	120	120	120
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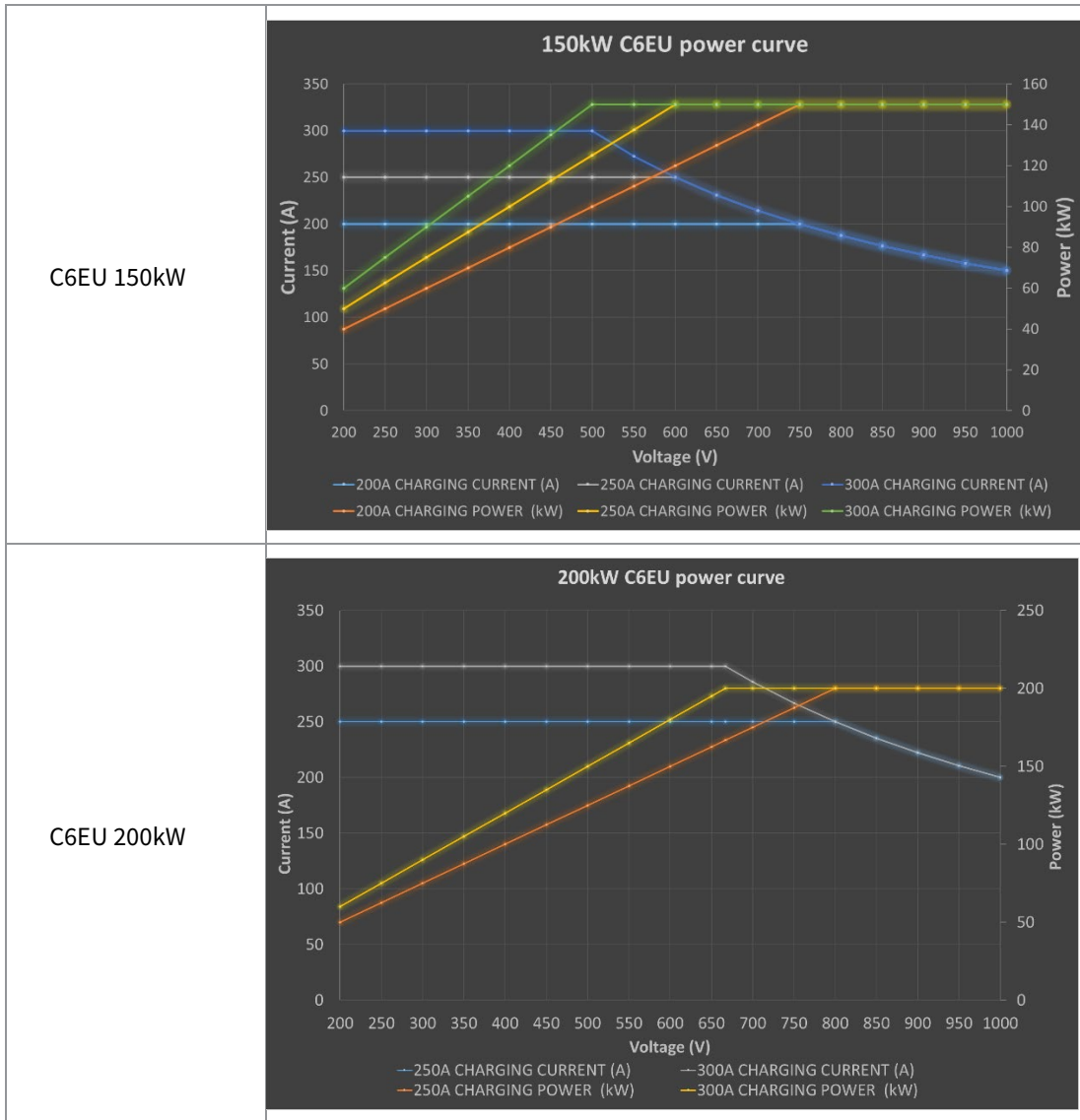


Table 3.8.1 C6EU power curve

## 4. Installation

The product will be delivered to a warehouse by logistic company and handed over to the customer. Normally XCHARGE is not responsible for the transport of charger to final installation location.

### 4.1 Required space for placing and maintaining

The space that C6EU needs is calculated as follows:

- Vertical view: 740 mm x 615mm;
- Front and backside 0.8 meter to open the front door;
- Right and left 1.0 meter to facilitate maintenance personnel to replace the connector cable.

The construction area is shown in the picture below.

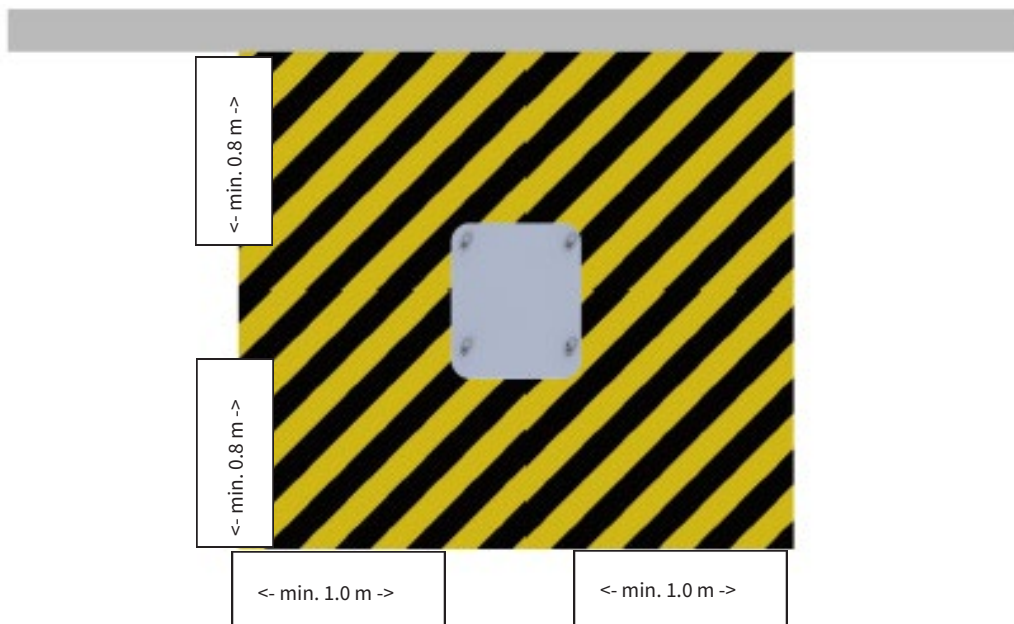


Figure 4.1 Construction area

## 4.2 Installation warnings

**! WARNING**

Danger of life through improper installation!

Ignoring the environmental conditions can lead to dangerous situations when dealing with electricity.

- When installing the charging device outside, avoid the direct sunlight of the equipment screen, which will affect the use of the scanning code;
- Do not install and use the charging device near flammable, explosive, rough or combustible materials or chemicals or steam.

## 4.3 Construction Foundation

### 4.3.1 Concrete Foundation

The C6EU charging station can be built on a concrete foundation. The flat surface of foundation should not be larger than the dimension of 800 mm \* 800 mm. For the entrance of the cable, a hole should be provided in the foundation corresponding to the type of power cable, which was dimensioned in Figure 4.3.1 as an example for the C6EU 200kW. If you do not use a Prefabricated foundation, please notice the hardening times of the applied concrete before installation.

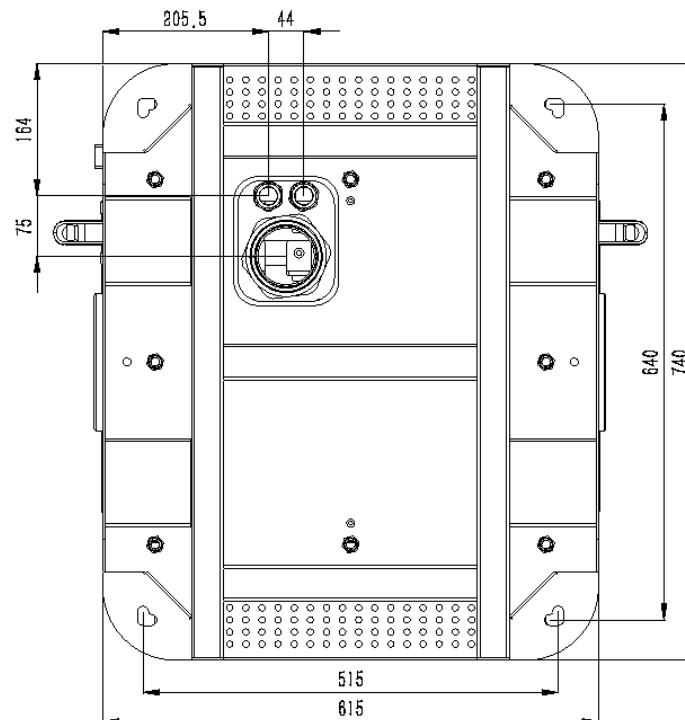


Figure 4.3.1 Dimension of C6EU 200kW foundation

The height of the foundation is determined by the terrain of the site. Depending on rainfall and drainage a height between 15 cm and 30 cm above the ground is recommended by XCHARGE.

Because of frost-proof the foundation has to be about 80 cm deep under the ground.

## Notes:

- laying of power cables should be carried out in accordance with relevant national and industrial standards and specifications, as well as construction quality, process and technical standards;
- Cable selection specification shall be selected according to the type, power, voltage and current level of the equipment and the number of equipment installed;
- When cables are laid, they are strictly forbidden to be exposed. According to the different environments and installation locations, cable bridges, line pipes and directly buried modes are used for laying;
- When the cables are directly buried, the depth of burying shall not be less than 0.8m because of the frost-proof;
- When plastic pipes are used for power distribution, flame-retardant type and wall thickness  $>2.0\text{mm}$  shall be adopted. When the steel pipe is used for underground pipe wiring, the wall thickness is  $>2.5\text{mm}$  and anticorrosive treatment is carried out;
- The selection of power cable specifications should be selected according to the installation environment and fire requirements.

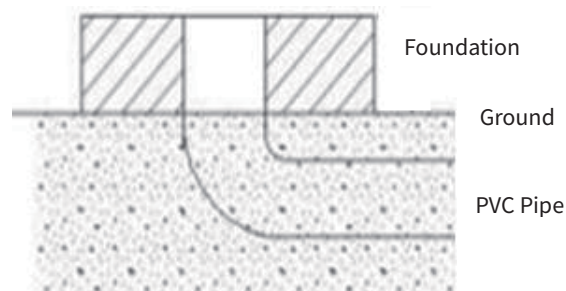


Figure 4.3.2 Sketch of the foundation layers

## 4.4 Power supply and power cable

Requirements for the power supply:

Power (30kW)	Rated voltage	Rated current	Frequency
2 power modules	400V±10%, AC	92A	50Hz
3 power modules	400V±10%, AC	140A	50Hz
4 power modules	400V±10%, AC	185A	50Hz
5 power modules	400V±10%, AC	230A	50Hz
Power (40kW)	Rated voltage	Rated current	Frequency
2 power modules	400V±10%, AC	120A	50Hz
3 power modules	400V±10%, AC	185A	50Hz
4 power modules	400V±10%, AC	245A	50Hz
5 power modules	400V±10%, AC	304A	50Hz

Table 4.4.1 Requirements for the power supply

- Cable type: 3P+N+PE, shielded cables are optional if required by local law;
- The optional cable shielding must be attached to the PE Rail at both ends of the cable;
- The diameter of the cable conductor must be determined by your contractor / electrician.

Here is the suggestion for the cable dimension of all types C6EU (cable length within 40m):

Power Module (30kW)	Cable dimension	Cable gland (diameter)	Circuit breaker inside
2 power modules	4x35 mm <sup>2</sup> 1x16 mm <sup>2</sup>	M50 (32 - 38 mm)	4P 125A with RCD Type A
3 power modules	4x50 mm <sup>2</sup> 1x25 mm <sup>2</sup>	M72 (52 - 60 mm)	4P 180A with RCD Type A
4 power modules	4x95 mm <sup>2</sup> 1x50 mm <sup>2</sup>	M72 (52 - 60 mm)	4P 250A with RCD Type A
5 power modules	4x150 mm <sup>2</sup> 1x95 mm <sup>2</sup>	M72 (52 - 60 mm)	4P 350A with RCD Type A
Power Module (40kW)	Cable dimension	Cable gland (diameter)	Circuit breaker inside
2 power modules	4x50 mm <sup>2</sup> 1x25 mm <sup>2</sup>	M72 (52 - 60 mm)	4P 160A with RCD Type A
3 power modules	4x95 mm <sup>2</sup> 1x50 mm <sup>2</sup>	M72 (52 - 60 mm)	4P 250A with RCD Type A
4 power modules	4x150 mm <sup>2</sup> 1x95 mm <sup>2</sup>	M72 (52 - 60 mm)	4P 350A with RCD Type A
5 power modules	4x185 mm <sup>2</sup> 1x95 mm <sup>2</sup>	M90 (62 - 70 mm)	4P 400A with RCD Type A

Table 4.4.2 Suggestion for the cable dimension of all types C6EU (cable length within 40m)

## 4.5 Packaging and Unpacking

### 4.5.1 Packaging

Material	Sizing	Comments
Shrink wrap	1 pack	Prevent scratch
Foam plastic protection	2m x 2m	Prevent shaking & collision damage
Tilt indicator	2 set	Guarantee upright status
Wooden box	850mm x 800mm x 2080mm 1150mm x 900mm x 2180mm (with cable management system)	
Nail gun	1 set	

Table 4.5.1 Used material for packaging

It is necessary to ensure vertical transportation. If the indicator turns red, it can be considered that during transportation severe impact and tilt occurs.



Figure 4.5.1 Tilting detector on the package



## 4.5.2 Unpacking

Remove the package to confirm that charging station is compact.

- Release the clips on the wooden box;
- Remove the outer wooden box with a crowbar;
- Remove foam plastic protection;
- Remove the inner shrink wrap.

### **WARNING**

#### **Risk of suffocation!**

Children are not allowed to play with plastic wrap and shrink wrap.

## 4.6 Positioning and wiring

### **CAUTION**

#### **Material damage due to improper handling**

- Collisions and bumps can damage the charging station
- Move the charging station with the utmost caution
- Please use a soft pad to set down the charging station

Insert the forklift from the bottom facing the connector side (CCS or CHAdeMO) of charging station and move the charging station to the desired installation location. As shown in Figure 4.6.1 the width of fork is up to 420mm and the length of fork is min. 600mm. **Please move the charging station with the utmost caution!**

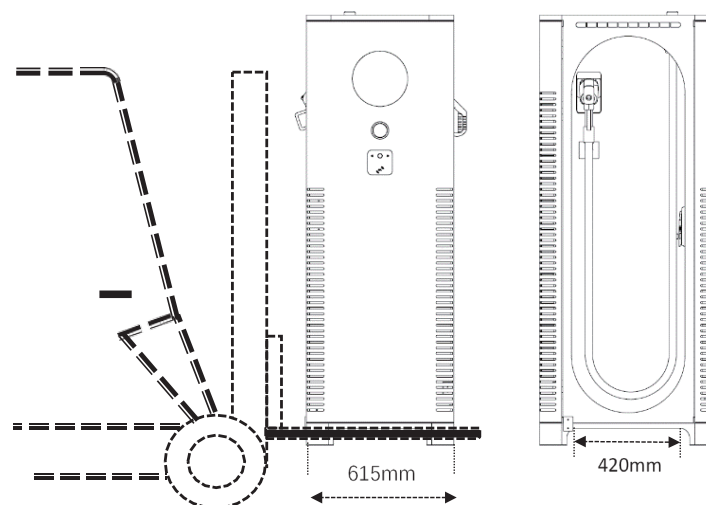


Figure 4.6.1 Forklift parameter

The charging station can also Alternatively be transported and aligned by crane. This can be achieved through four eyebolts included in delivery, which can be screwed into the tapped holes on the top.

## Notes:

- Only 60kW and 120kW C6EU are supposed to be transported by crane for a short distance (for example from floor to Foundation). For more than 150kW because of the weight forklift is suggested by XCHARGE to apply. Please ensure that the body of C6EU stays stable during moving through crane or forklift to avoid the possible swinging, which may cause damage to the charger;
- The cable entrance on the bottom of charger is divided into three inlets, of which the first is for the power cable, the second is for the LAN cable and the third is for the signal cable. In order to prevent animals from entering the charging station to cause unnecessary damage, it should be sealed with a barrier plate and three waterproof cable glands.

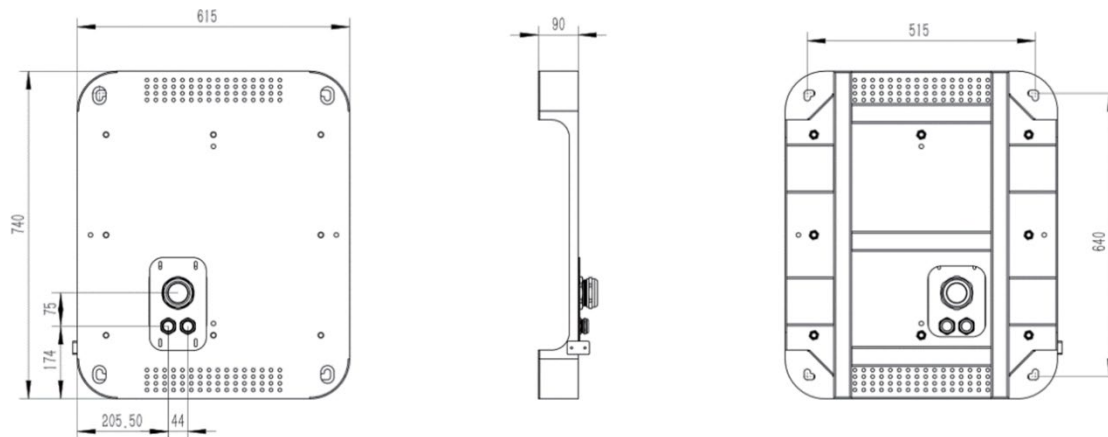


Figure 4.6.2 Dimension of Cable entrance and glands



**WARNING**

### **Mortal danger due to electrocution!**

The contact with high power parts can result in electric shock, burns or death. Before working please put on the required protection device such as protective clothing and gloves.

- Disconnect the system from the power supply.
- Make sure that the power supply is disconnected while working.

After opening the front door and removing the cover, please connect the 3 phase cables L1, L2, L3 and the neutral conductor N as well as the PE protective conductor to the busbar. Then check the connection carefully. Tighten all terminal screws to complete the

installation of the power cables. The screw size and torque requirements are shown below in table 4.6.1.

Type	Size of screws	Torque	tools
C6EU 60kW	L1/L2/L3/N/PE M8x16mm	15-20N.m	13mm socket
C6EU 80kW	L1/L2/L3/N/PE M8x16mm	15-20N.m	13mm socket
C6EU 120kW	L1/L2/L3/N M10x20mm PE M8x16mm	M8: 15-20N.m M10: 25-30N.m	13mm socket for M8; 17mm socket for M10
C6EU 150kW	L1/L2/L3/N M10x20mm PE M8x16mm	M8: 15-20N.m M10: 25-30N.m	13mm socket for M8; 17mm socket for M10
C6EU 160kW	L1/L2/L3/N M10x20mm PE M10x20mm	M10: 25-30N.m	17mm socket for M10
C6EU 200kW	L1/L2/L3/N M10x20mm PE M10x20mm	M10: 25-30N.m	17mm socket for M10

Table 4.6.1 Screw size and torque requirement

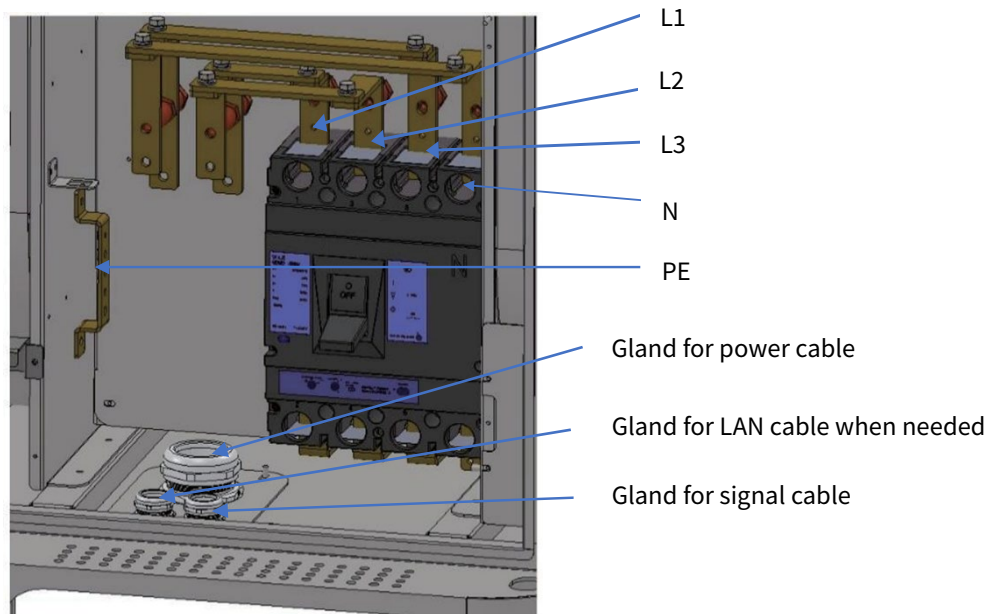


Figure 4.6.3 Illustration of Cable entrance and glands

In case that the station will be connected with a LAN cable for the backend connection, this cable should be laid through waterproof gland on the bottom to the RJ45 Port on the A8 communication board, shown in Figure 4.6.4. (it's suggested to use such soft flat LAN cable like in figure because of the limited place for installation. Any other RJ45 converter in the charger could be installed by customer if needed)

In case that the station connects with backend through SIM card, the SIM card slot are reserved on the main control board.

After installing the cable into the charging station, the bottom of the charging station is fixed to the concrete platform by 4 fixed concrete anchor screws M10.

## 4.7 Verification of measurement values

Please ensure all measured values are within specified range before proceeding to commissioning and operation.

Measurement points on live side	Unit	Nominal value	Specified range
L1 to N	Voltage	230 V	± 10%
L2 to N	Voltage	230 V	± 10%
L3 to N	Voltage	230 V	± 10%
L1 to L2	Voltage	400 V	± 10%
L1 to L3	Voltage	400 V	± 10%
L2 to L3	Voltage	400 V	± 10%
N to PE (on connection terminal)	Voltage	0 V	
PE to N (on connection terminal)	Resistance	<1000mΩ in TN-S system	variable according to local law/standards and different earthing system

Table 4.7.1 Supposed measured values before commissioning



 **WARNING**

**Danger of life through wrong installation!**

Extension cables are not permitted according to IEC 61851-1. If an extension cable or a second cable set is used, there is a risk of electric shock or cable fire.

## 5. Commissioning and operation

### 5.1 Power up

  <b>WARNING</b>
<p><b>Mortal danger due to electrocution!</b></p> <p>The contact with high power parts can result in electric shock, burns or death.</p>

If the charger is firmly fixed on the foundation and the power supply has been properly applied, then the charging station can be powered up by turning on the main switch, which is located in the left on bottom behind the front door.

After that the charger operates automatically, loads the operating system, and then is ready to use in about two minutes.

### 5.2 Display and usage

#### 5.2.1 Display and usage

This will be the home page shown on screen after the charger is powered up.

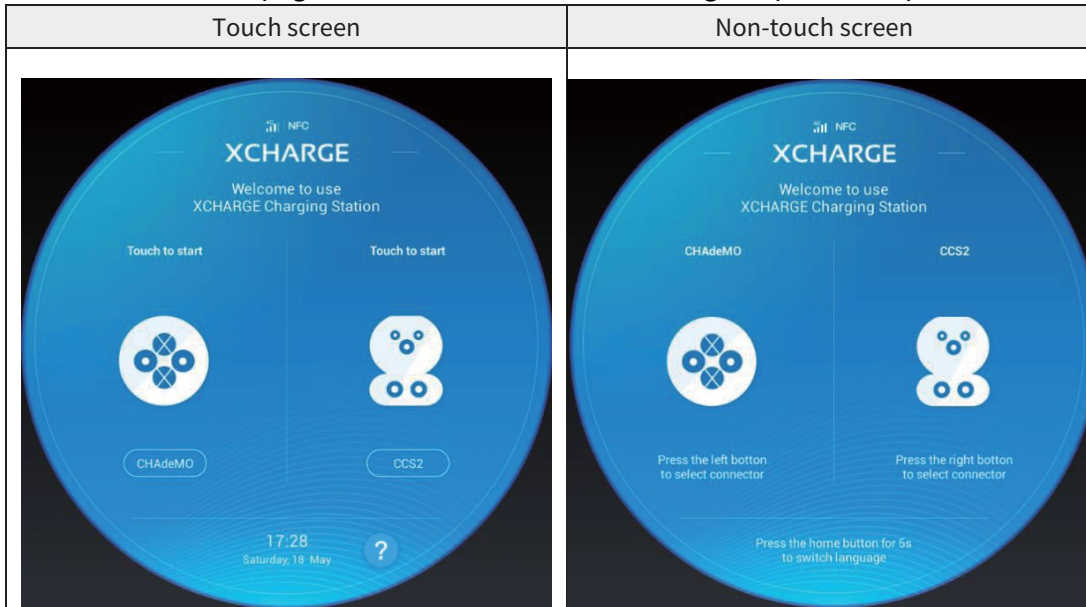


Figure 5.2.1 Start page for touch and Non-Touch screen

## 5.2.2 Control Panel

For the charger with non-touch screen please press the arrow buttons and home button based on the guides on display to choose the options on screen.

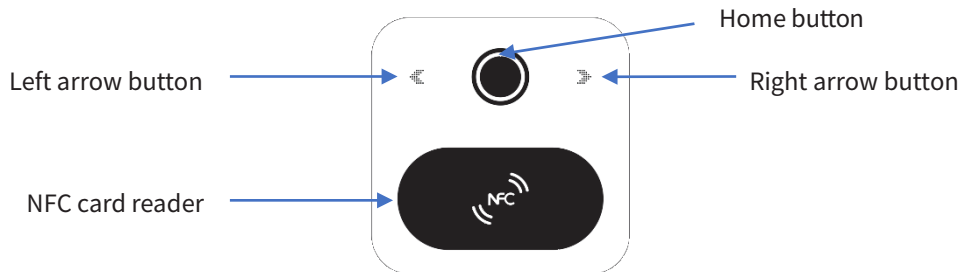


Figure 5.2.2 Control panel

## 5.3 Charging process

See Figure 5.3.1 for the charging flow chart for C6EU with touch Screen:

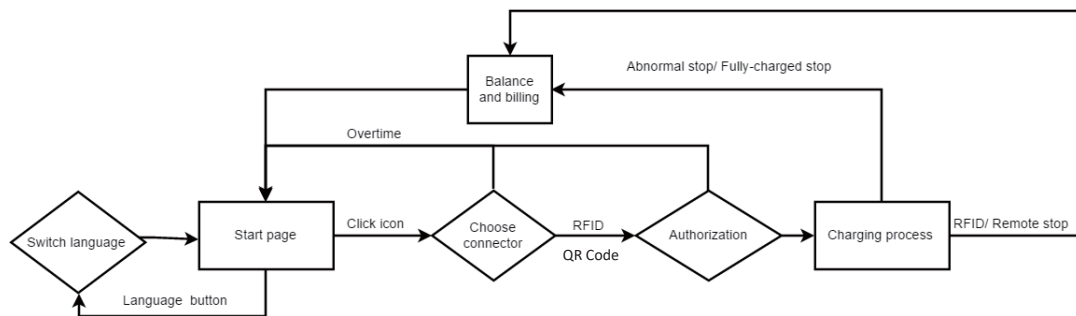


Figure 5.3.1 Charging flow chart for C6EU with touch Screen

See Figure 5.3.2 for the charging flow chart for C6EU without touch Screen:

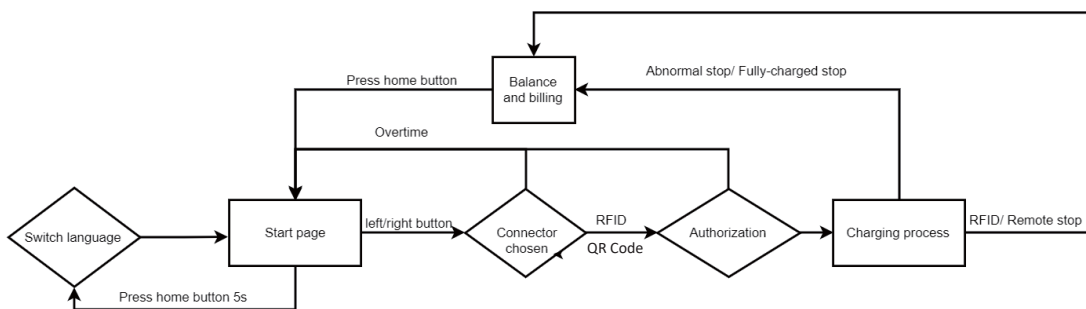


Figure 5.3.2 Charging flow chart for C6EU without touch Screen

The explanation of keywords:

- Icon: the charging connector sign on screen;
- Overtime: There is no action or no proper operation from the user within specified time;
- RFID: Radio Frequency Identification card;

- Abnormal stop/ fully-charged stop: stop initiated by EVSE or EV; RFID/Remote stop: stop initiated by user.
- Language button: press question mark in the bottom right corner (just available for touch screen) and then the different languages can be selected shown below in Figure 5.3.3:

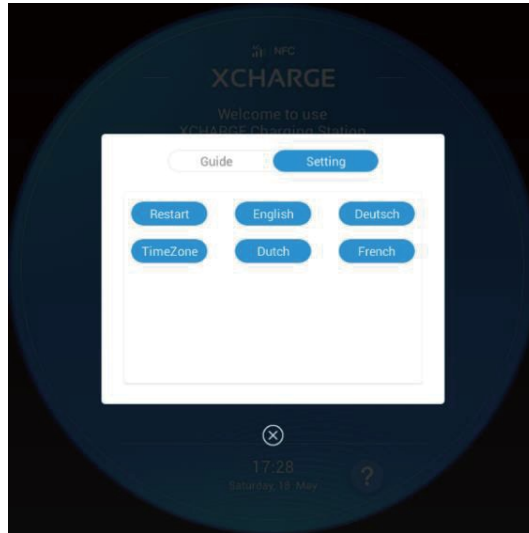
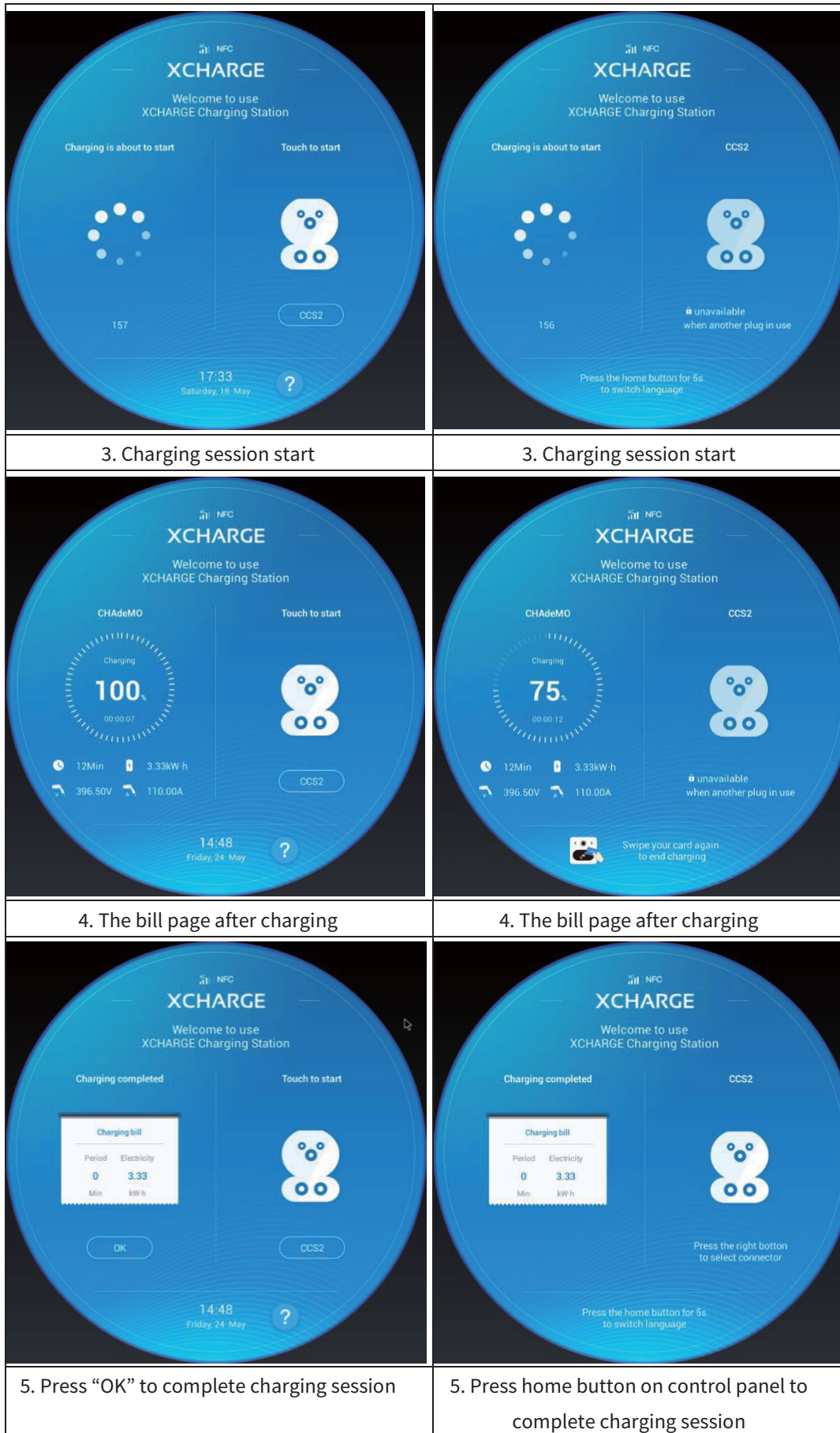


Figure 5.3.3 Setting page

The important steps are shown below as screenshot in Figure 5.3.4 (for single-connector version just one connector icon is shown on the screen and all the others are same as double connectors):

Touch screen	Non-touch screen
1. Select charging icon and wait for the authentication	1. Select charging connector and wait for the authentication
2. Authentication passed, waiting for the official charging process	2. Authentication passed, waiting for the official charging process





3. Charging session start

3. Charging session start

4. The bill page after charging

4. The bill page after charging

5. Press "OK" to complete charging session

5. Press home button on control panel to complete charging session

Figure 5.3.4 UI screenshot



## 5.4 Indicator lights

On the top of each side of the charger there is a widely visible LED indicator, which shows different statuses of the charging station.

Lights Pattern	Status
	Idle mode
	Charging percentage (SOC)
	Fully charged (100% SOC)
	System preparing
	Error
	System self-checking

Table 5.4.1 Status of LED indicator

## 6. Fault diagnosis

Charging station is equipped with automatic diagnosis function, and the fault will be directly displayed on the screen and sent to backend.

If the charging station is online, users can call customer service, we will arrange online engineer for remote repair charging fault.

If the charging station does not connect to network, please call the customer service, and we will arrange crew to repair and maintenance as soon as possible.

Error Code	Meaning	First-Aid checking	Responsibility
0001	Charger communication failed Communication between A8 and DCB failed	Power off the charger and then check the connection between DCB and A8 board	EVSE
1005	Power module communication failed	Check that the DIG switch of the module is in the correct position, Check the CAN communication connection between power module and DCB module	EVSE
1007	Meter for connector 1 warning	Check the connection and communication of electricity	EVSE

		meter 1 (RS485) to DCB board	
1008	Meter for connector 2 warning	Check the connection and communication of electricity meter 2 (RS485) to DCB board	EVSE
1009	Connector 1 insulation module alarm	Check insulation module power supply Check insulation module connection and communication (RS485) to DCB board	EVSE
1010	Connector 2 insulation module alarm	Check insulation module power supply Check insulation module connection and communication (RS485)	EVSE
100F	Charger temperature alarm	Check the temperature sensor in the cabinet	EVSE
1012	BMS demand voltage is above or below limits	Check EV	EV
1013	L1-phase overvoltage	Check grid input	Grid
1014	L1-phase undervoltage	Check grid input	Grid
1015	L2-phase overvoltage	Check grid input	Grid
1016	L2-phase undervoltage	Check grid input	Grid
1017	L3-phase overvoltage	Check grid input	Grid
1018	L3-phase undervoltage	Check grid input	Grid
1023	Discharge check failure	Check power module	EVSE
1025	Insulation check failure	Please contact XCHARGE	EVSE
1080	Power module check failure	Please contact XCHARGE	EVSE
10A0	SPD warning	Check SPD status	EVSE
10B0	PE warning	Check PE connection	EVSE
2005	Connector 1 temperature alarm	Check status of connector 1	EVSE
2006	Connector 2 temperature alarm	Check status of connector 2	EVSE
2016	Connector DC contactor failure	Check connector DC contactor status	EVSE
2017	EV battery reverse wiring	Check EV	EV
2018	EV battery voltage abnormal	Check EV	EV
2019	EV battery overvoltage	Check EV	EV
2021	EV battery undervoltage	Check EV	EV

4002	The emergency stop button is pressed	Check the cause of emergency stop, restore emergency button	Unknown
4009	Switch DC contactor failure	Check switch DC contactor status	EVSE
4021	Charger front door opens	Check whether the door is closed, check whether the access control spring is working and whether the cable is connected	EVSE
4022	Charger back door opens	Check whether the door is closed, check whether the access control spring is working and whether the cable is connected	EVSE
4023	Power module failure	Please contact XCHARGE	EVSE
4025	The vehicle demand voltage exceeds power module rating	Check EV	EVSE
4026	Electromagnetic lock locking failure	Please contact XCHARGE	EVSE
4027	Electromagnetic lock unlocking operation failed	Please contact XCHARGE	EVSE
4028	Electromagnetic lock reset failed	Please contact XCHARGE	EVSE
5009	The power module is not energized	Check power module supply	EVSE
5010	Power module address conflict	Check if the DIG switch of the module is in right position	EVSE
5011	PE warning	Check PE connection	EVSE
5012	AC wiring of charger lacks phase	Check three phase connection	EVSE
6003	Water level alarm	Check if there is water exceeds detector	EVSE
6004	Relay check failure	Check relay	EVSE
6005	Electromagnetic lock check failure	Please contact XCHARGE or check the status of relay	EVSE

## Notes:

When scanning QR-code or sweeping NFC/RFID card to start charging and system shows self- test failure: due to the difference of EVs inlets, plug the socket again to ensure that the charging connector is in the right position and lock functions well.

## 7. Maintenance



### **Mortal danger due to electrocution!**

The contact with high power parts can result in electric shock, burns or death. Before working please put on the required protection device such as protective clothing and gloves:

- Disconnect the system from the power supply,
- Make sure that the power supply is disconnected while working.

Make sure to put the charging connector back on the right side of the connector holder after charging and ensure that the charging cable is naturally drooping.

Regularly check the charging station and charging cable. If damage is found, you can contact the customer service for replacement or maintenance.

### 7.1 Cleaning of the cabinet

Please make sure that you are informed and follow the following instruction.

- The C6EU Charge Station is powder coated. This coating must be kept in good condition;
- We suggest that C6EU needs to be cleaned two times every year (adjusted according to the actual situation);
- Remove rough dirt by spraying with low-pressure tap water instead of high-pressure jet; Apply a neutral or weak alkaline cleaning solution and let it soak;
- Only use cleaning agents with a PH value between 6 and 8; Do not use cleaning agents with abrasive components;
- Do not use abrasive tools;
- Remove dirt by hand with a non-woven nylon hand pad; Do a regular check on the coating for damage;
- Call the customer service if any damage on coating occurs.

### 7.2 Anti-dust net replacement

In order to change the anti-dust net in 10min, quick change method is applied. After opening the front door and lifting the lock bar, the cover will open, then wash, air-dry the net, install the anti- dust net and locks back.

 **CAUTION**

Anti-dust net is located at charging station air-inlet part, and please check the net every 3 months and conduct scheduled cleaning. If not, dust blockage may happen, causing internal components overheated.

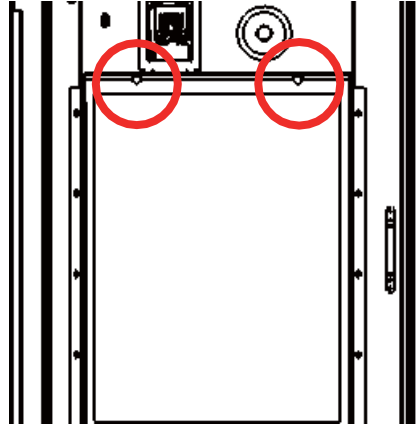


Figure 7.2.1 Lock bar of the anti-dust net

 **WARNING**

**Danger of life!**

lease shut down the input power before cleaning the charging station.

When opening the front and rear doors, please pay attention to prevent dust from entering the cabinet and clean if necessary.

## 8. Contact Information

### Contact for Europe:

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