



C6EU SERIES

Installation and Operation Manual

ENGLISH

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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 Fast Charging station.

Due to the high technical modularity and the different customer requirements there are various variants, which differ in the maximum output power, the installed cables and plugs 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.

1.2 Proper Usage of the manual

This product is a high-power charging station for recharging electric vehicles (EVs) using the fixed cable- and plug-connections CCS Combo 2 and/or CHAdeMO.

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 fast 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. Please observe your country-specific regulations about requirements of the grounding for charging station.
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 CCS 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 plug 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 stucked on 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>

Figure 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>



WEEE Symbol

Do not dispose of the product with domestic waste. Please follow the valid disposal regulations in the installation site for electronic waste.



CE Mark

Figure 1.5.2 signs on nameplate

2. Product description

2.1 System overview



Figure 2.1.1

a	HD/Touch screen with 22.5 cm diameter (HMI)	e	LED Indicator
b	Control panel with NFC reader	f	Charging plug
c	Emergency button	g	Locker of door
d	Air inlet	h	Air outlet

Table 2.1.1 Housing and elements outside

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

Type	Max. power	Power modul (20kW)	CCS	CHAdeMO
C6EU/160-200-1000VDC-x-JC	160kW	8	200Ax1	125Ax1
C6EU/160-200-1000VDC-x-CC	160kW	8	200Ax1, 125Ax1	no
C6EU/160-200-1000VDC-1-C0	160kW	8	200Ax1	no
C6EU/060-200-1000VDC-x-JC	60kW	4	125Ax1	125Ax1
C6EU/060-200-1000VDC-1-C0	60kW	4	125Ax1	no

Table 2.1.2 Type of C6EU

Notes:

1. "1" in the table means Single plug mode: one plug outputs at one time.
2. "x" shows the different power distribution modes:
 "2" means the Average mode: two plugs output same power value;

“3” means the Half intelligent mode: two plugs output same power value or one plug outputs at maximum value;

“4” means Intelligent mode: output multiple designated values.



Figure 2.1.2 design sketch of construction for C6EU

2.2 Charging plug system

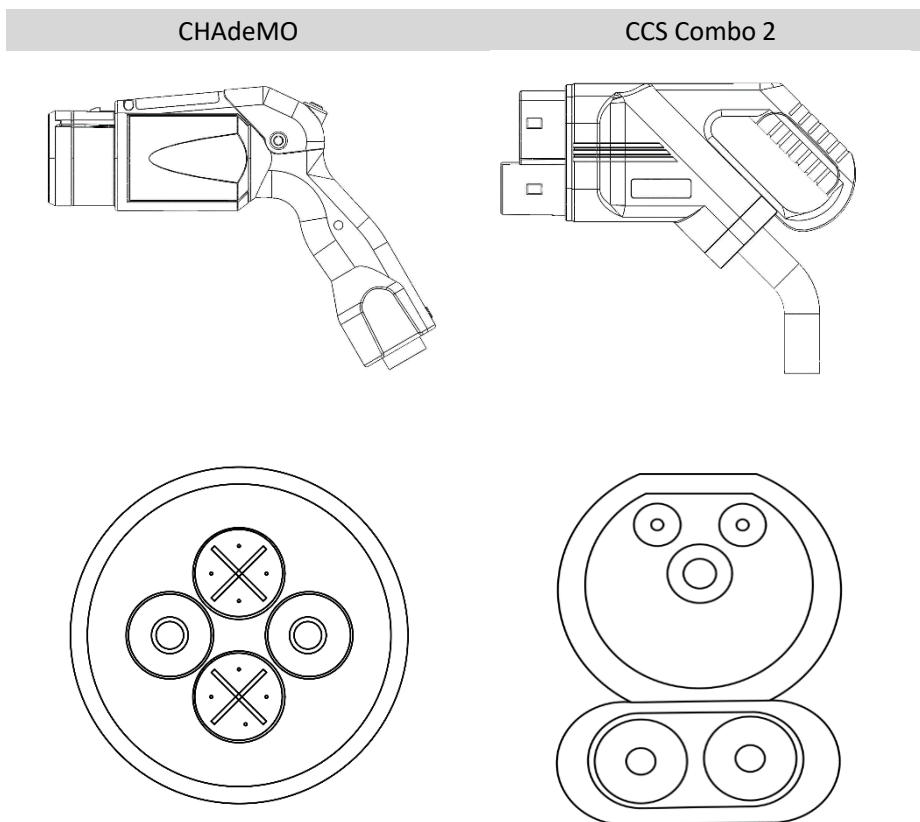


Figure 2.2 Struktur of charging plug, CHAdeMO and CCS Combo 2

3. Technical Data

3.1 Nameplate

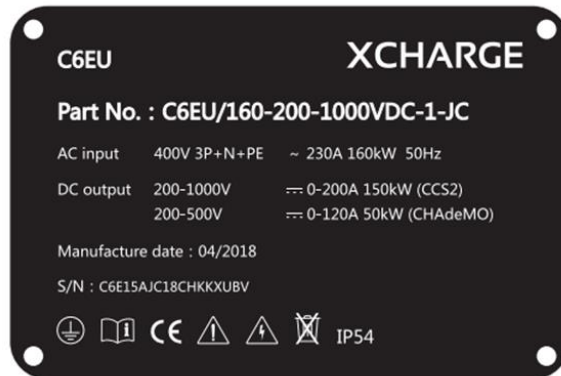


Figure 3.1.1 Nameplate

Nameplate contains all the necessary information includes:

- Product type and serial number
- Input power and wiring
- DC rated output voltage, current and power
- Manufacture date

3.2 Electrical data

Input	
Input voltage range	3 phase 400 V _{AC} +/- 10% 50 Hz
Power factor	> 99% at nominal output power
Efficiency	96% at nominal output power
DC output (C)	
Maximum output power	160 kW
Output voltage range	200 – 1000 V _{DC} (Combo-2)
Maximum output current	200 A _{DC} (Combo-2)
Harmonic component	5% < in 50 – 100% of rated output power
DC output (J)	
Maximum output power	60 kW
Output voltage range	50 – 500 V _{DC} (CHAdeMO)
Maximum output current	125 A _{DC} (CHAdeMO)
Harmonic component	5% < in 50 – 100% of rated output power
General	
DC connection standard	EN61851-23 / DIN 70121 Combo-2 CHAdeMO 1.0
DC cable length	3.5/5/7 meters
DC plug type	COMBO-2 / CHAdeMO
RFID system	ISO 14443 A&B/ISO 15693/ ISO18092/ECMA-340

Table 3.2.1

3.3 Mechanical Data

Mechanical data	
Dimensions (H x W x D)	1750 mm x 600 mm x 720 mm
Weight	300 kg(160kW)
Volume	0.75m ³
Dimensions including packaging	2000 mm x 800 mm x 920 mm
Weight including packaging	340 kg(160kW)
Weight concrete foundation	Min. 400 kg
Mechanical impact protection	IK10

Table 3.3.1

3.4 Environmental data

Environmental data	
Ground load bearing	At least 400kg as least
Ingression protection	IP54
Temperature range – Operation	-25 °C to +50 °C
Temperature range – De-rating	+50 °C to +70 °C
Temperature range - Storage	-40 °C to +80 °C
Operating Relative Humidity	5%-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	<60 dB in rated output power
Atmospheric Pressure	79KPa-106KPa
Altitude	2000 m max.
Network	GSM/WCDMA/LTE/LAN

Table 3.4.1

3.5 Technical Standards

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

Healthy, safety and general requirements	EN 50385: 2017 EN 61851-1: 2011 EN 61851-23: 2014 EN 61851-24: 2014
EMC	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

3.6 Electrical diagram

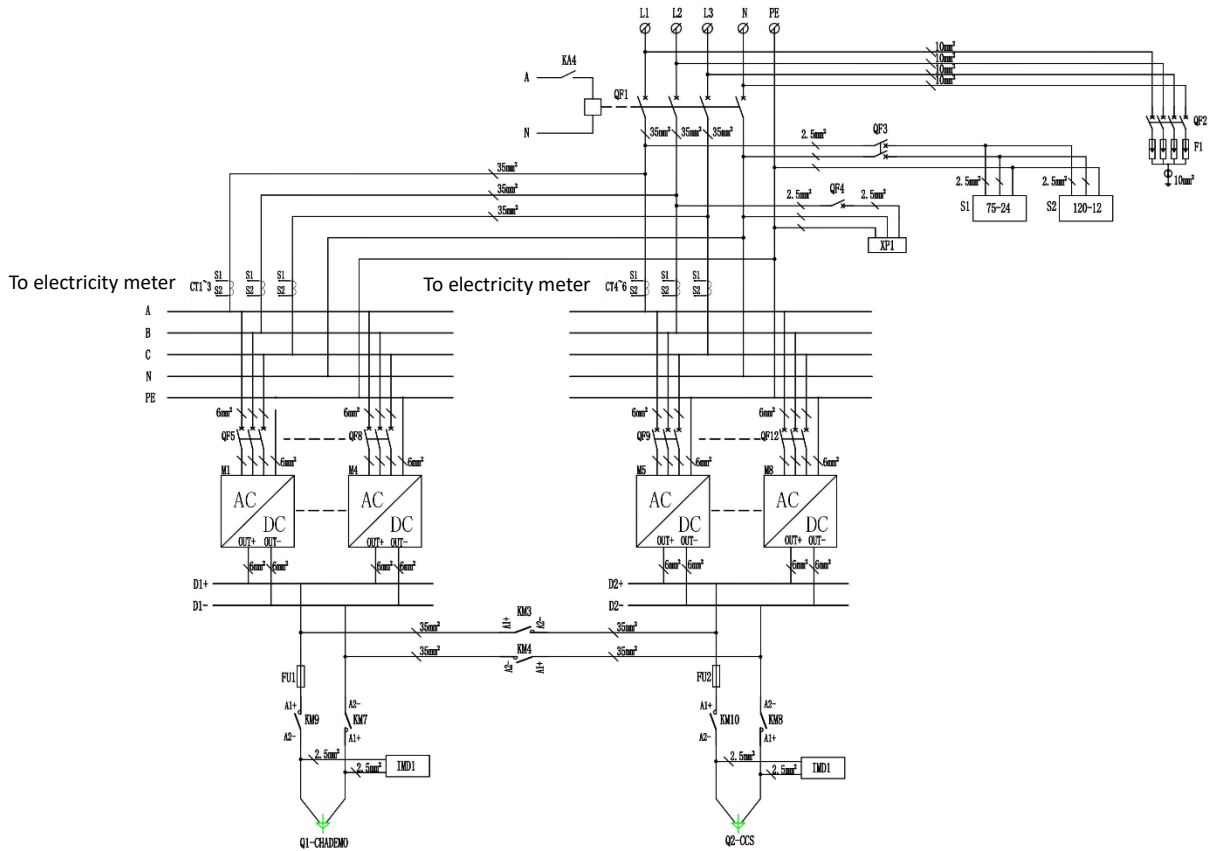


Figure 3.6.1 electrical connection diagram

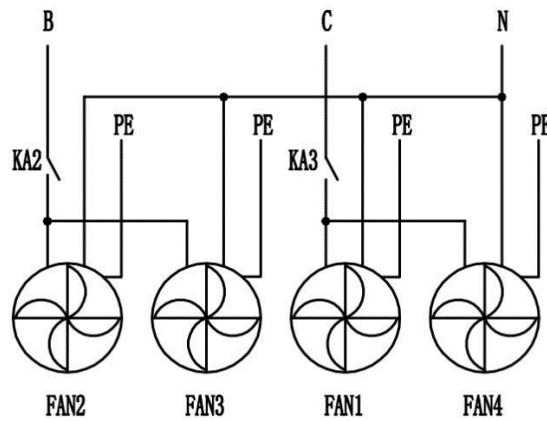


Figure 3.6.2 Fans' control diagram

Notes:

The diagram was already approved by TÜV Rheinland according to Standard EN 61851-23.

3.7 Function Structure of C6EU

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

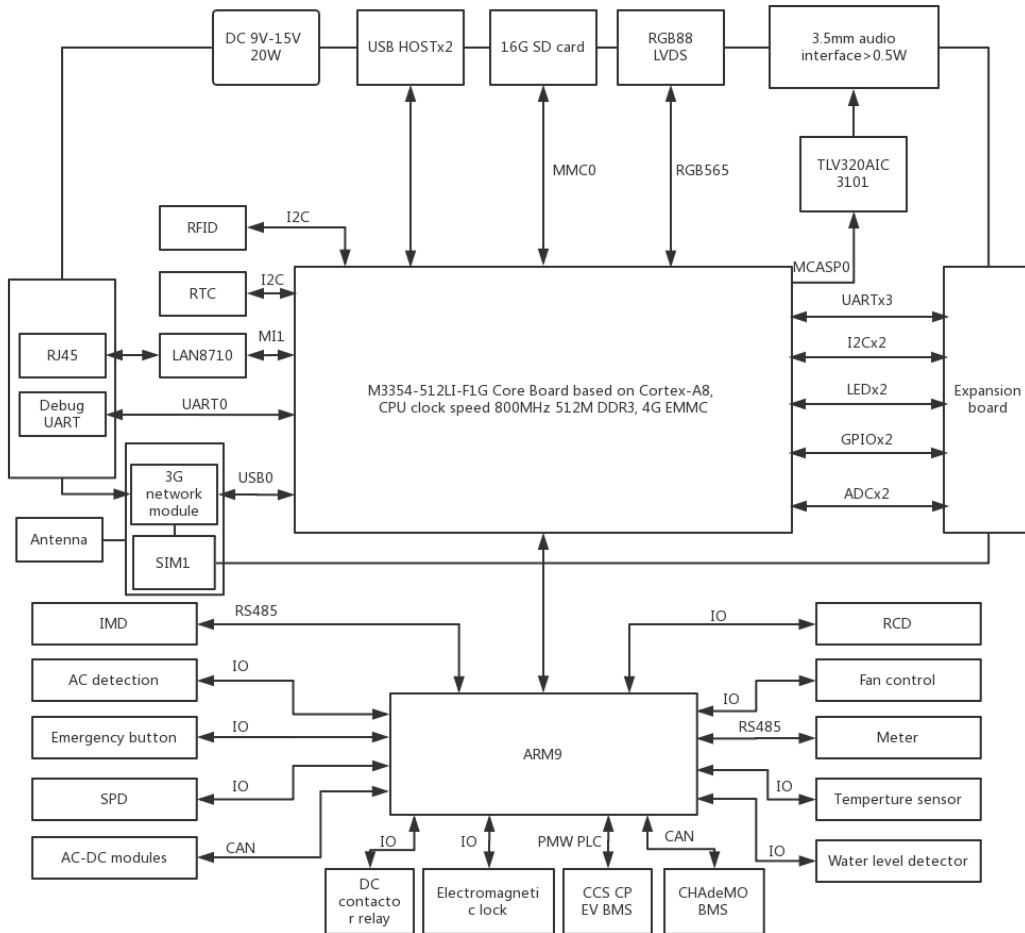


Figure 3.7.1

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: 720 mm x 600mm
- Front and backside 0.8 meter to open the front door.
- Right and left 1.0 meter to facilitate maintenance personnel to replace the plug cable.

As shown in the picture, it is the construction area.

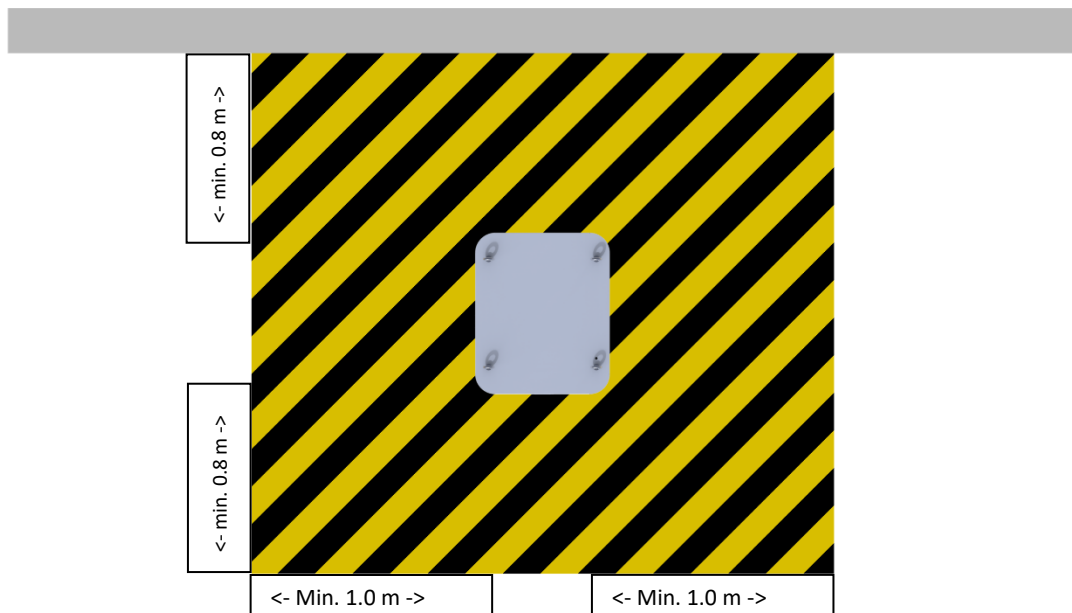



Figure 4.1

4.2 Installation environment

 WARNING
<p>Danger of life through improper installation! Ignoring the environmental conditions can lead to dangerous situations when dealing with electricity.</p>

- 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 Construct Foundation

The C6EU charging station should 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 160kW. If you do not use a Prefabricated foundation, please notice the hardening times of the applied concrete before installation.

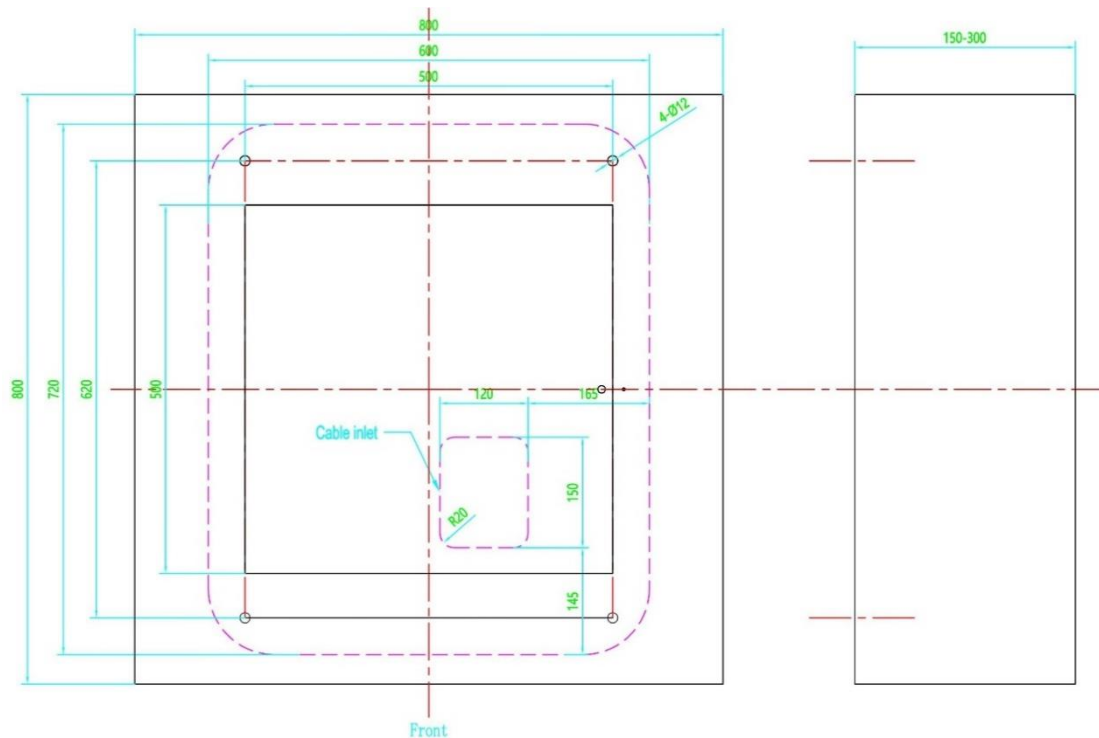


Figure 4.3.1 concrete foundation for 160kW C6EU

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 >2.0mm shall be adopted. When the steel pipe is used for underground pipe wiring, the wall thickness is >2.5mm and anticorrosive treatment is carried out.
- The selection of power cable specifications should be selected according to the installation environment and fire requirements.

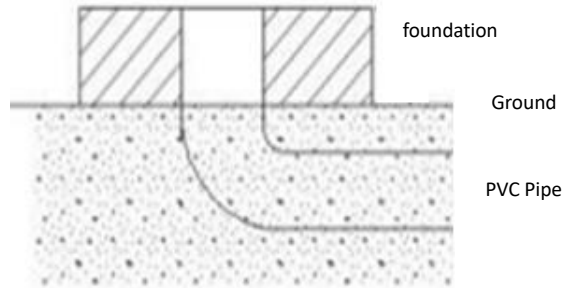


Figure 4.3.2

4.4 Power supply and power cable

- Requirements for the power supply:

Power	Max. voltage	Max. current	Frequency
C6EU 60kW	400V±10%, AC	120A	50Hz
C6EU 160kW	400V±10%, AC	230A	50Hz

Table 4.4.1

- 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.

Power	Cable dimension	Connected circuit breaker in C6EU
60kW	4x35mm ² 1x16 mm ²	4P 125A with RCD Type A
160kW	4x150mm ² 1x70 mm ²	4P 400A with RCD Type A

Table 4.4.2

4.5 Unpacking

Remove the package to confirm that charging station is compact.

- Remove the outer wooden box with a crowbar
- Remove hardboard case
- Remove foam plastic protection

- Remove the inner shrink wrap

! WARNING

risk of suffocation!

The children are not allowed to play with plastic wrap and shrink wrap.



Figure 4.5

4.6 Position

! 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 back of charging station and move the charging station to the desired installation location.

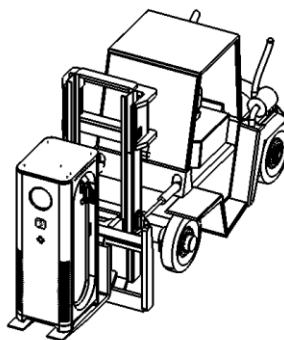


Figure 4.6.1

- 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.

- 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 ground wire of foundation 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.

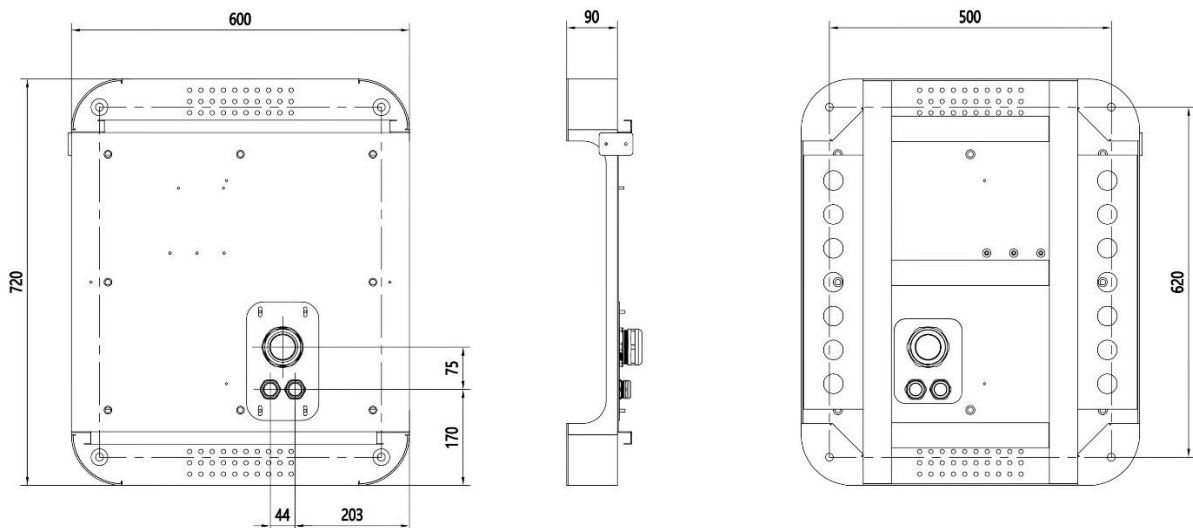


Figure 4.6.2

  **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. After all tighten the screws to complete the installation of the power cables.

XCHARGE

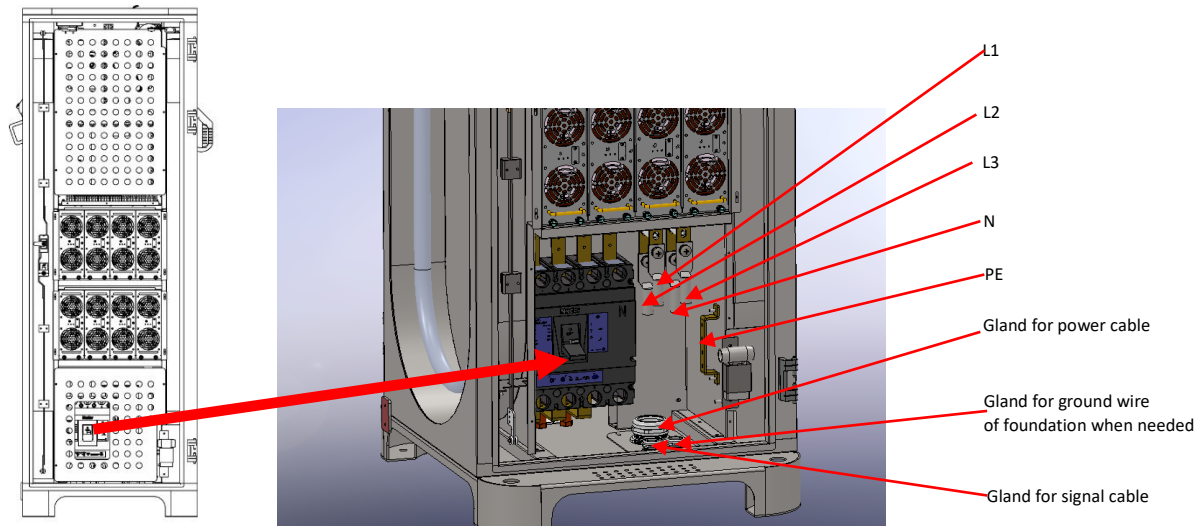



Figure 4.6.3

- 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.

5. Commissioning and operation

5.1 Power up

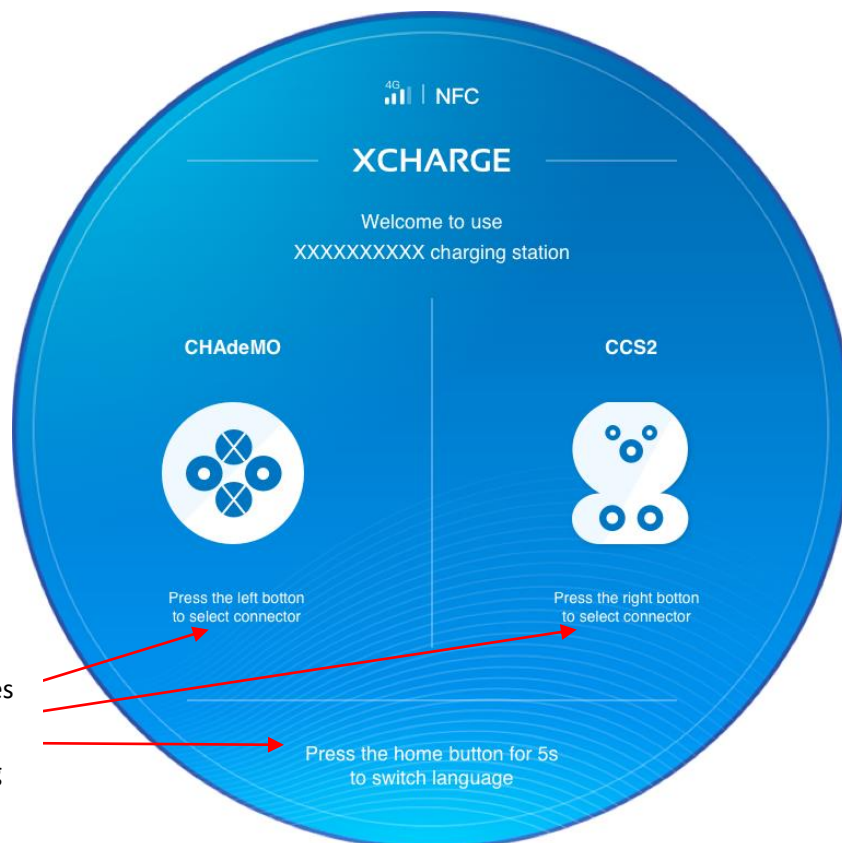
 WARNING
Mortal danger due to electrocution! The contact with high power parts can result in electric shock, burns or death.

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 Start page



Notes:
Please read the guides on the start page carefully before using

Figure 5.2.1 Start page for Non-Touch screen

5.2.2 Control panel

Please press the arrow buttons and home button based on the guides on display to choose the options on screen.

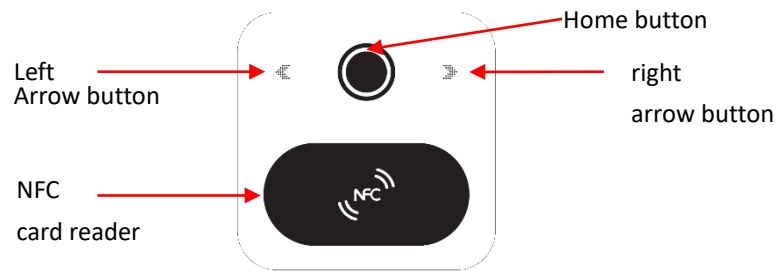


Figure 5.2.2 Control panel

! 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.

5.3 Charging process

The charging flow chart for C6EU with Non-Touch Screen:

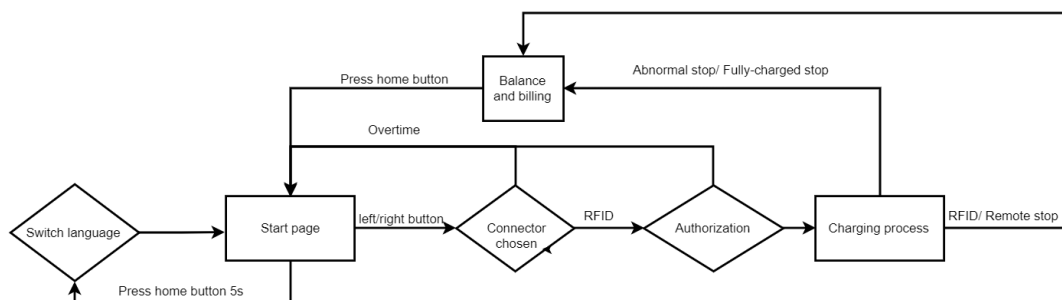


Figure 5.3.1

Explanation of keywords:

- 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

5.4 Indicator lights

Above the respective cable suspension is a widely visible LED indicator, which shows different statuses of the charging station.

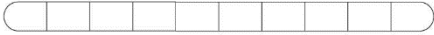
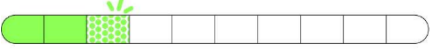
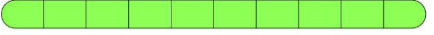



Lights outline	Status
	Sleep mode
	Charging percentage
	Fully -charged
	System activation
	Error
	System self-checking

Figure 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.
- 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.

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 plug is in the right position and lock functions well.

Fault No.	Fault description	Effect on charging	
		Stop	Prevent
0001	Charging pile communication failed. Communication between A8 and DCB failed.	√	√
0002	The charging pile extension communication failed. Communication between host A8 and extension DCB failed.	√	
1004	Meter communication 485 detection failed.	√	
1005	Power module CAN failed.	√	
1007	Plug 1 or Plug 2 meter alarm.	√	
1009-1010	Plug 1, Plug 2 insulated communication module alarm. : The charging port A insulated communication module alarm, charging port B insulated communication module alarm.	√	
100F	Temperature alarm.	√	√
1012	The BMS demand voltage is too low or too high (vehicle malfunction)	√	
1013-1018	A-phase voltage is too high, A-phase voltage is too low, B-phase voltage is too high, B-phase voltage is too low, C-phase voltage is too high, C-phase voltage is too low.	√	√
1023	Leakage detection failed.	√	√
1024	DC voltage detection failed.	√	√
1025	Insulation monitor failed.	√	
1080	Power module alarm.	√	√

10A0	AC surge protective device alarm.	√	√
10B0	Ground alarm.	√	√
2005	Plug 1 or Plug 2 temperature alarm.	√	
2010	BMS CAN failed to detect. (vehicle malfunction)	√	
2014	BMS communication failure. (vehicle malfunction)	√	
2015	The Plug 1 or Plug 2 BMS timeout alarm.(vehicle malfunction)	√	
2016	Plug contactor failure.	√	
2017	Battery reverse wiring.	√	√
2018	The battery voltage is abnormal. High voltage occurs on the battery side before communication.	√	
2019	Battery overvoltage.	√	
2020	The auxiliary power supply is not powered.	√	
2021	Battery undervoltage.	√	
3001	Reach charger setting conditions. No exception, it is considered to be full.	√	
3002	The vehicle terminal prompts manual termination.	√	
3004	The BMS terminates. (vehicle malfunction)	√	
3005	Charger over temperature.	√	
3006	Charging connection failure.	√	
3007	Overheating inside the charger.	√	√
3008	The power cannot be transmitted. (vehicle malfunction)	√	
3009	Charger emergency stop. (optional)	√	√
300B	The current does not match. (vehicle malfunction)	√	
300C	Abnormal voltage.(vehicle or charger failure)	√	
3018	Self-test timeout.	√	
4000	High-voltage relay failure.	√	
4001	Vehicle occupancy time out.	√	
4002	The emergency stop button is pressed. (optional)	√	√
4003	The monomer voltage setting is reached. No exception, it is considered to be full.	√	
4004	Charger started terminate.	√	
4005	Charging connector failure.	√	
4006	Battery pack temperature is too high.	√	
4007	Current exceeds demand.	√	
4008	Abnormal voltage, this is a vehicle fault.	√	
4009	DC contactor failure.	√	
4010	There is an abnormality in the charging Plug.	√	
4011	The vehicle is full. This is a vehicle feedback.	√	

4012	Detection point 2 voltage detection failure.	√	
4020	The total voltage setting is reached. No exception, it is considered to be full.	√	
4021	Pile front door open.	√	√
4022	The pile back door opens.	√	√
4023	The power module is faulty. The failed module must be recorded in data.	√	
4024	The power module status changes. The module status must be recorded in data.	√	
4025	The vehicle demand voltage exceeds the power module rating. shown as	√	
5001-5007	CRO timeout, CRO timeout, CTS timeout, CRO timeout, CCS timeout, CST timeout, CSD timeout.	√	
5008	Other self-test failures.	√	
5009	The power module is not powered on.	√	
5010	(C6) Power module address conflict.	√	√
5011	Charging pile ground wire is not connected.	√	
5012	Charging pile AC wiring phase missing.	√	
5013	The emergency stop button is pressed.	√	
5014	Charging pile voltage is abnormal.	√	
5015	Charging pile current is abnormal.	√	
5016	Charging temperature is abnormal.	√	
5017	Charging pile leakage.	√	
5018	The communication between the charging pile and the car is abnormal.	√	
5019	The car indicates charging pause.	√	
501A	Car timeout timeout, end charging.	√	
501B-F 5020-5022	BRM timeout, BCP timeout, BRO timeout, BCS timeout, BCL timeout, BST timeout, BSD timeout.	√	
6003	Water level alarm.	√	
6004	Relay failure.	√	
9000	Charge Plug is not inserted.	√	
A000	Trickle charge timed out to end charging.	√	

7. Maintenance


 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.

Make sure to put the charging plug back on the right side of the plug 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

- The C6EU1 Charge Station is powder coated. This coating must be kept in good condition;
- We suggest that C6EU needs to be cleaned one time 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.

 CAUTION
Anti-dust net is located at charging station air-inlet part, and please check the net 1 time pre year and change the new one. If not, dust blockage may happen, causing internal components overheated.

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.

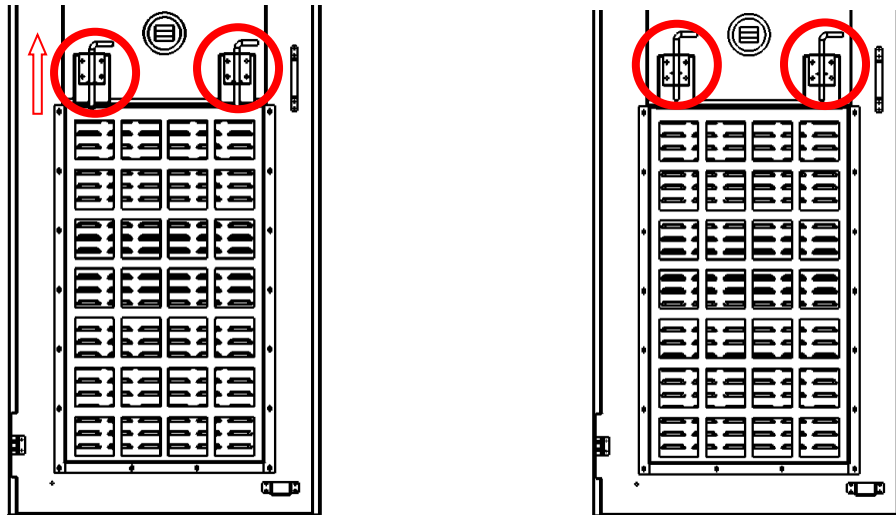


Figure 7.2.1

 **WARNING**

Danger of life!

Please 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. Information

Contact:

Hamburg, Germany

XCharge Europe GmbH

Address: c/o WeWork Stadthaus Axel-Springer-Platz 3 - 20355 Hamburg

Tel: +49-40808194740 Email: eu@xcharge.com

Beijing, China

Beijing XCharge Technology Co., Ltd.

Address: 10F Guobin Building, No.21 Jiuxianqiao Road, Chaoyang District, Beijing, China

Tel: +86-1057215988 Email: b@xcharge.com