

Guidance for AD Screen

DC 180

Public Charger



Fast Charging Station

Designed for roadside
charging, retail and
urban applications.



Language

English

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1 Document Information

1.1 About this manual

This manual describes the installation, operations and safety maintenance of the DC 180 charger. Before installation, please read this manual to ensure a successful installation, operation and safety maintenance.

1.2 Target group

This document is intended for professional or other qualified personnel only. Qualified personnel must possess the following skills:

- Knowledge of how the product operates and how to use it.
- Knowledge of commercial electrical installation and ability to test and certify installation.
- Understand how to address hazards and risks related to the installation and use of electrical equipment.
- Understand equipment installation and commissioning.
- Understand all relevant standards and directives.
- Understand and follow the instructions in this manual, as well as all safety information.

1.3 Compliance

Before installation of the DC 180 charging station, it is important to read this manual carefully and talk to a licensed contractor, electrician, or trained installation expert. They will be able to help you make sure you meet all local and national codes and safety standards, as well as any applicable laws and ordinances. The most common installation and mounting scenarios are outlined in this document.

1.4 Disclaimer of Warranties

This document is copyrighted and can only be used with permission from us. This manual is based on the most up-to-date information available when it was printed. It is subject to any changes that it may be made without prior notice. Although the accuracy of the information in this manual has been verified, there is no assurance that it is complete and accurate. This includes, but is not limited to, product specifications, functionalities, and illustrations.

We are not responsible for any losses or damages that may arise from using this document, including but not limited to lost profit or data.

If you use or modify the DC 180 charging station in a way that is not intended to be, your limited warranty will be void.

1.5 Illustrations

This document cannot display all the configurations of the DC 180 charging station. Therefore, the illustrations in this document only show the typical settings. They are only used for instruction and descriptions of installation.

1.6 Language

The original description of this document is written in English. All other language versions are translated versions of this document.

1.7 Terminology

Abbreviations	Definition
AC	Alternating Current
CCU	Charging Control Unit
DC	Direct Current
EV	Electric Vehicle
OCPP	Open Charge Point Protocol
PE	Protective Earth
RCBO	Residual Current Breaker with Overcurrent Device
RFID	Radio-frequency Identification
SOC	State of Charge
SPD	Surge Protection Device
TCU	Transmission Control Unit
ITB	Interface Transfer Board
PS	Power Supply

1.8 Revision Record

Version	Date	Descriptions
V1.0	2024.03.01	Initial version
V1.1	2024.07.19	Version 1.1
V1.2	2025.08.08	Updated description for packaging sensor
V1.3	2025.08.27	Delete 'Enclosure grounding operation'
V1.4	2025.11.13	Updated technical specifications
V1.5	2025.12.12	The 4G module of the charger has been removed and a dual-card router has been added

2 Safety Instructions

2.1 Safety Requirement

Symbols description

Symbol	Risk Description
	General risk
	Hazardous voltage with risk of electrocution
	Waste from electrical and electronic equipment
	High temperature warning- indicates the risk of burns caused by high temperature areas or areas with high component temperatures
	Indicates the protection level of the equipment
	Grounding protection connection point
 DC	DC Voltage
 AC	AC Voltage

Personal Protective Equipment

When handling and maintaining the DC 180 charger, it is crucial to wear the appropriate safety protective equipment to personal safety and compliance with safety standards. Below is a list of recommended protective gear along with its characteristics:



Insulating Gloves

- Rated for 1000V AC/1500V DC (Class 0)
- Made from durable, non-conductive material
- Ensure a snug fit for dexterity and safety



Insulating Safety Boots

- Rated for 1000V (Class 0)
- Made with dielectric materials to prevent electrical conduction
- Slip-resistant soles for better traction



Helmet with Face Shield

- EN 397 and EN 50365 certified
- Provides full face protection against electrical arcs and flying debris
- Adjustable fit for comfort and security



Antistatic Mat

- Rated for 1000V (Class 0)
- Reduces the risk of electrostatic discharge
- Durable and non-conductive material

Recommended Tools

To ensure the correct and efficient installation of the DC 180 charger, it is essential to have the appropriate tools. Below is a list of recommended minimum tools needed to carry out the installation. Using the proper tools not only facilitates the installation process but also ensures the safety and integrity of the installed equipment.



Smartphone



Screwdriver Set



Wrench Set



Multimeter

2.2 Operators and Installers Responsibility

These DC 180 installation instructions and guides are intended for operators who are responsible for installing, operating, servicing, and maintaining the product. Installers should thoroughly understand electrical high-power systems and electric vehicle charging infrastructure. Before performing any task, operators and responsible technical personnel should read these instructions carefully.

The installer is the qualified person who installs the charger on-site.

The installer should:

- Hold relevant qualifications to complete the installation according to local regulations and standards.
- Hold relevant qualifications to work with commercial electrical installations and be able to certify installation according to local regulations.
- Follow local health and safety rules and wear the right personal protective equipment (PPE) to minimize exposure to hazards.
- Complete Product training.
- Follow installation manual.
- Install an Upstream Protection Device according to Local Regulations and Earthing System.
- Complete the Site Survey before installation to calculate the Supply Cable Size, according to cable type, installation reference method, upstream over-current protection device size, DC Charger Output Power and circuit length.
- Be trained to understand and effectively respond to emergency scenarios, including electric shocks, fires, and workplace accidents.

2.3 Training and Competency

- We provide mandatory specialized training for installation, commissioning, maintenance, and servicing of the DC 180 chargers exclusively at our European Headquarters located in the Netherlands. This training is specifically provided to authorized distributors.
- Distributors are responsible for ensuring comprehensive training is delivered to all installers, maintenance personnel, and service engineers. Records of completed training, certification status, and periodic refresher courses must be maintained by distributors to ensure compliance and competence.

2.4 Safety Instructions

Prior to DC 180 installation, isolate the main supply. Before any installation, dismantling, repair or exchange of components, the supply protection device and internal group switches of the DC 180 cabinet must be switched off. A Safe Isolation Procedure must be carried out to ensure that electrical power is disconnected from the system. Only certified EV installers are authorized to install, disassemble, repair, or replace parts on a DC 180. After installation, service, or repair, the charger cabinet must be securely closed and locked.

Before installation:

- Install physical barriers or bollards to isolate the EV charging area from open public spaces.
- Clearly mark the EV charging area with visible signage indicating high voltage and restricted access.
- Clearly visible signage indicating emergency contact information, the location of first aid kits, fire extinguishers, and emergency exits must be installed as per local regulations
- Wear appropriate protective gear, such as safety gloves and goggles, during installation.
- Before conducting installation, maintenance, or servicing, the DC 180 unit must be securely isolated from the power supply according to clearly defined Lockout/Tagout procedures.
- The EV charging point operates at high voltage. Take necessary precautions to avoid electric shock.
- Familiarize yourself with emergency procedures and shut-off mechanisms in case of accidents or malfunctions.
- Prior to installation, a thorough Risk Assessment must be completed and documented, identifying all potential hazards and outlining measures to mitigate risks effectively.



According to local electrical regulations, the DC 180 must be connected to a Protective Earth/ Ground. Before connecting the input power supply, ensure that the grounding is reliable.

2.5 Cyber Security

It is the responsibility of the Owner to ensure that the product is securely connected to and communicates with a network interface. The Owner must take the necessary steps to protect the DC charger, network, system, and interface from any security breaches, unauthorized access, interference, intrusion, leakage, or theft of data information. We shall not be liable for any damages or losses incurred as a result of security breaches.

2.6 Disposal Instructions

To prevent adverse environmental and human health impacts caused by potentially hazardous substances, the product and its components must be disposed of in accordance with applicable local, national, and European regulations.

This product is manufactured using RoHS-compliant components, ensuring it does not contain hazardous substances above the limits defined in Directive 2011/65/EU (RoHS).

In accordance with the WEEE Directive (2012/19/EU), distributors, resellers, or importers placing this product on the market within the European Union are responsible for:

- Registering with national WEEE compliance schemes in the countries where the product is sold.
- Labeling the product with the appropriate WEEE marking (crossed-out wheeled bin symbol) if required.
- Arranging take-back, collection, and recycling of the product at end-of-life, as per national implementation of the WEEE Directive.
- Keeping records of waste transfer and treatment in accordance with local environmental regulations.

We recommend that distributors contact local environmental agencies or compliance organizations in each EU country to ensure full adherence to WEEE and related waste management laws.

2.7 Incident Reporting

All incidents, near misses, and unsafe conditions must be promptly reported according to established local procedures. Installers must implement a clear reporting mechanism to manage and respond appropriately to such reports, maintaining records for regulatory compliance and audits.

2.8 Fire Protection And Emergency Procedures

Fire Protection:

- The DC 180 charger is equipped with an Emergency Stop (E-Stop) button, clearly marked and accessible. In case of fire or emergency, pressing the E-Stop immediately stops the charging session to minimize risk.
- Fire extinguishers suitable for electrical fires (Class C/E, CO₂ or powder type) must be placed clearly and within accessible proximity as required by local regulations.
- A thorough fire risk assessment must be conducted before installation, documenting potential ignition sources, combustible materials, and protective measures.
- Clearly defined and marked evacuation routes and emergency exits must be established according to national fire safety regulations.
- Maintenance personnel must be trained regularly to effectively manage fire incidents, including correct use of firefighting equipment, emergency procedures, and evacuation protocols.

Emergency Procedure in Case of Fire:

- Immediately activate the emergency alarm if available.
- Press the Emergency Stop (E-Stop) button on the charger only if it is safe to do so, to halt charging operations and reduce risks associated with electrical hazards.
- Trained personnel should shut down the main power supply only if this can be done safely without personal risk.
- Immediately call the fire brigade/emergency services using the local emergency telephone number.
- Use an appropriate fire extinguisher (Class CO₂ or powder) to attempt extinguishing the fire only if trained and it is safe to do so without placing yourself or others in danger.
- Evacuate all personnel from the area immediately using clearly marked emergency exit routes and proceed calmly to the pre-defined emergency assembly point.
- Do not re-enter the affected area until officially declared safe by emergency services or authorized personnel.

3 General Description

3.1 Technical Specifications

Table 3-1 Technical Specifications

Part Number	EVB-CE-DCT180-102(180kW)	EVB-CE-DCT150-102(150kW)	EVB-CE-DCT120-102(120kW)	EVB-CE-DCT090-102(90kW)
Rated Input Current	277A	231A	185A	139A
Recommended minimum upstream protection Device Rating	350A	280A	250A	180A
Input Voltage	400V AC ±10%			
Rated Input Power	191kVA	159kVA	128kVA	96kVA
Input AC Power Connection	3P+N+PE (TN-C-S, TN-S, TT)			
Short Circuit Current Rating	42kA			
DC Output (MAX)	150~1000V 350A DC180kW	150~1000V 350A DC150kW	150~1000V 350A DC120kW	150~1000V 300A DC90kW
DC Output Connector	CCS2 with auto-retractable cable management system (5m standard length, 7m optional)			
Power Factor at Full Load	≥0.98			
Peak Efficiency	≥96%			
Total Harmonic Distortion	≤5%			

Part Number	EVB-CE-DCT180-102(180kW)	EVB-CE-DCT150-102(150kW)	EVB-CE-DCT120-102(120kW)	EVB-CE-DCT090-102(90kW)
Maximum Noise Level	<65 dB on Full Load (1m / 25 °C)			
External Housing material	Stainless Steel			
Cabinet Dimensions W x H x D (mm)	H2017 x W1156(800+178x2) x D700			
Package Dimensions WxHxD (mm)	1230x2201x821 (mounted on a standard wooden pallet and protected from damages during transport)			
Charger Weight	472kg	456kg	440kg	424kg
IP Rating	IP54			
IK Rating	IK 10			
Operating Temperature	-30 °C to +50 °C			
Storage Temperature	-40 °C to +80 °C			
Maximum Altitude	<2000m			
EMC	Class A			
Compliance and Safety Standards	CE UKCA IEC 61851-1 IEC 61851-23 IEC 61000			
Identification	RFID, NFC (ISO 14443 A+B part 4 ISO/IEC 15629)			
Network Connection	FDD-LTE (Band1/3//7/8/20/28A) TDD-LTE (Band38/40/41) WCDMA(Band1/8) GSM(Band3/8)			

Note: Protocol Standard with DIN70121, and this version do not support the function: AMP MAP, CM VALIDATE and TLS.

3.2 Product Overview

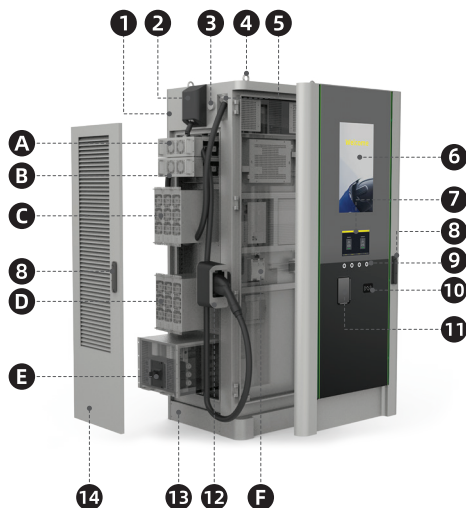


Figure 3-1 DC 180 Overview

- | | |
|-------------------------------------|---------------------------------|
| 1 Main Cabinet | 11 Point of Sale (POS) Terminal |
| 2 Cable Management Device | 12 Connector Holder |
| 3 Antenna | 13 Base/Left Cover |
| 4 Eye Bolt | 14 Left Door |
| 5 Waterproof Cable Fixing Connector | |
| 6 Screen for Advertising | A/B DC Output Module |
| 7 Screen for Operation | C/D Power Module |
| 8 Door lock | E Input Module |
| 9 Operation Buttons | F System Control Module |
| 10 RFID Reader | |



DC 180 is also offered as an option without the advertising screen. For more details, please contact your Local Distributor or Sale Representative.

3.3 Dimensions

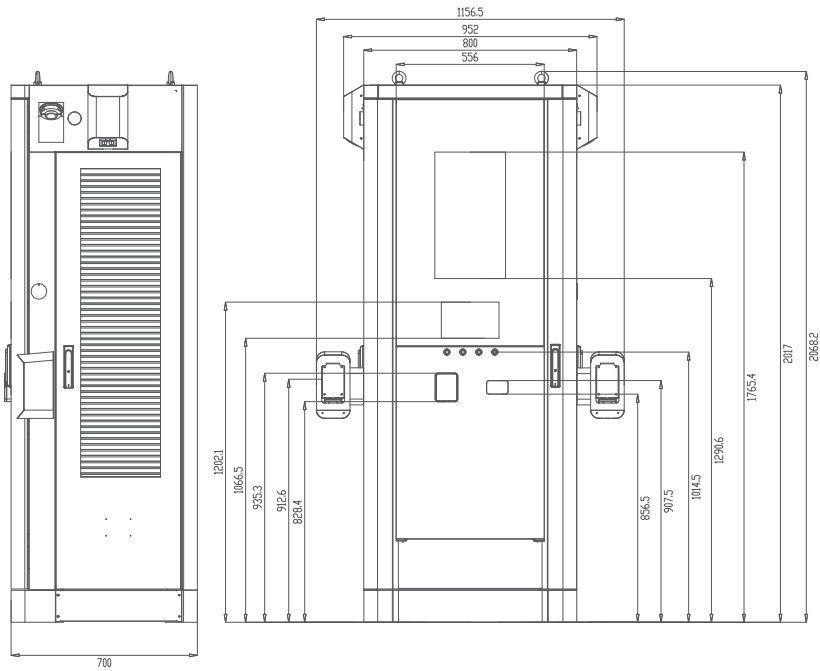


Figure 3-2 DC 180 Dimensions

3.4 Working Principle Diagram

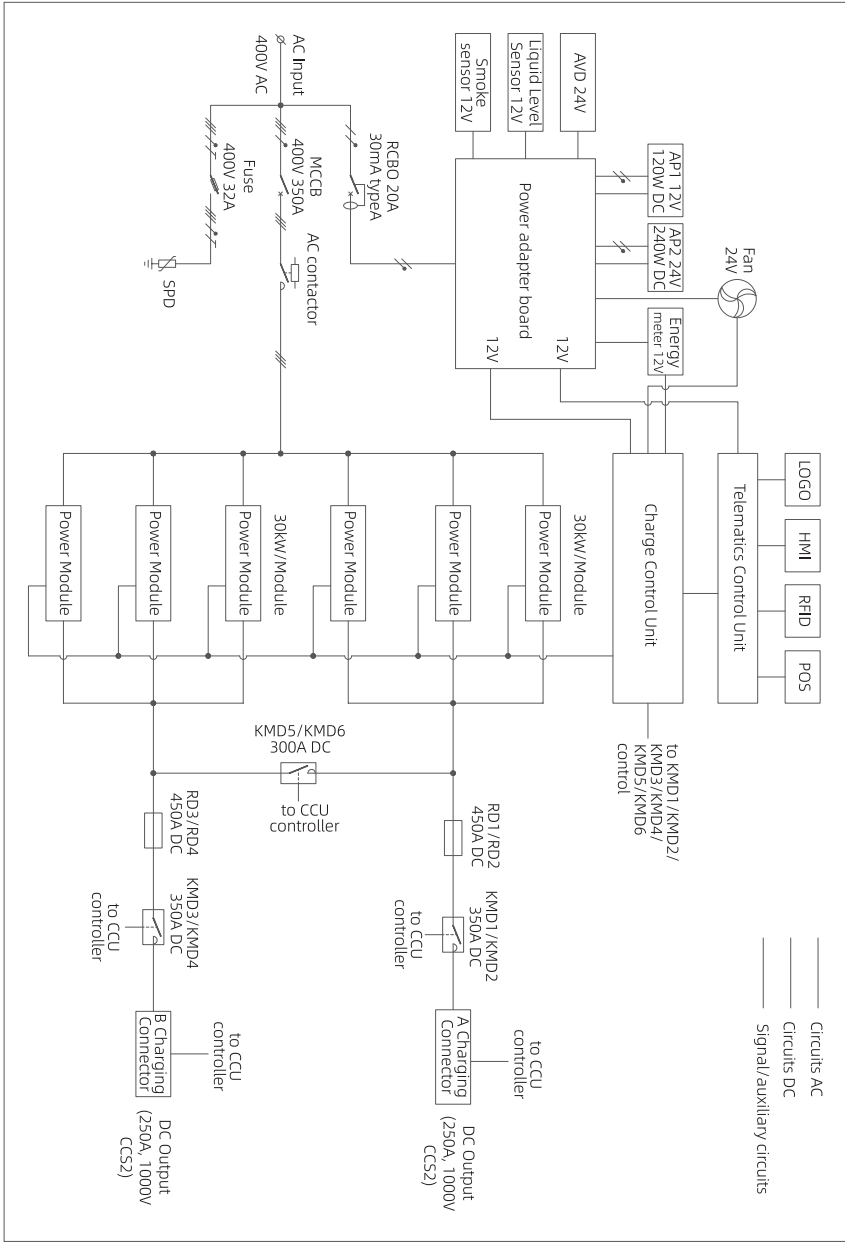


Figure 3-3 Working System Schematic Diagram

4 Package Specification and Transportation

4.1 Package Specification

The DC 180 is delivered with recyclable wooden pallets. To protect and prevent chargers from damage during transport, laminated polyethene foam is used, which should be disposed of in accordance with local regulations and guidelines.

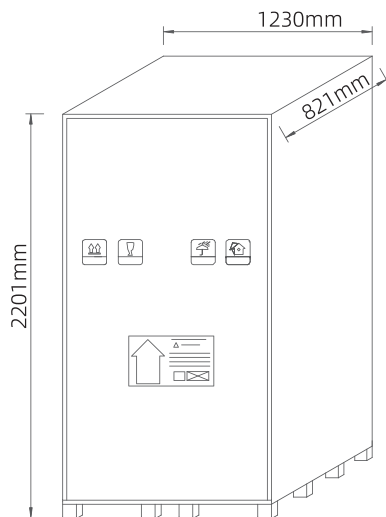


Figure 4-1 Package Dimensions

4.2 Packaging check and Logistics

Shock sensors and tilt sensors are attached to the original wooden box. Before unpacking DC 180, please check both sensors. If the shock sensor appears red or the tilt sensor indicates that the package was tilted more than 30°.

- Make a note on the delivery receipt.
- Open the packing box and do a visual inspection of the product. If you notice any visual damage, contact supplier or your local distributor.

The DC 180 is capable of being transported using both pallet trucks and forklifts, as well as being transported by crane. This can be accomplished by mounting four crane eyebolts on the top of the charger. These eyelets are directly affixed to the housing, and this method is only for onsite installation when the charger is unboxed.

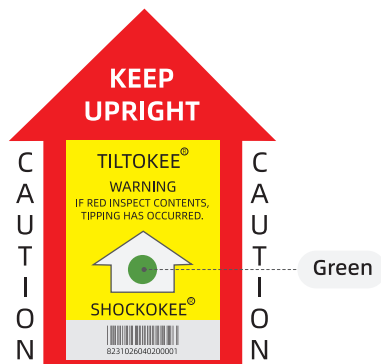


Figure 4-2 Packaging Sensor (Normal Status)

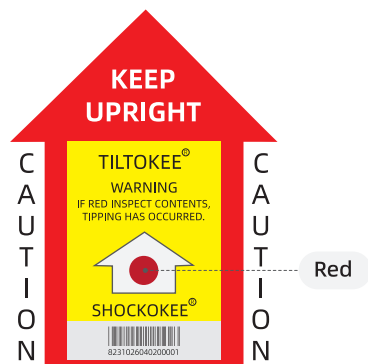


Figure 4-3 Packaging Sensor (Failed Status)



- DO NOT drop the cabinet or subject it to strong impact.
- Make sure that the forklift truck can lift the cabinet safely. Obey the safety instructions that apply to the forklift truck.

Moving the cabinet with a forklift:

The placement of the DC 180 to the final location is the responsibility of the contractor.

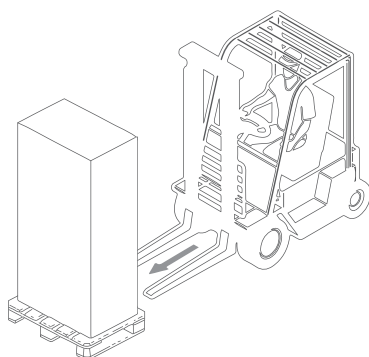


Figure 4-4 Transporting on the Pallet by Forklift Truck

To Hoist the cabinet

- Install the M12 Eyebolts onto the lifting holes on the top of the cabinet.
- Ensure that the rope/chains of the lifting equipment are connected to the eyebolts.
- Move the cabinet to the construction site.

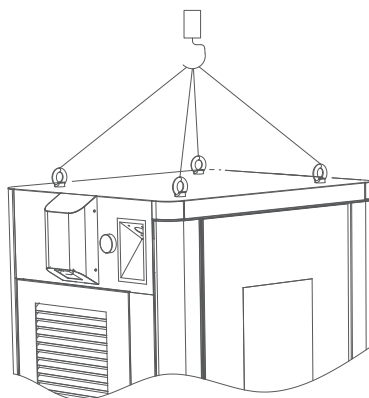


Figure 4-5 Hoisting the Cabinet to the Construction Site



- DO NOT drop the cabinet or subject it to strong impact.
- DO NOT exceed a tilting angle of 30°.
- Avoid excessive force on the hoisting points.

4.3 Unpacking

Remove the packaging material and interior protection materials using appropriate tools.

Use the tools to open the metal buckle, removing the top cover first.

Open the front metal buckle and then on either side of the charger.

- If you don't want to damage the cardboard box, you can take out the charging pile from the bottom of the box to the top.
- If the damage to the carton is not taken into account, it can be disassembled at will.



Figure 4-6 Cabinet Packaging

4.4 Package Contents

Table 4-1 List of Included Parts

DC 180



User Manual
1 pcs



Expansion Bolt
(M16 x 150)
4 PCS



Certificate of
Conformity
1pcs



Cabinet
Door Key
4 PCS



Delivery
Inspection
Report
1pcs



5 Installation Instructions

5.1 Site Preparation

Before installation, all local legal requirements applicable to the installation site must be met. Before installing of DC 180, ensure that:

- The concrete foundation base is prepared according to the manual.
- Space and the airflow around the cabinet is sufficient.
- Installation site design complies with local requirements and regulations.
- Cable duct is sufficient to guide supply cables to the cabinet.
- Installation is protected with a capable rating upstream protection device.
- The charger supply circuit is protected by an upstream RCD device if the installation method or local regulation requires upstream RCD protection.
- Site survey and cable calculation are completed to select the right cross-sectional area (CSA) of charge point supply circuit cable.
- External Earth Loop Impedance (ZE) meets local electrical regulations.

5.1.1 Recommended space location

Overview of the system

- A EV Car
- B DC Charger
- C Power Distribution Box

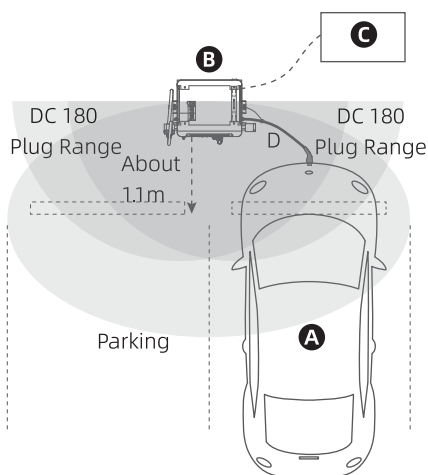


Figure 5-1 Layout of Charging System

To guarantee optimal operation, maintenance and adequate air circulation around the unit, an area of 2360mm x 2050mm is necessary. Place the DC 180 at the head of the parking space with the display facing the vehicle to maximize cable reach for the different electric vehicles. If the charger is installed in an indoor car park, make sure to leave a minimum of 500 mm space behind the unit and wall for air circulation.

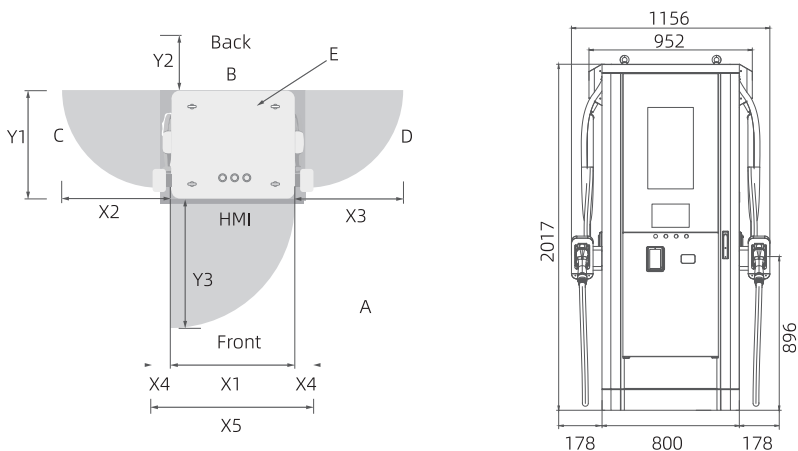


Figure 5-2 Location Requirements

Table 5-1 Location Requirements

Parameter	Size	
	mm	in
X1	800 mm	31.50 in
X2	780 mm	30.71 in
X3	780 mm	30.71 in
X4	178 mm	7.01 in
X5	1156 mm	45.52 in
Y1	700 mm	27.56 in
Y2	500 mm	19.69 in
Y3	830 mm	32.67 in

5.1.2 Preparing the Foundation

The DC 180 needs to be mounted on a flat, solid, and level surface. This may be a concrete base or floor. If the customer would like to provide extra protection against flooding, we recommend finishing the top surface of the base 150mm above ground level, but this is not a requirement.

To prepare the DC 180 foundation please follow the steps below:

- Dig a hole at the designed location of the minimum dimension 800x740mm with a depth greater than 500mm.
- Set the cable duct/conduit in position, making sure the conduit comes out of the base surface. If you run installation cables through the duct at this stage, make sure the cable slack is a minimum of 800mm.
- Pour concrete into the hole and let it dry.
- Drill 4 holes with 110 mm depth at the positions as in Figure 5-4. Alternatively, use the drilling template attached to the charger.
- Insert M16 Expansion Bolts attached to the package in the drilled holes, to mount the charger housing to the base.
- Seal the cable duct, using Duct Sealant or other product intended for this.

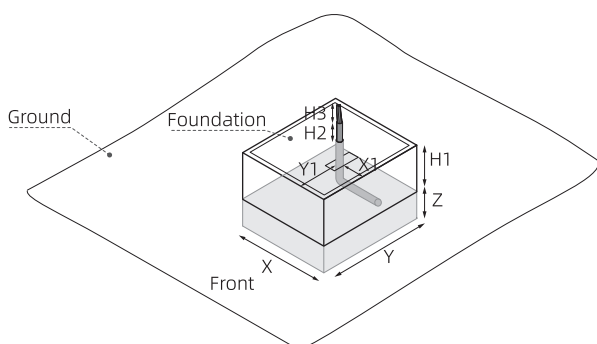


Figure 5-3 Concrete Foundation Overview

Table 5-2 Foundation dimensions requirements

Parameter	Size	
	mm	in
X	800 mm	31.49 in
X1	177 mm	6.96 in
Y	740 mm	29.13 in
Y1	290 mm	11.41 in
Z	Follow local regulations	
H1	Follow local regulations	
H2	160 mm	6.30 in
H3	650 mm	25.59 in



- Make sure the angle and diameter of the conduit meet the requirements for wires to be guided through.
- Make sure the size of the marked area meets the specifications shown in Table 5-3 Drilling Holes.
- Figure 5-4, the D hole size suitable to fit M16 expansion bolt.

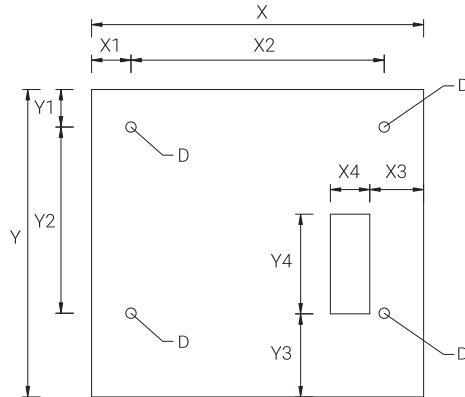


Figure 5-4 DC 180 Drill Holes

Table 5-3 Drilling Holes

Abbreviations	Definition	
	mm	in
X	800 mm	31.50 in
X1	95 mm	3.74 in
X2	610 mm	24.02 in
X3	130 mm	5.12 in
X4	95 mm	3.74 in
Y	740 mm	29.13 in
Y1	90 mm	3.54 in
Y2	448 mm	17.64 in
Y3	200 mm	7.87 in
Y4	240 mm	9.45 in

5.2 Cabinet Installation

To install the cabinet, follow the steps below:

I. Remove the cabinet covers.

Remove the left and right base covers (A) using a screwdriver. Open the right door of the cabinet. Remove the screws (C) and the insulating plate (B) from the cabinet.



Figure 5-5 Removing the Base Covers

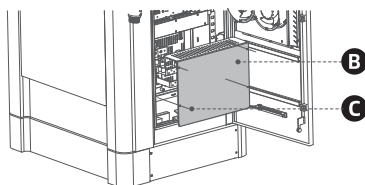


Figure 5-6 Removing the Insulating Cover

II. Loosen the fastener of cabinet

Loosen the fasteners (D) and open the gland plate, then close the door.

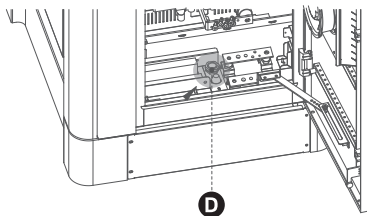


Figure 5-7 Loosening the Fasteners

III. Remove the hexagonal nut of the cabinet

Unscrew and remove the hexagonal nuts and bolts, to disconnect the charger from the pallet.

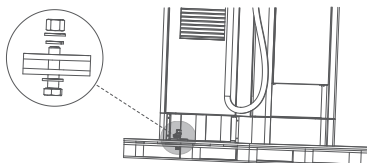


Figure 5-8 Removing the Cabinet from the Pallet

IV. Hoist the cabinet

Install the M12 Eyebolts to the lifting holes on the top of the cabinet. Lift the charger carefully onto the previously prepared foundation, ensuring the housing mounting holes are aligned with the installation bolts, and set the cabinet down on to the base.

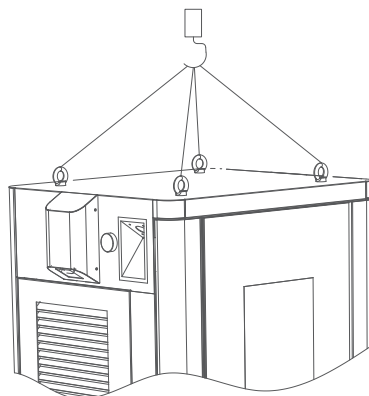


Figure 5-9 Hoist the Cabinet

V. Fix the cabinet on to the foundation

Carefully lower the cabinet on the foundation. Mind about installation cables during setting down the housing. Open the right-side door of the charger and guide cables through cable entry when lower down the cabinet, making sure cable insulation is not damaged during this operation. Tighten the four installation bolts attached to the package.

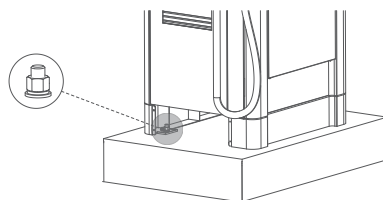


Figure 5-10 Tightening the Bolts

VI. Tighten the cable gland

Guide the AC input wires (C) through the cable entry plate as instructed in the following figure and tighten the two fasteners (A&B). Use spare cable glands (D,E) for LAN cable if you connect the charger to the network via Ethernet.

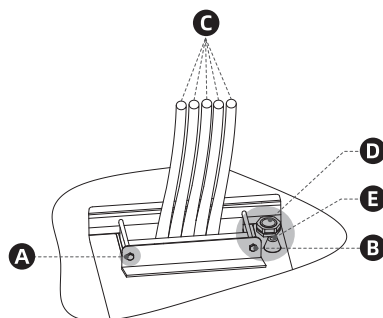


Figure 5-11 Guiding the Cables through the Cable Gland Plate

5.3 Electrical Connection



Electrical Connection can only be performed by a qualified electrician. Before any electrical connection, make sure that the supply circuit is isolated from the main supply.



The cross-section of the supply cable must be calculated and designed according to the protection device rating, installation method and length of the circuit.



Ensure that the main circuit switch and auxiliary circuit switch of the charger are in OFF position. Perform Safe Isolation Procedure to ensure that the supply circuit is isolated and it's safe to connect input wires

I. Connect the PE wire first

- A. Cut the PE wire to the appropriate length and remove insulation.
- B. Use a crimping tool, connect the cable lug to the PE wire.
- C. Loosen the PE terminal (B) M8 bolt (D).
- D. Connect PE conductor (A) to the PE terminal (B).

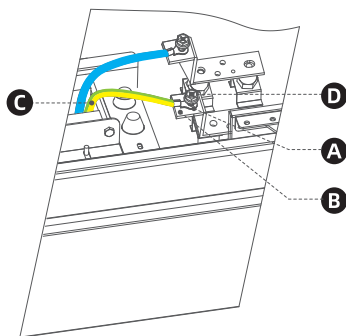
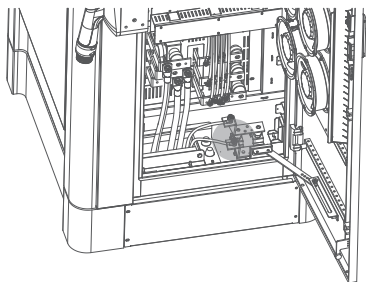


Figure 5-12 PE Wire Connection

II. Connect the AC Input Wires

To connect the live conductors to the installation terminals:

- A.** Cut the L1, L2, L3 and N conductors to the appropriate length and remove insulation.
- B.** Use a crimping tool to connect the cable lug to the N wire.
- C.** Loosen the N terminal. (See figure 5-13)
- D.** Connect the N conductor to the N terminal marked with letter D. (See figure 5-13)
- E.** Use a crimping tool to connect the cable lugs to the L1, L2 and L3 wires.
- F.** Connect L1, L2 and L3 conductors to the Line terminals, using attached M10 bolts. Recommend to use the torque $40N.m \pm 10\%$.
 - L1 conductor to the terminal A
 - L2 conductor to the terminal B
 - L3 conductor to the terminal C
- G.** Install back protection panel for the income terminal. Close right side doors making sure you don't leave any tools inside the cabinet and doors are locked.

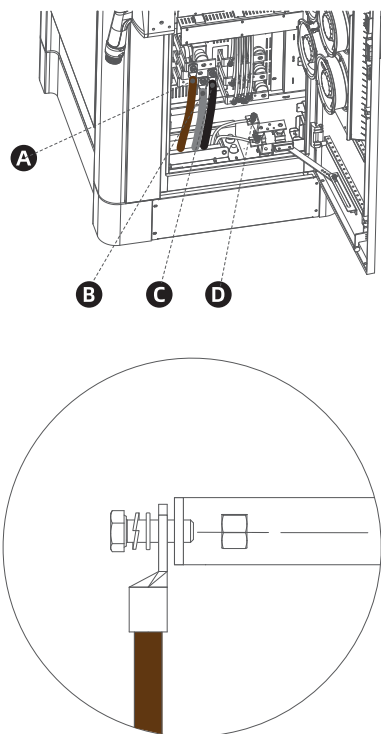


Figure 5-13 Connecting the AC Input Wires



1. The max size of input cable is 120mm², and the recommended input cable size for different rated refer to table 9-8.
2. If needed, connect two AC input wires in parallel as shown below.

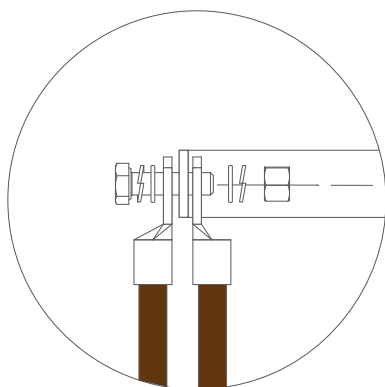
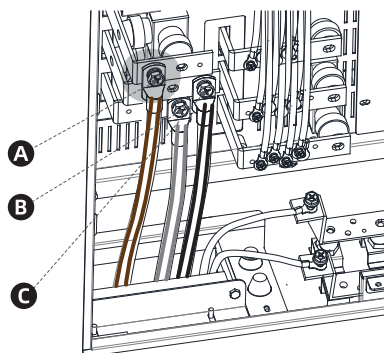


Figure 5-14 Connecting the Two AC Input Wires

5.4 Network Cable and SIM Card installation

The DC 180 charger supports multiple network connection options, including WiFi, Ethernet, 4G. This allows for flexible and reliable connectivity, ensuring that the charger can establish a network connection regardless of the available infrastructure. Whether you have access to a WiFi network, an Ethernet connection, or need to rely on cellular data through 4G, the DC 180 can adapt to your specific network requirements.

5.4.1 Connection of Ethernet Cable

Begin by planning the route for the Ethernet to the DC 180, consider factors such as distance, obstacles, and the most direct path for the cable. Dig a trench from the ground to the location of the DC Charge point. Ensure that the trench is deep enough to accommodate the Ethernet cable and protect it from potential damage. Lay a conduit or protective pipe in the trench to house the Ethernet cable. This will provide additional protection and make future maintenance or replacement easier. Use spare cable glands (D, E) for LAN cable entry (see Figure 5-11 Guiding the cables through the cable gland plate).

To install the Ethernet cable, follow the next steps:

- A.** Ensure that the charger is powered off before proceeding with the installation.
- B.** Open the right door of the cabinet. Remove the screws (C) and the insulating plate (B) from the cabinet (see Figure 5-6 Removing the Insulating cover.)
- C.** Identify the Ethernet port on the charger. It is located on the left side of the charger (see Figure 5-15 DC 180 Ethernet Port).
- D.** Connect one end of the Ethernet cable to the Ethernet port on the DC charger. Make sure it is securely inserted, and the connector clicks into place.
- E.** Connect the other end of the Ethernet cable to the network source. Again, ensure a secure connection by inserting the connector fully and ensuring it clicks into place.
- F.** Install back protection panel for input terminal. Close right-hand side doors making sure you don't leave any tools inside the cabinet and doors are locked.

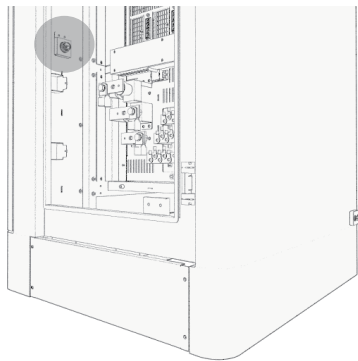


Figure 5-15 DC 180 Ethernet Port

5.4.2 SIM Card Installation

When planning the SIM card connection for the DC 180 at a site, there are a few key considerations to keep in mind. It is important to choose a reliable and robust network provider that offers good coverage in the area where the charger will be installed. This ensures a stable and consistent network connection for the charger. Considering factors such as the expected usage, number of charging sessions, and the amount of data that will be transmitted, ensures there will be sufficient data allowance for smooth operation. Carefully consider these factors when planning the SIM card connection for the DC 180 at a public site, ensures you can provide a reliable and efficient charging service for electric vehicle users. DC 180 supports dual SIM connection.

To install a SIM, follow the next steps:

To install a SIM card

- A.** Ensure that the charger is powered off before proceeding with the installation.
- B.** Use the included key to open the front door. The 4G LTE router is installed in the area below the cabinet.
- C.** Remove the small red SIM-slot cover with a PH1 screwdriver (do not lose the screw).
- D.** Take the SIM card out of its packaging and handle it carefully to avoid any damage and insert into slot number 2 (top slot). Orientation matters: the notched corner faces outward. Push gently until fully seated.
- E.** Refit the SIM-slot cover, and close the door, ensuring no tools are left inside and the door is locked.

Note

- Slot 1 contains the Maintenance SIM – do not remove.
- If an APN must be configured, follow the router instructions in the Section 6 Commissioning.

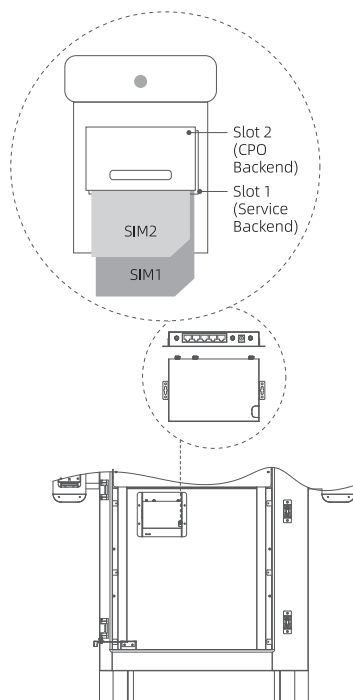


Figure 5-16 Installing SIM Card

5.5 Power Modules for Charger

To install Power Modules, follow locations as on Figure 5-17. Each power module slot in the charging station is marketed as location number (see Figure 5-17).

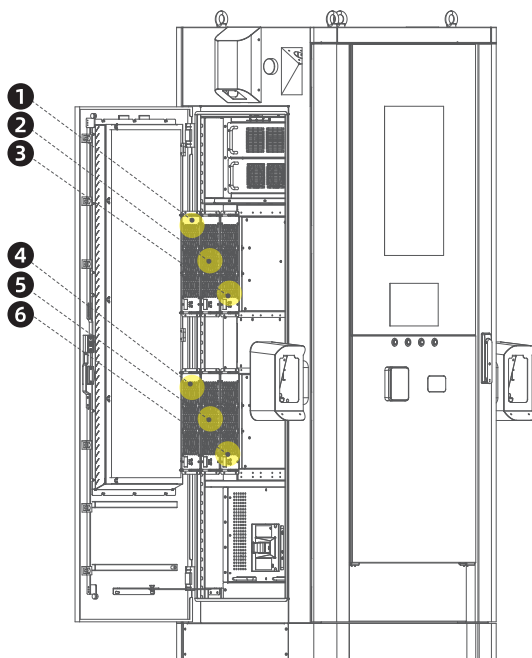


Figure 5-17 DC 180 Power Modules Locations

DC 180 Station can be set in different configurations, depending on power demand. The maximum Output Power of the DC 180 station can be set as 90kW, 120kW, 150kW or 180kW depending on the number of installed power modules. See Table 5-4 for details.

Table 5-4 Power Modules locations

Type	Rated Power	Number of Modules	Location
DC 90	90 kW	3 PCS	1, 2, 4 or 1, 4, 5
DC 120	120 kW	4 PCS	1, 2, 4, 5
DC 150	150 kW	5 PCS	1, 2, 3, 4, 5 or 1, 2, 4, 5, 6
DC 180	180 kW	6 PCS	1, 2, 3, 4, 5, 6

DC 180 is a stackable modular system that provides flexibility to adjust the power capacity of the charging point by stacking multiple power modules together. Each power module has a maximum rating of 30kW and can be easily connected to the system.



Figure 5-18 DC 30kW Power Module

To install the Power Modules, follow the next steps:

- A. Ensure that the charger is turned off before proceeding with the installation.
- B. Carefully unpack the power modules, taking care not to damage any components.
- C. Open the left-side doors of the charging cabinet and gently insert the power module into the designated slot. Avoid using excessive force to prevent damage.
- D. Using screws included in the package, fasten the power modules to the charging cabinet.
- E. Repeat the process for each power module, following the specific location numbers from Table 5.4.
- F. For slots that are not in use, install a dummy cover (see Figure 5-19 Dummy Cover).

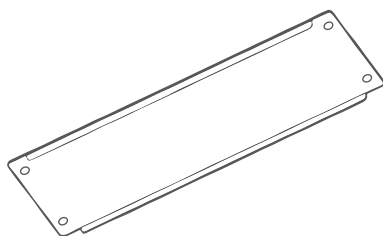


Figure 5-19 Dummy Cover

- G. Once all power modules are installed, double-check that they are securely connected and properly aligned. After installation, each power module needs to be configured, which is described in the commissioning document.
- H. Close the charger cabinet doors, making sure you don't leave any tools inside the cabinet and the doors are locked.

Table 5-5 LED for Power Module

PM LED	Name	Status	Description
Green Light	Power Light	Green On	PM normal
		Green Flash	Commission with back end
		Yellow On	Input AC voltage is abnormal or temperature is abnormal
Yellow Light	Protection Light	Yellow Off	Automatic mode is operating normally
		Yellow Flash	Manual mode is operating normally
Red Light	Error Light	Red On	The fan has failed

5.6 Upstream Protection Device Requirement

Refer to Table 3-1 Technical Specifications in the DC 180 product documentation to determine the recommended specifications for the upstream protection device. This table includes details such as Rated Current, Voltage, and type of protection. Refer to local electrical regulations governing the installation of RCD devices. Ensure compliance with these regulations when selecting and installing the upstream RCD.

5.7 Commissioning for charger

Commissioning is necessary before operating the charger. The purpose is to check the safety, performance, and complete configuration of the charging system for operational purposes. A qualified service engineer from supplier or distributor is required for commissioning.

During commissioning, the system safety performance and the function of charging will be tested.

Qualified personnel, with expertise in electrical systems and the specifics of EV charging technology, are advised to follow the detailed guidelines outlined in the "DC 180 Commissioning and Maintenance" document. This document contains step-by-step procedures, safety protocols, and essential information necessary to successfully commission the DC 180 charge point.

Table 5-6 Commissioning checklist

s/n	Checklist	Result	Remark
1	Ensure that the charger is securely fixed	☐ Pass ☐ Fail	
2	Check the charger is well ventilated and the all doors can open without restriction	☐ Pass ☐ Fail	
3	Check that the inside and outside surface of the charger has not been damaged	☐ Pass ☐ Fail	
4	Check each charger connector is suitable	☐ Pass ☐ Fail	
5	Check that the internal control board and related connection are well secured	☐ Pass ☐ Fail	
6	Check that the grounding wire is well connected	☐ Pass ☐ Fail	
7	Use multi-meter test the upstream MCCB, and confirm the voltage PE-L1 = V PE-L2 = V PE-L3 = V N-L1 = V N-L2 = V N-L3 = V L1-L2 = V L1-L3 = V L2-L3 = V	☐ Pass ☐ Fail	
8	Power On the upstream MCCB and check the voltage, and confirm the voltage: PE-L1 = V PE-L2 = V PE-L3 = V N-L1 = V N-L2 = V N-L3 = V L1-L2 = V L1-L3 = V L2-L3 = V	☐ Pass ☐ Fail	
9	Charger "Power On" successful	☐ Pass ☐ Fail	
10	Press the Emergency stop button, the screen will display a warning Open the door, the screen will display a warning	☐ Pass ☐ Fail	



- Make sure the commissioning engineer is qualified
- Make sure all the checking lists are passed, then do the next step, and sign with customer about commissioning document.
- Refer to commissioning document for details.

6 Charging Operation

Commissioning is necessary before operating the charger. The purpose is to check the safety, performance, and complete configuration of the charging system for operational purposes. A qualified service engineer from Service Team or a qualified engineer is required for commissioning.

During commissioning, the system safety performance and the function of charging will be tested.

Qualified personnel, with expertise in electrical systems and the specifics of EV charging technology, are advised to follow the detailed guidelines outlined in the "DC 180 Commissioning and Maintenance" document. This document contains step-by-step procedures, safety protocols, and essential information necessary to successfully commission the DC 180 charge point.

6.1 Initial Startup

Before turning on DC 180, ensure the charge point is correctly installed and securely connected. Confirm that the power supply meets the required specifications. Start by visually checking the charge point for any damage or obstacles. Follow safety guidelines by wearing protective gear and ensuring a clear installation area. Turn on power from the upstream supply, then turn on DC 180 MCCB main switch and RCBO to start the system. Observe startup indicators on the display.

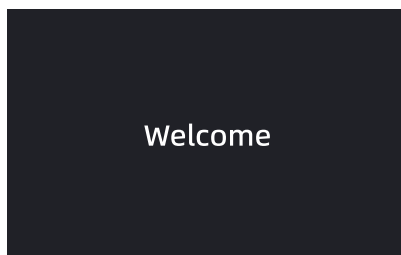


Figure 6-1 System Start Up

Allow the charge point to initialise its systems. When the Operation Screen status changes status to "Available", the DC 180 charge point is ready for operation (see Figure 6-2 Screen Standby Mode).

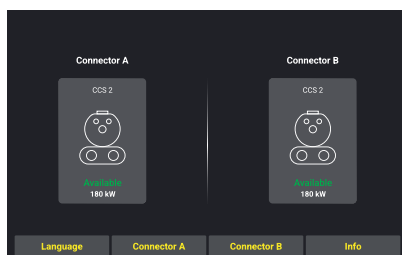


Figure 6-2 Screen Standby Mode

6.2 Charging Operations

The DC 180 charge point is designed to provide a seamless and efficient charging experience for electric vehicle users. This charging operation manual outlines the steps and considerations for using the DC 180 to charge an electric vehicle.

To start the charging session, follow the next steps:

A. Open the charging port on the electric vehicle and securely insert the charging connector into the vehicle's charging port.

B. Using mechanical buttons below the operation screen, select connector A or B (see Figure 6-3 Connector Selection)

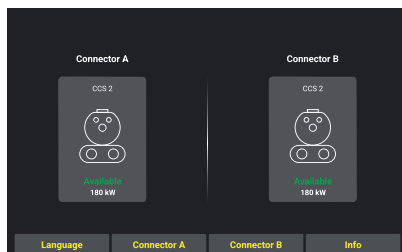


Figure 6-3 Connector Selection

C. Select the authorisation method to start the charging session. Using mechanical buttons below the operation screen select QR Code, Credit Card, or RFID Card (see Figure 6-4 Authorisation Screen). Depending on the selected method use the Charge Point Operator mobile app to scan the QR Code or tap Credit/Debit Card or RFID Card.

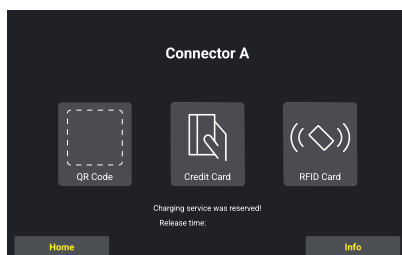


Figure 6-4 Authorization Screen

Start Method

- QR code on the screen
- Credit card
- RFID card

D. After authorisation, the DC 180 will set up communication with your EV and necessary safety tests will be performed. Following the safety tests, the charge session will start automatically. Information such as charging power, state of charge, energy delivered, duration and cost will be displayed. (see Figure 6-5 Charging Session)

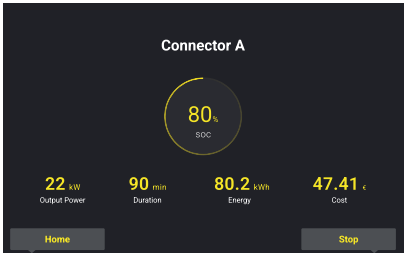


Figure 6-5 Charging Screen

E. To stop the charging session, press the stop button below the operation screen, and confirm with the same method as you authorised charging. If authorising by Credit/Debit Card or RFID Card, tap to confirm the end of the charging session. Once charging is finished, the transaction details will be displayed (see Figure 6-6 Transaction Details).

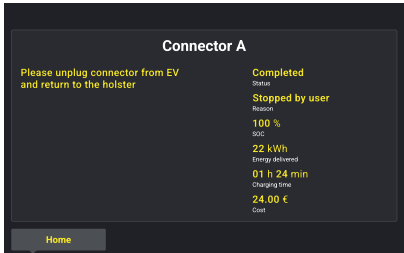


Figure 6-6 Transaction Details

F. Unplug the vehicle and return the connector to the charger holder.

6.3 Errors for charger

1. Emergency Stop

Check the Emergency stop button, if the Emergency stop button is pressed by user, please press and rotate clockwise to release it, then check the screen.

2. Connector Failure

If the 'Connector Failure' screen appears, follow the on-screen instructions to resolve the problem, or contact your local dealer or technical support.

3. EV Communication Error

If the 'EVCommunicationError' screen appears, follow the on-screen instructions to resolve the problem, or contact your local dealer or technical support.

4. Internal Error

If the 'InternalError' screen appears, you could check the service manual about error code to find the cause or contact your local dealer or Technical Support.

6.4 Platform Portal Parameters for DC 180

Setting the OCPP Parameters

- Requires an service support technician or a qualified installer engineer.
- With the Service App, select the customer platform.



After connecting with the platform test the app by scanning the QR code to start charging.

7 Maintenance

Instruction

For detailed instructions on maintenance and service procedures, please refer to the "DC 180 Commissioning and Maintenance " document. This comprehensive guide provides essential information regarding routine maintenance tasks, service intervals, and troubleshooting guidelines. By following the recommendations outlined in the maintenance document, you can maximize the efficiency and reliability of your DC 180 charge point, ensuring a seamless charging experience for your electric vehicle.

7.1 Maintenance Schedule

Table 7-1 Maintenance Schedule

Item	Frequency	Actions
Connector	Every 6 months	Check for cracks or ruptures on the connector and cable.
Input Cable	Every 6 months	Check for cracks or ruptures on the cable and the connection points. Check for signs of over-heating.
Inlet Air Filter	Every 6 months	Clean the inlet air filter.
Outlet Air Filter	Every 6 months	Clean the outlet air filter.
Inlet Air Filter	Annually	Replace the inlet air filter.
Outlet Air Filter	Annually	Replace the outlet air filter.
Cabinet	Every 6 months	Clean and check for damage, including the air filters.

8 Troubleshooting and After-Sales Service

8.1 Troubleshooting

If the charger is installed in an open place, there are various potential reasons for failure. If you cannot find a solution for the problem, contact your local representative or Technical Support.

Man-made damage faults

- Charging connector is cracked, crushed or has water damage.
- Charging cable is crushed by a car or pulled excessively by an external force.
- Charger is hit by a vehicle.
- Charger door is opened with excessive force or abnormally.
- Charger air duct is blocked.

8.2 Service

If you encounter any issues or faults with DC 180, which cannot be resolved through troubleshooting steps, we kindly request you to contact Technical Support. Our dedicated team of experts is available to provide you with the necessary assistance and guidance to resolve the issue effectively. To contact Technical Support, please refer to the contact details below or on our official website. Our team will be glad to assist.

9 Technical Specifications

9.1 General Specifications

Table 9-1 Product Specifications

Parameter	Description
Compliance and Safety	• IEC 61851-1 • IEC 61851-23 • IEC 61851-21 • IEC 61000
IP Rating	IP54
IK Rating	IK10
EMC	Class A
Output Voltage	• CCS: 150 to 1000V DC
Output Current (for DC 180)	• CCS: Max 350A
EV Charging Cable Length	• 5 m • 7 m (Option)
Certification	• CE • UKCA
Maximum noise level at a distance of 1m	< 65 dB @ 1m /25 °C/full load
Input AC Power Connection	3P + N + PE
Input Voltage Range	400 V AC $\pm$ 10%
Power Factor at Full Load	$\geq$ 0.98
Peak Efficiency	$\geq$ 96%
Total Harmonic Distortion (current $\geq$ 50% load)	$\leq$ 5%
Input AC Power Connection	3P + N + PE

Table 9-2 Operating Conditions

Parameter	Specification
Environment, general	Indoor Outdoor
Storage Temperature	-40 °C to +80 °C (-40 to 176 °F)
Operation temperature range	-30 °C to + 50 °C (-22 to +122 °F)
Maximum altitude above sea level	< 2000 m (6561')

9.2 Packaging Specifications

Table 9-3 General Dimensions

Parameter	Specification	
Width of the Cabinet	800 mm	31.49 in
Depth of the Cabinet	700 mm	27.56 in
Height of the Cabinet	2017 mm	79.41 in
Length of the charging cable (air-cooled)	5000 mm (Optional) 7000 mm	196.85 in 275.59 in

Table 9-4 Packaged Product Specifications

Parameter	Specification	
Width	1230 mm	48.43 in
Depth	821mm	32.32 in
Height	2201 mm	86.65 in
Mass of the Package	24 kg	52.91 lbs.
Maximum Tipping Angle	30°	

NOTE: The DC 180 is mounted on a standard size wooden pallet and protected to prevent damage during transport.

9.3 Communication Interface Specifications

Table 9-5 Communication Interface Specifications

Parameter	Specification
RFID Standard	ISO 14443 A + B to part 4 ISO/IEC 15693
RFID-supported Applications	• Mifare • NFC • HID For information about these options, contact the manufacturer.
Network Connection	• FDD-LTE (Band1/3//7/8/20/28A) • TDD-LTE (Band38/40/41) • WCDMA(Band1/8) • GSM(Band3/8)

9.4 Ethernet Cable Specifications

Table 9-6 Ethernet Cable Specifications

Parameter	Specification
Ethernet Type	RJ45
Cable Type	8P + PE, Shielded
Availability	99.9%

9.5 AC Input

Table 9-7 Detail AC Input Specifications

Type Parameter	DC 180	DC 150	DC 120	DC 90
Maximum Rated Input Current (A)	277	231	185	139
Recommended upstream Input Circuit Breaker (A)	350	280	250	180
Maximum Power Dissipation (kVA)	191	159	128	96
Short Circuit Current Rating (kA)	42	42	42	42
Minimum recommended size of the input wire(mm ²)	70*2	120	95	70



Note: The length of power input wiring for charger also affects the input wiring selection, and local rules must be followed in installation)

