TOMMATECH GmbH

GERMAN-based company

DC EV CHARGER MANUAL

CONTENTS

CONTENTS

1. GENERAL

1.1 PURPOSE OF THE DOCUMENT

Purpose of the Document

The purpose of this document is to guide installation personnel in the setup of TOMMATECH DC charging stations.

1.2 Scope of Application

1.2.1 Equipment types covered by this manual:

- TOMMATECH DC030K1G - DC040K1G
- TOMMATECH DC060K1/2G - DC080K2G
- TOMMATECH DC090K1/2G - DC120K2G - DC160K2G
- TOMMATECH DC180K2G
- TOMMATECH DC240K2G - DC320K2G - DC400K2G

1.3 Charging Power Ratings

1.3.1 DC030K1G - 30 kW
1.3.2 DC040K1G - 40 kw
1.3.3 DC060K1G - 60 kW
1.3.4 DC060K2G - 60 kW
1.3.5 DC080K2G - 80 kW
1.3.6 DC090K1G - 90 kW
1.3.7 DC090K2G - 90 kW
1.3.8 DC120K2G - 120 kw
1.3.9 DC160K2G - 160 kW
1.3.10 DC180K2G - 180 kW
1.3.11 DC240K2G - 240 kW
1.3.12 DC320K2G - 320 kW
1.3.13 DC400K2G - 400 kW

2. INTRODUCTION

The DC Fast Charger is the ideal choice for powering battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV). It is designed for fast charging in both public and private locations such as retail and commercial parking areas, fleet charging stations, highway service areas, workplaces, and residences.

The fast charger offers the advantage of easy installation. Plug-in power modules allow for flexible and cost-effective setups in various types of locations.

It also features network communication capabilities, enabling connection to remote network systems and providing EV drivers with real-time information such as station location, charging progress, and billing data.

With function buttons, safety certifications, and a user-friendly interface, the fast charger is an ideal choice for outdoor use, offering excellent waterproof and dustproof design.

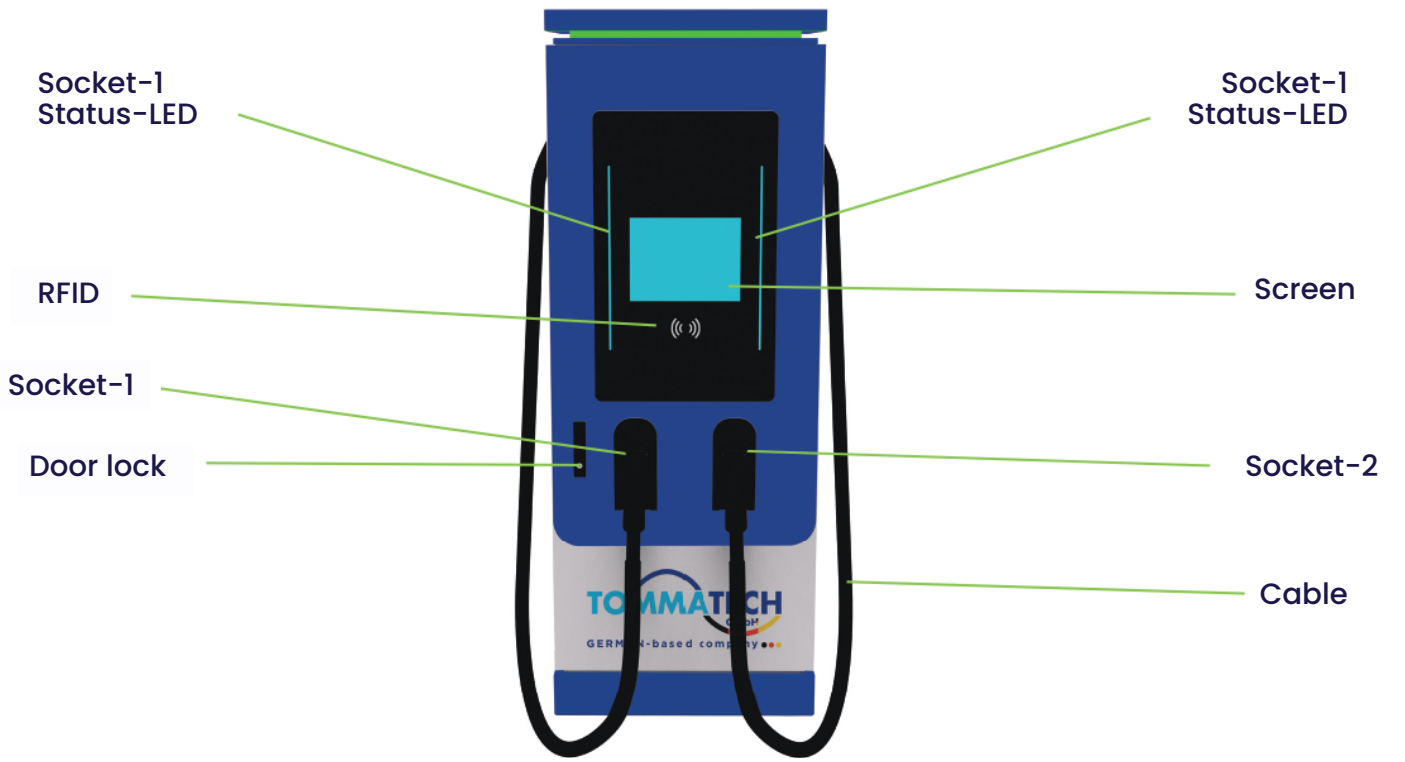
3. FEATURES

- Plug-in power modules ensure easy and compatible installation.
- Offers users the convenience of starting/stopping charging via authorized RFID smart cards or a mobile app.
- Manufactured in accordance with the latest industry standards.
- Outdoor-rated to withstand solid and liquid ingress, making the unit robust and highly reliable.
- Provides a high-contrast screen interface with multifunction buttons.
- Can be upgraded for simultaneous charging up to 400 kW per output using a liquid-cooled connector up to 600A.

4. APPLICATIONS

- Public and Private Parking Areas
- Shared Parking Spaces
- Workplace Parking Areas
- Charging Stations

5. BASIC USER INTERFACE



6.DEFINITION OF RELEVANT WARNING SYMBOLS

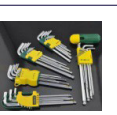
Table I – Definition table of relevant warning symbols

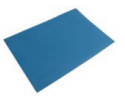
Nr.	Symbol	Description
1		The "Electrical Hazard" symbol indicates danger. Failure to follow procedures or incorrect application may result in injury or death of the installer. It identifies a hazard that could lead to serious injury or death due to electric shock.
2		The "Caution" symbol indicates danger. It identifies a hazard that could result in serious injury or death.
3		The "Crushing Hazard" symbol identifies a danger that may lead to injuries caused by parts of the body being caught or crushed.
4		This symbol can be found on the product, in the user manual, or on the packaging. It indicates that electrical and electronic equipment and accessories must be disposed of separately from regular household waste. Materials marked with this symbol can be reused. By reusing old equipment, materials, or through other forms of reuse, you can make a significant contribution to environmental protection.

7. PRE-INSTALLATION PREPARATION

7.1 Standard Construction Tools

Standard Construction Tools Table

Nr.	Category	Name	Areas of Use	Image
1	Cable preparation tools	Electrician's knife	The peeling of the insulation cover	
2	Installation tools	Wire stripping pliers	Removal of the insulation layer	
3	Installation tools	Crimping pliers	Terminal connection	
4	Installation tools	Hammer drill	Component installation	
5	Installation tools	Electric air drill	Component installation	
6	Installation tools	Cutting machine	Pipe cutting	
7	Installation tools	Heat gun	Thermal shrinkage of insulation materials	
8	Installation tools	Pipe welding machine	Welded PE pipe	
9	Installation tools	Hex key	Screw fastening-removal	
10	Installation tools	Open-end wrench (includes set no:13)	Nut tightening/removal	
11	Installation tools	Grinding	Polishing of the materials	
12	Installation tools	Complete screwdriver set	Screw fastening-removal	

Nr.	Category	Name	Areas of Use	Image
13	Measuring instrument	Laser level gauge	Horizontal measurement	
14	Measuring instrument	Spirit level	Horizontal measurement	
15	Measuring instrument	Multimeter	Measurement of voltage, current, etc.	
16	Measuring instrument	Insulation mat	Placement of removed parts	
17	Transport vehicle	Forklift	Horizontal-vertical transport vehicle	
18	Transport vehicle	Crane	Horizontal-vertical transport vehicle	
19	Installation tools	Cable clamp	RJ45 cable termination tool	

7.2 Installation Materials

7.2.1 Cable Termination Elements

Nr.	Name	Image
1	150 mm cable lug	
2	70 mm cable lug	
3	RJ 45 connector	

7.2.2 Other Materials

Nr.	Name	Image
1	Non-flammable paste	
2	Heat-shrink tubing for cable terminal insulation, insulation tape, and other accessories	

7.3 Installation Personnel Requirements

1- Follow the construction site's health and safety (H&S) regulations when entering the site.

2- Wear a safety helmet properly (fasten the chin strap, ensure the helmet is in good condition) when entering the site. Avoid loose clothing, slippers, or unsafe attire. Do not consume alcohol before work and do not smoke on site.

3- Operators working at heights must wear safety helmets, safety harnesses, non-slip shoes, and appropriate work tools.

4- Wear protective masks if the work area is dusty or involves spray painting.

5- Do not enter hazardous zones under lifting areas or vertical work to avoid being struck by objects.

6- Stay as far away as possible from mechanical equipment and electrical circuits to prevent mechanical and electrical injuries.

7- Users of mobile electric tools must be skilled and knowledgeable about safety precautions. Wear insulated shoes and gloves whenever possible. Metal cases must be grounded or properly earthed.

8- Temporary site electricity and electrical boxes must be maintained securely; damaged electrical components must be replaced promptly.

9- Use rubber cables for temporary site electrical wiring. PVC-sheathed cables are prohibited. Do not insert any cables directly into sockets

10- Avoid working directly with electricity.

11- Enter through edges of foundation pits, roofs, and other openings carefully to prevent falls.

12- Pay attention to ground conditions like nails and steel rods to prevent sticking, impacts, hanging, falls, and other injuries.

13- Do not remove protective structures, safety signs, or warning signs on site without permission. Prohibit overload work.

14- Strengthen on-site maintenance of construction equipment to maintain stable operation speed and prohibit faulty or overloaded work.

7.4 Delivery of Construction Drawings

After arriving on site, the installer should first request the equipment installation location drawings from the warehouse staff and verify that the cable and concrete foundation requirements for each piece of equipment are met.

7.5 Electrical Cables

For TOMMATECH DC charging units, the power cable to be installed must be a halogen-free, flame-retardant N2XH-0.6/1KV cable. Copper conductors are preferred, but NA2XH flame-retardant cables can also be used. Cable installation must comply with the electrical installations strong current regulations. Accordingly, the burial depth is approximately 0.8 m. Cable cross-section calculations will be made based on the power of the EA charging station used, considering cable length, voltage drop, and current carrying capacities (depending on whether the cable runs underground, in a conduit, or overhead). Inspect and verify the cable before installation.

Important Note: *If the facility is installed at a petrol station, the EMERGENCY STOP button cable (2x2.55 mm² NYY) must operate in conjunction with the station's emergency alarm system and must cut off power to the entire station.*

7.6 Requirements for Concrete Foundation Construction

The concrete foundation must be poured before placing the product. The top view dimensions of the concrete foundation by type are shown in Figure 1.a. The embedded depth of the foundation is 600 mm, with an additional 200 mm height above the ground level. The three-dimensional view is shown in Figure 1.b.

1- Pay attention to the leveling when pouring the foundation.

2- The foundation installation must be higher than ground level to provide protection against external factors such as rainwater.

3- The foundation surface is slightly sloped for drainage to prevent water accumulation.

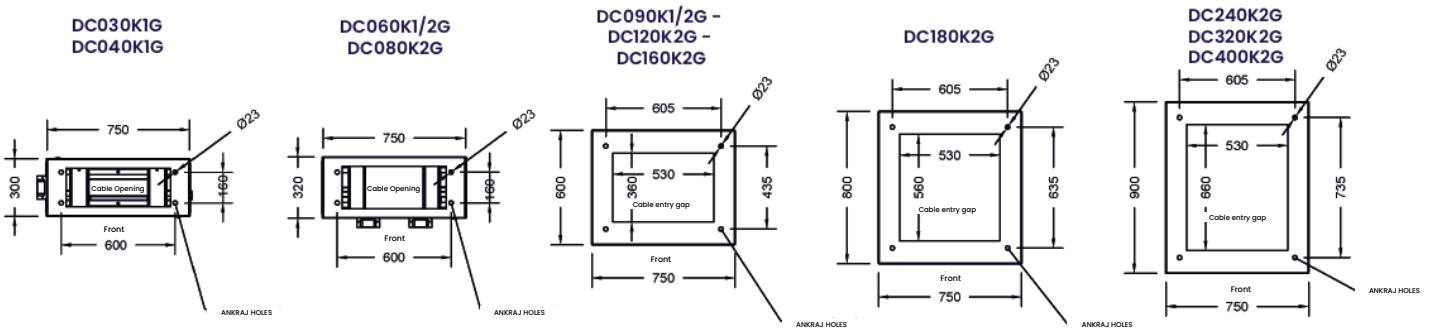
4- Use at least C20 concrete for the foundation.

5- As shown in Figure 1, a conduit for electrical cables and, if necessary, internet cables must be placed in the foundation.

6- After completing the foundation, check its flatness using a spirit level.

7-For fixed embedding, use four MI2 screws of 1-250 mm length. Screws must be pre-embedded into the concrete foundation according to the positions in the drawings, protruding 30-40 mm above the foundation surface without any concrete or cement residue on them.

8- The 30 mm threaded section on the simple concrete foundation surface should be wrapped with adhesive tape to prevent foam formation between the threads used for fixing while pouring the concrete.



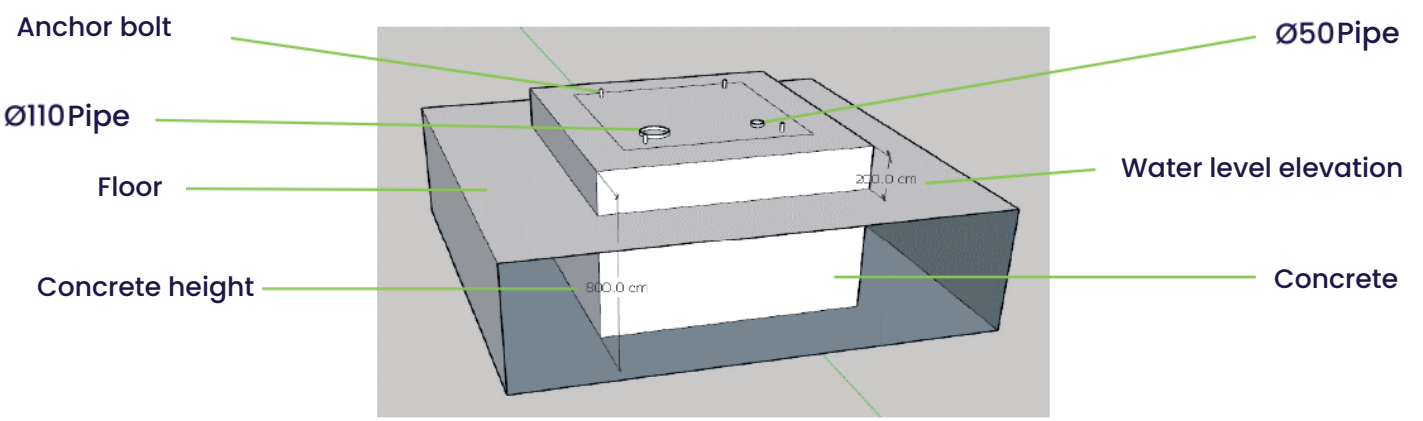


Figure 1.A Top View and Cross-Section of the Concrete Base

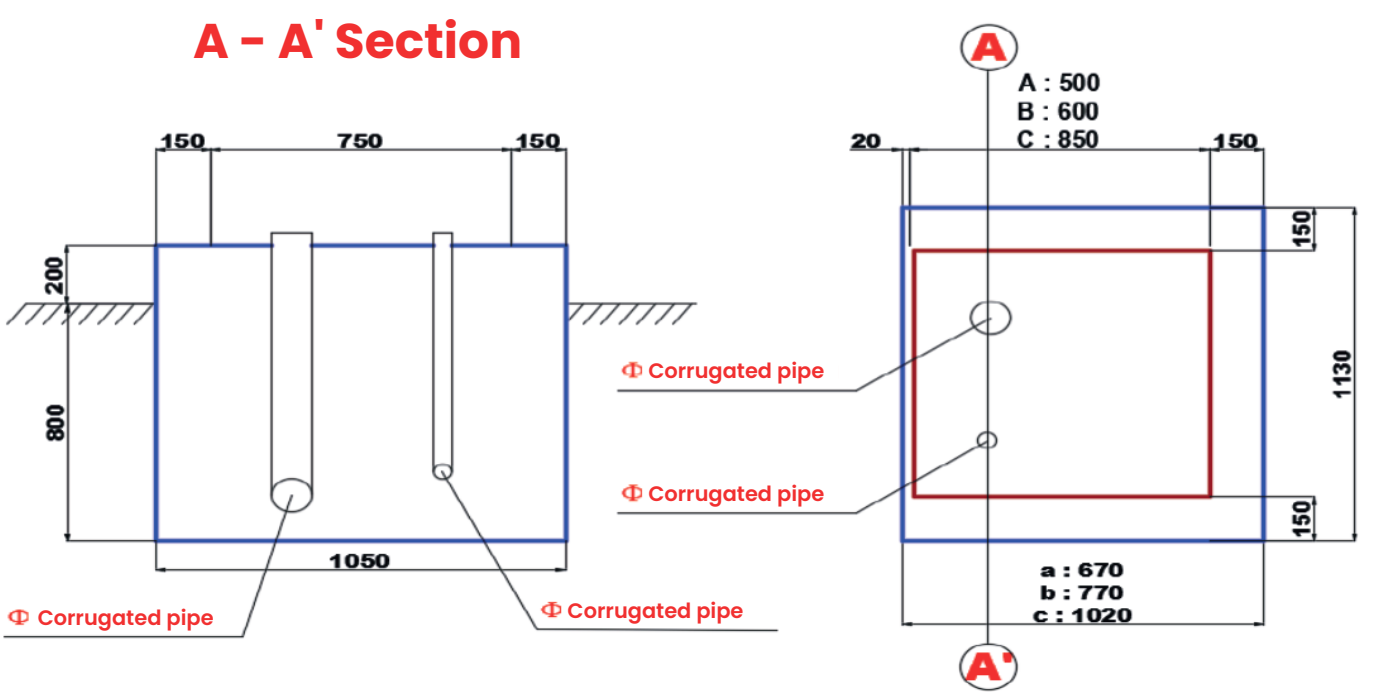


Image - 1st Concrete Base Anchor Measurements

Note: The device supports GSM and WiFi communication. If internet access via Cat-6 is desired, a conduit entry must be made from the area marked as internet input to the O50 bellows, and internet provided via Cat-6 cable. If the facility is installed at a petrol station, an EMERGENCY STOP button cable (2x2.5 mm²) must be installed.

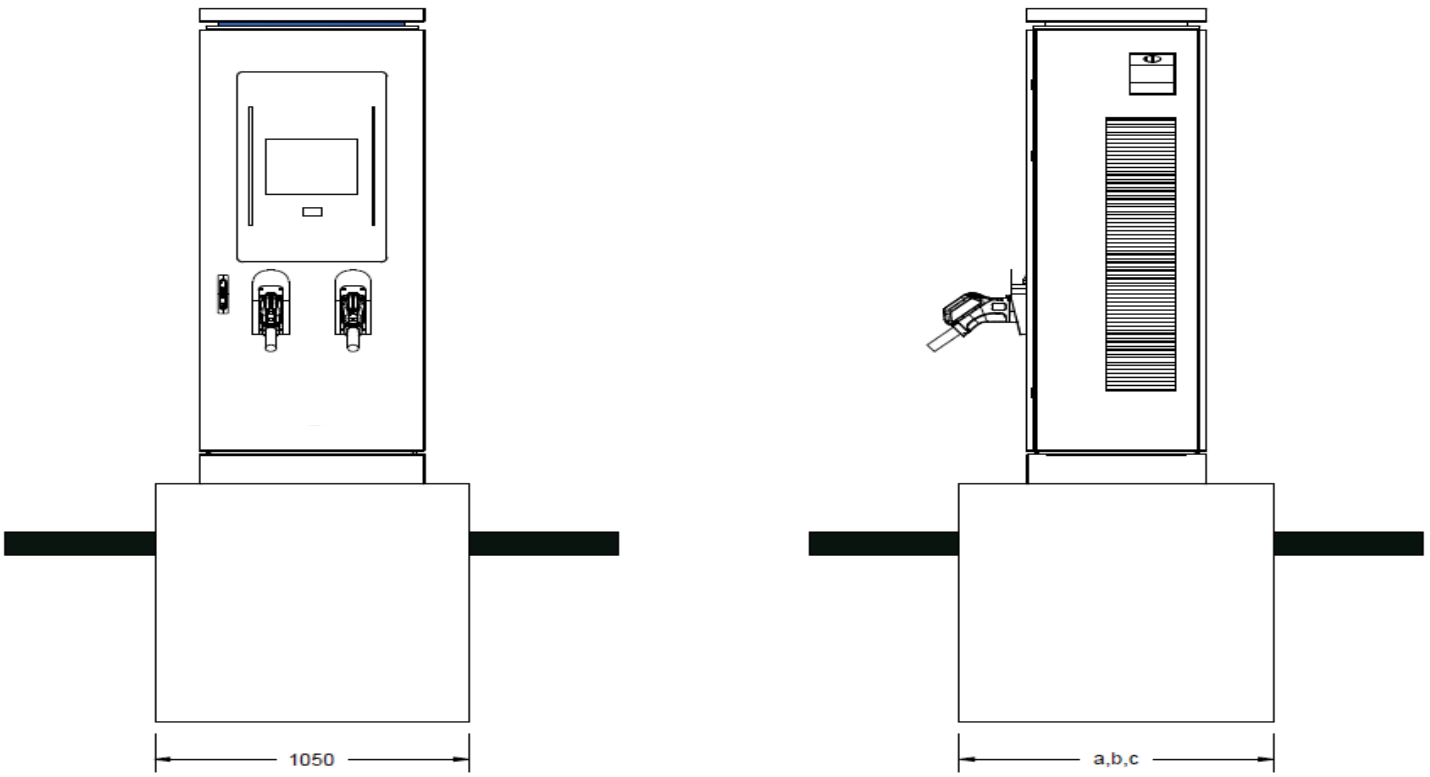


Image 2 - Front and Side View of the Installation

7.7 Equipment Spacing Requirements

1 *Maintenance Distance Requirements*

When installing the charging point near walls or other obstacles at the rear or sides, a specific maintenance clearance must be maintained. Please refer to Figure 3 below.

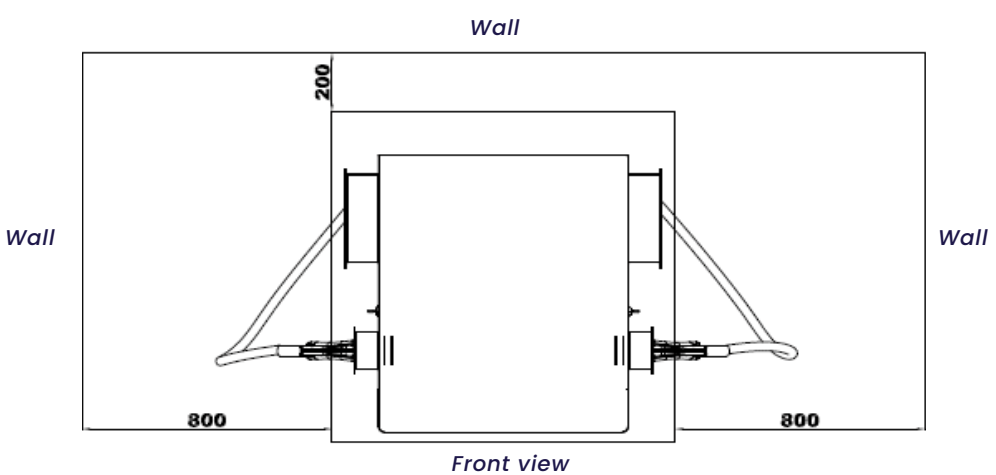


Image - 3 Charger Maintenance Distance Diagram

2 *Distance Requirement for Vertical Protection Barrier*

There must be a 700 mm clearance between the end of the concrete base and the center of the vertical protection barrier. The stopper should be at least 400 mm away from the end of the vertical protection barrier. For the required steel pipe and concrete base dimensions of the vertical protection barrier, please refer to Figure 4.

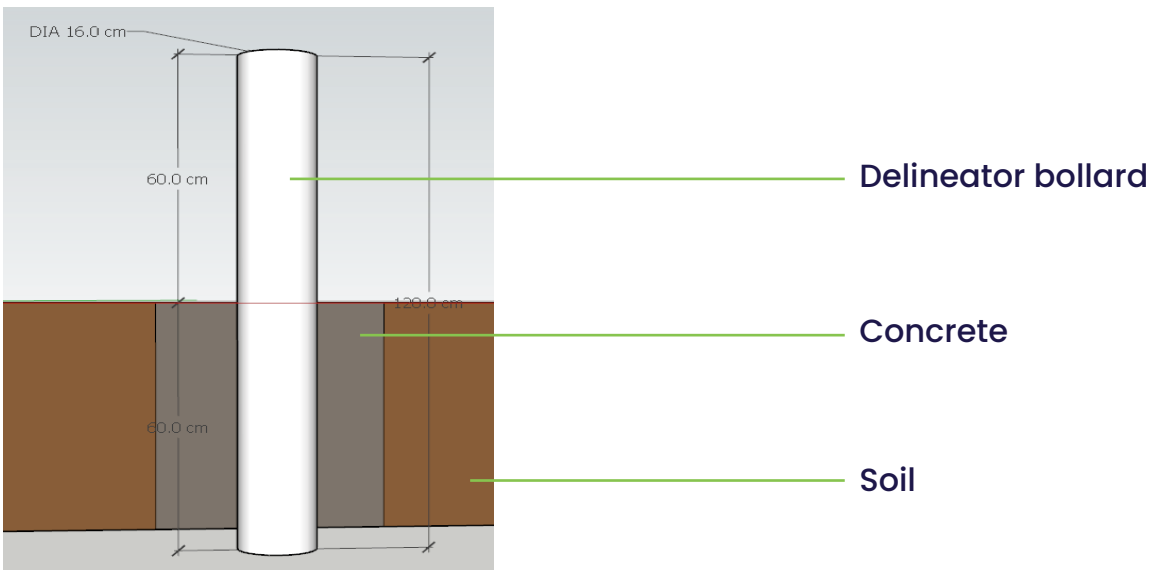


Image -4 Vertical Protection Barrier

3 *Distance Requirement for Single or Back-to-Back Parking*

When the charging point is installed in the middle of a parking space or in a back-to-back parking arrangement, a clearance of 1700 mm between the vehicle and the charging stack is recommended to facilitate the charging process.
Figure 5.a shows the layout dimensions of the DC charging point.

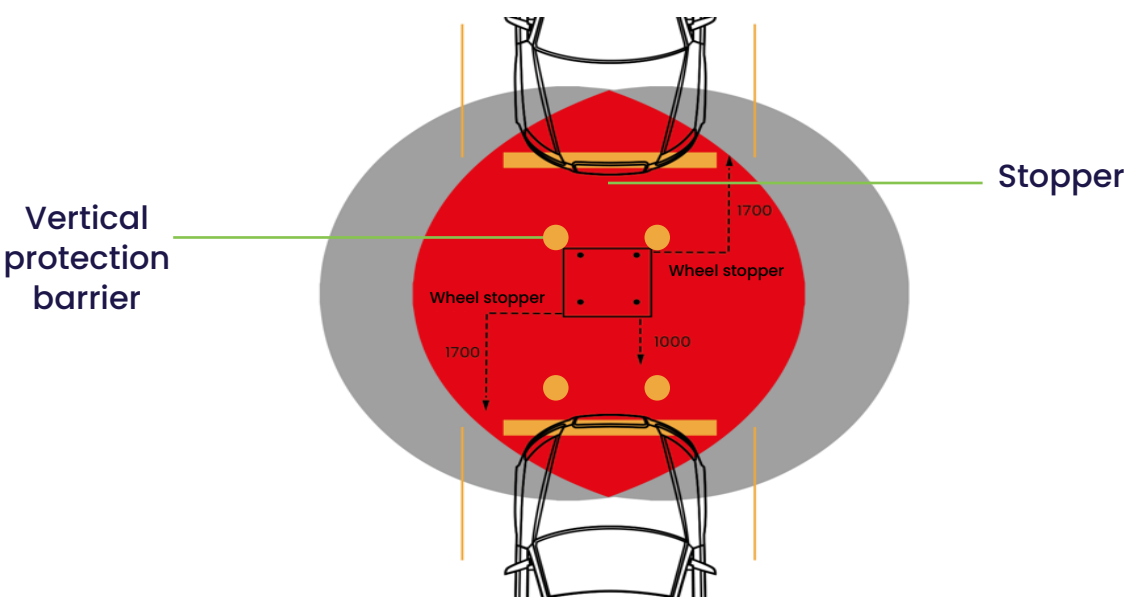


Figure 5.a Distance Requirements for Single or Back-to-Back Parking

4 *Distance Requirement for Multiple Adjacent Parking Spaces*

When the charger is installed between two parking spaces, to ensure sufficient maintenance clearance between the vehicle and the charging stack quality control, a minimum distance of 1700 mm is recommended from the lower center of the charging point to the vehicle stop. (As shown in Figure 5.b)

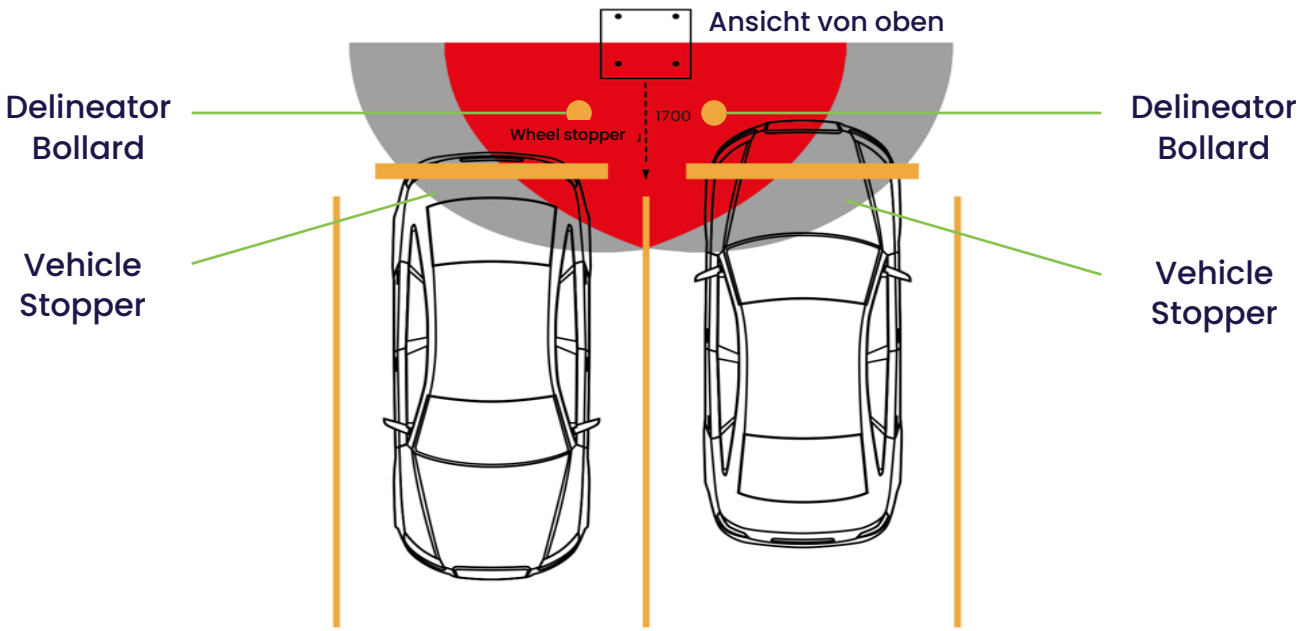


Figure 5.b Distance Requirements for Multiple Adjacent Parking Spaces

7.8 Equipment Spacing Requirements

Assuming the charging unit operates at full load, the circuit breaker current and voltage values must comply with the table below.

Power	Current	(A)	Tension	Minimum cable cross-section to be used	
kW	I_{max}	I_n	U_n	Cu	Al
30	46	160	400 V	5x6 mm²	-
40	61	160	400 V	5x10 mm²	-
60	92	160	400 V	3x25+16 mm²	3x35+16 mm²
80	122	160	400 V	3x25+16 mm²	3x35+16 mm²
90	137	160	400 V	3x50+25 mm²	3x70+35 mm²
120	183	250	400 V	3x70+35 mm²	3x95+50 mm²
160	244	300	400 V	2(3x50+25) mm2 3x95+50 mm²	3x150+70 mm²
180	274	315	400 V	2(3x50+25) mm2 3x120+70 mm²	3x185+95 mm²
240	365	400	400 V	2(3x70+35) mm²	2(3x120+70) mm²
320	487	600	400 V	2(3x95+50) mm²	2(3x150+70) mm²
400	608	600	400 V	2(3x185+95) mm²	3x2(1x240)+2(1x240)mm²

The cable cross-section to be selected must be determined based on voltage drop calculations according to the distance. If cables run side by side or stacked, cable selection must also consider current-carrying capacity and ventilation conditions. It is recommended that the grounding conductor has the same cross-section as the phase conductor (EEE 80-2000).

7.9 Grounding/Insulation Resistance and Safety Requirements

1. The product must be connected to a grounded, metallic, permanent wiring system. Connections must comply with all applicable electrical regulations. Ensure the protective grounding resistance is less than 40 Ω.
2. Verify the insulation resistance test report to confirm the cable's insulation resistance is 10 MΩ or higher.
3. Always ensure power is disconnected during installation and maintenance.
4. Use appropriate protection when connecting to the main power distribution network.
5. Use appropriate tools for each task.

In addition to the cable assembly provided for connecting the electric vehicle to the charging station, no cable extension set or second cable assembly shall be used.

Note: The above requirements are minimum requirements. Special standards are subject to local laws or regulations.

8. INSTALLATION STEPS

8.1 Before Installation

CAUTION: The product must be installed only by a licensed contractor and/or licensed technician in compliance with all building codes, electrical regulations, and safety standards.

CAUTION: The product must be inspected by a qualified installer before first use. Under no circumstances does compliance with the information in this manual relieve the user from the responsibility to adhere to all applicable specifications and safety standards.

- Do not use this product if the power cable or charging cable is damaged.
- Do not use this product if the enclosure is broken, open, or otherwise damaged.
- Do not place tools, materials, fingers, or other parts of your body on the charger or EV.

8.2 Unpacking and Inspection

8.2.1 Equipment Removal from Packaging, Packaging Diagram, and Accessory List

- The product is a direct current (DC) charger. The packaging design has passed packaging simulation tests. However, damage or defects to the product may occur due to tipping, dropping, or external impact during transportation. If the packaging is severely damaged upon receipt, please report your findings to the manufacturer.
- The product is delivered from the factory. Shipping is not included in the order. Delivery by a shipping company to the warehouse or designated location is the customer's responsibility.

Name	Photo description (before unpacking)	Amount	Package Dimension	Weight (with Packaging)	File included with the product	Parts list
DCO30K1G - DCO40K1G		1	900x400 x1300	150 kg	Approval certificate, delivery test report, user manual	Key 3 Stop card 2
DCO60K1/2G - DCO80K2G		1	900x400 x1700	150 kg	Approval certificate, delivery test report, user manual	Key 3 Stop card 2
DCO90K1/2G - DCO120K2G - DC160K2G		1	900x700 x2100	270 kg	Approval certificate, delivery test report, user manual	Key 3 Stop card 2
DCO180K2G		1	900x900 x2100	670 kg	Approval certificate, delivery test report, user manual	Key 3 Stop card 2
DCO240K2G - DCO320K2G - DC400K2G	 -	1	900x1000 x2100	800 kg	Approval certificate, delivery test report, user manual	Key 3 Stop card 2
Modul	-	-	450x100	15 kg/pcs	-	Screw 4 pcs/module

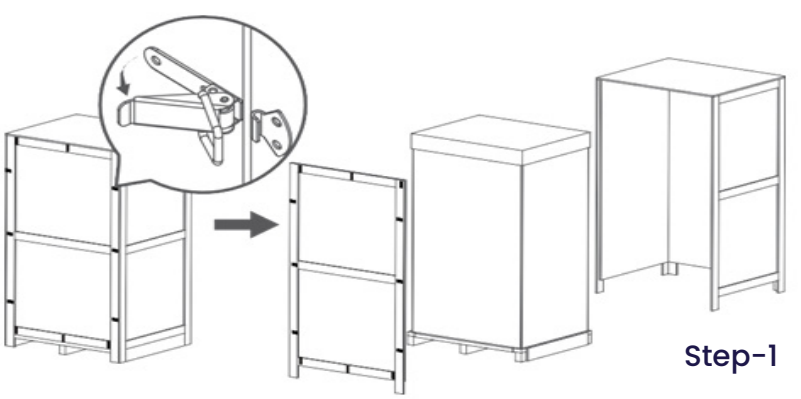
Information: The delivery truck unloads the pallet carrying the DC 30 kW–400 kW power cabinet. Transporting the DC 30 kW–400 kW power cabinet to its final location is the responsibility of the customer/contractor.

8.2.2 Unpacking and Inspection

- Check the packing list number and equipment quantity.
- Verify the equipment nameplate information.
- Confirm that all random documents are complete.
- Ensure that spare parts and accessories are intact and complete.
- Review the delivery inspection report and certificate.
- Inspect the equipment's appearance for any deformation, dents, stains, or other conditions.

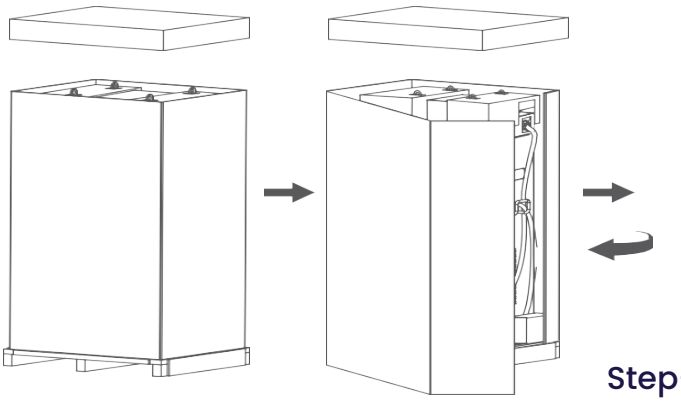
8.2.3 Notes Regarding Unpacking

- Do not refuse delivery/receipt.
- Make a note on the delivery receipt and check for any damage to the cabinet.
- If damage is detected, leave the cabinet in its original packaging and request an inspection from the carrier within 3 days after delivery.
- Contact the manufacturer by mail or phone to inform them of your findings.
- Please disassemble the shipping box as shown below.



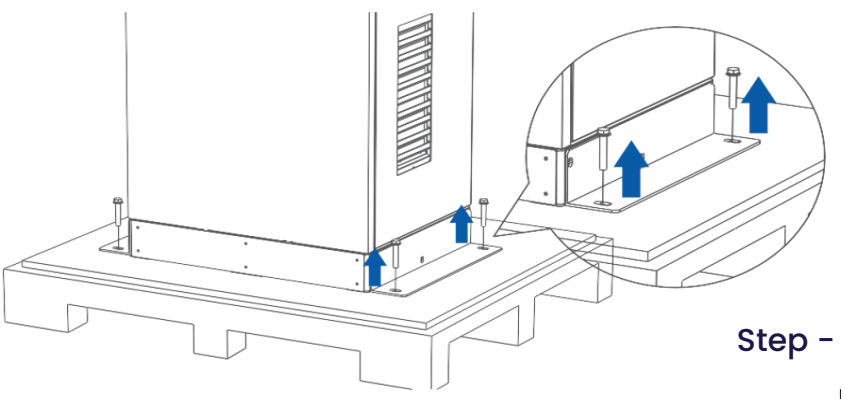
Step-1

- Please remove the cardboard box and the protective inner packaging as shown below.



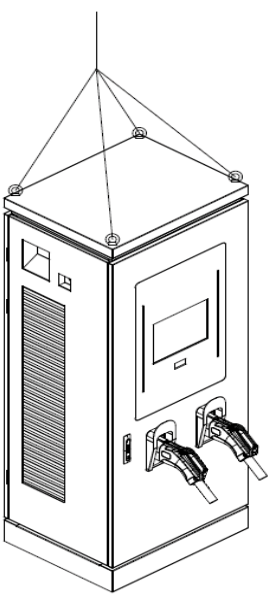
Step- 2

- Remove the fixing bolt.



Step - 3

- A forklift or crane can be used for transportation.



Step - 4

Crane Description: Select appropriate lifting ropes and machinery based on the weight, and secure the ropes to each of the four lifting lugs on top. The included rope angle should be between 45° and 60°. The hook's center of force will be located at the symmetrical center of force as shown in Figure 7. The charging unit is lifted according to the lifting operation specification, and the hole positions on the base are aligned with the anchor bolts and the charging unit. The cable entry mouth is aligned with the embedded PVC pipe and placed on the cement base

- Secure the charging unit with 4 MI2 nuts and washers.

8.3 Electrical Wiring of the Equipment

- Open the front door of the device and take the power cable from the bottom of the cabinet.
- Connect the power cable through the waterproof connector as shown in Figure 9, separate the appropriate length, crimp the copper end, and connect it to the relevant terminal. Ensure that the copper-ended bolts of the cable connection are not loose. During connection, prevent scratching or damaging the cable insulation to avoid short circuits.
- Pass the L1, L2, L3, and N conductors through the toroidal current transformer.

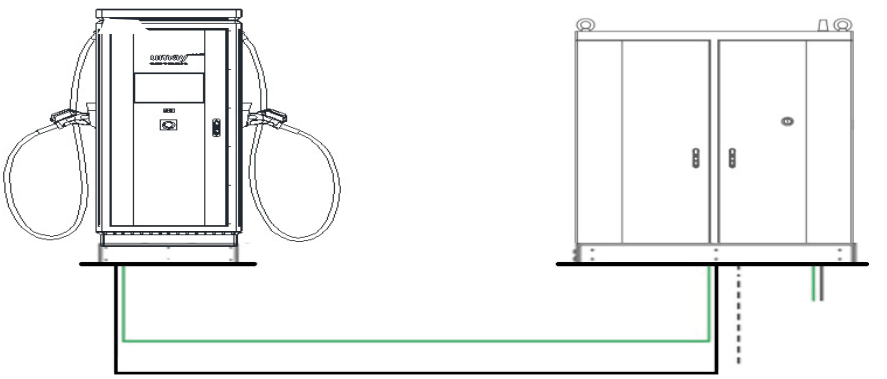


Image-9 power cable installation

- Install the AC cable (L1, L2, L3, N, and PE conductors) between the distribution panel and the DC charging unit.

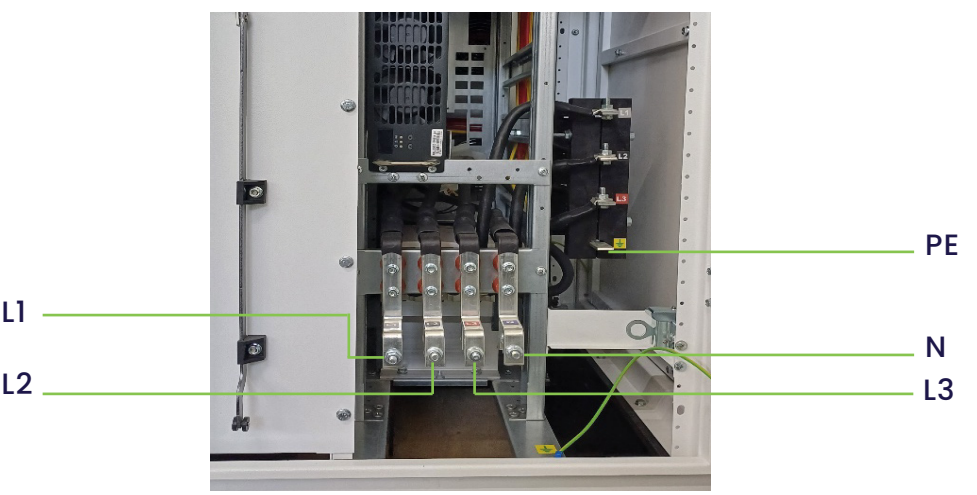
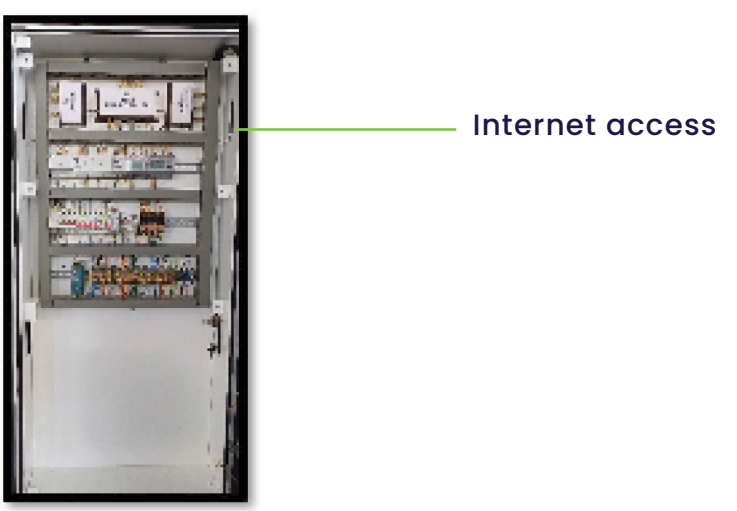


Image - 10 Terminal Connection diagram



Picture-11 ethernet and emergency connection terminals

- Crimp the terminals of the L1, L2, L3, N, and PE conductors firmly onto the locations shown in Figure 10.

Warning: Standard and correct procedure steps must be followed; incorrect application may result in personal injury or death.

The device has GSM and Wi-Fi communication. If internet access via CAT-6 is desired, the internet input should be provided through a pipe to the 650 bellows as shown below using CAT-6 cable.

- If needed, connect a network cable to connect to a network instead of GSM or Wi-Fi.
- Open the front door of the equipment, separate the CAT-6 network cable and the corresponding length from the 650 pipe under the charging unit.
- Strip the cable, crimp the RJ45 connector, and connect it to the corresponding socket on the mainboard as shown in Figure 11.

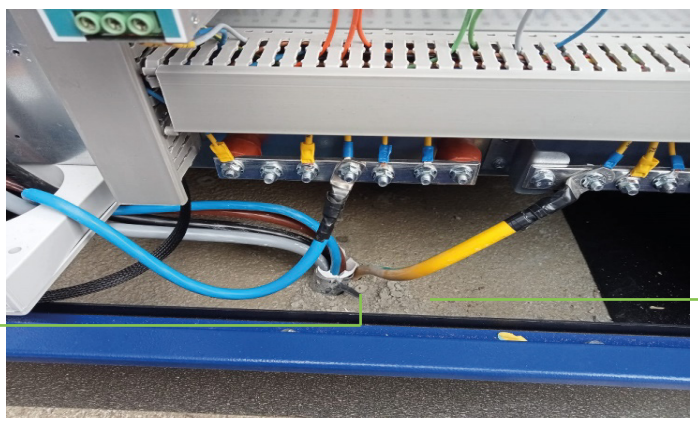


Figure 12: Cable conduit blockage

To ensure the cabinet meets NEMA 3R (IP54) rating and to prevent pests from entering, seal the cable entry hole with flame retardants and electrically insulating foam materials (as specified in section 7.2.1). Make sure the live conductors are at least 12 mm apart.

9. CHECK AFTER INSTALLATION

9.1 Examination of Installation Cables

9.1.1 Equipment and Fixed Control

1. The charger has a neat appearance, there are no dents or damage. Additionally, the position is consistent with the base and is securely fastened without any looseness.
2. The equipment orientation meets the installation criteria.
3. There is no incomplete installation of equipment setup accessories.
4. The equipment is in plumb. The water level meets the requirements of the tool manual.

9.1.2 Installation and Connection of DC Charging Cable

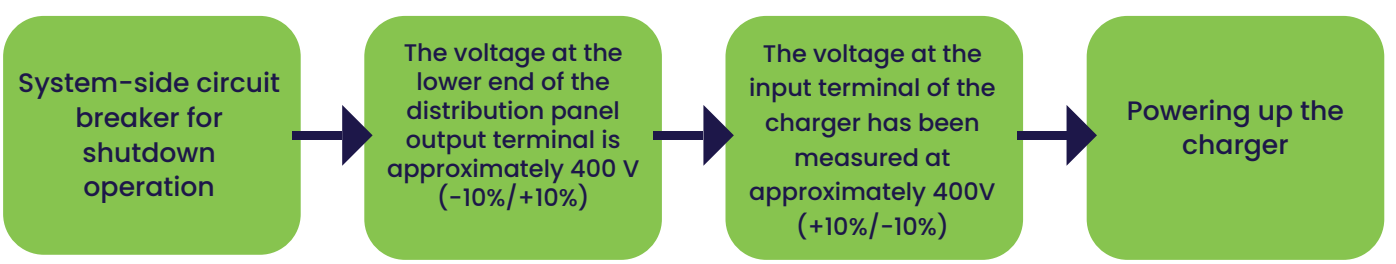
1. Check if the cable insulation coating is scratched or damaged.
2. Check if the copper end of the power cable is suitable and if the wiring is reliable.
3. Check that the terminals of the communication cable are correct and not loose.
4. Check the connection of the water pipe and whether there is any looseness (for DC240K2G, DC320K2G, DC400K2G).
5. Check the hanging cable signs.
6. Check if the cable bending radius meets the requirements.
7. Check if the grounding wire of each box is directed to the grounding network.

9.2 Check Before Opening

1. **Short circuit:** Check the power supply line of the low voltage distribution cabinet connected to the charging pile and verify if there is a short circuit between the three-phase hot cable, neutral cable, and grounding cable.
2. **Power supply voltage before the power source:** Before the equipment's power source, please check the power supply voltage of the empty plastic casing entering the low voltage distribution cabinet's line terminal for normal, phase loss, overvoltage, undervoltage, phase sequence, and other abnormalities.

9.3 Check after the power is turned on

1. After confirming that the equipment cables are complete and correct, power on the equipment. The power procedure is as follows:



2. Complete the general installation

Note:
• The maximum DC voltage must be 1000V, the DC power cable used should withstand at least 3500V and have the necessary safe current capacity.
• Please remember and ensure that all installation setups comply with national safety standards and regulations.
• The permissible distance between the charging unit and the vehicle is a maximum of 5 meters.

10. EVC-TT-DCO030/400KW-100/600A-1/2G SERIES VERSION DESCRIPTION

EVC-TT-DC030/400KW-100/600A-1/2G series has different versions depending on the charging connectors used. The available combinations are shown in the table below. The relevant position of the charging connectors is indicated on the left and right sides of the charger.
As an example,

Version	CCS2 Liquid Cooling	CCS2 Natural	CCS1 Liquid Cooling	CCS1 Natural
EVC-TT-DC030/400KW-100/600A-1/2G	X	X	X	X

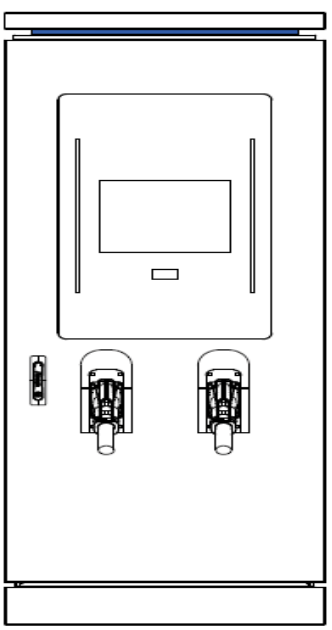
U: Natural cooling CCS1 Combo

V: Liquid cooling CCS1 Combo

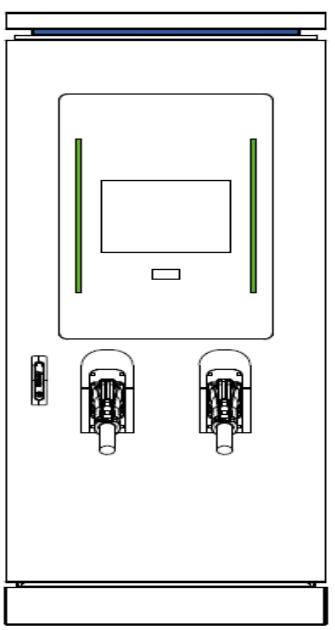
E:Natural cooling CCS2 Combo

F: Liquid cooling CCS2 Combo

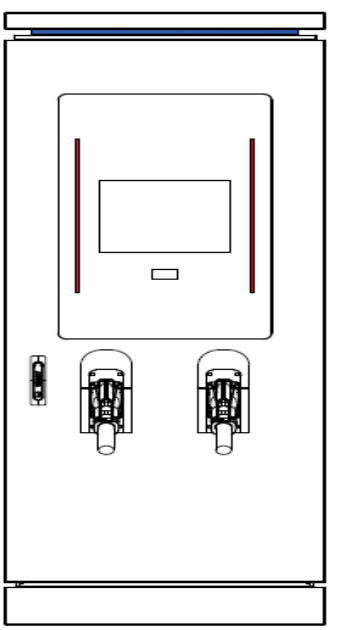
10.1 LED Indicator and Operating Status



Ready



Charging



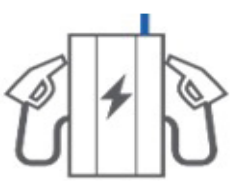
Malfunction

Status \ LED	Top Indicator	Left Indicator (DC1)	Right Indicator (DC2)
Opening (in preparation)	Blue Flashing Light	No Color	No Color
On hold (ready for use)	Blue Solid	No Color	No Color
Charging	Blue Solid	Green Flashing Light	Green Flashing Light
Charging completed	Blue Solid	Green Solid	Green Solid
Malfunction	Blue Solid	Red	Rotes Licht

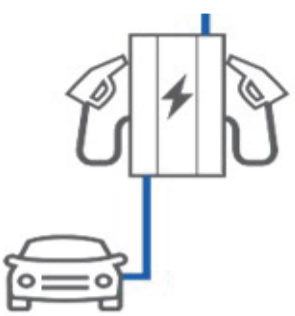
10.2 Dynamic Power Sharing Information

Dynamic Power Sharing (applicable only for the two-connector model):

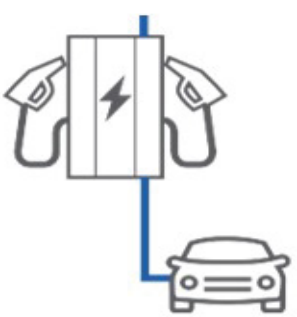
1. When no connector is plugged in, the input contactor will be open circuit. This prevents standby power consumption.
2. When the left connector is plugged in, the output power will be exactly 400kW (9100).
3. When the right connector is plugged in, the output power will be exactly 400kW (100).
4. When both connectors are plugged in at the same time, each connector will receive 200kW (450) output power.



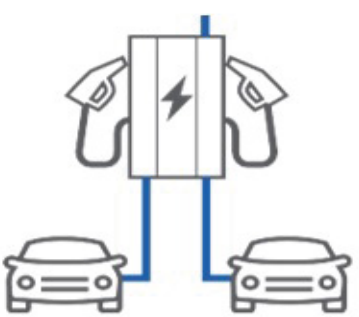
Situation-1



Situation -2



Situation -3



Situation -4

Situation	Total Power	1. Connector Power	2. Connector Power
1	400 kW	x	x
2	400 kW	400 kW	x
3	400 kW	x	400 kW
4	400 kW	200 kW	200 kW

11. DELIVERY FORM

Nr:	File Name	Number of Pages	Document Requirement
1	Package Opening List	1	✓

Additional

Franchise Name				Package Opening Date		
No:	Item Name	Product	Number	Qualification Number	Equipment Status	Note
1	TOMMATECH 30-400 kW		1			
2	Approval Certificate		1			
3	Rev. Stop Card		2			
4	Delivery Inspection Report		1			
5	User Manual		1			
6	Key		3			
7	Module		6			
8						
9						
10						
Package Opening Result						
Signature box	Installation Company			Business Company		

12. INSTALLATION INSPECTION AND COMMISSIONING

12.1 Installation Environment

When selecting the installation site for the high-power charger, the environmental conditions listed in the table below should be taken into consideration. Accumulation of dust or sand on the equipment may cause premature damage to the equipment.

Environmental conditions	Situation	Recommended Range
Ambient temperature		-30°C ~ 50°C
Ambient Humidity		%10 ~ %95
Altitude		For use below 2000m, capacity reduction for use above 2000m
Sunshade		Suggested but not required
Rain Shelter		It is recommended for better charging experience and maintenance on rainy days.
Air circulation/Draft		10 cycles per hour
Measures against vandalism		National regulations
Abrasive material (dust level)		Does not contain polluting substances such as salt, acid, smoke, etc.
Insects, pests, vermin, termites		No
Non-flammability		Cabinet top and bottom are non-flammable.
Wireless connections		4G signal is good
Drainage facility (flood control measures)		The drainage facilities are good, there is no flooding.
Stopper or metal bollard, delineator, fixed iron post 60 cm		Recommended

12.2 External Infrastructure Preparation and Control

Item	Situation	Description
Concrete (stand) base		
Input cables and terminals		Tip/length/section
The key and lock of the charging unit door		Type/No.
Leakage current protection relay		30mMA type A, 4 poles
Fuse circuit breaker		
Grounding resistance		< 4Ω
Network connection and quality		Wi-Fi , 4G > -65dB

12.3 Charging Unit Inspection – Before Installation/Powering Up

Item	Situation	Description
View		Eye examination
Labeling and warning signs		Eye examination
The key and lock of the charging unit door		Eye examination
package (accessory) list		Eye examination
Internal cabling and connection		see: bolt torque table, page 5
The durability of the entry cables		1. AC power cables
The durability of the ethernet cable		2. RJ45 connector
The durability of the exit cables		DC power cables
Distribution panel identity		

12.4 Charging Unit Inspection – Power On

Item	Situation	Description
Visual display		
Network connection quality		
LED status indicator		
Charging unit adjustment		
Server connection		
Network connection & quality		Wi-Fi, Ethernet cable, 4G > -65dB

12.5 Charging Unit Control - Charging

Item	Status	Description
User authorization — RFID		
User authorization — QR Code		
User authorization — others		
Connection check waiting time		
Reading each screen element		
Charging test		
Electronic lock function (optional)		
Air flow and cooling fan		

12.6 EMERGENCY STOP CONTROL

Item	Status	Description
Not-Aus-Taste		

13. PRODUCT FEATURES

Model Name			EVC-TT-DC030/400KW-100/600A-1/2G Serie
Mechanical Properties	Dimensions (BxTxH)	DC030K1G - DC040K1G	750 x 300 x 1200 mm
		DC060K1/2G- DC080K2G	750 x 320 x 1550 mm
		DC090K1/2G - DC120K2G - DC160K2G	750 x 600 x 2000 mm
		DC180K2G	750 x 800 x 2000 mm
		DC240K2G - DC320K2G - DC400K2G	750 x 900 x 2000 mm
	Weight (kg)	DC030K1G - DC040K1G	<120 kg
		DC060K1/2G- DC080K2G	<120 kg
		DC090K1/2G - DC120K2G - DC160K2G	<240 kg
		DC180K2G	<640 kg
		DC240K2G - DC320K2G - DC400K2G	<740 kg
	DC output interface (the interface may vary depending on the connector).		CCS1/CCS2
	Cooling		Natural: compressed air (fan)
	Entry IP protection		NEMA3R/IP54
	Anti-vandalism IK		IK10 (excluding screen and RFID module)

13. PRODUCT FEATURES

Model Name		EVC-TT-DC030/400KW-100/600A-1/2G Serie
DC output power cable	Natural cooling	100 A - 400 A
	Liquid cooling	500 A - 850 A
DC output	Output voltage range	CCS1/CCS2:150VDC ~ 1000VDC
	Maximum output current	For CCSI/CCS2 500A 800VDC output voltage
	Maximum output power	400kW
	Simultaneous exit mode	30 kW - 400 kW da 0%, 25%, 50%, 75%, 100%
	Voltage accuracy	±2%
	Current accuracy	±2%
Maximum distance between power cabinet and vehicle	5 m	
Standby power	<100W	
Communication	External	Ethernet / Wifi /GSM 4G
	Internal	CAN Bus/ RS485
Output protection	SCP, Short Circuit Protection	
	OCP, Over Current Protection	
	OVP, Over Voltage Protection	
	LVP, Low Voltage Protection	
	OTP, Over Temperature Protection	
	IMD, Isolation Protection	
Internal protection	OTP, Over Temperature Protection	
User interface and control	Viewing	HMI Screen
	User authentication	RFID: Supports ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966), OCPP, APP, Mobile payment
Environmental conditions	Operating temperature	Between -30°C and +50°C
	Storage temperature	Between -40°C and +70°C
	Relative humidity	5% ~ 95% RH, non-condensing
	Elevation	≤ 2000m(6561')
Regulations	Security	UL2202,IEC 61643-21,IEC 61643-12
	EMI/EMC	FCC CFR Title 47 Section 15
		Section B: 2020
		ANSI C63.4: 2014
		ICES-003:2020 Topic 7

14. OPERATION PROCESS

14.1 Start-up Procedure

Operation Sequence:

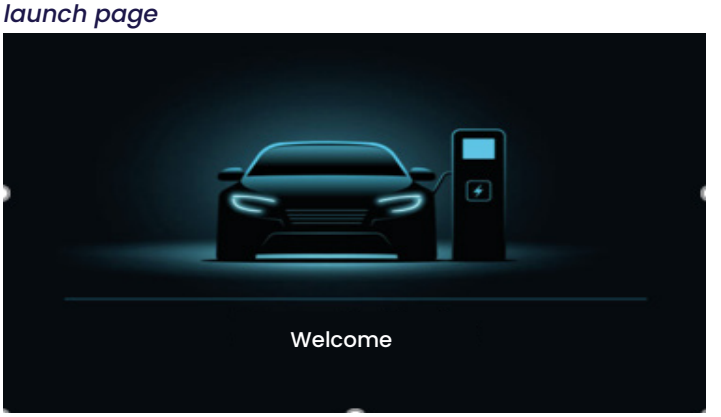
1. System start-up
2. Preparing for charging
3. Connect the DC charging connector
4. User authorization
5. Charging in progress
6. Charging completed
7. Charging summary
8. Status messages
9. Error messages
10. Connection status
11. AC/DC meter information
12. Software information
13. Time settings

14.1.1 System Initialization

When the charger is turned on, it starts with the “Charging Station” start-up page.

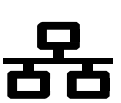
- After the device is powered on and the system starts, you will see the following screen.
- The start-up process will take approximately 2 minutes, after which the main page will be displayed.

launch page



main page

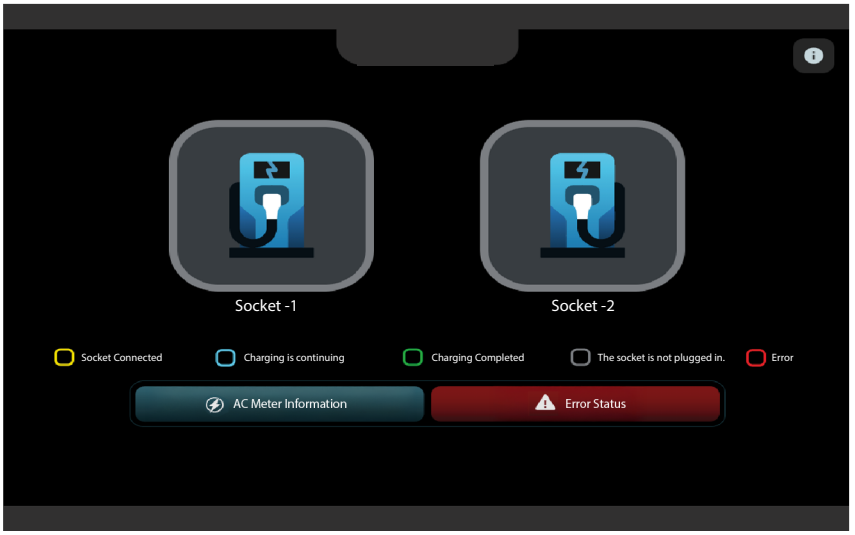
if the billing function is enabled, unit and currency

Ethernet back-end status		*Wi-Fi Status*	
			
there is a connection	*no connection*	*there is a connection*	*no connection*

3G/4G Status		*OCPP backend status*	
			
there is a connection	*no connection*	*there is a connection*	*no connection*

14.1.2 Prepare for Charging

After the authorization and connector attachment process, the charger will communicate with the vehicle, and the "Preparing" page will appear on the screen as shown in the image below

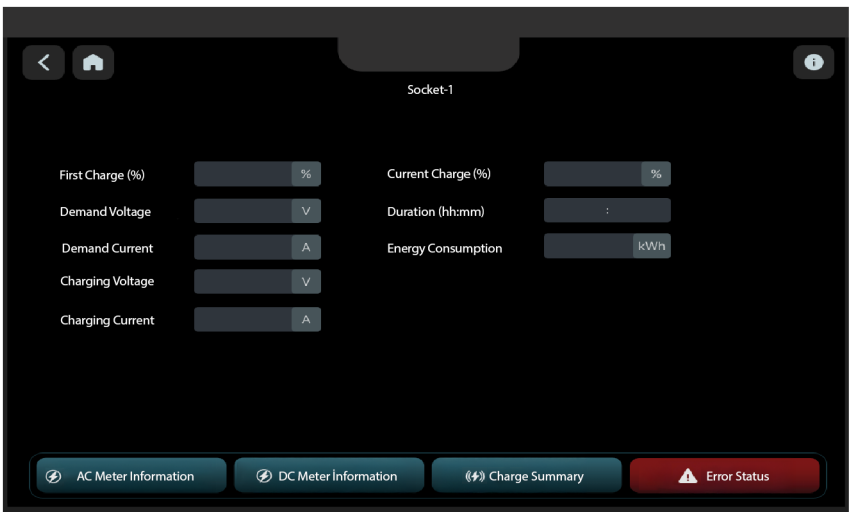


Information of the Selected Charging Connector

Connector Selection Icon:Press the right or left icon to select the charging connector the user wants to use.

14.1.3 Connecting the Charging Connector

After authorization, the screen will prompt the user to connect the charging connector to the EV charging port as shown below.



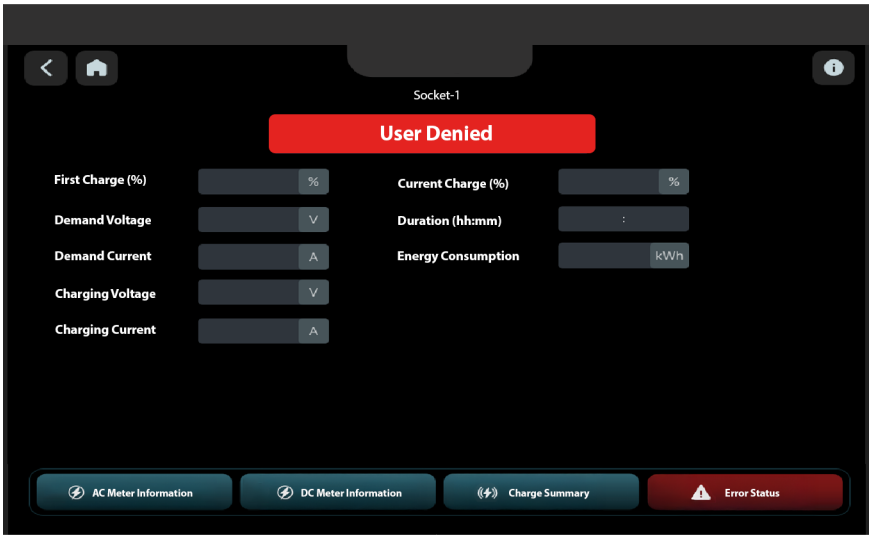
- Remove the charging connector from the cable holder and insert the connector into the electric vehicle's charging port.
- The charger will automatically detect the type of charging connector.
- Once the physical connection of the charging connector to the charging port is complete, the process will begin.To return to the main page during this session, please press the left button. This normally takes less than 10 seconds.

14.1.4 User Authorization

After the system has started, the screen will remain on the main page as shown below. Use your RFID card or mobile application to authorize the use of the charging unit.

user authorized

- User Authorization Method: RFID, QR code, and mobile application.
- If a method is disabled, the unauthorized method(s) will appear dimmed on the screen.



authorization failed

Scan the RFID card to end this charging session and return to the main page.

14.1.5 Charging in Progress

When the charger enters the ready-to-charge stage, the Charging Page will appear on the screen as shown below.

Duration

Rechargeable power

Energy

EV battery SOC (state of charge)

Load the charging information to begin charging. When the battery is fully charged or the set limit is reached, charging will automatically stop and the process will proceed to the next step

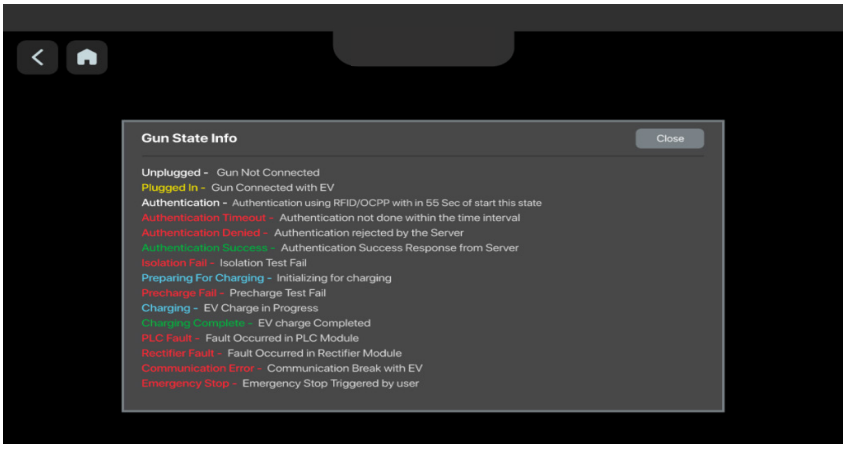
14.1.6 Charge Complete

The user can also stop the charging by scanning the RFID card.

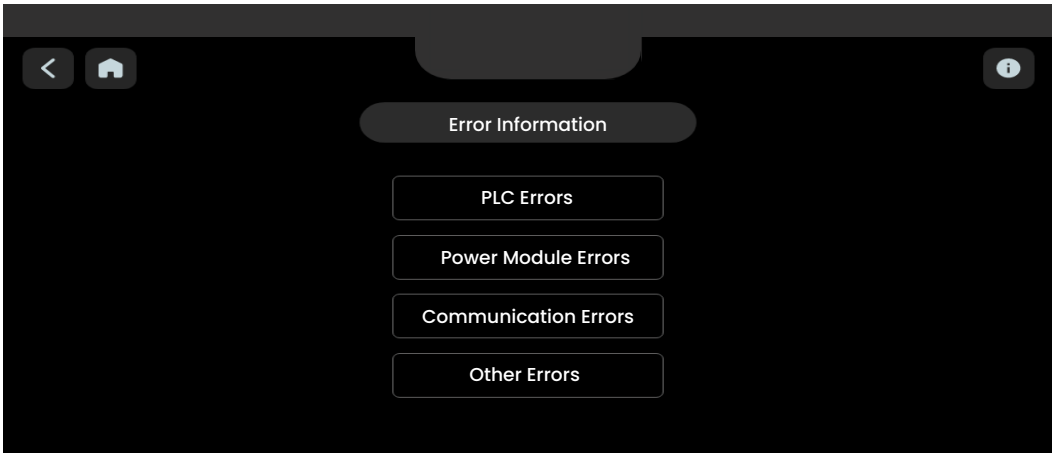
14.1.7 Charging Summary

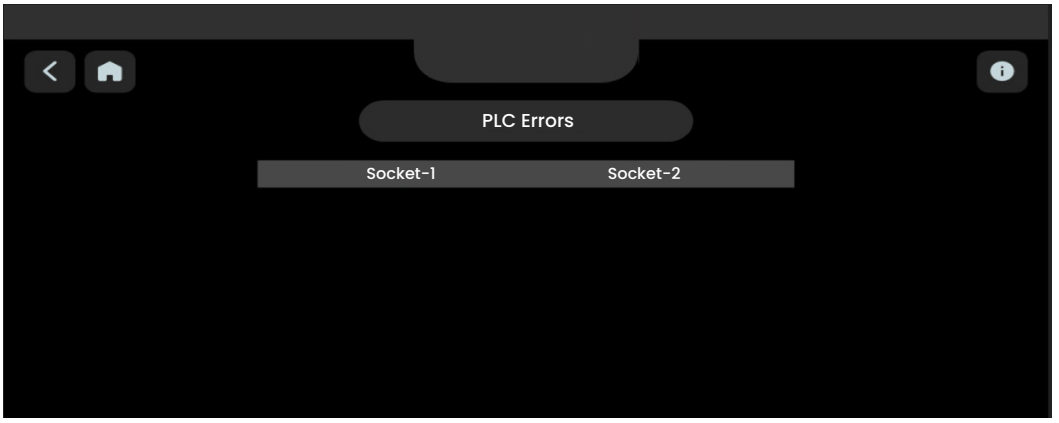
- After the charging process is completed, the charging system will display the “Charging Summary” page as shown below, and the charging connector lock will automatically release.
- Remove the charging connector from the EV’s charging port and place the charging connector back into the cable holder.
- When the connector is removed, the screen will return to the main page or to the Charging Page of the other charging connector.
- During simultaneous charging, if any of the charging connectors is removed, the screen will switch to the Charging Page of the other charging connector.

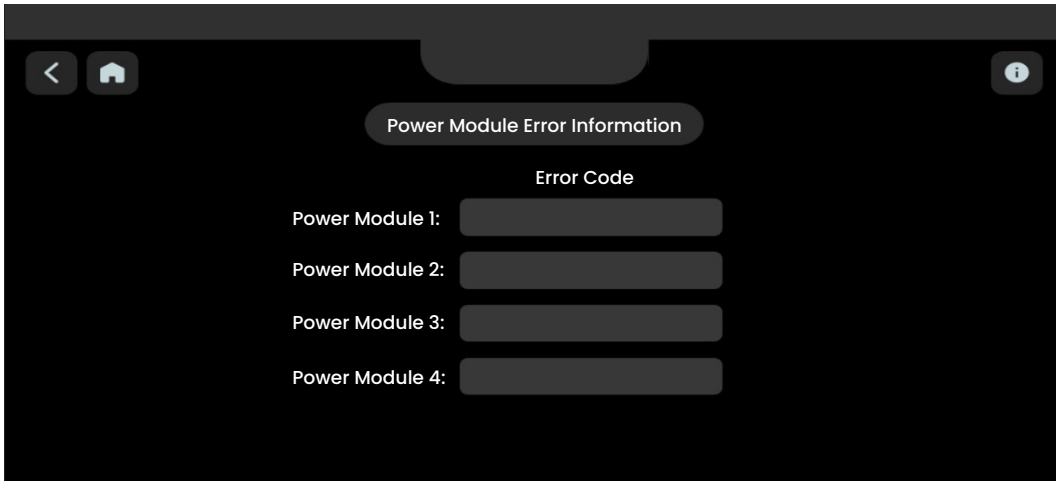
14.1.8 Status Messages

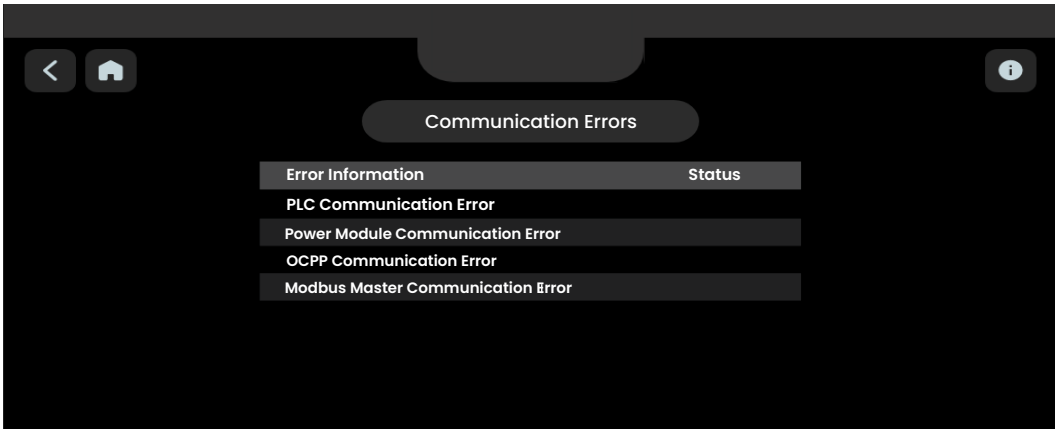


14.1.9 Error Messages

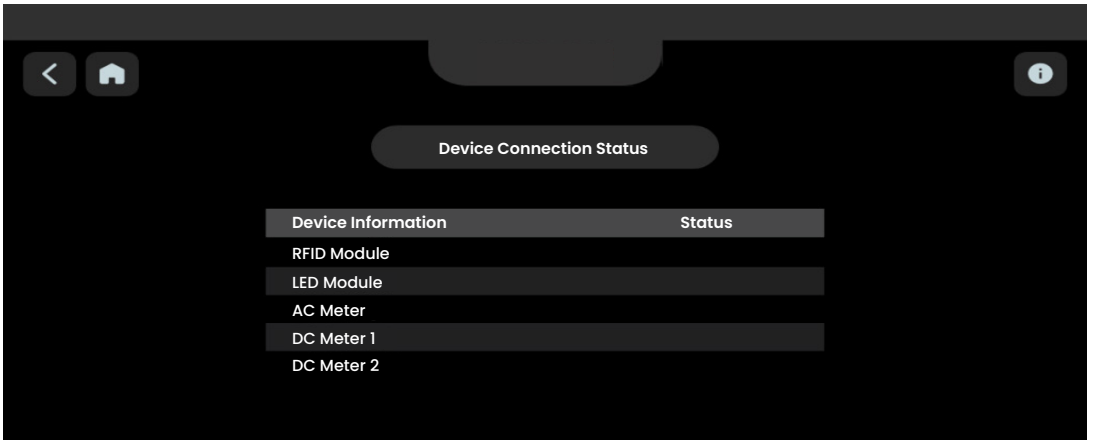




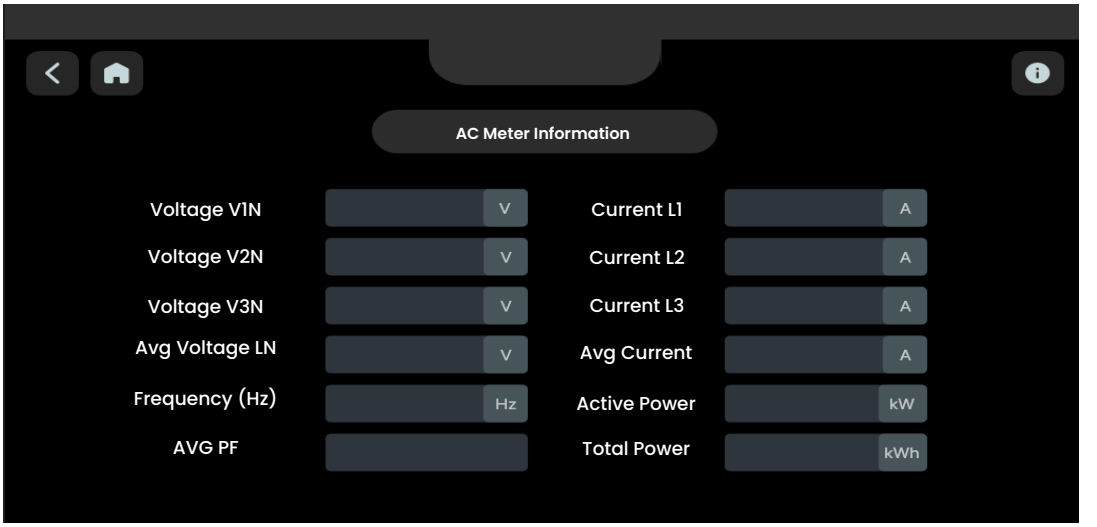


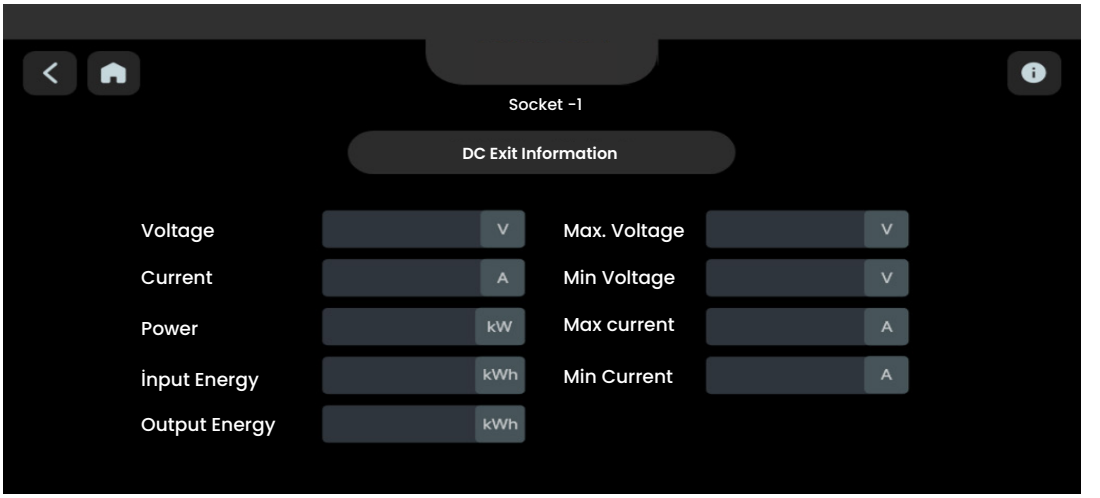


14.1.10 Connection Status

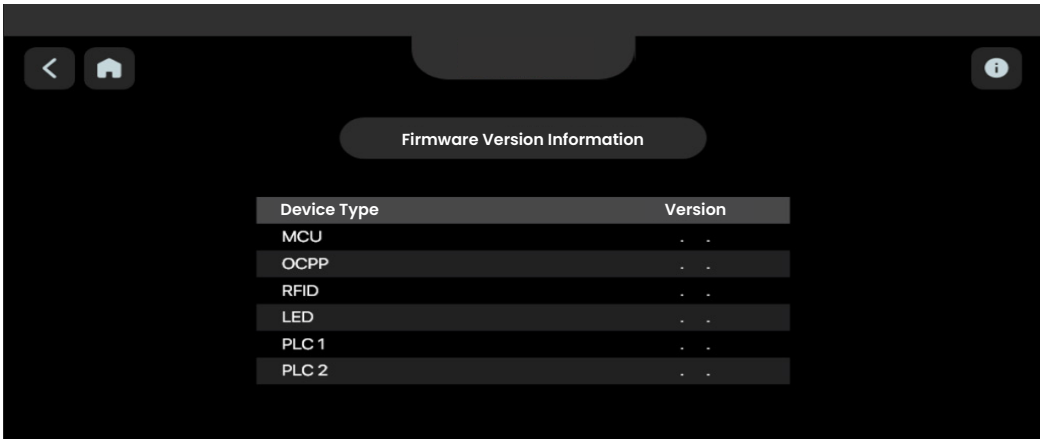


14.1.11 AC/DC Meter Information

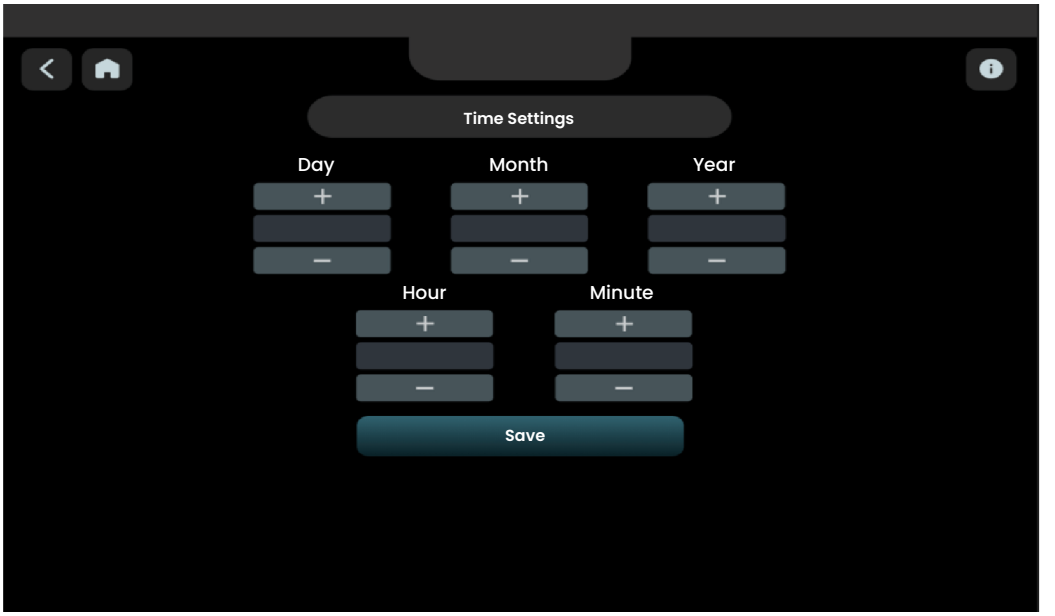




14.1.12 Software Information



14.1.13 Time Settings



14.2 Troubleshooting

- If an error occurs during the charging process, please follow the instructions in the table (Table 5), or contact the DC Fast Charger operator for further instructions.

- In case of an emergency, press the Emergency Stop Button to immediately stop charging.

Reason for Stop During Shutdown by Charger			
1	Normal stop (close by)	301	The charger was stopped via RFID or the touchscreen.
2	Stop from server (remote)	302	has been stopped from server
3	Server offline	303	Server offline
4	Power loss	304	Restarted during charging/Power outage during charging
5	Emergency stop	305	Charging stopped due to emergency stop button being pressed
6	The electric vehicle is not connected.	306	
7	Other		
7,1	Weak signal error	307	Charging error due to high noise or simple SLAC error in the SLAC sequence
7,2	Authorization error	308	Charging process failed due to authentication error
7,3	Cable control error	309	Charging failure due to cable check error/ insulation fault.
7,4	Pre-charge error	310	Charging failure due to pre-charge error

	Error Subject	Solution
1	Emergency stop pressed	Resolved by turning the emergency stop.
2	RFID card reader is not detecting the card	Internet connection should be checked
3	The LEDs are not illuminated	LED board should be checked.
4	AC contactor is not activating.	AC KAKR should be checked
5	Isolation error	The insulation relay should be checked, and if present, the insulation fault should be resolved.
6	The vehicle starts charging and ends in a short time.	DC controller outputs and DC contactors should be checked
7	DC voltage is not visible on the screen.	It should be checked whether the power modules are properly installed in the drawer.
8	The power module is not working.	The power module addressing setting should be checked.

Nr.	Error Type	Charger/gun specific malfunction	Error Code	Description	Red LED Status	Charging Device CP Status	Charger Gun CP Status	Error Code	Notes
1	Temperature error of the charging clutch	Charger gun	ER001	The temperature of the gun exceeds the threshold of 90°C	On	Available	Error	OCPP+HMI	
2	High NE voltage	Charger	ER005	The neutral-ground voltage is outside the limit	On	Error	N/A	OCPP+HMI	Hardware procurement is necessary.
3	Mains voltage too low	Charger	ER006	Less than the 159V threshold of the AC network	On	Error	N/A	OCPP+HMI	
4	Mains voltage too high	Charger	ER007	Exceeding the 280V threshold of the AC network	On	Error	N/A	OCPP+HMI	
5	RFID communication defect	Charger	ER009	The situation where the RFID module cannot communicate with the controller via the RS-485 interface	On	Available	Available	OCPP+HMI	
6	Communication error with the AC energy meter	Charger	ER010	The situation where the RFID module cannot communicate with the controller via the RS-485 interface	On	Error	N/A	OCPP+HMI	This feature is enabled according to customer requirements. If the feature is disabled, the charger and gun status will be normal, and the RED LED will be off.
7	High residual current	Charger	ER011	The leakage current exceeding 30 mA	On	Error	N/A	OCPP+HMI	Hardware procurement is necessary.
8	System temperature too high	Charger	ER012	The range that the cabin temperature should be in	On	Error	N/A	OCPP+HMI	Hardware procurement is necessary.
9	Fault in the surge protection device	Charger	ER013	The occurrence of an SPD fault	On	Error	N/A	OCPP+HMI	Can be configured by the user using the CDM tool.
10	PLC communication error	Charger gun	ER014	Interruption of CAN communication with PLC modules	On	Available	Error	OCPP+HMI	
11	Error in the control panel	Charger	ER015	Software error / controller's inability to communicate with all peripheral devices	On	Error	N/A	OCPP+HMI	
12	OCPP communication error	Charger	ER016	System offline / unable to connect to the server	Off	Available	Available	OCPP+HMI	
13	Smoke detector	Charger	ER017	Smoke sensor detecting fire inside the cabinet	On	Error	N/A	OCPP+HMI	Can be configured by the user using the CDM tool.
14	RCCB triggering/MCB triggering	Charger	ER018	RCCB triggered due to excessive leakage, or high NE or MCB fault occurred due to short circuit and overload	On	Error	N/A	OCPP+HMI	Hardware procurement is necessary.
15	ESD pressed	Charger	ER019	Pressing the emergency stop button	On	Error	N/A	OCPP+HMI	
16	Communication error with all rectifiers	Charger	ER020	Communication loss between the CAN controller and the rectifier module	On	Error	N/A	OCPP+HMI	
17	Insulation faults	Charger gun	ER021	Insulation fault condition	On	Available	Error	OCPP+HMI	
18	LED panel error	Charger	ER022	The LED controller not communicating with the main controller	On	Available	Error	OCPP+HMI	Can be configured by the user using the CDM tool.
19	Rectifier 1 Communication error	Charger gun	ER023	Communication error between Rectifier 1 and the controller	On	Available	Error	OCPP+HMI	
20	Rectifier 2 Communication error	Charger gun	ER024	Communication error between Rectifier 2 and the controller	On	Available	Error	OCPP+HMI	
21	Rectifier 3 Communication error	Charger gun	ER025	Communication error between Rectifier 3 and the controller	On	Available	Error	OCPP+HMI	
22	Rectifier 4 Communication error	Charger gun	ER026	Communication error between Rectifier 4 and the controller	On	Available	Error	OCPP+HMI	
23	DC undervoltage	Charger gun	ER027	Rectifier DC output voltage is higher than the EV maximum voltage	On	Available	Error	OCPP+HMI	
24	DC overvoltage	Charger gun	ER028	Rectifier DC output low voltage fault	On	Available	Error	OCPP+HMI	
25	DC output overcurrent	Charger gun	ER029	Rectifier DC output voltage is higher than the EV maximum voltage	On	Available	Error	OCPP+HMI	
26	HMI-Interface Defekt	Charger	ER030	HMI cannot communicate with the main controller	Off	Available	Available	OCPP+HMI	
27	Modem communication error	Charger	ER031	Communication error between the OCPP module and the modem	Off	Available	Available	OCPP+HMI	
28	System start error	Charger	ER032	The controller cannot initialize hardware peripheral devices	On	Error	N/A	OCPP+HMI	
29	Relay card error	Charger	ER033	Relay card unable to communicate with the controller	On	Error	N/A	OCPP+HMI	
30	DC measuring device Communication error	Charger gun	ER034	DC meter cannot communicate with the controller via the RS-485 interface.	On	Available	Error	OCPP+HMI	This feature is enabled according to customer requirements. If the feature is disabled, the charger and gun status will be normal, and the RED LED will be off.
31	Entire PLC Communication error	Charger	ER035	Both PLC modules cannot communicate with the controller via the CAN bus.	On	Error	N/A	OCPP+HMI	
32	Sabotage detected	Charger	ER036	Tamper/door sensor event detection	On	Error	N/A	OCPP+HMI	Can be configured by the user using the CDM tool.
33	Input contact fail	Charger	ER037	AC contactor fault condition.	On	Error	N/A	OCPP+HMI	Hardware procurement is necessary.
34	Rectifier temperature too high	Charger gun	ER038	Rectifier temperature exceeding the 70°C threshold.	On	Available	Error	OCPP+HMI	
35	Gun DC contactor error	Charger gun	ER039	DC contactor fault condition.	On	Available	Error	OCPP+HMI	Hardware procurement is necessary.
36	Fuse damage to the EV charging plug	Charger gun	ER040	Fuse damage fault condition.	On	Available	Error	OCPP+HMI	Hardware procurement is necessary.
37	Charging plug verification timeout	Charger gun	ER041	Authentication error condition.	On	Available	Error	OCPP+HMI	
38	Charging plug CP cable error	Charger gun	ER042	The PLC module detecting a CP line fault	On	Available	Error	OCPP+HMI	
39	SLAC charging plug defective	Charger gun	ER043	The PLC module detecting an SLAC fault.	On	Available	Error	OCPP+HMI	
40	Charging plug V2G defective	Charger gun	ER044	The PLC module detecting a V26 fault	On	Available	Error	OCPP+HMI	
41	Charging plug switch-on charging defect	Charger gun	ER045	Pre-charge phase fault condition.	On	Available	Error	OCPP+HMI	
42	E-vehicle defect	Charger gun	ER046	The electric vehicle is generating a fault condition	On	Available	Error	OCPP+HMI	
43	Error in the communication of all DC measuring devices	Charger	ER047	Both DC measurement devices cannot communicate with the controller via the RS-485 interface	On	Error	N/A	OCPP+HMI	This feature is enabled according to customer requirements. If the feature is disabled, the charger and gun status will be normal, and the RED LED will be off.
44	AC type 2 energy meter error	Charger gun	ER048	AC energy meter cannot communicate with the controller.	On	Available	Error	OCPP+HMI	
45	AC type-2 overvoltage	Charger gun	ER049	AC output voltage is higher than the EV maximum voltage	On	Available	Error	OCPP+HMI	
46	AC type 2 undervoltage	Charger gun	ER050		On	Available	Error	OCPP+HMI	
47	AC type 2 overcurrent	Charger gun	ER051	AC output current is higher than the EV maximum current.	On	Available	Error	OCPP+HMI	
48	AC type 2 undercurrent	Charger gun	ER052	AC output low current fault.	On	Available	Error	OCPP+HMI	

15. MAINTENANCE

15.1 General Maintenance

- Please ensure proper ventilation around the charging units. Do not block the air inlet and outlet grilles to allow adequate heat dissipation of the charging units. Ignoring these precautions may cause the units to overheat.

WARNING: Ensure all maintenance activities comply with safety regulations and local electrical codes.

- Before detaching the CCS2 charging connector from the charging station housing, press the release button on the CCS2 charging connector.
- To ensure proper operation of the DC Fast Charger, regularly clean or replace the air filters.
- Clean the DC Fast Charger at least three times a year and always keep its external surface clean.
- Clean the cabinet exterior with a damp cloth or moist cotton towel, using only low-pressure tap water and cleaning agents with a pH between 6 and 8.
- Do not use high-pressure water jets.
- Do not use abrasive cleaning agents or tools. Improper cleaning agents may damage the coating, paint, surface finish, gloss, and durability of all external parts.
- If water enters the DC Fast Charger, immediately disconnect the power supply and contact the DC Fast Charger manufacturer for repairs.
- Please neatly coil the cable bundle around the holder and gently rewind it.
- Make sure to securely place the charging connector back into its holder.
- If there is any damage to the charging connector, cable, or its holder, please contact the DC Fast Charger manufacturer.
- Use the DC Fast Charger properly. Do not strike or scratch the cabinet or the touchscreen display.
- After maintenance with the door open, please close and lock the door.
- The LED screen must not be cleaned with organic solvents.
- If the enclosure or screen is cracked, broken, open, or shows any signs of damage, please contact the DC Fast Charger manufacturer.

WARNING: Risk of electric shock or injury. Before working on the equipment or removing any components, TURN OFF the power. Do not remove circuit protection devices or any other components until the power is in the OFF state.

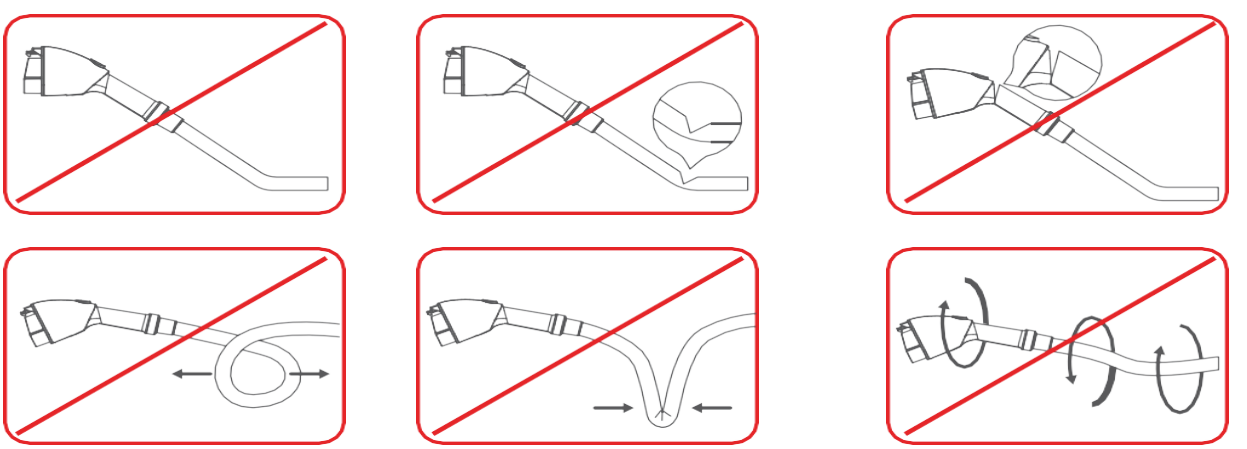
- Before performing any maintenance, switch off the power distribution cabinet supplying power to the EV charger to ensure it is disconnected from the AC mains supply. Failure to do so may result in physical injury or damage to the electrical system and charging unit.

- Before starting maintenance and turning off the main breaker, please record the status code number on the LCD monitor.

- Replace the air filter every six to twelve months.

- Inspect the charging connector (and pump, cooling unit, and cooler if present) every three months.

- Do not bend, shake, drop, or crush the charging cable. Never drive a vehicle over it.



- Ensure the minimum bending radius is not exceeded.

- After charging, immediately return the cable to the charger station's holder.

Cable:
Perform a visual inspection for defects or damage.
Check whether the charging cable is securely fastened.
Clean the charging cable with a damp cotton cloth.

15.2 Grounding Measurement

According to the provisions specified in the Grounding Regulation for Electrical Installations published in the Official Gazette dated 21.08.2001 and numbered 24500, the inspections of the following items will be conducted before provisional acceptance and during periodic maintenance:

> Operational Grounding Measurement (with Ground Resistance Tester)
> Protective Grounding Measurement (with Ground Resistance Tester)
> Panel Protective Grounding Measurement (with Ground Resistance Tester)
> Metal Body Grounding Measurement (with Ground Resistance Tester)
> Equipotential Busbar Check (Thermal Camera and Visual Inspection)
> Visual Inspections of Grounding Connections (Thermal Camera and Visual Inspection)

The above-mentioned measurements will be performed using a calibrated Ground Resistance Tester. The operational grounding resistance must be below 2 Ω, and the protective grounding resistance must be below 4 Ω.

Within the scope of these measurements, the "ANNEX-1 Grounding Measurement Report" will be filled out. In case of insufficient grounding, the grounding resistance will be brought to the required standard values in accordance with the regulation. After making the necessary corrections, the "ANNEX-1 Grounding Measurement Report" will be completed again. The report will be signed with a wet signature by EMO (Chamber of Electrical Engineers) and/or authorized personnel/institutions by EMO.

Temperature measurements of grounding connections will be performed using a thermal camera. Necessary corrections will be made for issues detected during visual and thermal inspections such as corrosion, disconnection, looseness in lugs and terminals, etc.

The requested grounding measurements will be taken at the specified points, and the form below will be filled out and delivered to the Consultant.

Following the temperature measurement by the thermal camera, the facility power will be cut off, and the connections at points with high temperature values will be disassembled and their surfaces cleaned.

During grounding inspections, it will be ensured that all metal parts are connected to the grounding conductor.

15.3 AC and DC Cable Inspection

In electric charging stations, the conductors of DC cables, AC cables, AC panel cables, and main AC panel cables will be inspected before provisional acceptance and during periodic maintenance within the following scopes:

> Lug and Connector Inspection (Thermal Camera and Visual Inspection)
> Cable Head Inspection (Visual Inspection)
> Transformer Low Voltage (LV) and High Voltage (HV) Bushing Cap Inspection (Visual Inspection)
> Cable Tray Inspection (Visual Inspection)
> Cable Tie, Heat Shrink Tubing, Steel Spiral, and Similar Equipment Inspection (Visual Inspection)
> Cable Bending Radius (Visual Inspection)
> Insulation resistance measurements will be performed for Transformer – Panel – Metal Body – Charging Unit cables using an insulation tester. (The ANNEX-2 Insulation Resistance Measurement Report will be completed.)

If the insulation value falls below the threshold value, the cable will be replaced with a new one.
The insulation threshold value will be presented to the Consultant with material approval.

Cable lug connections must be crimped and tightened using the method defined by the manufacturer. Lug connections found loose during visual and thermal inspections will be re-tightened. Connectors damaged by rain or other external factors will be replaced with new ones.

AC cables must be installed according to the bending radius specified by the cable manufacturer and the TEDAŞ (Turkish Electricity Distribution Corporation) Electric Distribution Network Energy Cables Installation Procedures and Principles. The cable bending radius will be measured during inspections.

The physical protection feature of the bushings used on the transformer low voltage (LV) and high voltage (HV) sides will be visually inspected. If adequate protection is not present, they will be replaced with new ones.

Sharp edges of cable trays will be inspected. It will be checked whether rubber or similar protective products are applied. If absent, these will be procured and installed.

Using thermal camera and visual inspections, the oxidation status, tightness, and heat shrink tubing (makaron) usage on terminal lug connections will be checked. If deemed necessary based on these inspections, the components will be replaced with new ones.

15.4 LV Panel Inspection

Inspections of all panels at the facility, including the main distribution panels that supply the charging stations, will be carried out before provisional acceptance and during periodic maintenance according to the scopes specified in the TEDAŞ Low Voltage Distribution Panels Technical Specification, visual inspections, and thermal inspections. The detailed scope of the inspections is listed below.

During LV panel inspections, all work will be performed using maximum safety measures with personal protective equipment (PPE) such as insulated mats, insulated gloves, insulated stands, etc.

When There is Energy and at Full Load	Energy from nothing
Inspection of Connections with Thermal Camera	General Electric Connection Control
Emergency Stop Button Operation Control	Internal External Cleaning Control
If available, the examination of the SCADA and Energy Quality Recorder fault history.	Switch Mechanical Assembly Control
Connections of the Residual Current Protection Relay	Toroid Connection Control
NH Knife Switch Fuse and Surge Arrester Inspection	Bar Corrosion Control
Control of compensation capacitor connections	NH Knife Switch and Surge Arrester Control
Examination of Reactive Power Relay Data	Measurement-Based Connection Control
Inspection of Connections with Thermal Camera	Compensation System Connection Control

15.5 Functional Tests

Following the inspections, the tests described below will be performed both before and after necessary corrections. Photos and reports will be submitted to the Consultant.

Residual Current Device (RCD) Functional Test

Network Monitoring Relay Functional Test

Emergency Stop Functional Test

Before inspection	Post-Maintenance
EK-1 SOIL MEASUREMENT REPORT	EK-1 SOIL MEASUREMENT REPORT
EK-2 ISOLATION RESISTANCE MEASUREMENT REPORT	EK-2 INSULATION RESISTANCE MEASUREMENT REPORT
EK-3 ENERGY ANALYZER MEASUREMENT REPORT	EK-3 ENERGY ANALYZER MEASUREMENT REPORT
EK-4 THERMAL CAMERA MEASUREMENT REPORT	EK-4 THERMAL CAMERA MEASUREMENT REPORT

Within the scope of the Vehicle Charging Station, it is expected that faults detected during inspections and any faults occurring are resolved within a maximum of 24 hours. The most common and especially critical fault points are listed below:
Thermomagnetischer Schalter

KTMŞ Fault

Surge Arrester Fault

DC and AC Cable Insulation Issues

Communication Errors

Deformations in the construction caused by external factors such as snow, wind, etc., will be reported in detail along with fault resolution and status reports to the consultant and management within 24 hours after each fault repair.

Features

	30 kW	40 kW	60 kW	80 kW	90 kW	120 kW
General Data						
Model	DCC, OPC	DCC, OPC	DCC, OPC	DCC, OPC	DCC, OPC	DCC, OPC
Power Input						
Input Current	400VAC	400VAC	400VAC	400VAC	400VAC	400VAC
Input Current	80A	80A	125A	160A	160A	200A
Entry Frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Power Factor	0,98	0,98	0,98	0,98	0,98	0,98
Measurement	Internal DC Meter	Internal DC Meter	Internal DC Meter	Internal DC Meter	Internal DC Meter	Internal DC Meter
Efficiency	96%	96%	96%	96%	96%	96%
Power Output						
Output Voltage	150-1000VDC	150-1000VDC	150-1000VDC	150-1000VDC	150-1000VDC	150-1000VDC
Exit Interface	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4
Output Current	100A	150A	200A	250A	300A	400A
Power	30 kW	40 kW	60 kW	80 kW	90 kW	120 kW
Protection						
Internal AC RCD	30mA-5A	30mA-5A	30mA-5A	30mA-5A	30mA-5A	30mA-5A
Internal DC RCD	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA
Parafudr	Type C 40kA	Type C 40kA	Type C 40kA	Type C 40kA	Type C 40kA	Type C 40kA
Interface						
Screen	7" HMI	7" HMI	7" HMI	7" HMI	15" HMI, 32" LED	15" HMI, 32" LED
Language	Turkish, English	Turkish, English	Turkish, English	Turkish, English	Turkish, English	Turkish, English
Status Indicator	LED	LED	LED	LED	LED	LED
Charging Start Options	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP
Communication						
Network Interface	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet
Protocol	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig
Environmental Factors						
Working Temperature	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)
Storage Temperature	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)
Elevation	≤2000	≤2000	≤2000	≤2000	≤2000	≤2000
Mechanical Properties						
Protection Class IP (IEC 60529)	IP54	IP54	IP54	IP54	IP54	IP54
Protection Class IP (IEC 60529)	IK10	IK10	IK10	IK10	IK10	IK10
Cooling	Natural+Fan	Natural+Fan	Natural+Fan	Natural+Fan	Natural+Fan	Natural+Fan
Cable Length	5m	5m	5m	5m	5m	5m
Measures (W x H x D)	750x1200x300 mm	750x1200x300 mm	750x1550x320 mm	750x1550x320 mm	750x2000x600 mm	750x2000x600 mm
Weight	120 kg	120 kg	190 kg	240 kg	240 kg	332 kg
Conformity						
Certificate	CE	CE	CE	CE	CE	CE
Standards	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3
Assembly Type	Floor	Floor	Floor	Floor	Floor	Floor

Features

	160 kW	180 kW	240 kW	320 kW	400 kW
General Information					
Model	DCC, OPC	DCC, OPC	DCC, OPC	DCC, OPC	DCC, OPC
Input Power					
Input Voltage	400VAC	400VAC	400VAC	400VAC	400VAC
Input Current	250A	300A	400A	500A	630A
Entry Frequency	50Hz	50Hz	50Hz	50Hz	50Hz
Power Factor	0,98	0,98	0,98	0,98	0,98
Measurement	Internal DC Meter	Internal DC Meter	Internal DC Meter	Internal DC Meter	Internal DC Meter
Efficiency	96%	96%	96%	96%	96%
Output Power					
Output Voltage	150-1000VDC	150-1000VDC	150-1000VDC	150-1000VDC	150-1000VDC
output interface	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4	CCS2 DC Modus 4
Output Current	500A	500A	500A	600A	600A
Power	160 kW	180 kW	240 kW	320 kW	400 kW
Protection					
Internal AC RCD	30mA-5A	30mA-5A	30mA-5A	30mA-5A	30mA-5A
Internal DC RCD	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA	DC Insulation 6mA
Parafudr	Type C 40kA	Type C 40kA	Type C 40kA	Type C 40kA	Type C 40kA
User Interface					
Screen	15" HMI, 32" LED	15" HMI, 32" LED	15" HMI, 32" LED	15" HMI, 32" LED	15" HMI, 32" LED
Language	Turkish, English	Turkish, English	Turkish, English	Turkish, English	Turkish, English
Status Indicator	LED	LED	LED	LED	LED
Charging Start Options	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP	RFID Card, OCPP
Interface					
Network Interface	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet	4G, Wi-Fi, Ethernet
Protocol	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig	Unterstützt OCPP 1.6J, auf OCPP 2.0.1 upgradefähig
Environmental Factors					
Operation Temperature	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)	(-30) to (+50)
Storage Temperature	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)	(-40) to (+80)
Elevation	≤2000	≤2000	≤2000	≤2000	≤2000
Mechanical Properties					
Protection Class IP (IEC 60529)	IP54	IP54	IP54	IP54	IP54
Impact Protection IK (IEC 62262)	IK10	IK10	IK10	IK10	IK10
Cooling	Natural+Fan	Natural+Fan	Natural+Fan	Natural+Fan	Natural+Fan
Cable Length	5m	5m	5m	5m	5m
Dimensions (W x H x D)	750x2000x600 mm	750x2000x800 mm	750x2000x900 mm	750x2000x900 mm	750x2000x900 mm
Weight	362 kg	392 kg	640 kg	670 kg	700 kg
Conformity					
Certificate	CE	CE	CE	CE	CE
Standards	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3	IEC 61851-1 IEC 61851-21-2 IEC 61851-23 IEC 62196-3
Assembly Type	Floor	Floor	Floor	Floor	Floor