MaxiCharger DC Fast

Installation and Operation Manual

Version 3.1

UL Model

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For Services and Support (24/7):

Web: www.autelenergy.us

Tel: (844) 765-0150

Email: evsupport@autel.com

Address: 36 Harbor Park Drive, Port Washington, New York, USA

For technical assistance in all other markets, please contact your local distributor.

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1. Using This Manual

This manual describes the installation and use of the MaxiCharger DC Fast 120kW (DF120) and MaxiCharger DC Fast 240kW (DF240). Prior to installation, read through this manual to become familiar with the instructions of this MaxiCharger to ensure a successful installation and smooth operations.

1.1 Signal Word



DANGER

Indicates an imminently hazardous situation with a high risk level which, if the danger is not avoided, will cause death or serious injury.



WARNING

Indicates a potentially hazardous situation with moderate risk level which, if the warning is not obeyed, can cause death or serious injury.



CAUTION

Indicates a potentially hazardous situation with a medium risk level which, if the caution is not obeyed, may cause minor or moderate injury or damage to the equipment.



NOTICE

Provides helpful information such as additional explanations, tips, and comments.

1.2 Target Group

This documentation is intended for:

- Owner of the MaxiCharger (see *2.2 Owner Responsibilities*)
- Installation Engineer (see *2.3 Installation Engineer Qualifications*)

1.3 Revision History

Version	Date	Descriptions
V1.0	2022.05	Initial version
V2.0	2023.04	Complete manual overhaul
V2.1	2023.06	Updated charging module installation locations
V3.0	2024.02	Updated to v2.0 cabinet
V3.1	2025.09	Added environmental requirements, information of the maintenance and instructions. Updated a method of forklift truck for installation

1.4 Terminology

Term	Definition
AC	Alternating current
CCS	Combined Charging System, a standard charging method for electric vehicles
CCU	Charging Control Unit: a control unit used to communicate with the BMS (Battery Management System) and control the power delivery to the EV
CHAdeMO	Abbreviation of CHArge de MOve, a standard charging method for electric vehicles
DC	Direct current
EV	Electric vehicle
OCPP	Open charge point protocol, open standard for communication with charge stations
RCBO	Residual current breaker with overload
RCD	Residual current device; a device that breaks an electrical circuit when it detects a current leakage
RFID	Radio-frequency identification; a method of charging authentication
SPD	Surge protection device, a device intended to protect electrical devices from voltage spikes in AC circuits
TCU	Transaction Control Unit; intelligent hardware to handle the human-machine interface, metering, transaction, and communication with back office

2. Safety

The safety messages herein cover situations of which Autel is aware. Autel cannot know, evaluate or advise you as to all of the possible hazards. You must be certain that any condition or service procedure encountered does not jeopardize your personal safety.

- Preview the standard operating procedures and ensure that local building and electrical codes are reviewed before installing the MaxiCharger.
- Read the manual before installing or using the MaxiCharger.
- Do not install or use the MaxiCharger if the enclosure is broken, cracked, open, or has any other indication of damage.
- The information provided in this manual in no way exempts the user of responsibility to follow all applicable codes or safety standards.
- This document provides instructions for the MaxiCharger and should not be used for any other product. Before installation or use of this equipment, review this manual carefully and consult with a licensed contractor, licensed electrician or trained installation expert to ensure compliance with local building codes and safety standards.

2.1 Safety Warnings

- Ensure there is no voltage on the AC input cables during the complete installation procedure.
- Keep unqualified personnel at a safe distance during installation.
- All electrical wires used in the installation must comply with National Electric Code (NEC) to meet the rated current and voltage demand.
- Ensure the load capacity of the grid is in accordance with the MaxiCharger.
- Ensure the MaxiCharger is connected to a grounded, metal, permanent wiring system. Otherwise, an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product.
- Ensure the connections to the MaxiCharger comply with all applicable local rules.
- Ensure the wiring inside the MaxiCharger is protected from external factors. The cabinet doors should open and close freely without obstructing the wiring.
- Ensure there is no damage to the gasket that may cause water intrusion.
- Protect the MaxiCharger with safety devices and measures that the local rules specify.
- Installation personnel must have the correct protective equipment such as protective clothing, safety gloves, safety shoes, and safety glasses.

- A listed current-limiting overcurrent protective device shall be installed upstream of the equipment in lieu of a knife switch. The current-limiting device shall be rated and installed in accordance with NEC requirements to limit the let-through current and reduce potential fault energy.
- Do not install, use or maintain the equipment under the following circumstances:
  - Extreme weather (heavy rain, snow, hail, etc.);
  - Thunderstorm which brings a risk of lightning;
  - Strong wind (wind speed greater than 10m/s);
  - When the relative humidity is greater than 95% or when there is condensation on the surface or in the inner part of the equipment;
  - When there is a lot of dust, or corrosive, flammable, or explosive gases around;
  - When the enclosure, terminal block, or operating area is damp, frozen or submerged;
  - When the floor is slippery, or there is water accumulation or a risk of electric shock.
- If there is condensation in the inner part of the equipment, do not operate it until the inner heating system works for at least 4 hours to remove the condensation.
- Stop the operation and conduct inspection immediately whenever there is a sign of personal injury or equipment damage.

2.2 Owner Responsibilities

The owner runs the MaxiCharger for commercial or business use or has authorized a third party to use it. The owner should protect the user, other employees or third parties when the MaxiCharger is in use. The owner bears the responsibilities as follows:

- Know and obey the local codes and ordinances.
- Ensure all employees and third parties are qualified to operate the MaxiCharger.
- Ensure the MaxiCharger has installed the protective devices.
- Ensure all the protective devices are installed after installation or maintenance.
- Ensure the space around the MaxiCharger is sufficient to carry out installation or maintenance work.
- Ensure there is a plan in place in case of an emergency.
- Ensure there are no safety hazards on the site.
- Have a site operator available who undertakes the safe operation of the MaxiCharger and all the coordination of work if the owner takes no part in the work.
- Ensure the installation engineer follows the local codes and ordinances, the installation instructions, as well as the specifications of the MaxiCharger.

2.3 Installation Engineer Qualifications

- Fully understands the equipment and its safe installation procedures.
- Qualified according to local regulations to carry out the installation work.
- Able to follow all the local regulations and this manual to complete the installation of the MaxiCharger.

2.4 Usage Instructions

Do not operate the MaxiCharger and immediately contact the manufacturer if any of the following situation arises:

- Damage on the enclosure, charging cable or connector
- Lightning has struck the MaxiCharger
- Fire or flames at or near the MaxiCharger
- Any sign of water damage on the MaxiCharger

2.5 Signs on the MaxiCharger

Symbol	Risk Description
	General risk
	Hazardous voltage that gives risk of electrocution
	Waste from electrical and electronic equipment
	Hot surface that gives risk of burn injuries

2.6 Disposal Instructions

Potential hazardous substances of the MaxiCharger can have a negative impact on the environment and human health if the waste is not handled properly. Dispose any waste as needed to protect the environment and promote the reuse and recycling of the materials.

2.7 Cyber Security

NOTICE

This section is applicable to the Ethernet and Wi-Fi connection.

The MaxiCharger can use a network interface for connection and information and data communication. The owner bears the responsibility of a secure connection between the MaxiCharger and the owner's network or any other networks.

Appropriate measures shall be taken by the owner to shield the MaxiCharger, the network, the system, and the interface from any security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. These measures may include firewall building, authentication methods, data encryption, and anti-virus programs installation, etc.

Autel is not liable for damages and/or losses pertaining to the security breaches described above.

3. General Introduction

This MaxiCharger is designed to charge an electric vehicle (hereinafter called EV). The MaxiCharger provides you with safe, reliable, fast, and smart charging solutions.

Intended Use

This MaxiCharger is intended for the DC charging of EVs. It is intended for both indoor and outdoor use.

- Fleet
- Highway
- Commercial Parking
- Others



DANGER

- The equipment must be operated as described in this manual or other related documents released by Autel. Failure to comply may result in human injury and/or damage to the property.
- Use the equipment only as intended.



NOTICE

The images and illustrations depicted in this manual may differ slightly from the actual product.

3.1 Product Overview (Outside)

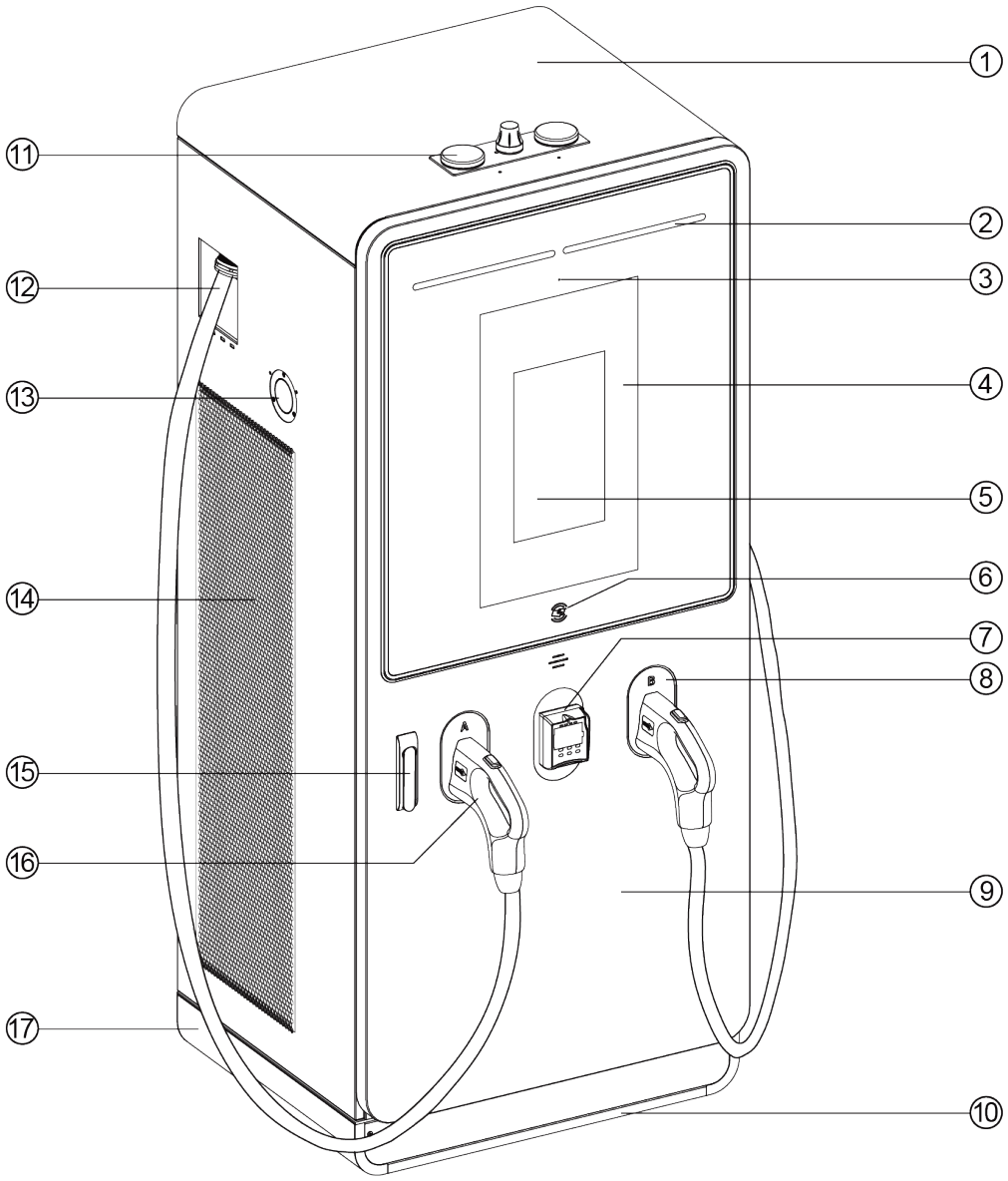


Figure 3-1 Product Overview (Outside)

1. Main Cabinet
2. LED Indicator
3. Ambient Light Sensor
4. Tempered Glass
5. Touchscreen
6. RFID Reader
7. POS Device
8. Holster
9. Front Door
10. Front Base Cover
11. Antenna
12. Waterproof Cable Fixing Connector
13. Emergency Stop Button
14. Vent
15. Handle Lock
16. Connector
17. Base

NOTICE

Autel can deliver the MaxiCharger with different payment terminals. The available options vary depending on the region of the installation. Consult Autel's customer service to obtain more information about the different payment options.

Table 3-1 Indicator Descriptions

Charging Status	Color	Description
Standby Mode	Solid Green	A connector is available.
EV Connected	Solid Blue	An EV is connected to the MaxiCharger.
Charging	Illuminating Green in Turn	Indicates the charging progress.
Charging Completed	Flashing Green	An EV is fully charged or has stopped charging.
Reservation	Solid Green	The MaxiCharger is reserved.
Error	Solid Red	An error has occurred.

3.2 Product Overview (Inside)

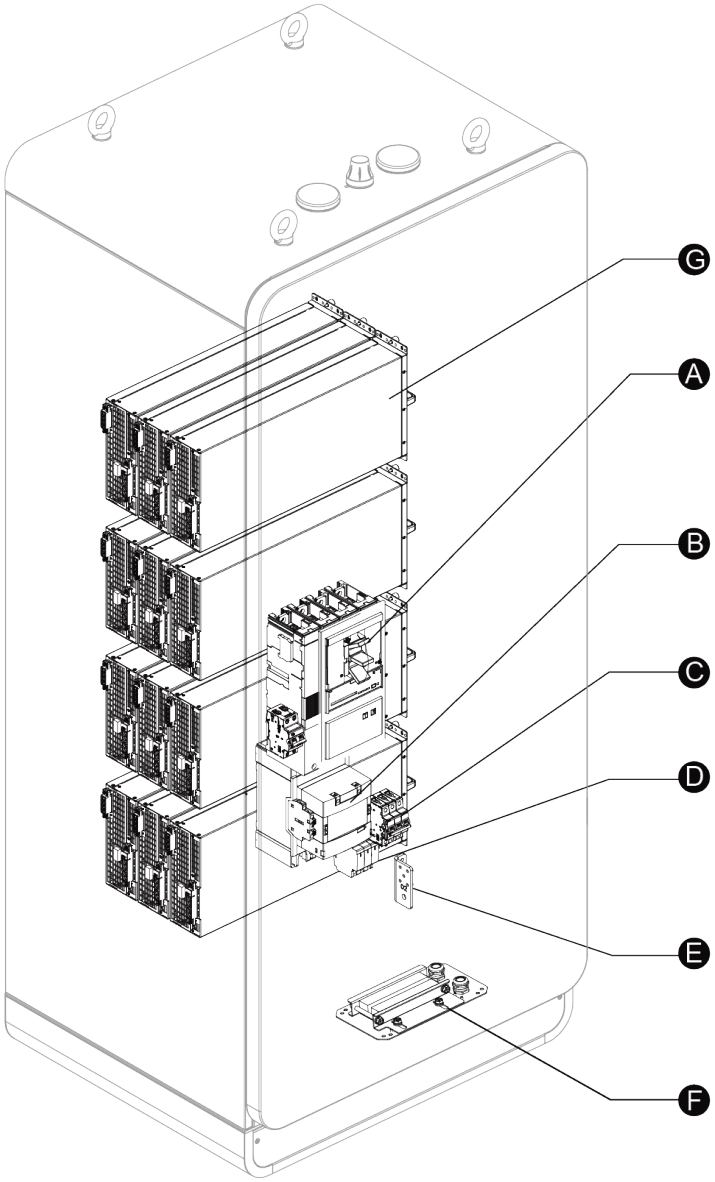


Figure 3-2 Product Overview (Inside)

A. Main Breaker — connects/disconnects the charging module
B. AC Input Fuse
C. Auxiliary AC Fuse
D. RCD Breaker
E. PE Busbar — connects the PE cable
F. Cable Gland Plate
G. Charging Module — varies depending on power output

3.3 Product Dimensions

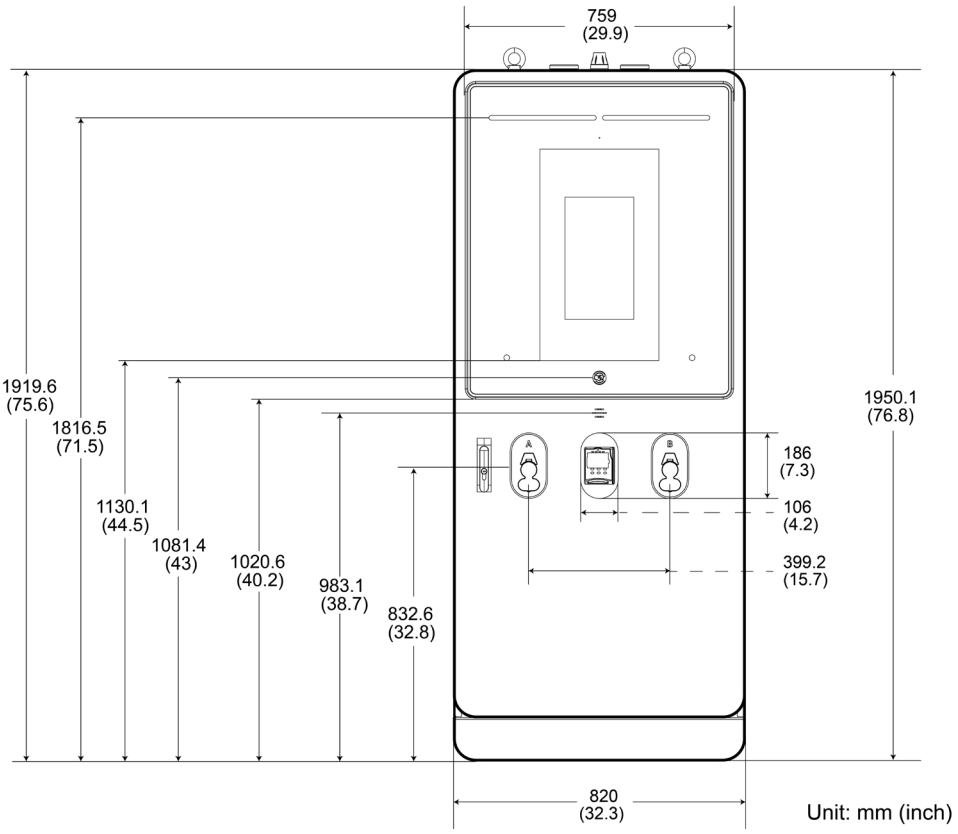


Figure 3-3 DF120/DF240 Dimensions (Front View)

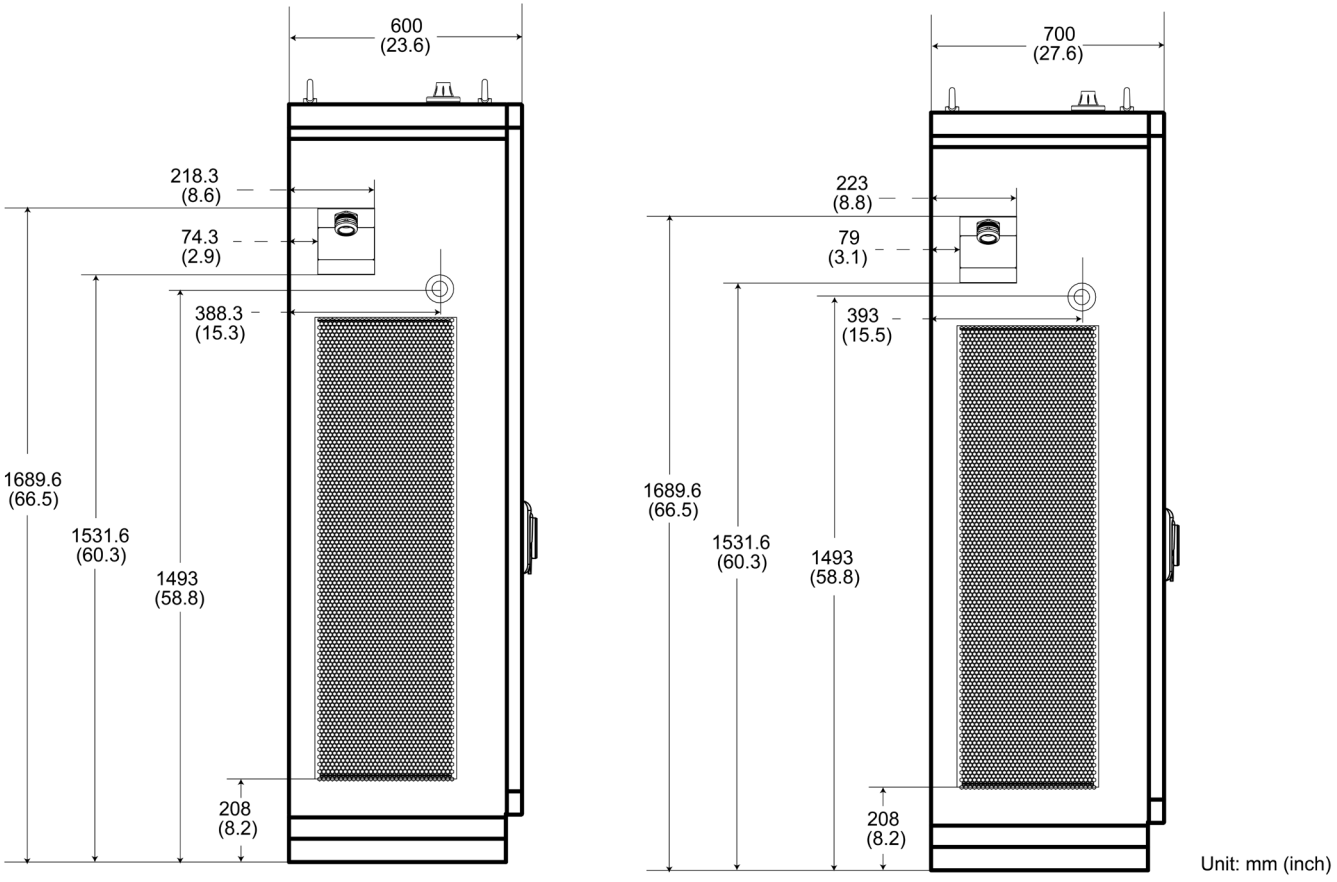


Figure 3-4 DF120/DF240 Dimensions (Side View)

3.4 Principle Diagram

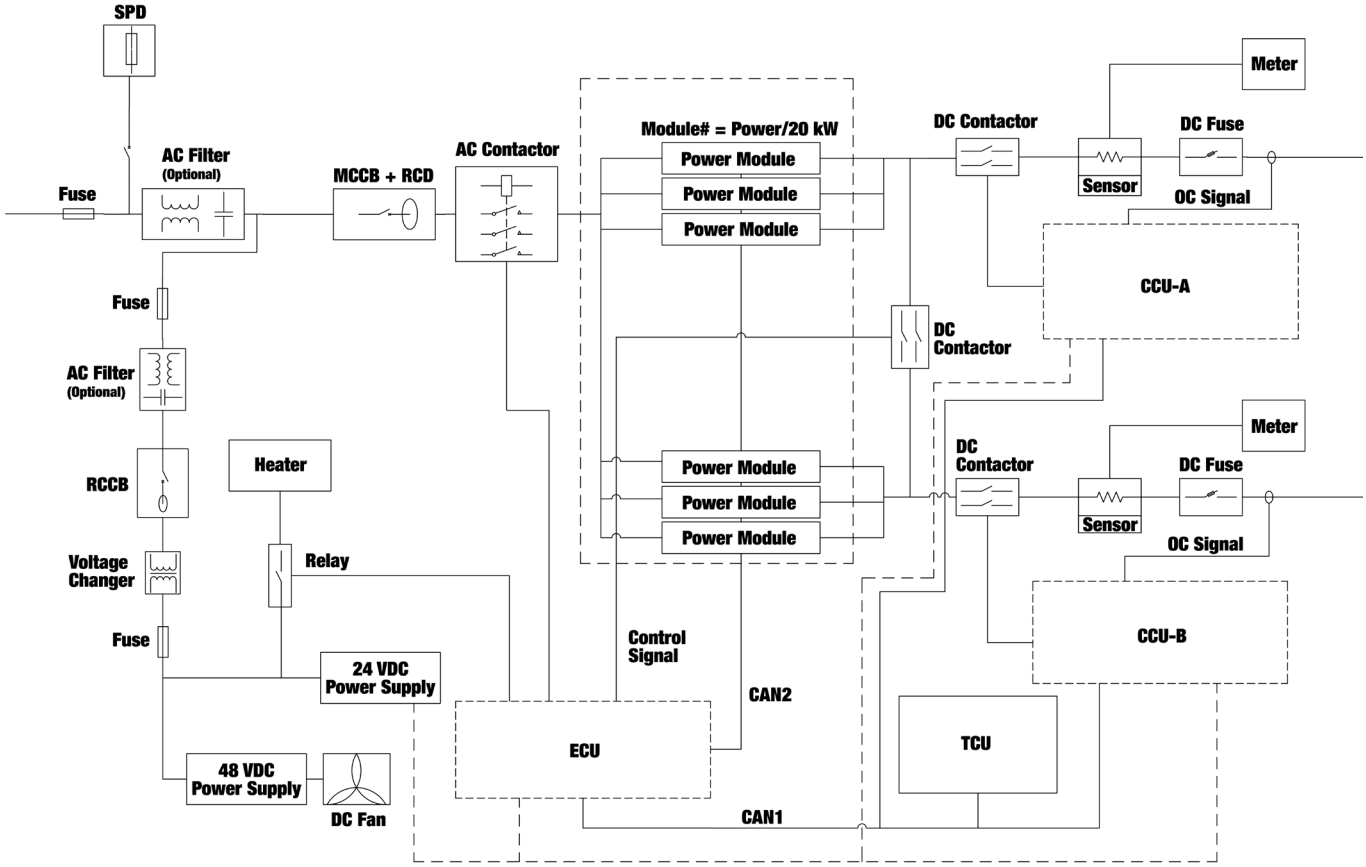


Figure 3-5 Principle Diagram

4. Preparation

4.1 Installation Site Design

An installation site design is prerequisite for determining conduit and wiring requirements from the panel to the proposed parking spaces, as well as for measuring cellular signal strength and identifying suitable locations for any necessary cellular signal booster equipment.



CAUTION

Always check local codes or consult an engineer to ensure the site is prepared in accordance with all applicable regulations. Local authorities might not permit a unit to operate if it is not installed to code.

General installation site design procedure:

1. Select a suitable site. Refer to *Location Requirements.*
2. Complete the electrical design. Refer to *Electrical Design.*
3. Prepare the cables, including the AC input wire, PE wire, and Ethernet cable (if no cellular network is available).
4. Ensure that the cable slack is sufficient to guide the cables into the cabinet.
5. Prepare the foundation for the cabinet. Refer to *Preparing the Foundation.*

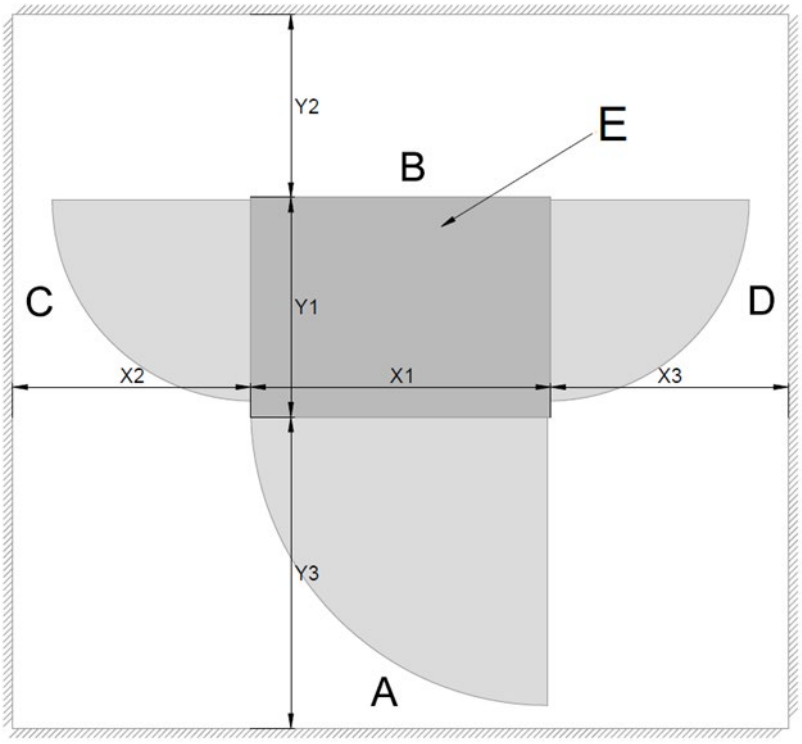


NOTICE

- The cables enter the cabinet from the bottom.
- Ensure the maximum opening of the cabinet inlet can sufficiently fit all cables.

4.1.1 Location Requirements

- The MaxiCharger requires an installation space of 95 x 81 inches (2420 x 1950 mm, for DF120) or 103 x 81 inches (2620 x 2050 mm, for DF240) in order to ensure the normal operation and airflow around the MaxiCharger. The space is calculated as follows:



A. Front side of the MaxiCharger

B. Rear side of the MaxiCharger

C. Left side of the MaxiCharger

D. Right side of the MaxiCharger

E. Cabinet

Table 4-1 Space Requirements

Parameter	DF120		DF240	
	in	mm	in	mm
X1	32.3	820	32.3	820
X2	31.5	800	35.4	900
X3	31.5	800	35.4	900
Y1	23.6	600	27.6	700
Y2	19.7	500	19.7	500
Y3	33.5	850	33.5	850

- Ensure the charger's installation location can sufficiently reach the parked EV with the chosen charging cable length. The standard length of a charging cable is 18 feet (5.5-meter), but 14.8 or 24.6 feet (4.5- or 7.5-meter) cables are also available.
- Ensure that the site complies with the relevant usability standards, such as ADA and DIN 18040:
  - Limit the curb heights.
  - Take into account the limited reach of a wheelchair user.
- Determine appropriate ground anchoring locations where concrete exists or can be installed (no asphalt surfaces).
- Consider locations where stations can be easily added in the future.
- Determine optimum conduit layout to minimize linear conduit costs to multiple parking spaces. If possible, avoid or minimize trenching requirements.
- Evaluate existing electrical infrastructure to determine if the existing utility service and electrical panel capacity is sufficient. Identify costs for any necessary upgrades and/or a new dedicated electrical panel. A certified electrician or project engineer is highly recommended when it comes to evaluating available capacity and identifying required upgrades.
- If a dedicated EV electrical panel is required, choose a panel location in close proximity to the existing electrical supply.
- Measure cellular signal strength to ensure adequate cellular coverage at the installation site. Cellular repeaters may be required for underground or enclosed parking structures to ensure adequate signal strength.
- Avoid locations under trees where sap, pollen or leaves may fall on the MaxiCharger increasing the station's maintenance requirements.
- Perpendicular parking stalls are recommended to allow a vehicle to enter front-first or rear-first, accommodating the various charging port locations on different EV's.



NOTICE

While Autel tests the MaxiCharger with a majority of upcoming vehicles, we cannot guarantee the port locations of future vehicles and cannot warrant the configurations proposed will work for all vehicles.

- Choose adjacent parking spaces in an area with adequate lighting.
- Consider how easily drivers can find the stations they need to access.
- Check local requirements for accessibility and pathway width, sometimes called "path of travel", to ensure station placement does not restrict sidewalk use.
- Pull-through parking (gas station model) is not recommended.

4.1.2 Electrical Design

The MaxiCharger requires underground wiring. The conduit and wire size are based on the length of runs from the electrical panel to the installation site. The wiring must be run through the conduit or ducting, or armored cable must be used to comply with local electrical codes. Consult the national and local codes or a service engineer for the quality, grade, and size of the conduit or cable.

CAUTION



As a continuous load device, the electrical branch circuits to the MaxiCharger must be sized at 125% of the load on each leg of a 3-phase panel for North America installations, in accordance with National Electric Code requirements. For other regions, refer to local code.

4.1.2.1 Use of RCD

The use of RCD is not recommended as RCDs can cause a nuisance trip during transient conditions such as power restoration, line surge or line dips.

To reduce the risk of electric shock, the MaxiCharger provides the following protective measures:

1. Galvanic isolation between the AC input and DC output so that current does not flow to earth.
2. The output isolation monitor interrupter (IMI). As UL2231-1 requires, the MaxiCharger has the IMI installed, which is evaluated during operation as part of certification testing.

However, the use of RCD is unavoidable on the MaxiCharger. Adjust the following settings to minimize nuisance trips:

1. Type: A, F or B (the latter two are preferred)
2. Trip threshold: 100 mA
3. Trip delay: 100 ms

4.1.2.2 Grounding Requirements

Ensure that a grounding conductor that complies with local codes is properly grounded to earth at the service equipment or, when supplied by a separate system, at the supply transformer.

4.1.2.3 Wiring Requirements

Refer to *Table 9-7 AC Input Specifications* for recommended wire gauges. If you plan to use a larger gauge wire to accommodate a long run, reduce the wire size at the local external disconnect.

Refer to *Technical Specifications* of the MaxiCharger to ensure that the service wiring at the installation location supports the MaxiCharger power requirements:

- Neutral conductors as required by region (a Neutral connection is not required for the MaxiCharger operation)
- AC conductors (L1, L2, and L3) and ground should refer to the specifications in *9.5 AC Input and DC Output Specifications*.

4.1.3 Preparing the Foundation

1. Dig a hole according to the foundation dimensions. The recommended dimensions of the hole are:

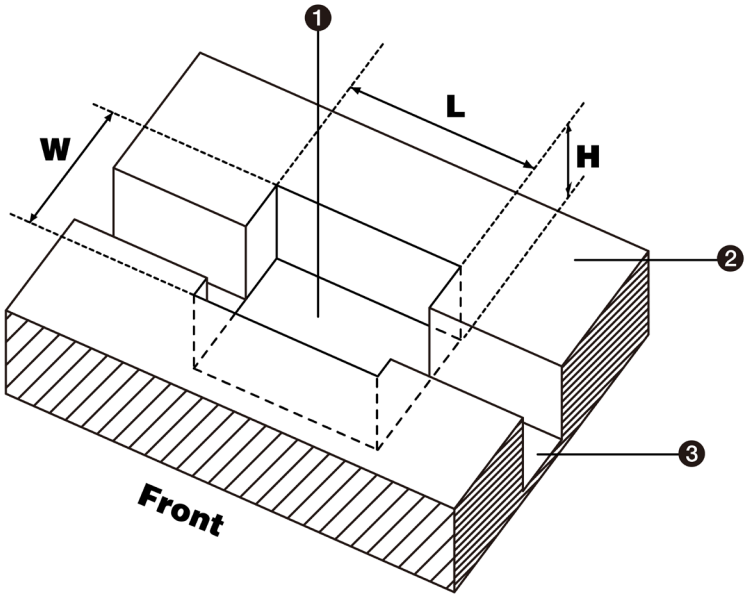
- For DF120: 32 x 25 x 20 inches (820 x 640 x 500 mm) (L x W x H)
- For DF240: 32 x 29 x 20 inches (820 x 740 x 500 mm) (L x W x H)

See *Figure 4-1 Digging a Hole*.

2. Trench and excavate an opening to accommodate the wiring conduit.

CAUTION

The outer diameter of conduit must not exceed the sizes specified in *Table 4-3 Foundation Specifications 2*. Conduit stub-ups should not be higher than 2.4 inches (60 mm) above the surface of the foundation.



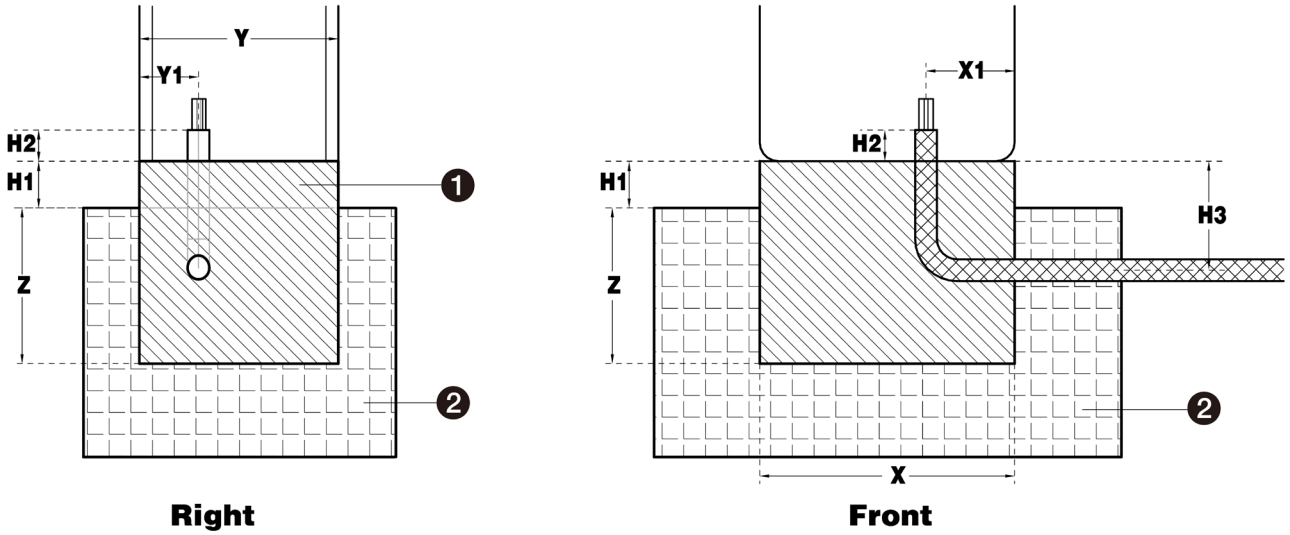
1. Foundation Size
2. Surface
3. Cable Tunnel

Figure 4-1 Digging a Hole

3. Run the conduit to the designated location.

4. Pour the concrete into the hole and wait until concrete has hardened. Verify that the foundation should be 5.9 inches (150 mm) higher than the surface. The concrete should be at a rated minimum of 2500 PSI and should be level with the rest of the surface.

5. Feed the AC input cables and the Ethernet cable (if available) out of the marked area (**C**). Ensure a length of at least 2 feet (61 cm) is available above the foundation to allow wiring to reach the AC terminals. See *Figure 4-2 Preparing the Foundation* and *Figure 4-3 Foundation Diagram*.



1. Foundation
2. Land

Figure 4-2 Preparing the Foundation

Table 4-2 Foundation Specifications 1

Parameter	Specifications			
	DF120		DF240	
	inch	mm	inch	mm
X	32.3	820	32.3	820
Y	25.2	640	29.1	740
Z	19.7	500	19.7	500
X1	10.8	275	11.2	285
Y1	7.5	190	5.9	151
H1	5.9	150	5.9	150
H2	3.9	100	3.9	100
H3	13.8	350	13.8	350

6. Place the drilling template on the concrete surface, aligning with the marked area (**C**). Mark the four mounting holes (**D**) and remove the drilling template.

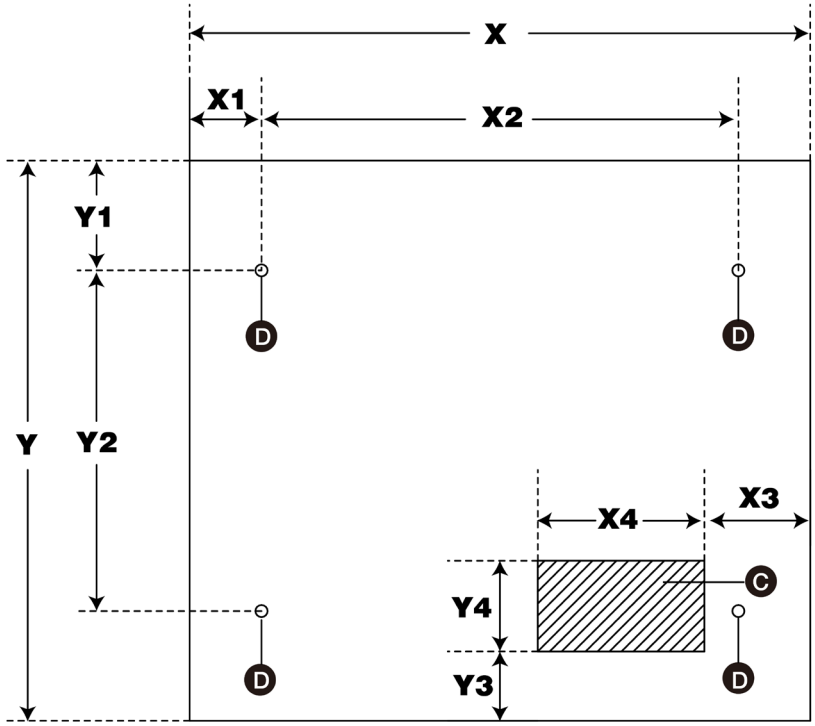


Figure 4-3 Foundation Diagram

Table 4-3 Foundation Specifications 2

Parameter	Specifications			
	DF120		DF240	
	inch	mm	inch	mm
X	32.3	820	32.3	820
Y	25.2	640	29.1	740
X1	3.7	95	3.7	95
X2	24.8	630	24.8	630
X3	5.5	140	5.5	140
X4	8.7	220	8.7	220
Y1	3.7	94.3	5.7	144.3
Y2	17.7	450	17.7	450
Y3	5.2	131	3.6	91.5
Y4	4.7	120	4.7	120

7. Drill into the holes with depth over 4.3 inches (110 mm) and 4/5 inch (20 mm) in diameter. Clean any debris using a brush.

8. Embed four M16 x 150 expansion bolts into the holes, leaving 2.4 inches (60 mm) above the ground. Then remove the nuts and gaskets and set them aside.

9. Cut the wires to the correct length.

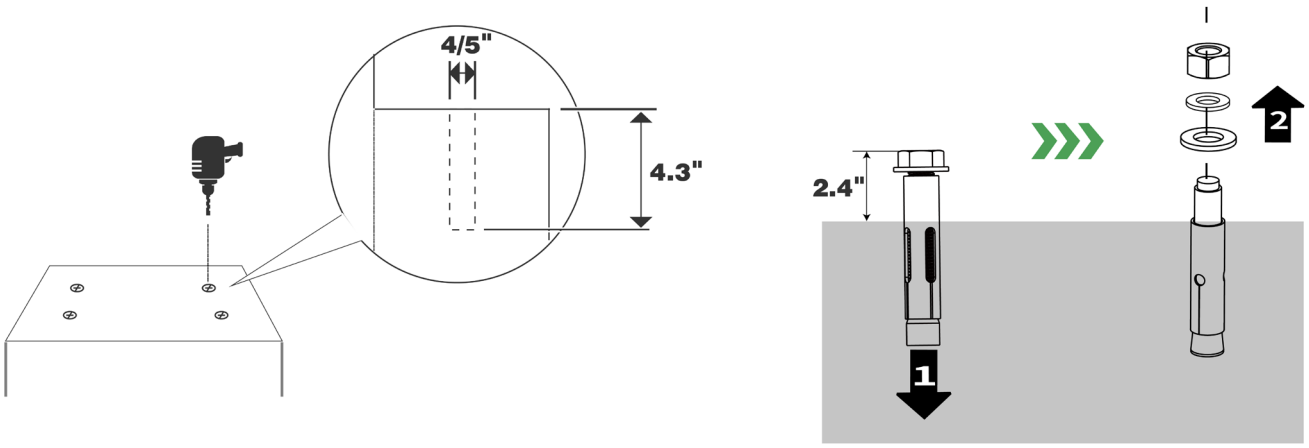


Figure 4-4 Installing the Bolts

NOTICE

- Depth of conduit may vary depending on the site. The diagram above does not specify the conduit depth, as long as the stub-ups are vertical and placed correctly.
- Fill the foundation with gravel to prevent rodents from entering the MaxiCharger.

4.2 Unpacking

1. Check the tilt and inversion indicators and Shockwatch.

- Observe the sensors attached to the package for the degree of the tilt and complete overturn. If the sensors demonstrate over 30° of tilt or total overturn, note on bill of lading and inspect the product.
- If the Shockwatch displays red, contact Autel customer service and the delivery personnel, and then inspect the product for any damage. **Do not** accept the delivery until the inspection is complete and no damage is found.

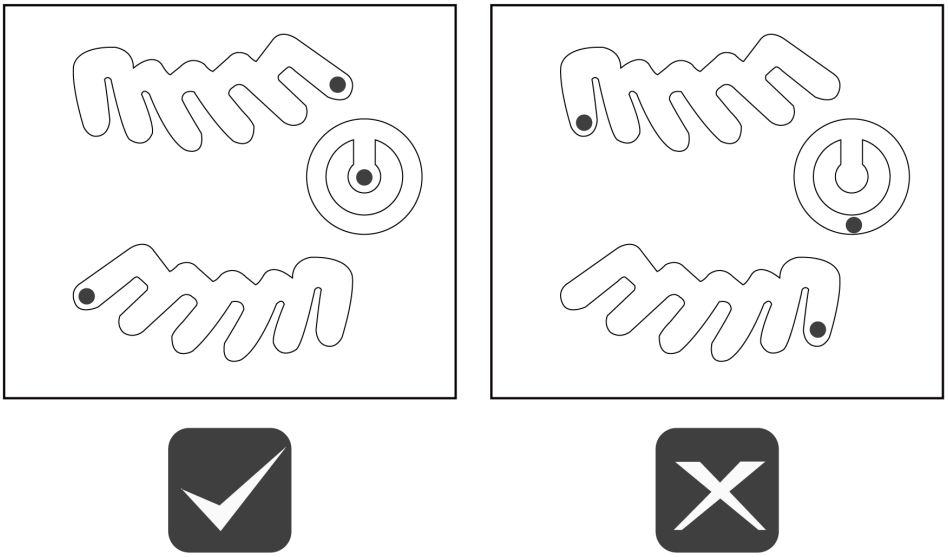


Figure 4-5 Tilt and Inversion Indicators

2. Remove the outside packaging and interior protection materials using appropriate tools.

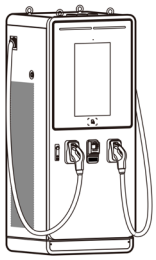
3. Inspect the MaxiCharger and the parts for installation for damage. If you find damage or the parts are not consistent with the order, contact a local representative.

4. Ensure that all parts are delivered according to the order.

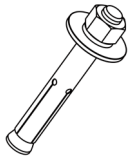
4.3 Packing List

Packing List for DF120

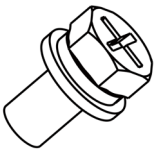
MaxiCharger
1 PC



Expansion Bolt
(M16 x 150)
4 PCS



Bolt (M10 x 30)
7 PCS



Flat Gasket (Size 10)
10 PCS



Hex Nut (M10)
7 PCS



Screw (M4 x 10)*
24 PCS



Bolt (M8 x 25)
2 PCS



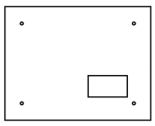
Eye Bolt (M16)
4 PCS



Cabinet Door Key
2 PCS



Drilling Template
1 PC

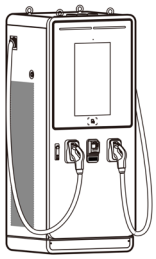


Packing List
1 PC

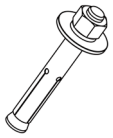


Packing List for DF240

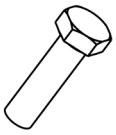
MaxiCharger
1 PC



Expansion Bolt
(M16 x 150)
4 PCS



Bolt (M10 x 35)
7 PCS



Flat Gasket (Size 10)
14 PCS



Hex Nut (M10)
7 PCS



Spring Washer
(Size 10)
7 PCS



Bolt (M8 x 25)
2 PCS



Screw (M4 x 10)*
48 PCS



Cabinet Door Key
2 PCS



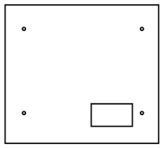
Eye Bolt (M16)
4 PCS



Packing List
1 PC



Drilling Template
1 PC



* These screws are only provided for chargers without charging modules installed.

4.4 Recommended Tools

The following tools are recommended when installing the MaxiCharger.

- Multimeter
- Spirit Level
- Tape Measure
- Brush
- Cellular Signal Detection Device
- Wire Stripper
- Cable Lug
- Crimping Plier
- Power Drill
- 5/8” (16 mm) Drill Bit
- PH2 Screwdriver
- Monkey Wrench
- Hex Wrench
- Open-end Spanner
- Socket Wrench (5/8”(16 mm) , 1/5” (5 mm), 5/16” (8 mm))



NOTICE

The tools mentioned above are not part of the delivery. Ensure the professional personnel have all the listed tools for installation.

5. Installation

5.1 Before Installing

Prior to installation, check the following:

- The installation site is prepared.
- The appropriate service wiring, circuit protection, and metering is in place at the installation site.
- A grounding conductor that complies with local codes is properly grounded to earth.
- The cellular coverage at the installation site should be consistently strong when choosing to communicate over cellular network for the MaxiCharger. Use a cellular signal detection device to ensure the signal is above -90 dBm. If the signal is below -90 dBm, install repeaters to boost the strength of the cellular signals. Repeaters are often required when installing the MaxiCharger in an underground environment such as an underground garage or enclosed parking space.
- There is enough space available around the installation site to accommodate using a forklift or other lifting equipment, to unpack, and to allow people to work around freely.
- All the parts and tools are available.
- Install a disconnect switch or current-limiting device. The installation shall specify the type and rating of the fault-clearing device to be used. The device shall be capable of interrupting fault current within a maximum clearing time of 0.05 seconds. All equipment shall be installed in accordance with NEC provisions.



CAUTION

A supplement surge protection breaker must be installed at the service panel if the installation area experiences frequent thunderstorms.

General Installation Procedure:

1. Take into consideration of the center of gravity of the MaxiCharger when moving the equipment. Refer to *Center of Gravity*.
2. Move the cabinet to the installation site. Refer to *Moving the Cabinet to the Site*.
3. Install the cabinet. Refer to *Installing the Cabinet*.
4. Complete the electrical wiring. Refer to *Electrical Wiring*.
5. Connect the MaxiCharger to the internet. Refer to *Connecting to the Internet*.
6. Install the charging module (optional). Refer to *Installing the Charging Module*.
7. Finish the installation. Refer to *Finishing Installation*.

5.2 Center of Gravity

Please see the figure below for the center of gravity when installing the MaxiCharger.

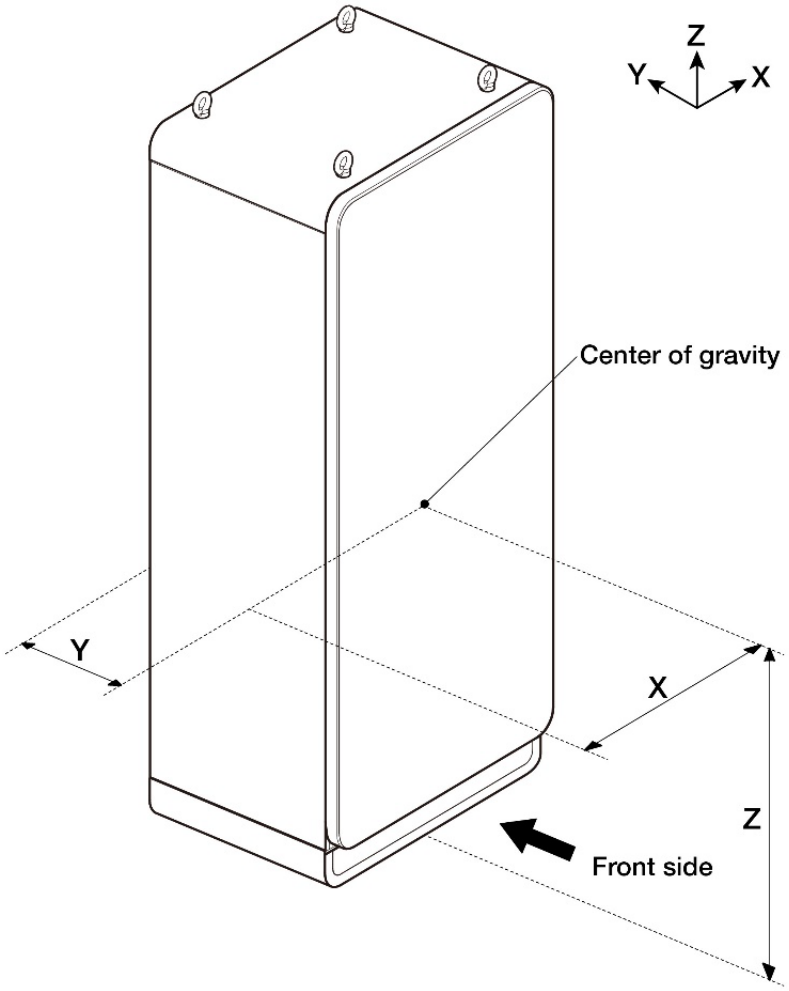


Figure 5-1 Center of Gravity

Parameter	Specifications			
	DF120		DF240	
	inch	mm	inch	mm
X	15.8	400	15.8	400
Y	13.0	330	11.8	300
Z	33.1	840	33.1	840

5.3 Moving the Cabinet to the Site

There are two ways to move the cabinet to the construction site:

- Hoist
- Forklift

WARNING

Risk of pinching or crushing. Heavy Equipment.



- ➢ Ensure that the hoisting equipment or forklift truck can lift the cabinet safely.
- ➢ Obey the safety instructions that apply to the hoisting equipment or forklift truck.
- ➢ Take into account the dimensions, mass, and center of gravity of the MaxiCharger.

CAUTION



- ➢ DO NOT drop the cabinet or subject it to strong impact.
- ➢ DO NOT exceed a tilting angle of 30°.
- ➢ Ensure that there is no dynamic force on the hoisting points.

5.3.1 Hoisting the Cabinet

STEP 1

Remove the four screws using a screwdriver to remove the front and rear base covers (**A**). **Set them aside.**

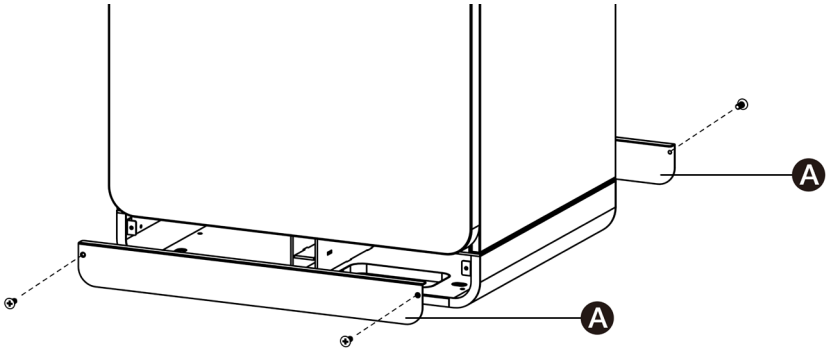


Figure 5-2 Removing the Base Covers

STEP 2

Remove the cabinet from the pallet by removing the hex nut (**A**), spring washer (**B**), flat gasket (**C**), expansion bolt (**D**), and flat gasket (**E**)**.**

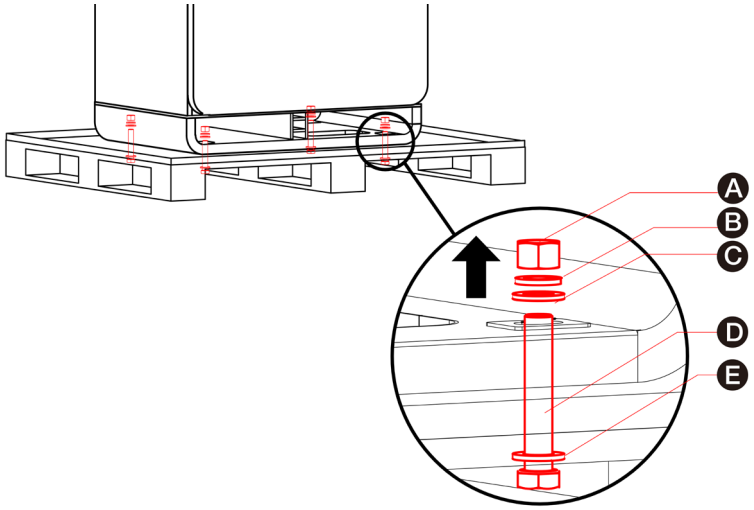


Figure 5-3 Removing from the Pallet

STEP 3

Remove the four plugs from the top of the cabinet using an open-end spanner. **Set them aside.**

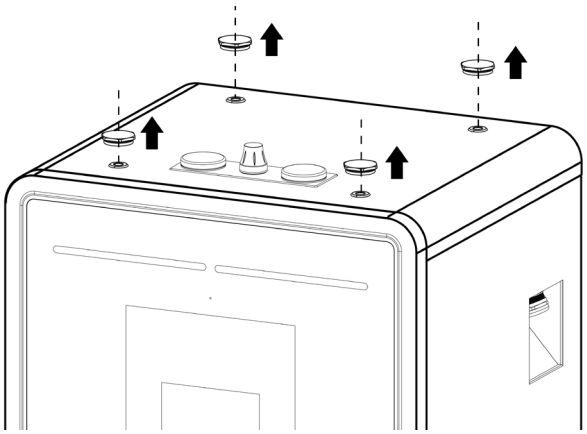


Figure 5-4 Removing the Four Plugs

STEP 4

Install four M16 eye bolts to the four lifting holes. Then you can choose one way of construction presenting below according to the requirement.

Connect the cables of the hoisting equipment to the eye bolts. Then move the cabinet to the construction site.

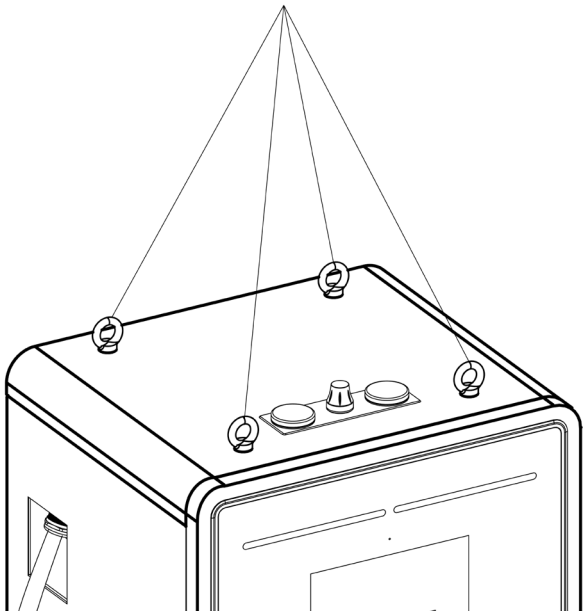


Figure 5-5 Hoisting the Cabinet

5.3.2 Forklifting the Cabinet

Ensure the forks (**A**) of the forklift truck in the gaps go through the gaps in the side of the pallet and move the cabinet to the construction site.

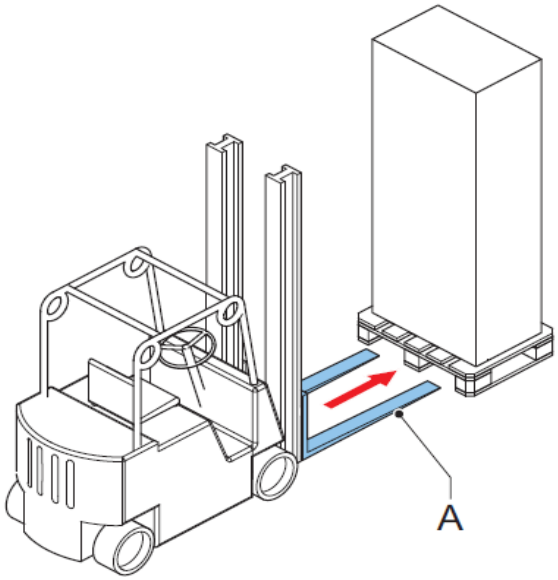


Figure 5-6 Transporting the Cabinet by Forklift

Refer to **step 1** and **step 2** of the *section 5.3.1* to remove the base covers and pallet.

Use the forklift truck to move the cabinet to the foundation. Ensure the forks of the forklift truck are properly aligned to pass through the openings of the base from the front side.

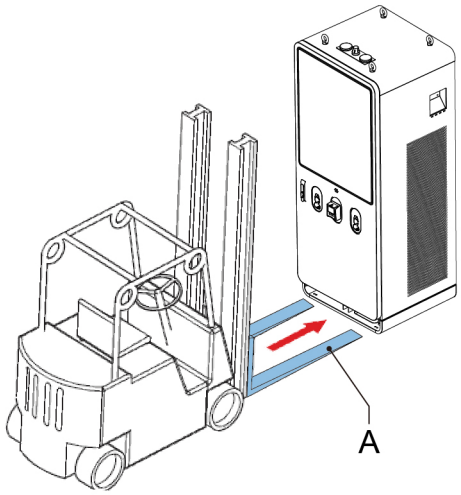


Figure 5-7 Forklifting the Cabinet

NOTICE

- **For forklift truck:** It is recommended that the width of the whole forklift and each fork do not exceed 600 mm and 250 mm.

5.4 Installing the Cabinet

STEP 1

Carefully lower the cabinet approximately 20 inches (500 mm) above the foundation, aligning with the four threaded bolts (**A**). Then route the service wiring through the AC inlet hole**.**

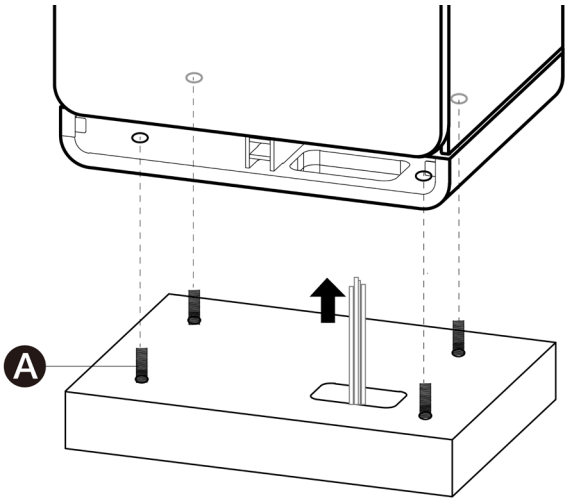


Figure 5-8 Lowering the Cabinet

STEP 2

Reinstall the gaskets and nuts which were removed earlier and tighten them using a 5/8” (16 mm) socket wrench to secure the cabinet onto the foundation**.**

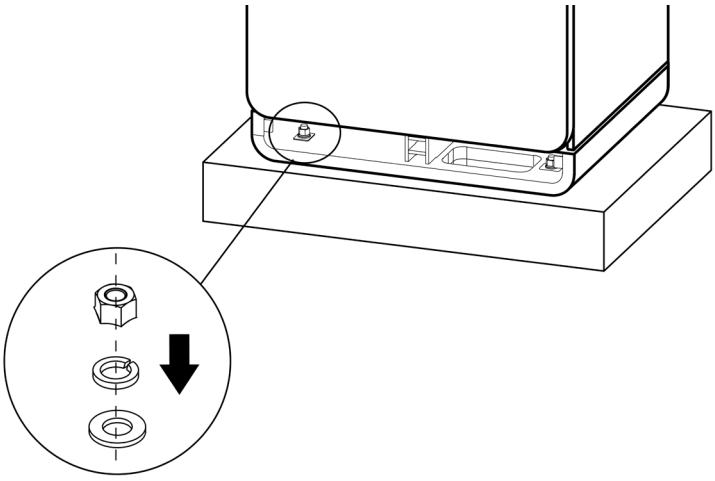


Figure 5-9 Securing the Cabinet onto Foundation

5.5 Electrical Wiring

STEP 1

Use the cabinet door key to open the front door. If necessary, open the left or right door after opening the front door**.**

DANGER

Hazardous voltage

Ensure that only qualified personnel have access to the door key.

STEP 2

Remove the three M6 nuts using a 1/5” (5 mm) socket wrench to remove the galvanic isolation board. **Set them aside.**

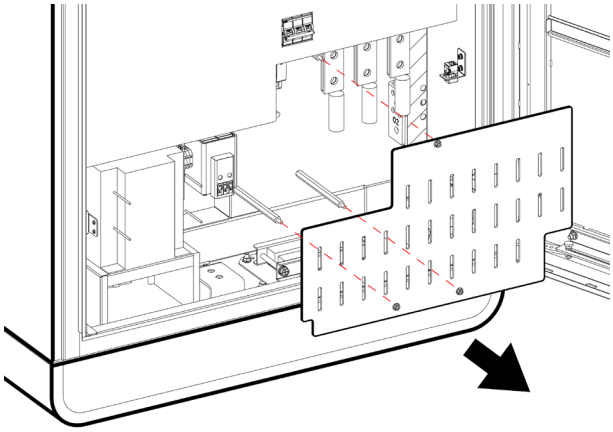


Figure 5-10 Removing the Galvanic Isolation Board

STEP 3

Loosen the four screws on the cover plate using a 5/16” (8 mm) socket wrench and slide it open.

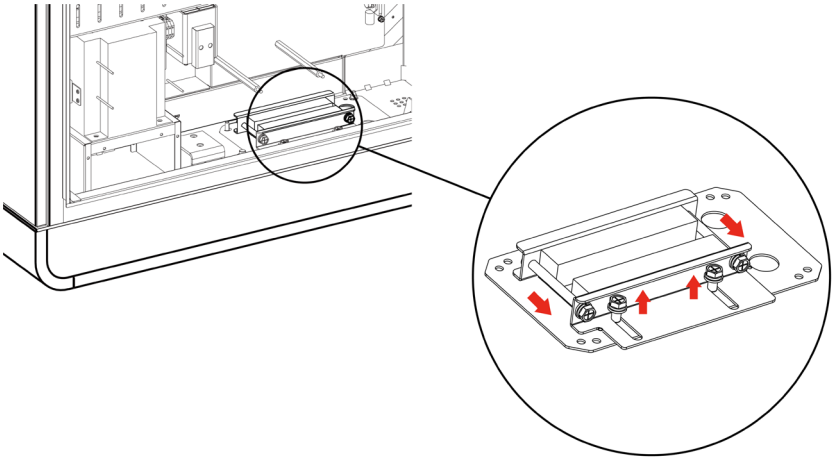


Figure 5-11 Opening the Cover Plate

STEP 4

1. Guide the AC input cable (**A**) through the cover plate and organize the cables as shown below.

2. Remove the plug on the cable gland, loosen the cable gland, and route the Ethernet cable (**B**, if applicable) through it. Install a spare Ethernet cable through cable gland (**C**) only as needed.

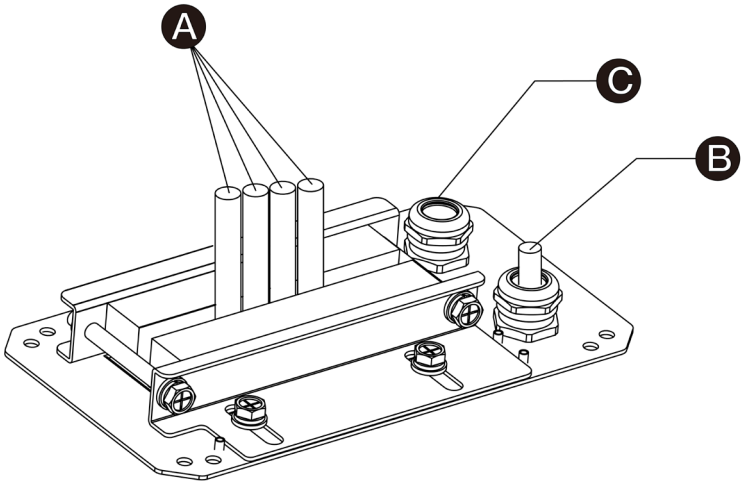


Figure 5-12 Guiding the Cables

STEP 5

1. Connect the earth conductor to the pin of the enclosure.

2. Connect the earth conductor to the earth electrode.

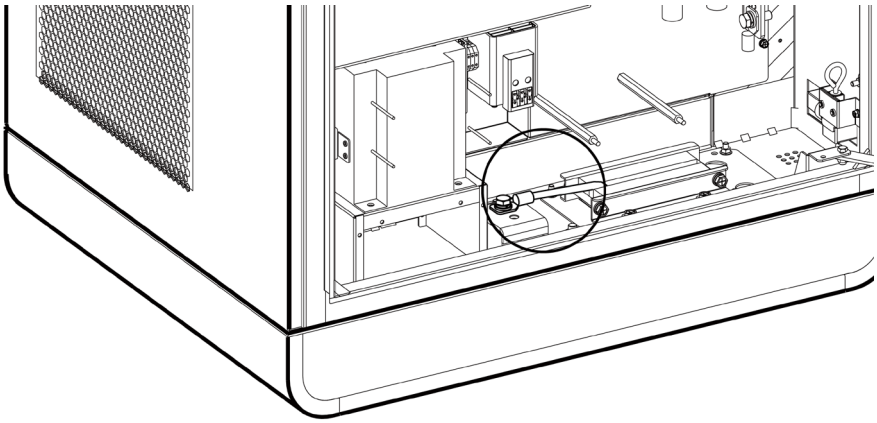


Figure 5-13 Grounding the Cabinet

STEP 6

1. Cut the PE wire of the power cable to the correct length to reach the PE busbar (**A**).
2. Use the wire stripper to remove 4/5 inch (20 mm) of the insulation from the end of the PE wire (**C**). Ensure the stripped length is compatible with the cable lug (**B**).
3. Use a crimping plier to attach the cable lug to the end of the wire.
4. Use the fasteners to attach the PE wire to the PE busbar and tighten the fasteners to 180 ± 22 in-lb (20.5 ± 2.5 N·m).

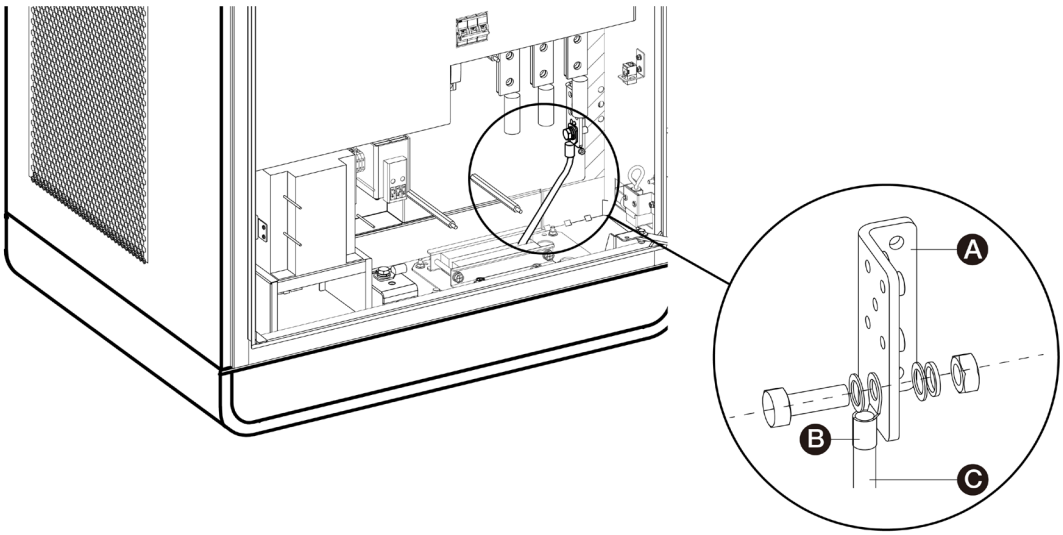


Figure 5-14 Connecting the PE Cable

NOTICE

- **For DF240:** From left to right, the fasteners are assembled in order of one M10 x 35 bolt, two #10 flat gaskets, one #10 spring washer, and one M10 hex nut, as shown above.
- **For DF120:** From left to right, the fasteners are assembled in order of one M10 x 30 bolt, two #10 flat gaskets, and one M10 hex nut.

STEP 7

1. Cut the L1, L2, and L3 wires to the correct length to reach the connectors on the AC terminals.
2. Use the wire stripper to remove 4/5 in (20 mm) of the insulation from the end of the wires. Ensure the stripped length is compatible with the cable lugs.
3. Use a crimping plier to attach the cable lugs to the end of the wires.
4. Use the fasteners to attach the wires to the connectors:

- L1 wire to the connector A
- L2 wire to the connector B
- L3 wire to the connector C

5. Tighten the fasteners to 180 ± 22 in-lb (20.5 ± 2.5 N·m).

6. Seal the gaps of the cable cover plate using fireproof mortar to protect the wiring from the environment.

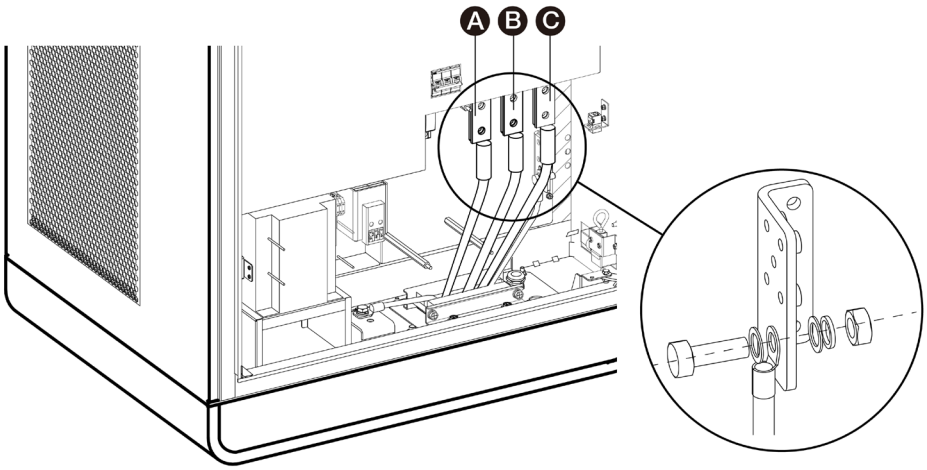


Figure 5-15 Connecting the AC Input Wires (1)

If needed, connect two AC input wires of the same type to each connector as shown below:

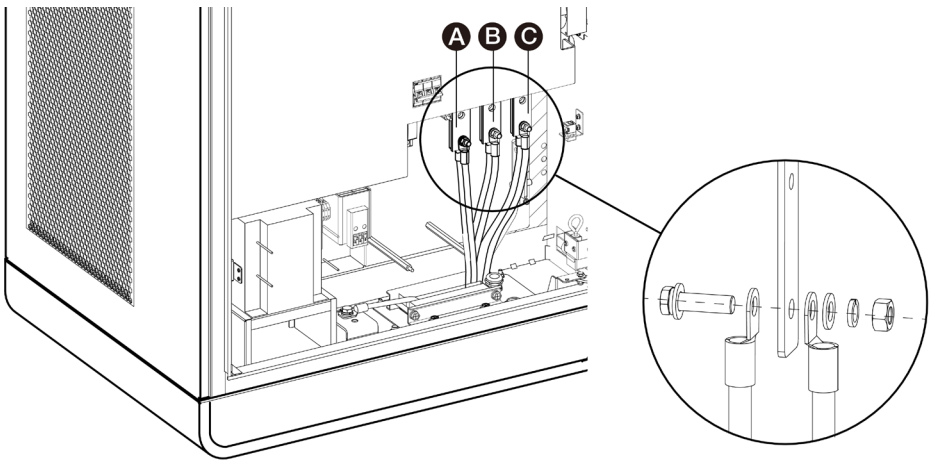


Figure 5-16 Connecting the AC Input Wires (2)

5.6 Connecting to the Internet

The MaxiCharger can be connected to the Internet via the Ethernet cable, cellular network or Wi-Fi.

5.6.1 Connecting the Ethernet Cable

Plug the Ethernet cable into the RJ45 port.

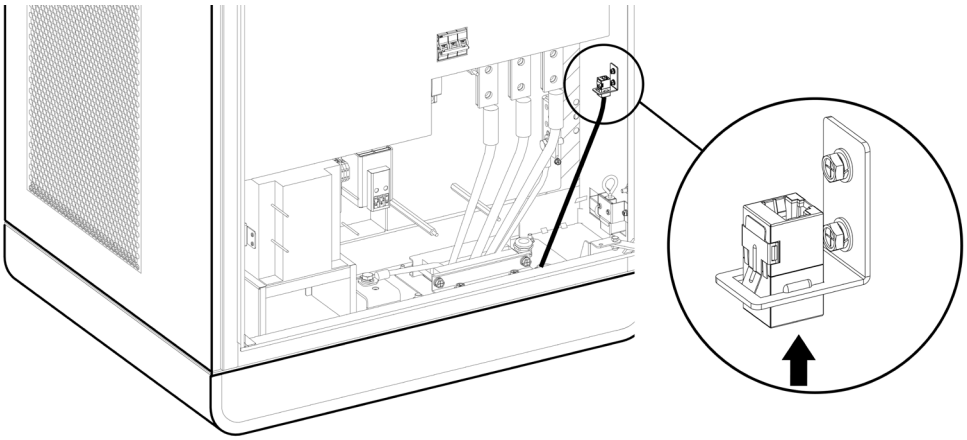


Figure 5-17 Connecting the Ethernet Cable

5.6.2 Installing the SIM Card

1. Press the button (**A**) to release the SIM card tray.
2. Insert the SIM card into the tray. Ensure the card is placed correctly.
3. Push the card tray into the slot.

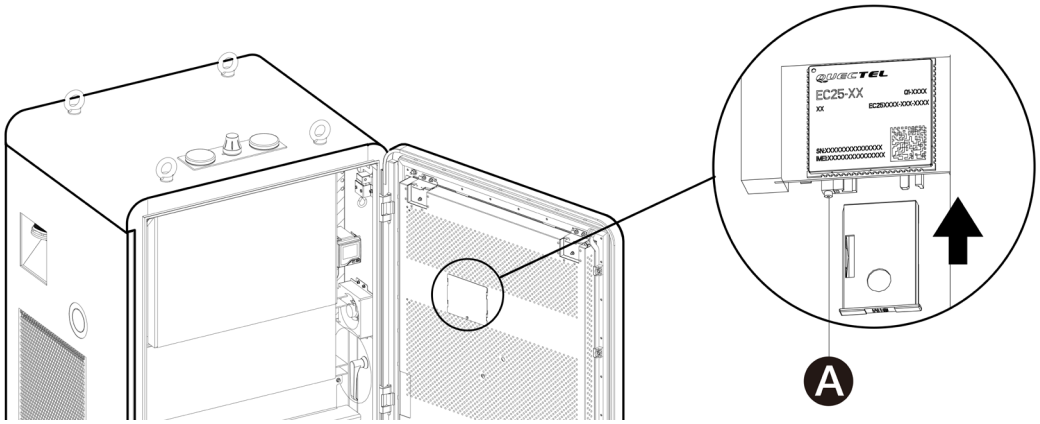


Figure 5-18 Installing the SIM Card

5.7 Installing the Charging Module

Follow the steps below to install the charging modules, if needed.

1. Slowly push the module into the slot.

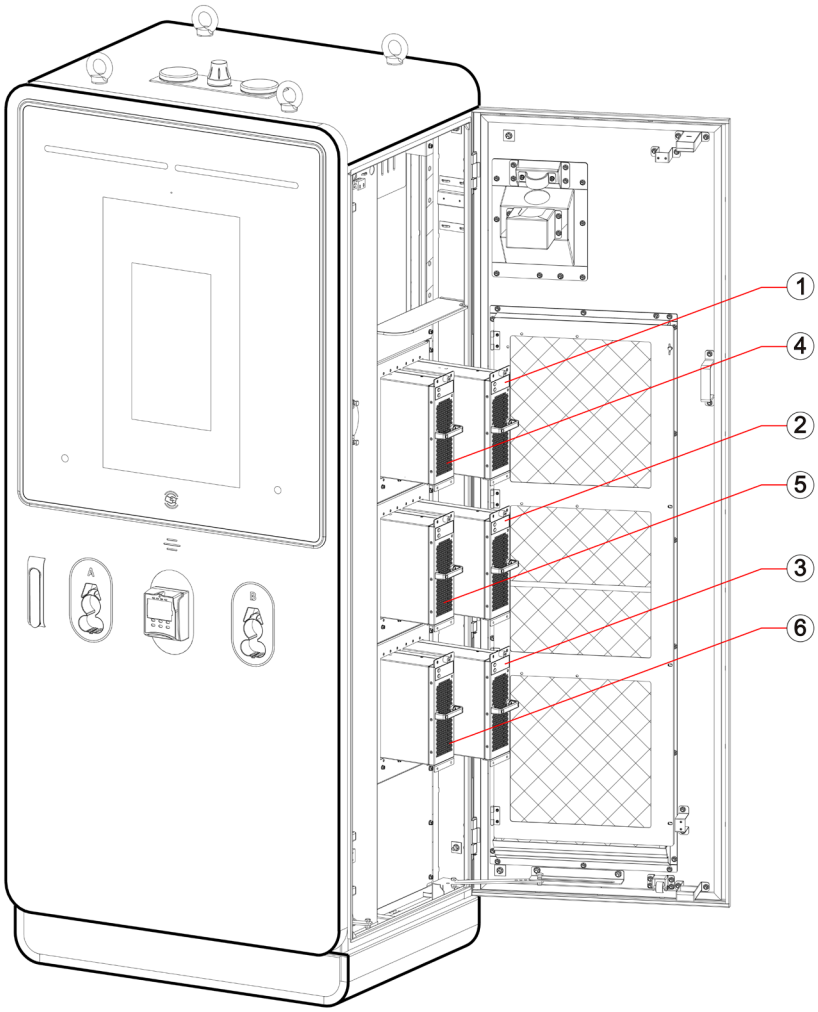


Figure 5-19 Installing the Charging Module (for DF120)

Table 5-1 Charging Module Installation Specifications

Rated Power	Number of Modules	Location
60 kW	3 PCS	1, 2, 4
80 kW	4 PCS	1, 2, 4, 5
100 kW	5 PCS	1, 2, 3, 4, 5
120 kW	6 PCS	1, 2, 3, 4, 5, 6

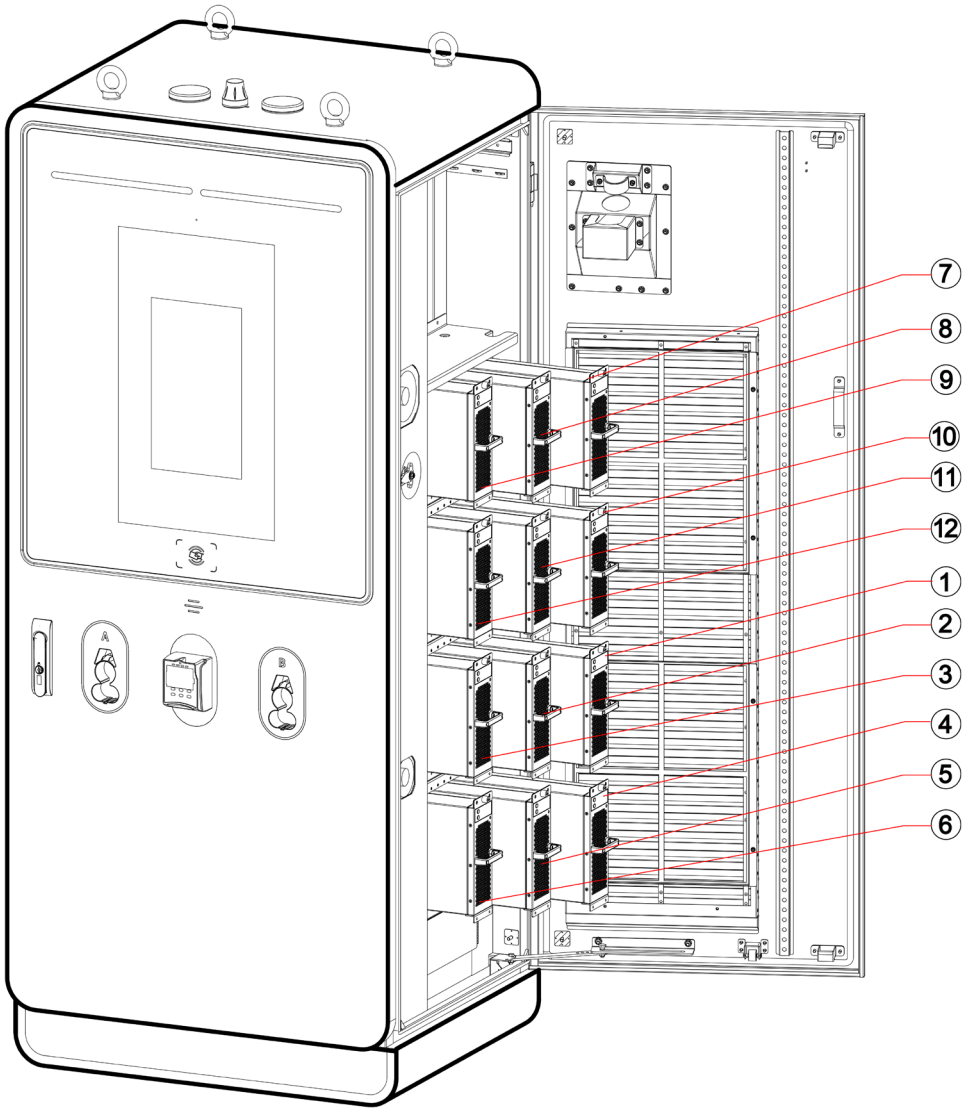


Figure 5-20 Installing the Charging Module (for DF240)

Table 5-2 Charging Module Installation Specifications

Rated Power	Number of Modules	Location
60 kW	3 PCS	1, 2, 7
80 kW	4 PCS	1, 2, 7, 8
100 kW	5 PCS	1, 2, 3, 7, 8
120 kW	6 PCS	1, 2, 3, 7, 8, 9
140 kW	7 PCS	1, 2, 3, 4, 7, 8, 9
160 kW	8 PCS	1, 2, 3, 4, 7, 8, 9, 10
180 kW	9 PCS	1, 2, 3, 4, 5, 7, 8, 9, 10
200 kW	10 PCS	1, 2, 3, 4, 5, 7, 8, 9, 10, 11
220 kW	11 PCS	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
240 kW	12 PCS	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

NOTICE

The above illustrations are for reference only. Install the charging modules based on the location number.

2. Install and torque the M4 x 10 screws to 11 in-lb (1.2 Nm) to secure the module.

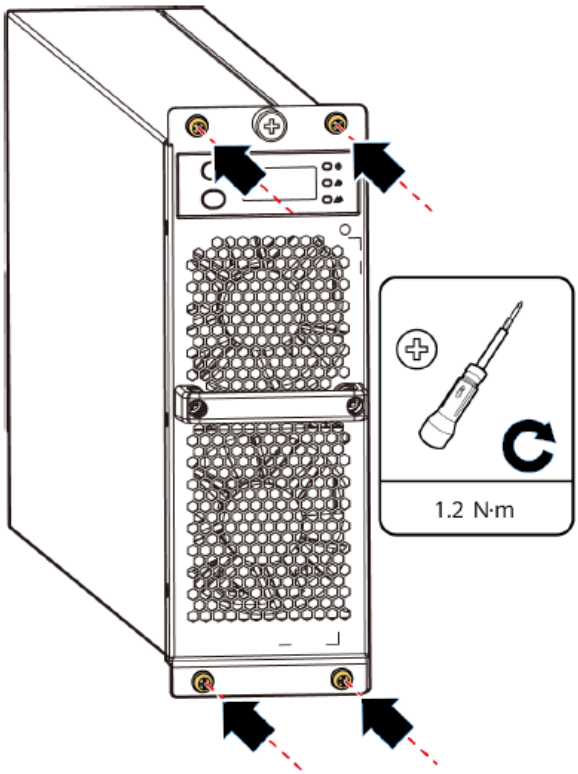


Figure 5-21 Tightening the Screws

3. After the installation is completed, set the hardware address. For details, refer to the charging module's manual.

5.8 Finishing Installation

1. Close the side and front doors and lock the front door using the cabinet door key. Ensure no debris are left inside.

2. Remove the four lifting eye bolts on the top of the cabinet and reinstall the plugs. Ensure the plugs are installed properly.

5.9 Preparing for Commissioning



DANGER

Hazardous voltage

Only a service engineer from the manufacturer is qualified to commission the MaxiCharger.

1. Ensure that the site complies with these requirements:
   - The MaxiCharger is installed as instructed in this manual.
   - The grid can support the AC input power.
   - Internet access, cellular network or Ethernet connection is available.
   - EVs compatible with every connector of the MaxiCharger must be available for commissioning work.
   - A site operator or owner is present to receive instructions from the service engineer of the manufacturer.
2. Ensure that the information below is available:
   - Site name
   - Address of the MaxiCharger
   - Longitude and latitude of the MaxiCharger. If there are more than one MaxiCharger on one location, the coordinates should be slightly different (at least 0.0001 degree) so that not all the equipment are at the same location on the map.
   - Photo of the surroundings of the MaxiCharger
   - Specification of the external fuse at the electrical panel
   - Date of installation completion
   - Contact information of the contact person on site
   - Special remarks

5.10 Local Service Portal Operations

The Local Service Portal is a service tool provided by Autel that provides information pertaining to the equipment. This service tool configures key parameters for commissioning, enables on-site diagnostics. Normally, the parameters have already been setup before shipment. Follow the steps below to adjust the parameters, if needed.

NOTICE

The OCPP parameter setup should be performed by an installation engineer.

5.10.1 OCPP Setting

Follow the steps below to set the OCPP parameter.

1. On the Standby Screen, tap the “currency ($)” icon on the lower-left corner to enter the Cost Details Screen.

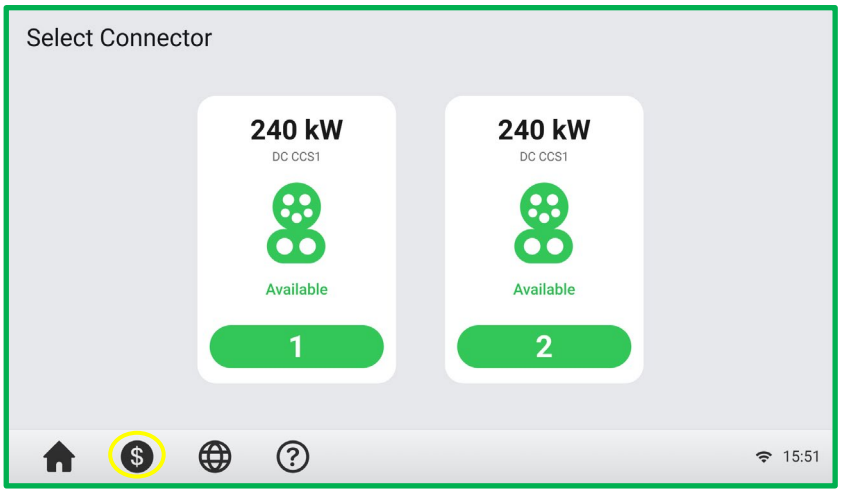


Figure 5-22 Standby Screen

2. On the Cost Details Screen, double tap the upper-left corner to enter the next page.

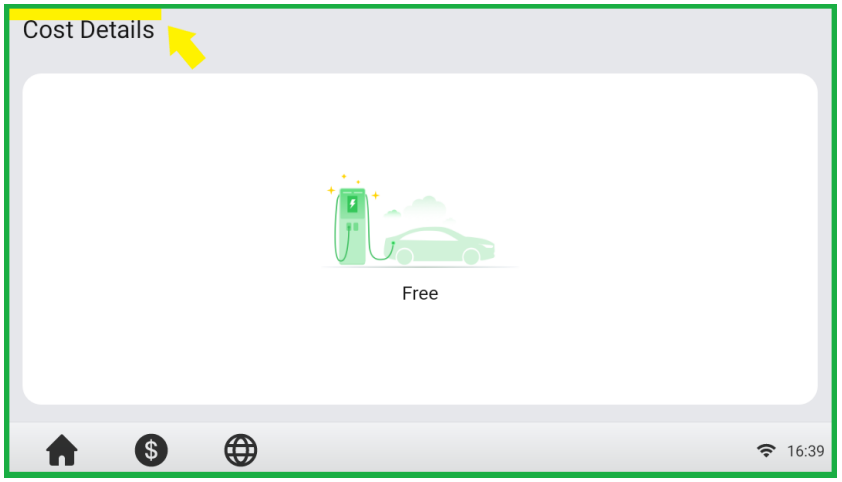


Figure 5-23 Cost Details Screen

3. Select **Device Maintenance** on the screen.

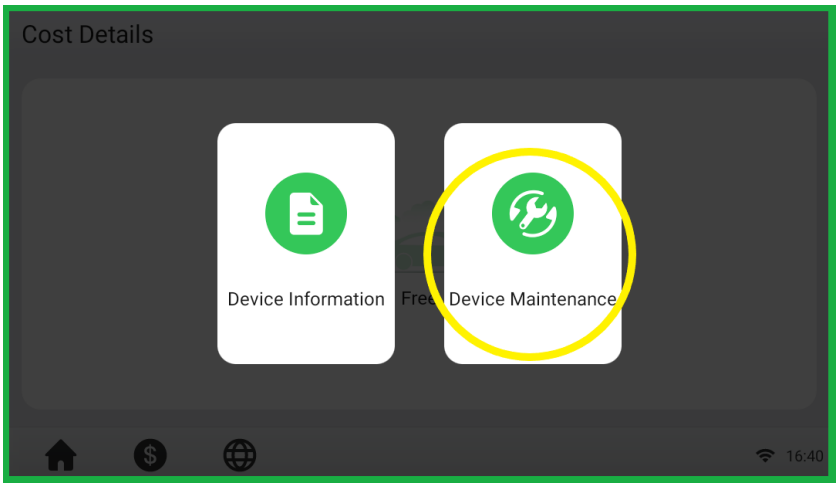


Figure 5-24 Selecting "Device Maintenance" Screen

4. A password prompt will appear. Enter the last 6 digits of the product serial number to continue, which can be found on the product label.

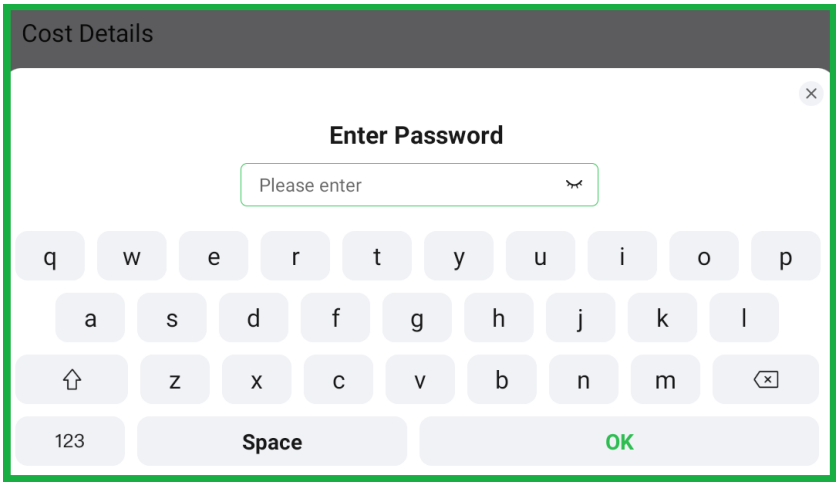


Figure 5-25 Entering Password Screen

5. On the Device Maintenance Screen, select **OCPP Connection**.

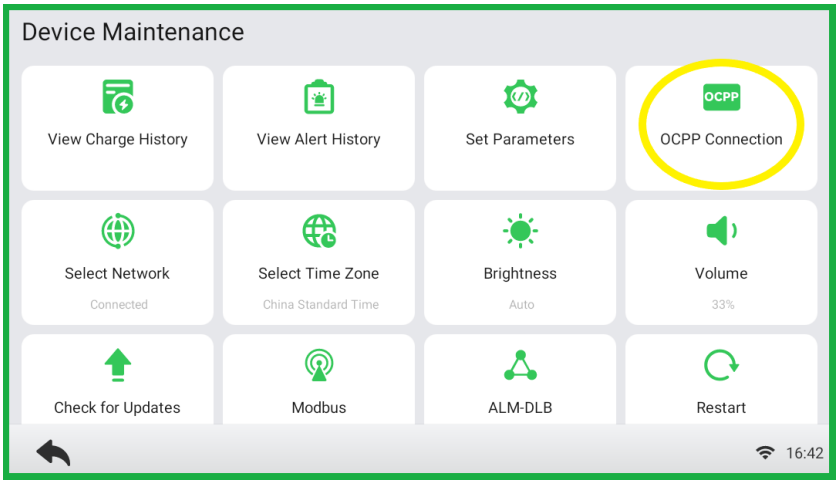


Figure 5-26 Device Maintenance Screen

6. Set the Server URL.



Figure 5-27 Setting the Server URL Screen

NOTICE

For safety reasons, it is recommended to contact Autel technical support to reset the password.

5.10.2 Autel Charge Cloud Configuration

To ensure the normal operation of the charger, configuring the Autel charge cloud is necessary. This platform is a one-stop charging management solution intended to address the needs of many use cases including residential, commercial, governmental, car dealers, and fleets. Contact Autel technical support for subscription and obtain the *Autel Charge Cloud Manual* for more details.

If a third-party cloud platform is used, consult their personnel for configuration.

6. Operation

6.1 Before Use

- Ensure that the MaxiCharger is installed according to the instructions in this manual.
- Make an emergency plan that instructs people what to do in case of an emergency.
- Provide instructions for emergency stop and charge session for the user.

  Instructions on emergency stop button:

  The emergency stop button is used to prevent personal injury or equipment damage by stopping the power output when an emergency or safety hazard occurs during equipment operation.

  How to use it: Press down the emergency stop button immediately when fire, electric shock risk, equipment smoke, odor, liquid seepage and other abnormal conditions occur. After the button is pressed down, the equipment will stop providing power and enter safety lock state. Only use the emergency stop button under emergencey circumstances. Do not use it as a means of stopping daily operations.

  How to release it: After the faults are eliminated and the situation is safe, trained technicians are allowed to release it by turning the emergency button clockwise or referring to the instructions on the screen.
- The manufacturer or a trained technician should perform the commissioning work. Contact the manufacturer when the MaxiCharger is ready for commissioning.
- The space around the MaxiCharger shall not be blocked by snow or other objects.
- Ensure that the maintenance work has been carried out on the MaxiCharger.
- If the MaxiCharger is de-energized for more than four hours, activate the internal heater to remove condensation from the cabinet.

6.2 Powering Up the MaxiCharger

1. Ensure that the upstream breaker stays in the **OFF** position and locked during the procedure.
2. Tighten the screws and bolts of key parts and ensure the cabinet is clean inside to prevent the electronic components from being damaged by dust or particles.
3. Use the multimeter to check the circuit connections among L1, L2, L3, and PE. If short circuit occurs, contact Autel technical support.
4. Ensure that the RCCB and MCCB stay in the **OFF** position.
5. Contact Autel technical support to turn on the upstream breaker, then use a voltage tester to measure the voltage of AC power input between the terminals on the surge protection device switch. Ensure that all the measured voltages are in accordance with local regulations.

6. Set the main breakers to the **ON** position.

7. Set the RCCB to the **ON** position and check the indicators on CCU, ECU, TCU, and the screen display.

   - If any indicator of CCU, ECU or TCU is off or the screen display is abnormal, please contact Autel technical support.
   - If all indicators and the screen display normal, go to next step.

8. Set the MCCB to the **ON** position and connect to the main circuit. Close the doors of the cabinet. The MaxiCharger is now ready for use.

6.3 Emergency Situations

If there is an emergency, push the **emergency stop** button. Then the MaxiCharger will stop all charge sessions and the touchscreen will display the following message:

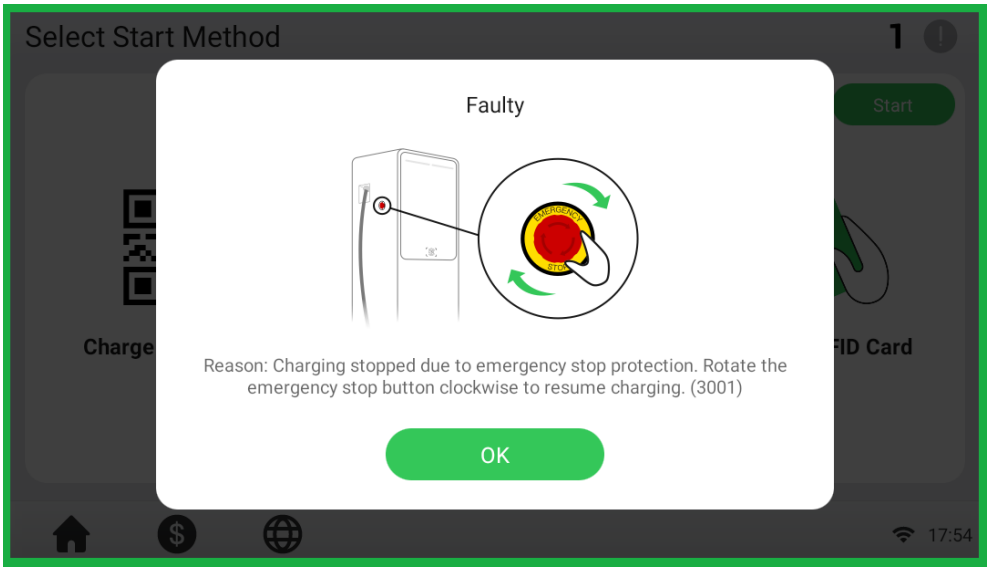


Figure 6-1 Fault Message Screen

Reset the MaxiCharger after an emergency (making sure that the situation is safe again first): Turn the emergency button clockwise to release it. The MaxiCharger will start, the message will disappear from the touchscreen, and the MaxiCharger will resume normal operation.

6.4 Charge Sessions

General charging procedure:

1. Park an EV with the charging port within reach of the connector.
2. Plug in the vehicle.
3. Start the charge session.
4. Stop the charge session.

6.4.1 Standby Screen

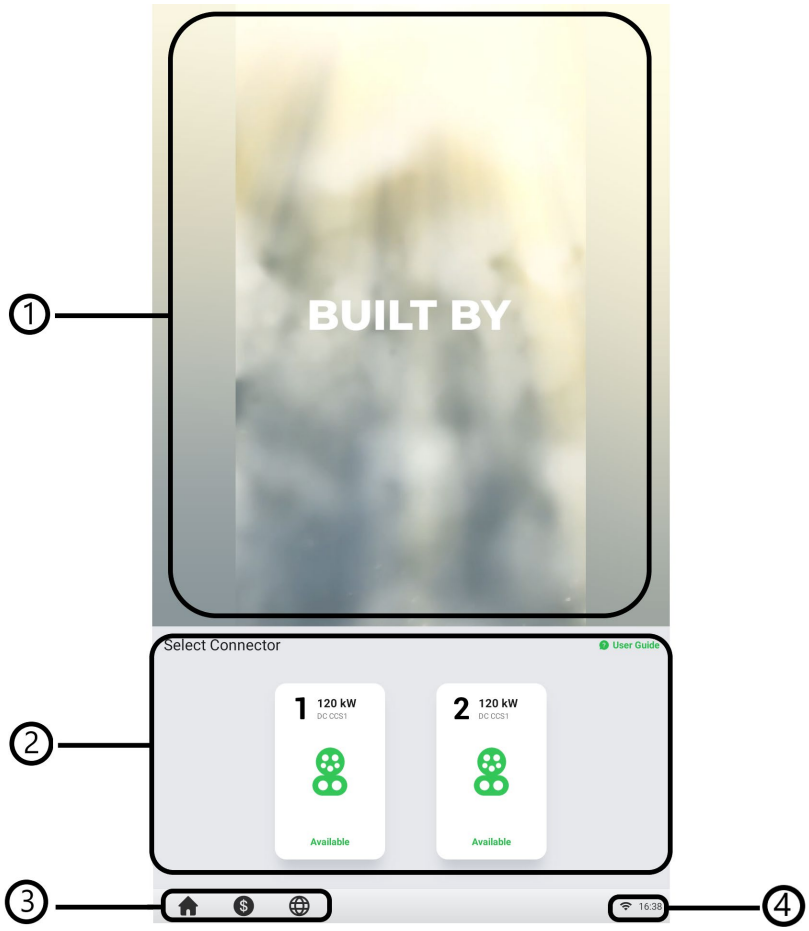


Figure 6-2 Standby Screen

1. Advertisement page — can be displayed on a full screen and is omitted in the following sample illustrations
2. Connector options — tap to view the connector information
3. Home button, Cost information, language options
4. Time and Internet icon — an x appearing at the lower corner of the Internet icon indicates the MaxiCharger is not connected to the Internet

After a connector is successfully connected to the EV, the MaxiCharger can automatically recognize the connector and the corresponding connector's Authorization screen will appear.

If no operation is performed for a period of time on the Authorization screen, the Standby screen will appear. Manually select the connector on the touchscreen to exit the standby screen.

6.4.2 Authorization

CAUTION

- Observe the screen for any abnormality, such as an error message, before starting a charge session. Check the surroundings and the MaxiCharger for any abnormality or damage as well.
- **DO NOT** operate the MaxiCharger if the screen displays an error message. Contact Autel technical support.

When the Authorization Screen appears, you can use any of the following methods to start a charge session:

- Scan the QR code on the screen
- RFID card
- Plug & charge (supports the ISO 15118 PnC function)
- Credit card (optional)

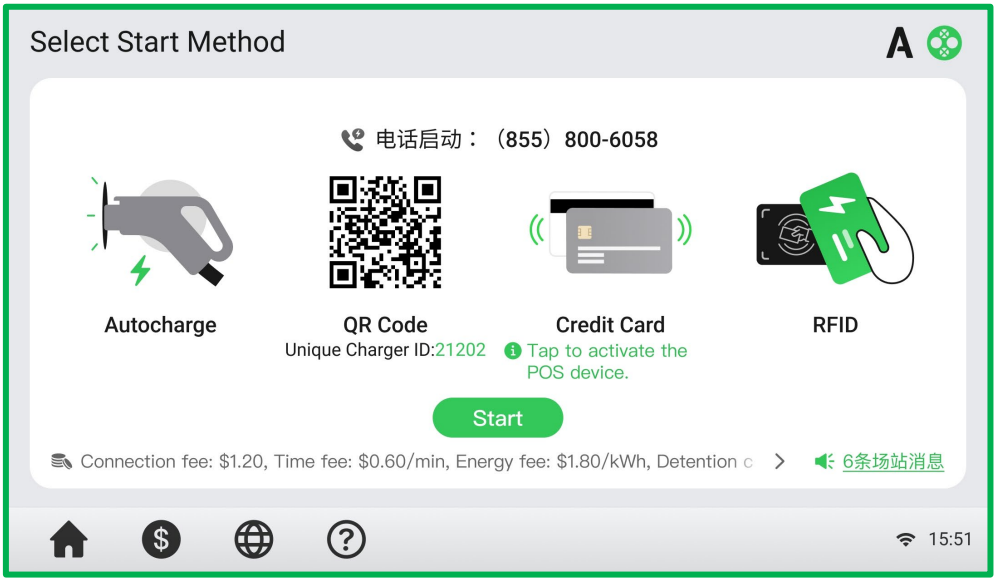


Figure 6-3 Authorization Screen

6.4.3 Start Charging

The MaxiCharger enters communication with the EV following a successful authorization. The charge session will start automatically after passing safety tests.

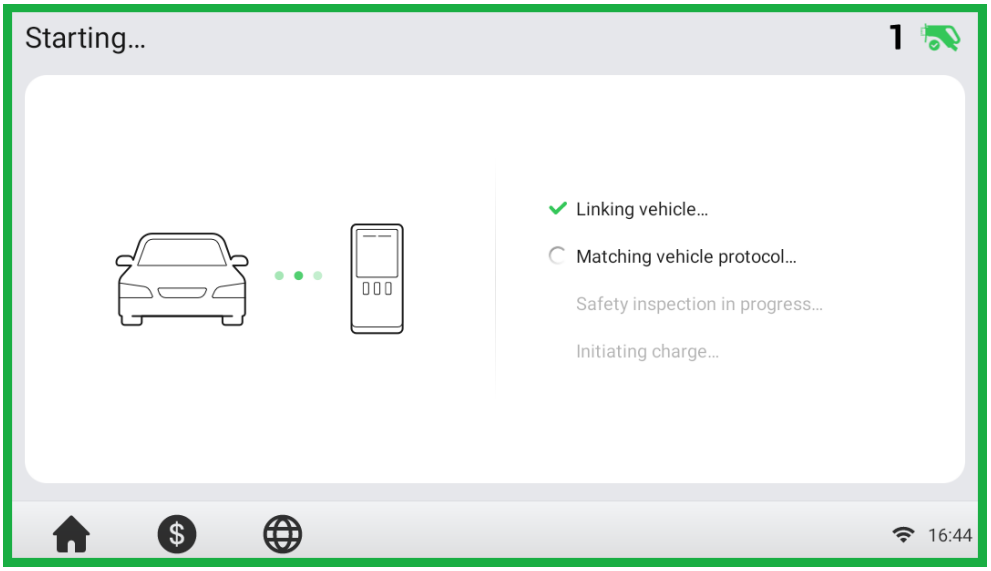


Figure 6-4 Start Charging Screen

6.4.4 Charging

Information about the charging duration, power, cost, and energy will appear on the Charging Screen.

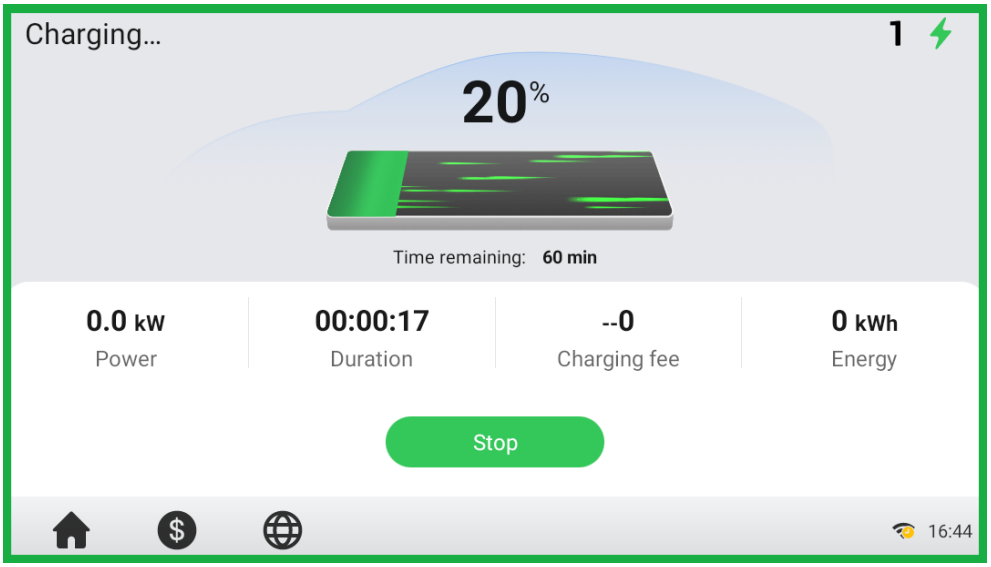


Figure 6-5 Charging Screen

6.4.5 Stop Charging

1. Unplug the vehicle or tap the **Stop** button on the touchscreen.
2. If a session stops unexpectedly, the charger requires another authorization to restart a charge session. Use the same authentication method to begin the charge again.
   - QR Code/Credit Card: Tap the **Stop** button on the Charging Screen of the Autel Charge app.
   - RFID Card: Tap the RFID card on the card reader again to finish charging.

NOTICE

The charge session stops automatically when the battery is full.

Once the charging stops, the transaction details will appear on the screen.

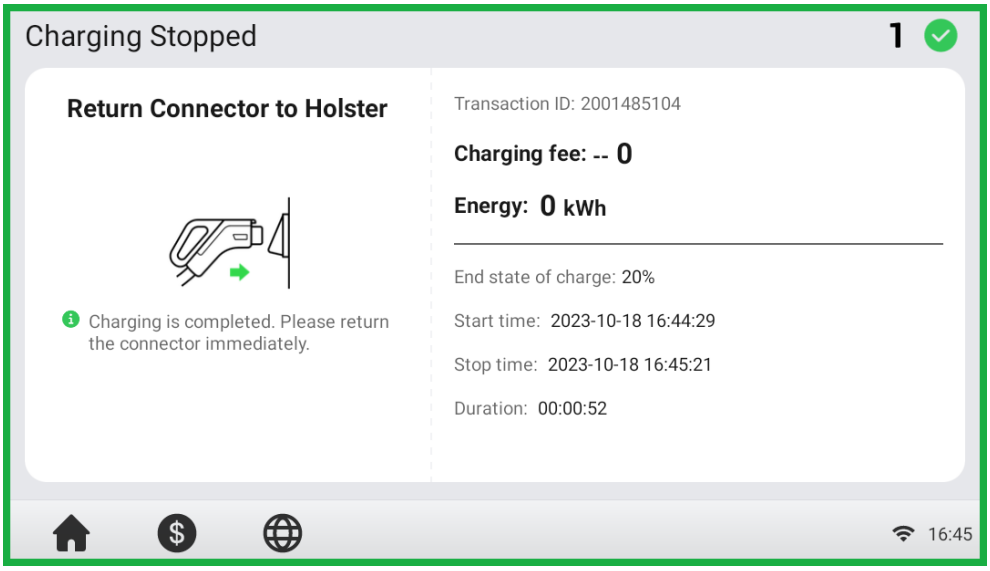


Figure 6-6 Order Details Screen

WARNING

- Do not cover the vent during charging.
- Do not clean or operate in your EV during charging.

6.4.6 Finish Charging

Return the connector to the holster on the MaxiCharger.

6.5 Charging Errors

This section depicts several common problems that may arise during a charge session along with possible causes/solutions to resolve them. If the problem persists, contact Autel technical support.

6.5.1 Connector Connection Error

If the connector is not connected to the EV, then the Connector Not Connected screen will appear. Disconnect completely, then plug in the EV and recheck the screen to see if the error message is resolved.

6.5.2 Authorization Failure

The Authorization Failure screen appears when there is an error processing the chosen authentication method. The cause and possible solution(s) will display on the screen. Follow the on-screen instructions to resolve the problem, or contact Autel technical support.

6.5.3 Charge Start Failure

The Charge Start Failure screen appears when the charger has failed to pass the initialization process. The cause and possible solution(s) will display on the screen. Follow the on-screen instructions to resolve the problem.

6.5.4 Charging Failure

The Charging Failure screen appears when various errors occur during a charge session. The cause and possible solution(s) will be displayed on the screen. Follow the on-screen instructions to resolve the problem, or contact Autel technical support.

6.6 Powering Down the MaxiCharger

General Procedure:

1. Set the upstream breaker which provides the power to this MaxiCharger to **OFF** and lock it. Ensure that this breaker stays in the **OFF** position during the procedure.
2. Open the front door.
3. Measure the AC voltage. Ensure that all the measured voltages are 0 V.
4. Measure the DC voltage. Ensure that all the measured voltages are 0 V.
5. Close the door.

6.6.1 Measuring the AC Voltage

Use a voltage tester to measure the AC voltage between the terminals on the surge protection device switch:

- L1 to L2
- L1 to L3
- L2 to L3

NOTICE

The surge protection device switch shows the indications L1, L2, and L3.

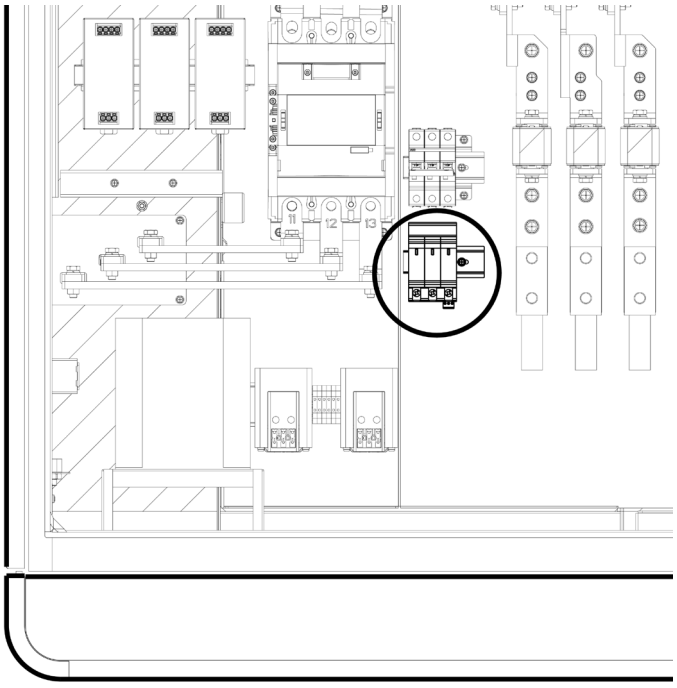


Figure 6-7 Measuring the AC Voltage

6.6.2 Measuring the DC Voltage

Use a voltage tester to measure the DC voltage between the output terminals:

- Power module group output 1- (B) to power module group output 1+ (A)
- Power module group output 2- (D) to power module group output 2+ (C)
- EV charging cable 1 output - (F) to EV charging cable 1 output + (E)
- EV charging cable 2 output - (H) to EV charging cable 2 output + (G)

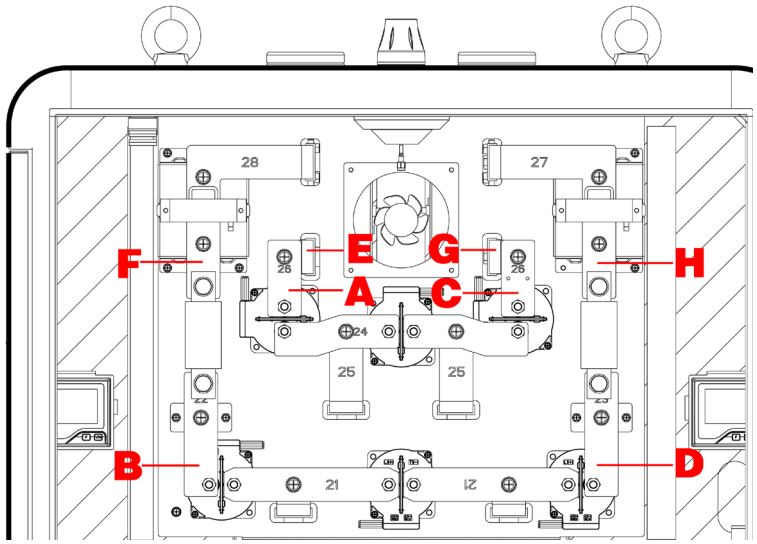


Figure 6-8 Measuring the DC Voltage

6.7 Removing Condensation

NOTICE

There may be condensation in the charger if the charger is powered off for more than four hours.

1. Open the front door.
2. Set the main breakers to **OFF** position:
3. Energize the MaxiCharger.
4. Close the door. Wait two hours. The internal heater of the cabinet will heat the inside of the cabinet, and the condensation will evaporate.
5. Open the front door.
6. Set the main breakers to **ON** position:
7. Close the door.

7. Maintenance

7.1 Routine Maintenance

Routine maintenance can keep the MaxiCharger in a safe and stable state.

- Clean the cabinet every quarter, tighten the screws and bolts of key parts, and check whether the wire connection of the connector is burned out. If any abnormality is found, replace the parts in time.
- Clean the air filter and dust filter at least twice a year.
- Test the residual current device once a year.



WARNING

- Disconnect the power supply to the MaxiCharger during the entire maintenance procedure.
- Prior to beginning work, ensure a minimum bleed-down time of 60 seconds has passed since de-energization.
- Ensure unauthorized personnel are kept at a safe distance during maintenance.
- Wear proper personal protective equipment, such as protective clothing, safety gloves, safety shoes, and safety glasses.
- If the safety devices are removed for maintenance, reinstall them after completing the work.

7.1.1 Cleaning the Cabinet

The cabinet is powder-coated. The coating must be kept in good condition. When the MaxiCharger is in a corrosion sensitive environment, superficial rust may appear on welding points. Visible rust has no risk to the integrity of the cabinet.

To remove rust:

1. Stop the charge session and power off the MaxiCharger.
2. Remove rough dirt by spraying with low-pressure tap water.
3. Apply a neutral or weak alkaline cleaning solution and let it soak.
4. Remove dirt by hand with a damp and non-woven nylon cleaning pad.
5. Rinse thoroughly with tap water.
6. Apply wax or a rust-preventive primer for extra protection if needed.

7.1.2 Residual Current Device Maintenance

The internal residual current device (RCD) and residual current breaker with overload (RCBO) should be tested annually for correct functioning. Before testing, unplug the MaxiCharger from the EV and stop the charge session.

1. Open the front door of the MaxiCharger. When the cabinet door is open, the MaxiCharger should not be directly exposed to a windy and rainy environment.

2. The MaxiCharger must be in the Standby mode. Tapping the touchscreen can wake up the MaxiCharger.

3. Locate the RCD (under the MCCB) and press the **Test** button to start testing.

   - Pass: The MaxiCharger stops operation when the MCCB is set to the middle position. The MaxiCharger starts operating again when the MCCB is set to the **OFF** then **ON** position.

   - Fail: There is no response when pressing the **Test** button. Please disconnect the AC power of the MaxiCharger and close the cabinet door, then contact Autel technical support. Do not use the MaxiCharger until the repair is completed.

4. Close the front door of the MaxiCharger after the test is finished.

5. Mark the time when the test is needed to be repeated annually.

7.1.3 Cleaning and Replacing the Air Filters

The MaxiCharger is equipped with an air inlet filter and an air outlet filter with a large mesh area to prevent the electronic components from being damaged by dust. Clean the air filters every 3 months (not exceeding 6 months). Replace the air filters once a year.

To clean the air inlet filter:

1. Ensure there is no active charge session and perform lockout-tagout to secure the charger.
2. Open the right-side door (**A**) of the MaxiCharger. When the cabinet door is open, the internal components of the MaxiCharger should not be exposed to rain, snow or harsh environments.
3. Manually loosen the four butterfly screws (**D**) to open the fixing board (**C**). Remove the air inlet filter (**B**).
4. Clean the air inlet filter of debris or dust and reinstall the cleaned filter. Or install a new air inlet filter.
5. Close the fixing board and tighten the four butterfly screws.
6. Close the right-side door of the MaxiCharger.

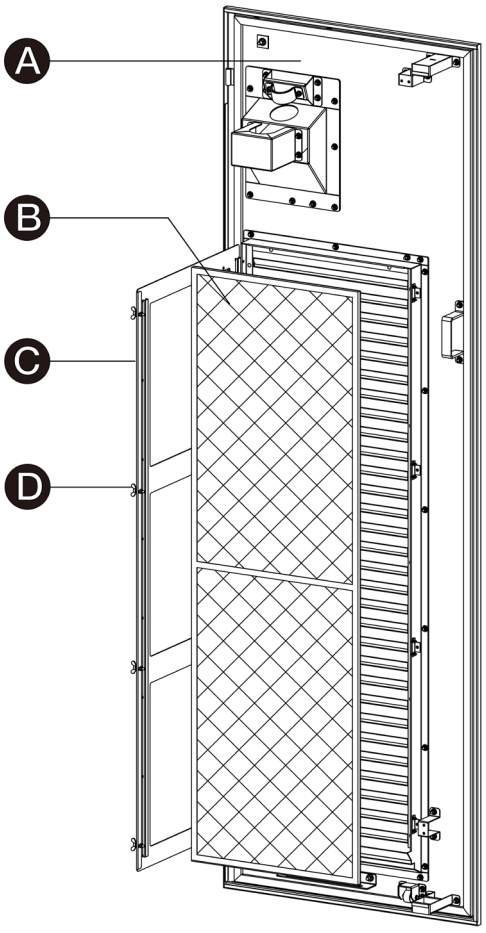


Figure 7-1 the Air Inlet Filter

To clean the air outlet filter:

1. Ensure there is no active session and perform lockout-tagout to secure the MaxiCharger.

2. Open the left-side door (**A**) of the MaxiCharger. When the cabinet door is open, the internal components of the MaxiCharger should not be exposed to rain, snow or harsh environments.

3. Manually loosen the four butterfly screws (**D**) to open the fixing door (**C**). Remove the air outlet filter (**B**).

4. Clean the air outlet filter of debris or dust and reinstall the cleaned filter. Or install a new air outlet filter.

5. Close the fixing board and tighten the four butterfly screws.

6. Close the left-side door of the MaxiCharger.

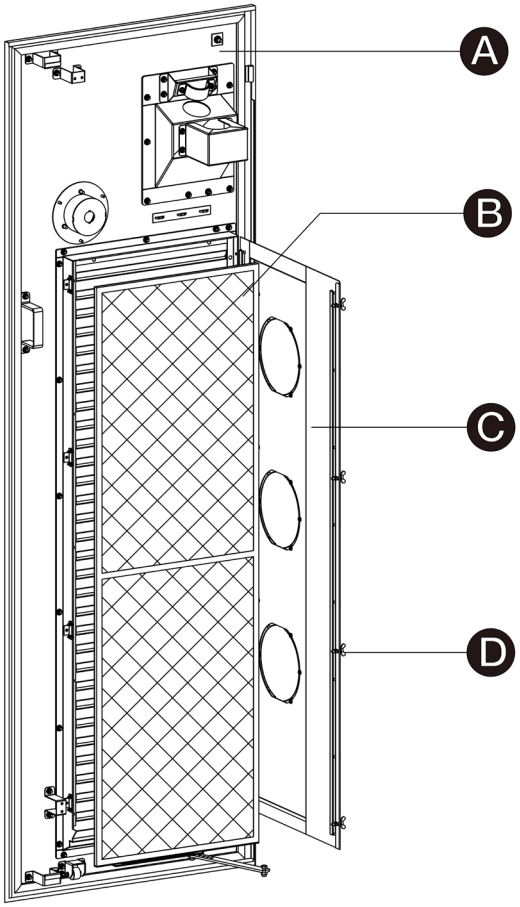


Figure 7-2 the Air Outlet Filter

7.2 Inspection and Maintenance

Routine maintenance is needed even if the MaxiCharger is operating in normal condition.

Refer to *Chapter 8 Troubleshooting* or contact Autel technical support to resolve any error.

When parts need to be replaced, cut off the power supply upstream and inside the equipment before proceeding.

Regularly conduct visual inspection of the following:

- Cable and connector: Check for cracks or ruptures.
- Display: Check for damage and cracks. Check whether the touchscreen works.
- Coating of the cabinet: Check for damage, cracks or ruptures.
- Cabinet: Check for rust or damage.

The following special inspections are needed for safe use:

- Check if the MaxiCharger was struck by lightning.
- Check if the MaxiCharger is damaged due to an accident or fire.
- Check if the MaxiCharger installation site has been flooded.



WARNING

Stop the charge session and do not connect the power to the MaxiCharger until all the inspections are completed.

7.3 Remote Maintenance

The MaxiCharger can connect to the Autel cloud platform to monitor parameters in real time. Autel's cloud platform provides remote upgrades, diagnosis, and services, and identifies any issue during operation.

- Daily system self-check.
- Contact Autel technical support to resolve any issue found.
- Autel service engineers can check logs, update configurations and programs, and provide remote maintenance services such as remote management, diagnosis, configuration, and upgrade.

7.4 Maintenance Schedule

Item	Frequency	Operations
Connector	Every 3 months	Check for cracks or ruptures on the connector.
Input Cable	Every 3 months	Check for cracks or ruptures on the cable.
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

The table below describes the most common faults when operating the MaxiCharger. Contact Autel technical support if the fault encountered is not in this table.

Error	Error Code	Possible Cause	Solution
CP voltage abnormal	0x2037	It may be caused by signal interference, poor contact or software errors.	Perform remote restart or reset. If the fault persists, contact Autel technical support.
Communication error with the entire charging module group	0x3011	There is a problem with the module's address setting.	Power off the MaxiCharger and restart it.
Overvoltage	0x202D	The DC output voltage is above the upper limit of the vehicle or the rated voltage of the MaxiCharger during charging.	Stop the charge session and contact Autel technical support.
Communication error with the power control module	0x200E	The CCU does not receive messages from the ECU and the communication is timed out.	Perform remote restart or reset. If the fault persists, contact Autel technical support.
BMS communication error	0x2007	It may be caused by charging incompatibility.	Perform remote restart or reset. If the fault persists, contact Autel technical support.
Cooling fan abnormality	0x304A	Fan aged or damaged.	Power off the MaxiCharger and contact Autel technical support for repair or replacement of the fan.
Charging port electronic locking fault	0x2002	It might be caused by a vehicle-related fault.	Contact the vehicle manufacturer and Autel technical support.
CCU auxiliary power supply shutdown	0x202C	Sever power fault due to aged key components or lines.	Power off the MaxiCharger. Then locate the faulty component or line and contact Autel technical support for its repair or replacement.

Error	Error Code	Possible Cause	Solution
Meter communication error	0x0001	Aged meter or line.	Stop the charge session and contact Autel technical support.
Insulation monitoring fault	0x2003	If it appears from time to time, it might be due to the vehicle or software error; if it appears frequently, there may be an aged key component.	Perform remote restart or reset. If the fault persists, contact Autel technical support.
AC contactor stuck	0x3008	AC contactor fault or line aging	Power off the MaxiCharger and contact Autel technical support.
FPGA fault	0x3010	Controller fault	Stop the charge session, power off the MaxiCharger, and contact Autel technical support.
CCU current sampling and module output current accumulation fault	0x3014	Charging module output or sampling fault	Perform remote restart or reset. If the fault persists, contact Autel technical support.
Power distribution contactor sticking (charging possible)	0x3047	Contactor or sensor fault or line aging	Power off the MaxiCharger immediately and contact Autel technical support.
Communication error on one charging module	0x3051	Abnormal charging module	Contact Autel technical support to identify the fault, and then clear the fault or replace the module.
Fan fault with one charging module	0x305A	Abnormal charging module	Contact Autel technical support to identify the fault, and then clear the fault or replace the module.

Error	Error Code	Possible Cause	Solution
Inconsistent CCU voltage sampling and the module output voltage	0x305C	Abnormal charging module	Contact Autel technical support to identify the fault, and then clear the fault or replace the module.
Insulation detection alert	0x2040	If it is a one-time problem, there is may be a falling object, and no operation is required; if it has occurred for several times, the connector cable may be damaged or there are foreign objects in the busbar.	Power off the MaxiCharger immediately and contact Autel technical support.
Charger offline	0x9001	Communication error between gateway and the Autel Charge Cloud	Check the network connection and OCPP configurations.

9. Technical Specifications

9.1 General Specifications

Table 9-1 Product Specifications

Parameter	Description
Compliance and Safety	UL 2202 UL 2231-1, UL 2231-2, CSA C22.2 No. 107.1-16; NEC Article 625 FCC Part 15 Class A
IP Rating	NEMA 3R
IK Rating	IK10
Short Circuit Current Rating	65 kA
EMC	FCC Part 15 Class A
Output Voltage	CCS: 150 to 950 V DC
Output Current	**DF120:** CCS: 200 A
	DF240: CCS boost: 300 A (Peak: 400 A)
EV Charging Cable Length	Standard: 18 ft. (5.5 m) Optional: 14.8 or 24.6 ft. (4.5 or 7.5 m)
Maximum noise level at a distance of 1 m	< 65 dB @ 1 m /77 ° F (25 ° C)/full load
Input AC Power Connection	3P + PE (No neutral)
Input Voltage Range	480 V AC (+10 % to -15 %), 60 Hz
Humidity	< 95 % RH (non-condensing)
Power Factor at Full Load	>= 0.98
Peak Efficiency	>= 96%

Parameter	Description
Total Harmonic Distortion (current / > 50% load)	<= 5%, 150 to 950 VDC

Table 9-2 Operating Conditions

Parameter	Specification
General Environment	Indoor Outdoor
Storage Temperature	–40 to 158 ° F (–40 to +70 ° C)
Operation Temperature Range	–31 to + 131 ° F (–35 to + 55 ° C) +122 to + 131 ° F (+50 to +55 ° C) with linear power de-rating
Maximum Altitude above Sea Level	< 6561.7 ft. (2000 m)

9.2 Packaging Specifications

Table 9-3 Packaging Specifications

Parameter	Specification	
Width	48.8 in	1240 mm
Depth	39.8 in	1000 mm
Height	84.5 in	2146 mm
Mass of the Package	121 lbs.	55 kg
Maximum Tipping Angle	30°	



NOTICE

The MaxiCharger is mounted on a standard size wooden pallet and protected to prevent damages during transport.

9.3 Communication Interface Specifications

Table 9-4 Communication Interface Specifications

Parameter	Specification
RFID Standard	ISO 14443 A + B to part 4 ISO/IEC 15693
RFID-supported Applications	Mifare NFC Calypso Ultralight, Pay-Pass HID For information about the options, contact the manufacturer.
Network Connection	3G/4G modem 10/100 Base-T Ethernet Wi-Fi

Table 9-5 Ethernet Cable Specifications

Parameter	Specification
Ethernet Type	RJ45
Cable Type	8P + PE, Shielded
Uploading Bandwidth	Minimum 128 Kbit/s
Downloaded Bandwidth	Minimum 4 Mbit/s
Availability	99.9%

9.4 Power Rating Specifications

Table 9-6 De-rating During Normal Duty Operation

Ambient Temperature		Power Output (%)	Derating (%)
° F	° C		
-31 to +122	-35 to +50	100	0
+122 to +131	+50 to +55	100 to 75 (linear de-rating)	0 to 25

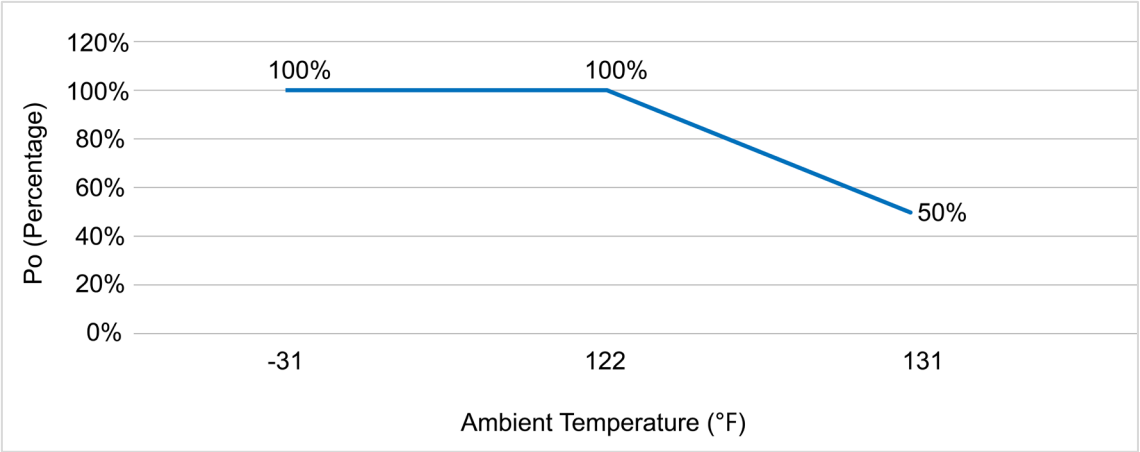


Figure 9-1 DF240 Output Derating Curve

NOTICE

The table and illustration above demonstrate the steady state rating of the MaxiCharger at specific ambient temperatures.

9.5 AC Input and DC Output Specifications

Table 9-7 AC Input Specifications

Parameter	Specification
Material	XLPE copper wires recommended
Recommended Cable Gauge	**For DF120:** Four cores, 138 Kcmil (70 mm^2) x 3 + 69 Kcmil (35 mm^2) x 1
	For DF240: Four cores, 365 Kcmil (185 mm^2) x 3 + 187 Kcmil (95 mm^2) x 1
Maximum Temperature of the Input Wires	190 ° F (90 ° C)

Table 9-8 Detailed AC Input Specifications

Parameter	Power Rating									
	60	80	100	120	140	160	180	200	220	240
Maximum Input Current (A)	91	120	148	177	206	234	263	292	321	349
Maximum Power Dissipation (kVA)	65.4	86.4	107.5	128.5	149.6	170.6	191.7	212.7	233.8	254.8
Short Circuit Current Rating (kA)	65	65	65	65	65	65	65	65	65	65

NOTICE

- Refer to the above table to determine the electrical specifications needed for installation in order to meet NEC standards.
- Refer to local code for specific design verification.
- Use proper cable routing methods (such as underground conduit and cable grooves, etc.) to ensure environment factors are taken into consideration.
- If local laws and regulations have different requirements, the provisions of local laws and regulations shall prevail.
- The MaxiCharger can be upgraded to larger power ratings. Take the cable size into consideration at the point of purchase in case that an upgrade is needed in the future.

Table 9-9 General DC Output Specifications

Parameter	Specification
DC Output Voltage Range	CCS: 150 to 950 V DC
Minimum DC Output Current	5 A
Connection Standard	CCS: IEC 62196-1:2014 and IEC 62196-3:2014, UL2251:2013, 3rd Ed. and SAE J1772™:2017

Table 9-10 Detailed DC Output Specifications for DF12O

MaxiCharger	Parameters			
	Maximum DC Output Power for One EV Charging Cable (kW)	Maximum DC Output Power for Two EV Charging Cables	Simultaneous DC on Two Outlets	Maximum DC Output Current
60	60	40 + 20 kW	Yes	CCS connector: 200 A
80	80	40 kW x 2		
100	100	60 + 40 kW		
120	120	60 kW x 2		

Table 9-11 Detailed DC Output Specifications for DF240

MaxiCharger	Parameters			
	Maximum DC Output Power for One EV Charging Cable (kW)	Maximum DC Output Power for Two EV Charging Cables	Simultaneous DC on Two Outlets	Maximum DC Output Current
60	60	40 + 20 kW	Yes	CCS boost: 300 A (Peak: 400 A)
80	80	40 kW x 2		
100	100	60 + 40 kW		
120	120	60 kW x 2		
140	140	80 + 60 kW		

MaxiCharger	Parameters			
	Maximum DC Output Power for One EV Charging Cable (kW)	Maximum DC Output Power for Two EV Charging Cables	Simultaneous DC on Two Outlets	Maximum DC Output Current
160	160	80 kW x 2		
180	180	100 + 80 kW		
200	200	100 kW x 2		
220	220	120 +100 kW		
240	240	120 kW x 2		

NOTICE

The output power of each connector depends on its rated voltage and maximum current.

9.6 Power Consumption Specifications

Table 9-12 Power Consumption during Stand-by

Parameter	Specification
Stand-by Power (Heater Off)	0.08 kVA
Stand-by Power (Heater On)	1.00 kVA

NOTICE

The heater will operate daily when the outside air reaches the dew point to avoid condensation inside the cabinet. When the heater is working, it will consume most of the required stand-by power.

9.7 Input Short Circuit Current Specifications

Table 9-13 Input Short Circuit Current

Situation	Specification
Rated Peak Withstand Current (kA peak)	65 kA
Rated Short-time Withstand Current (kA rms)	65 kA

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