MaxiCharger DH480

Installation and Operation Manual

Version 1.0

CE Model

Trademarks

Autel® and MaxiCharger® are trademarks of Autel Intelligent Technology Corp., Ltd., registered in China, the United States and other countries. All other marks are trademarks or registered trademarks of their respective holders.

Copyright Information

Disclaimer of Warranties and Limitation of Liabilities

All information, specifications, and illustrations in this manual are based on the latest information available at the time of printing. Autel reserves the right to make changes at any time without notice. While information in this manual has been carefully checked for accuracy, no guarantee is given for the completeness and correctness of the contents, including but not limited to the product specifications, functions, and illustrations.

Autel will not be liable for any direct damages or for any special, incidental, or indirect damages or for any economic consequential damages (including the loss of profits).

For Services and Support (24/7):

Web: www.autelenergy.eu

Tel: +49 (0) 89 540299608 (Europe)

Email: evsupport.eu@autel.com

Address: Landsberger Str. 408/4. OG 81241 Munich, Germany

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

CONTENTS

1. Using This Manual

This manual describes the installation and use of the MaxiCharger DH480. Prior to installation, read through this manual to become familiar with the instructions of this charging station 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 Charging Station (see *2.2 Owner Responsibilities*)
- Installation Engineer (see *2.3 Installation Engineer Qualifications*)

1.3 Revision History

Version	Date	Descriptions
V1.0	2024.08	Initial version

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
ECU	Equipment control unit
EV	Electric vehicle
OCPP	Open charge point protocol, open standard for communication with charge stations
RBU	Routing business unit
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
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 charging station.
- Read the manual before installing or using the charging station.
- Do not install or use the charging station 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 charging station 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 local rules to meet the rated current and voltage demand.
- Ensure the load capacity of the grid is in accordance with the charging station.
- Ensure the charging station 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 charging station comply with all applicable local rules.
- Ensure the wiring inside the charging station 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 charging station 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.

2.2 Owner Responsibilities

The owner runs the charging station 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 charging station 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 charging station.
- Ensure the charging station has installed the protective devices.
- Ensure all the protective devices are installed after installation or maintenance.
- Ensure the space around the charging station 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 charging station 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 charging station.

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 charging station.

2.4 Usage Instructions

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

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

2.5 Signs on the Charging Station

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

Appropriate measures shall be taken by the owner to shield the charging station, 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 charging station is designed to charge an electric vehicle (hereinafter called EV). The charging station provides you with safe, reliable, fast, and smart charging solutions.

Intended Use

This charging station 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)

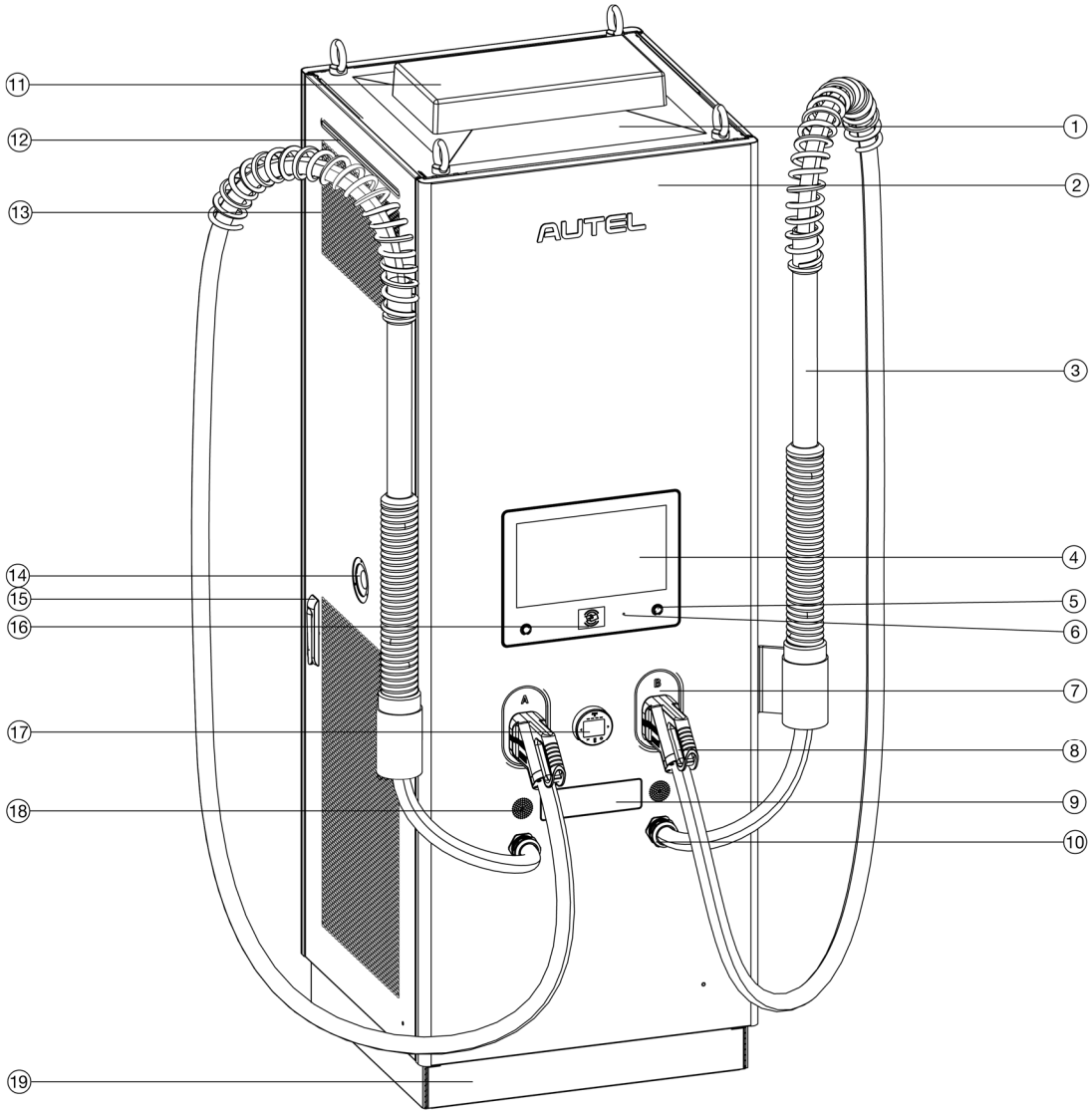


Figure 3-1 Product Overview (Outside)

1. Main Cabinet
2. Front Door
3. CMS
4. Touchscreen
5. Operation Button
6. Ambient Light Sensor
7. Socket
8. Charging Handle
9. Meter
10. Waterproof Cable Fixing Connector
11. Antenna
12. LED Indicator
13. Vent
14. Emergency Stop Button
15. Handle Lock
16. RFID Reader
17. POS Device
18. Loudspeaker
19. Base

NOTICE

Autel can deliver the charging station 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 charging handle is available.
EV Connected	Flashing Blue	An EV is connected to the charging station.
Charging	Illuminating Blue in Turn	Indicates the charging progress.
Charging Completed	Solid Blue	An EV is fully charged or has stopped charging.
Reservation	Solid Yellow	The charging station is reserved.
Error	Solid Red	An error has occurred.

3.2 Product Overview (Inside)

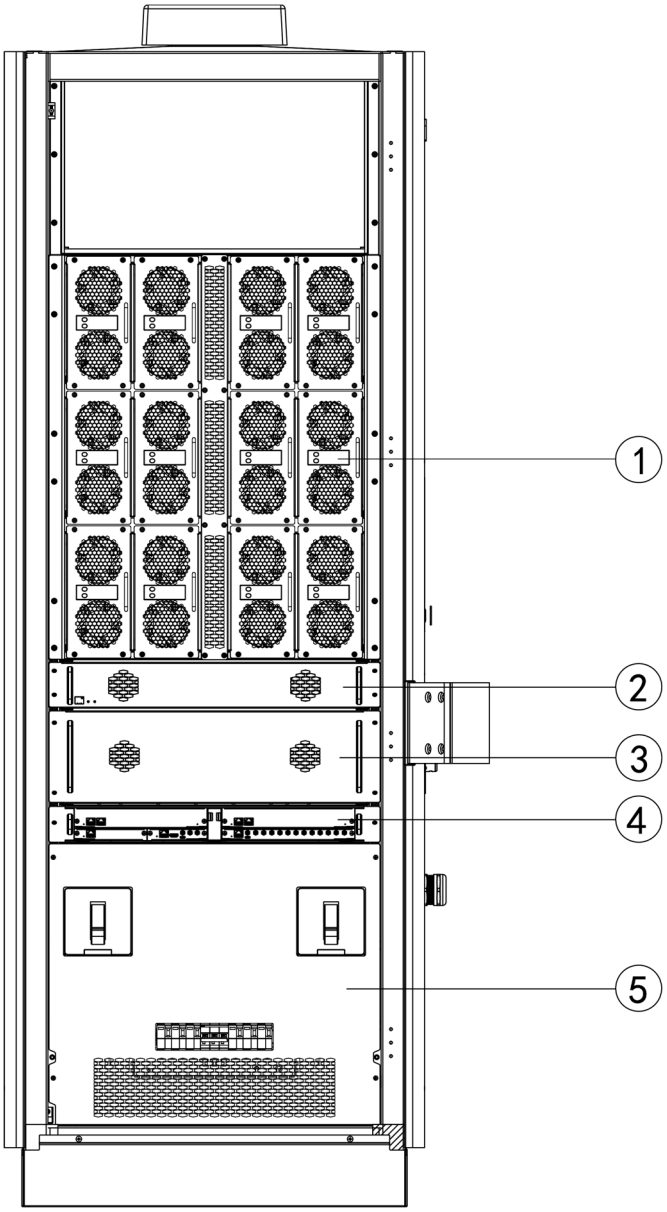
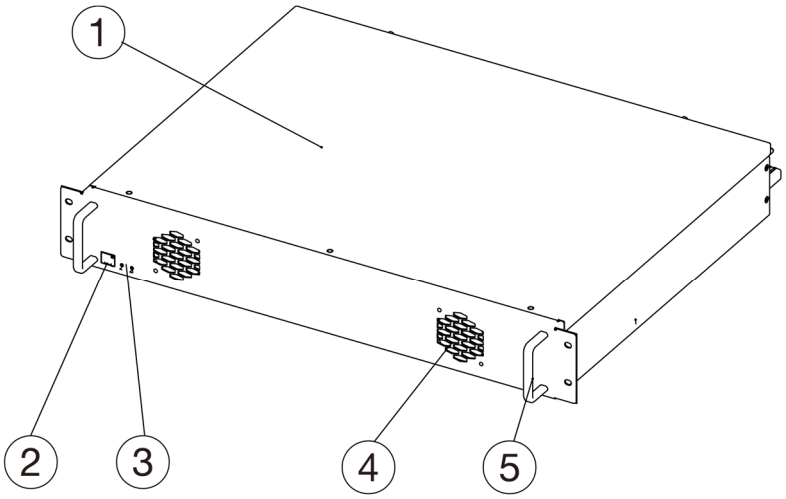


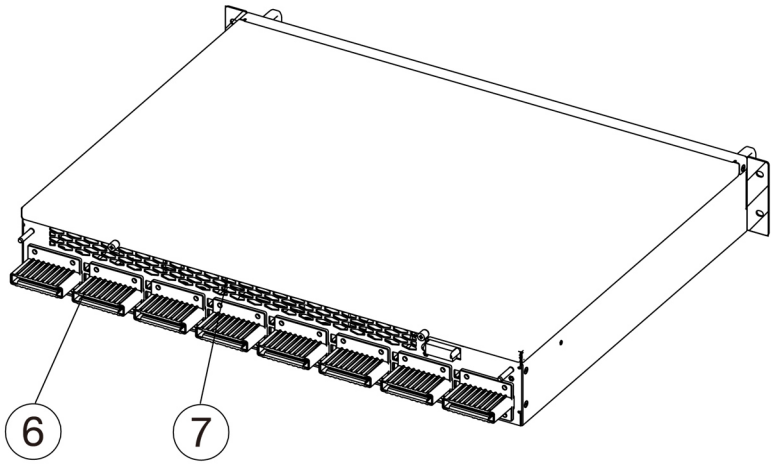
Figure 3-2 Product Overview (Inside)

1. Charging Module
2. Matrix Module
3. DC Output Module
4. Control Module
5. AC Input Module

3.2.1 Matrix Module



Front View



Rear View

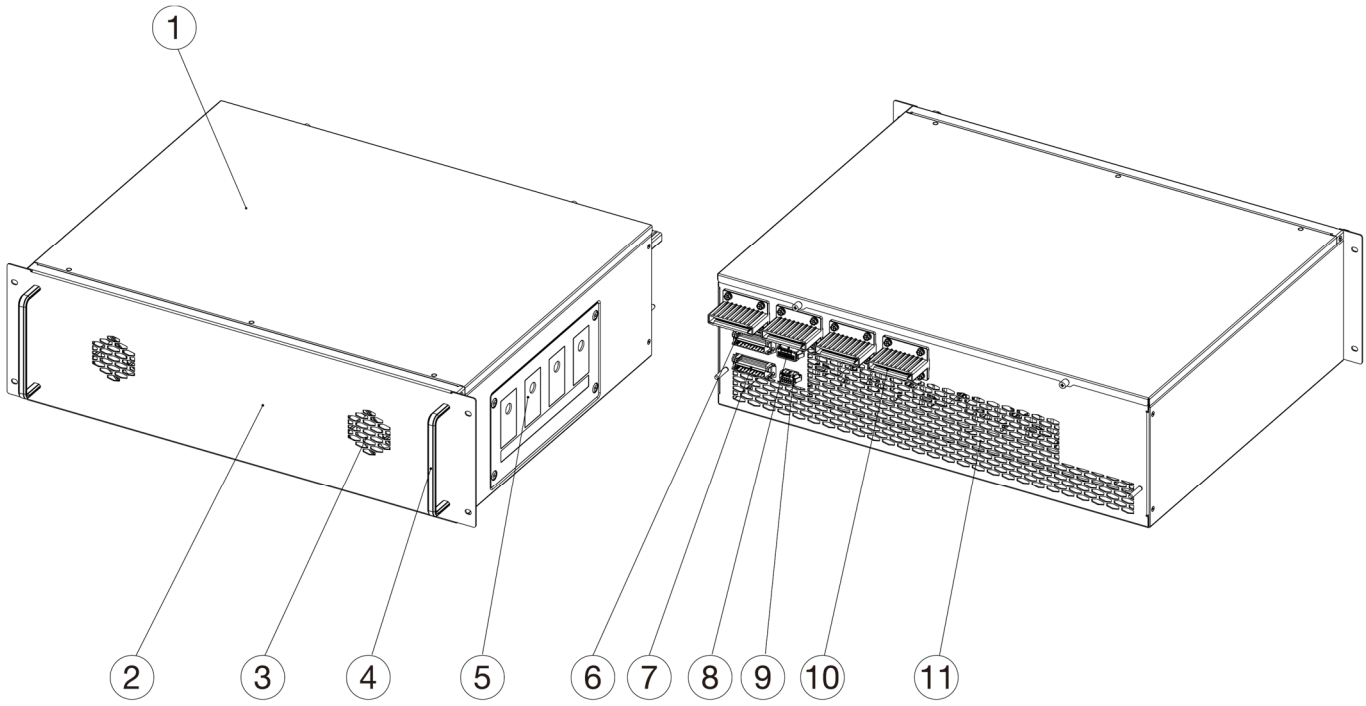
Figure 3-3 Matrix Module

Net Weight: Approx. 19.95 kg

Dimensions (W x D x H): 568 x 483 x 85 mm

1. Cover
2. Debugging Port
3. DIP Switch
4. Cooling Fan
5. Handle
6. Power Connector
7. Vent

3.2.2 DC Output Module



Front View **Rear View**

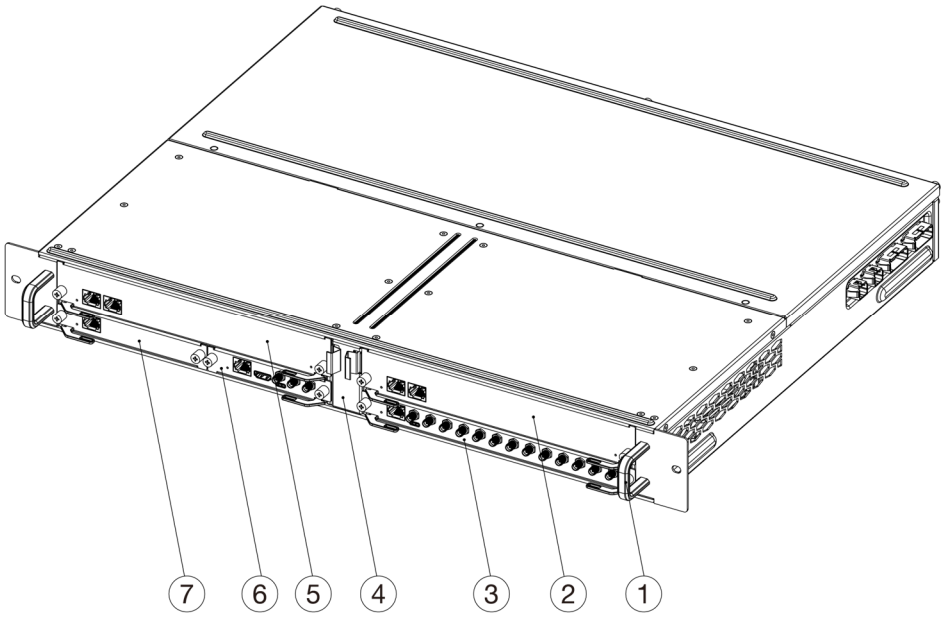
Figure 3-4 DC Output Module

Net Weight: Approx. 36.9 kg

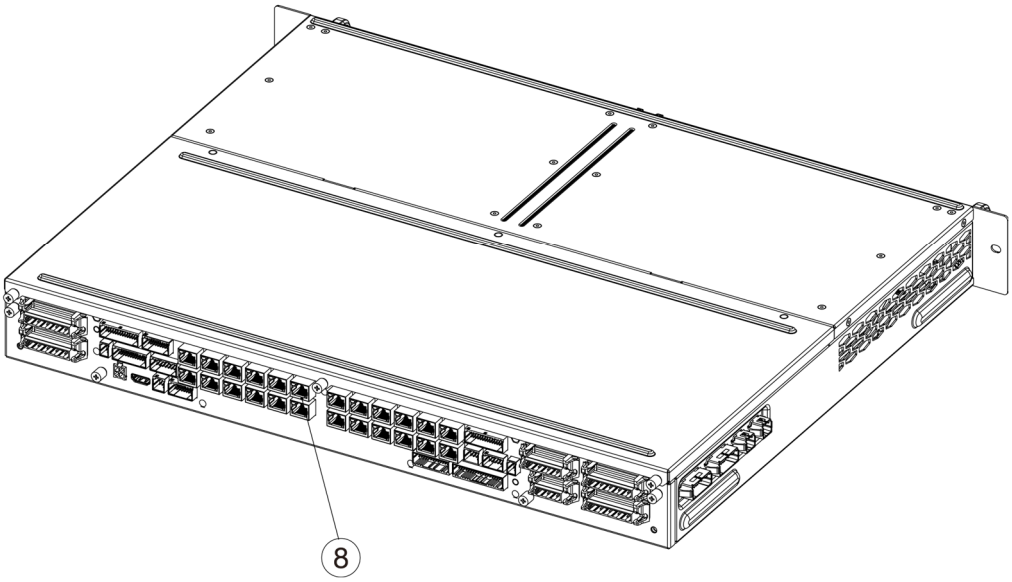
Dimensions (W x D x H): 568 x 486.5 x 172 mm

1. Cover
2. Front Panel
3. Cooling Fan
4. Handle
5. DC Output
6. Voltage and Current Measurement Connector for Charging Handle B
7. Voltage and Current Measurement Connector for Charging Handle A
8. Connector for Cooling Fan, Contactor of Charging Handle B and Hall Sensor
9. Connector for Contactor of Charging Handle A and Hall Sensor
10. Power Input Connector
11. Vent

3.2.3 Control Module



Front View



Rear View

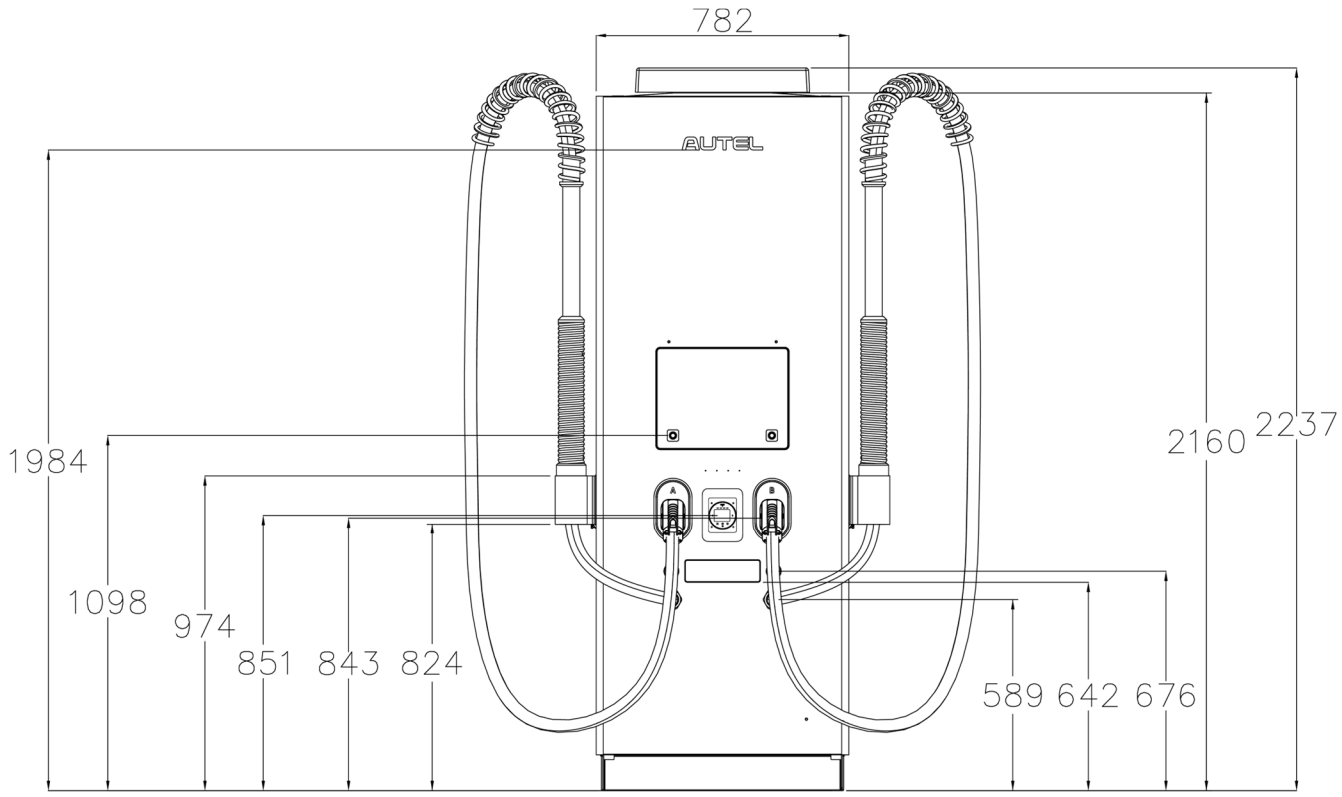
Figure 3-5 Control Module

Net Weight: Approx. 11.4 kg

Dimensions (W x D x H): 568 x 457 x 70.6 mm

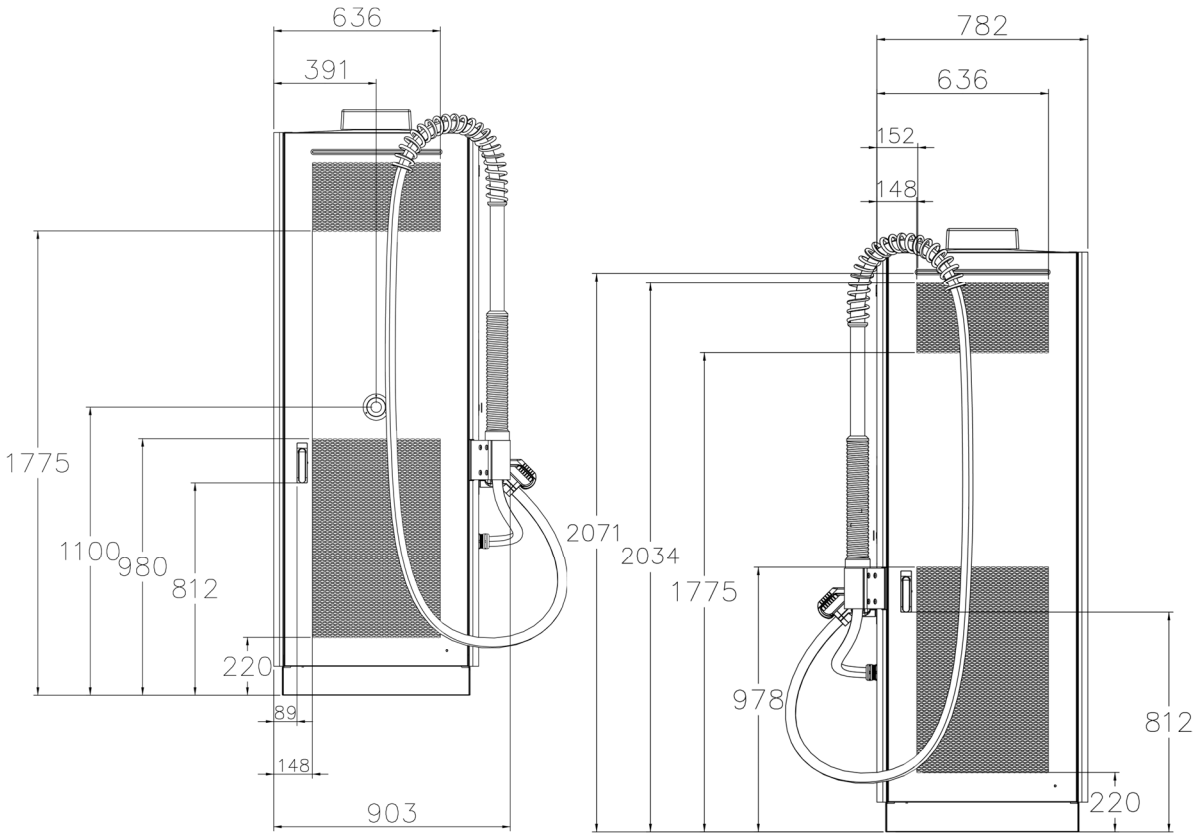
1. Handle
2. CCU
3. RBU
4. Cooling Fan
5. CCU
6. TCU
7. ECU
8. RBU GE

3.3 Product Dimensions



Unit: mm

Figure 3-6 DH480 Dimensions (Front View)



Unit: mm

Figure 3-7 DH480 Dimensions (Side View)

3.4 Direction of Airflow

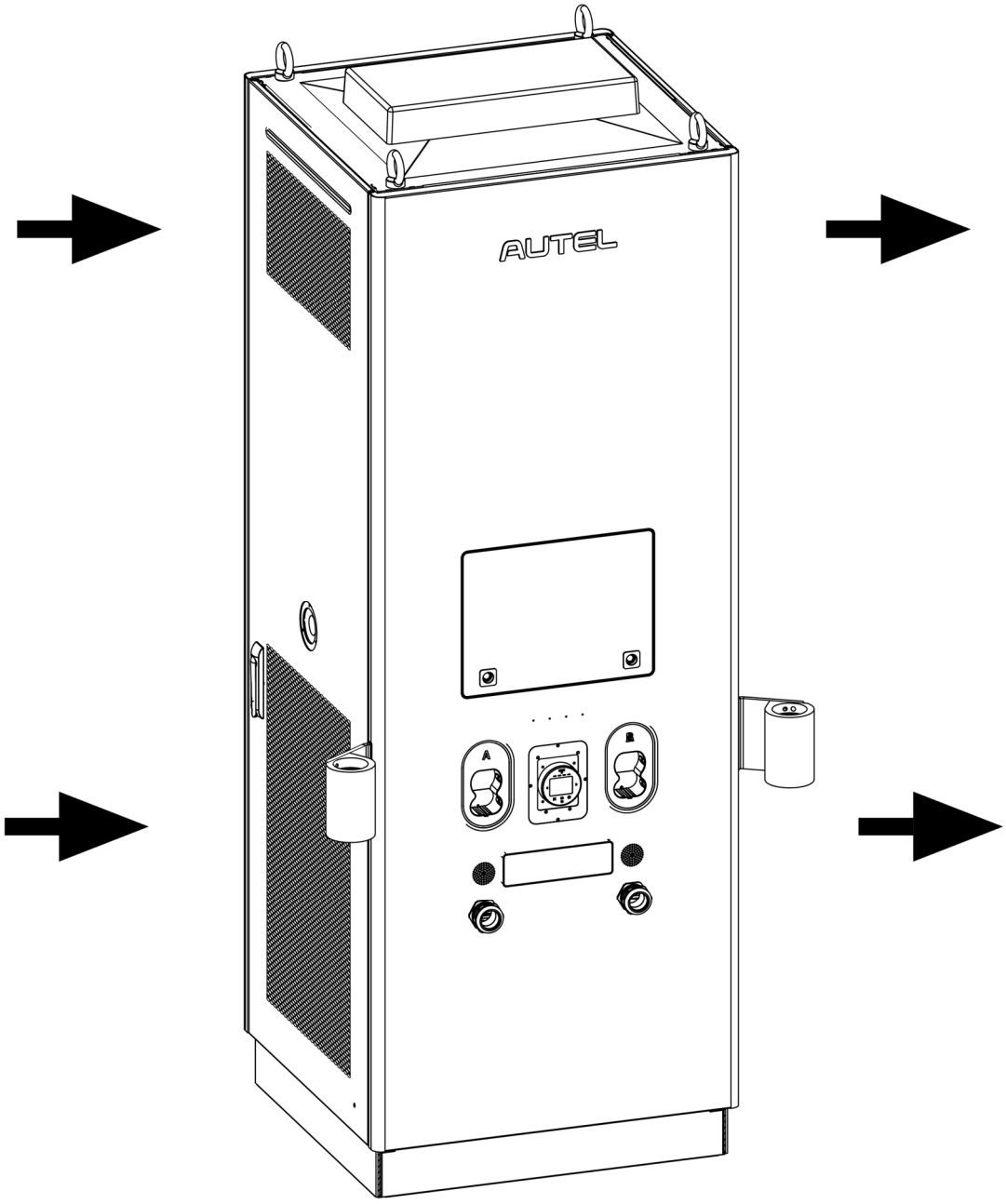


Figure 3-8 Direction of Airflow

3.5 Principle Diagram

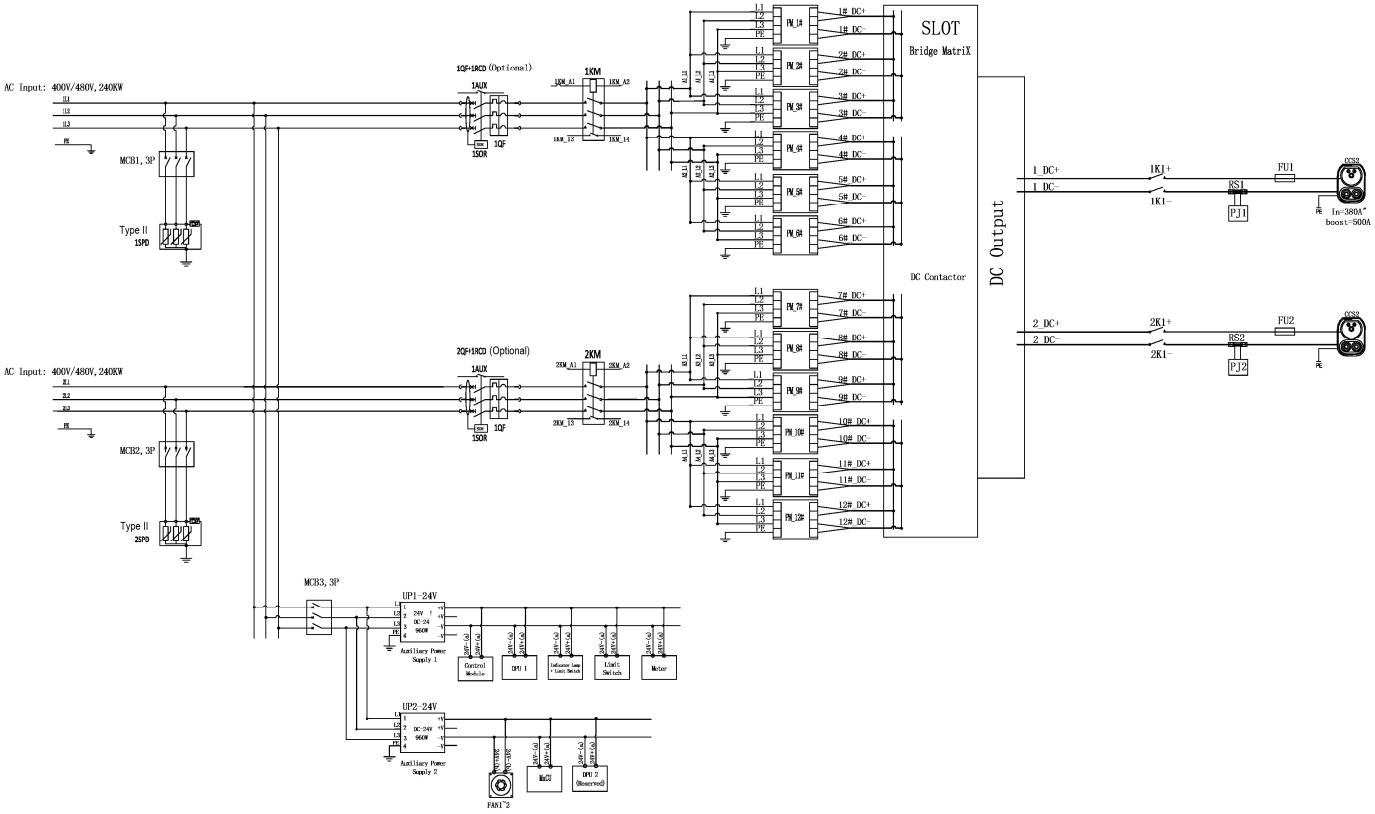


Figure 3-9 Principle Diagram

4. Preparation

4.1 One-stop Commissioning

The configuration of the charging station will be completed by three parties, including the customer, the installation contractor, and the installation personnel. The steps are as follows.

– The customer configures the charging station on the Autel Operation and Maintenance Platform and designates the installation ticket.

– The installation contractor confirms and receives the installation ticket on the Autel Operation and Maintenance Platform, and then assigns installer to install the charging station.

– The installer installs the charging station and synchronizes the configuration to it.

➢ **For the customer:**

1. Launch a web browser on the computer and enter the URL of Autel Operation and Maintenance Platform. Then input the account and password to log in to the web console.

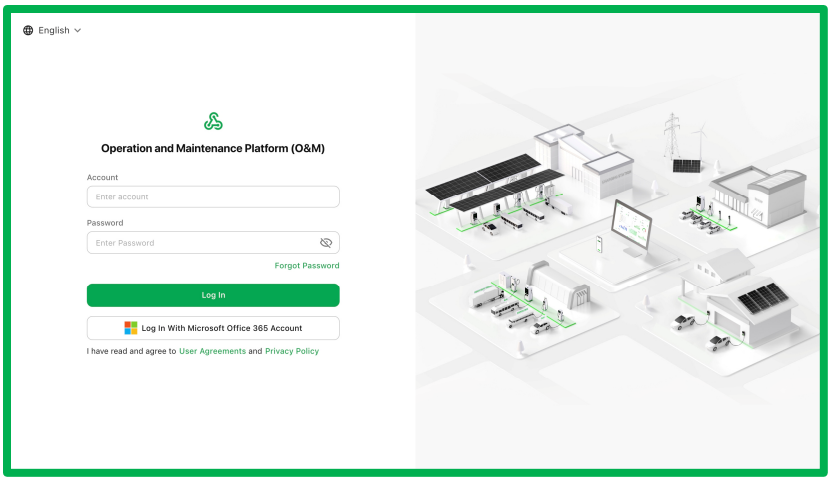


Figure 4-1 Log-in Screen

NOTICE

Contact your local distributor to obtain the URL of Autel Operation and Maintenance Platform, the account, and password.

2. Click on the **charging station icon** on the upper left of the screen to enter the Devices screen.

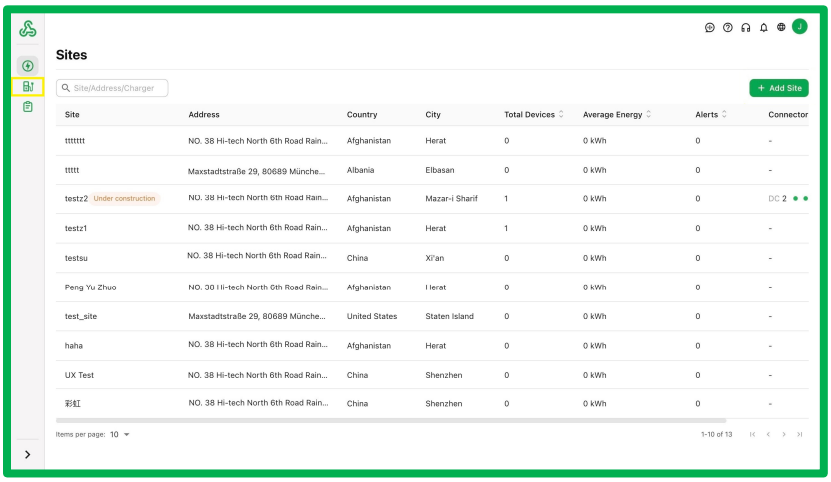


Figure 4-2 Sites Screen

3. On the Devices screen, click on the **Add Device** button on the upper right of the screen.

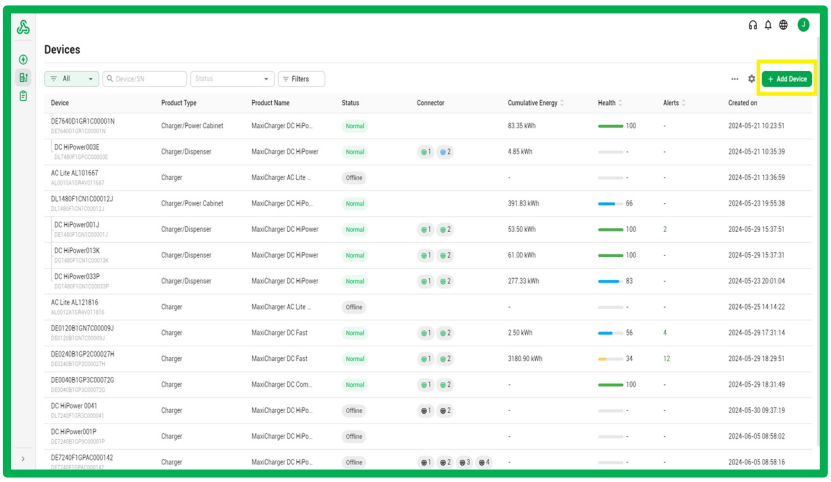


Figure 4-3 Devices Screen

4. Input the serial number and PIN of the charging station, then click on the **OK** button to add the charging station to the Autel Operation and Maintenance Platform.

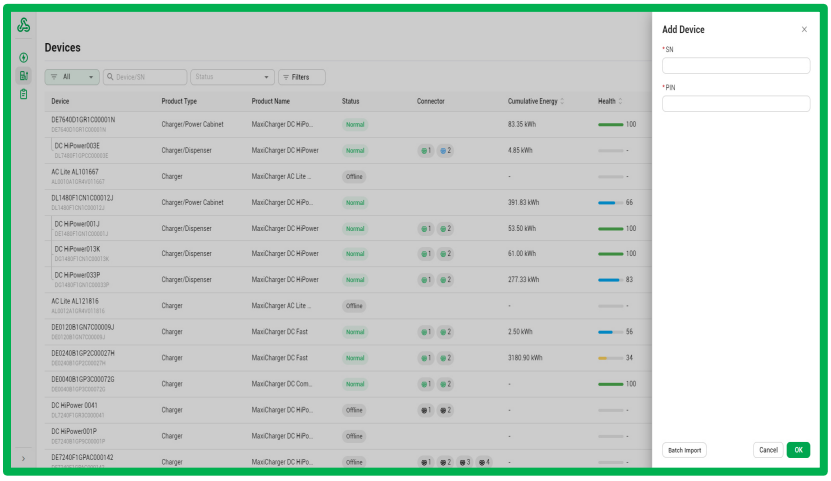


Figure 4-4 Adding Device Screen

5. Click on the **lightning icon** on the upper left of the screen to go back to the Sites screen.

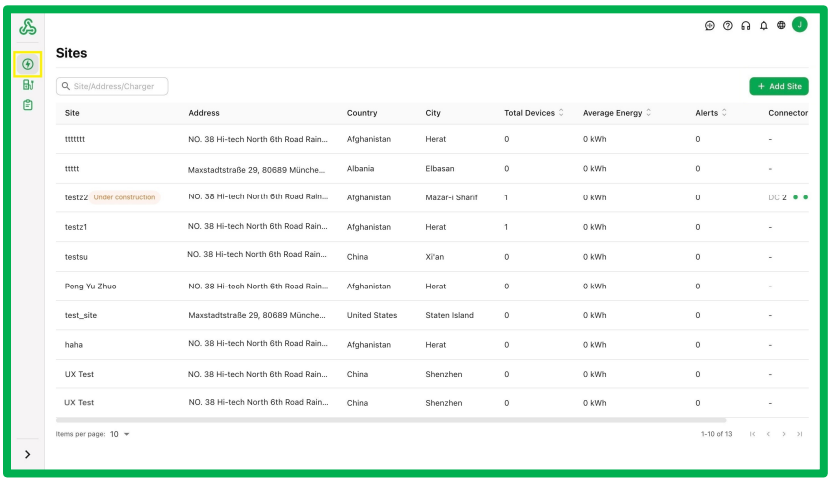
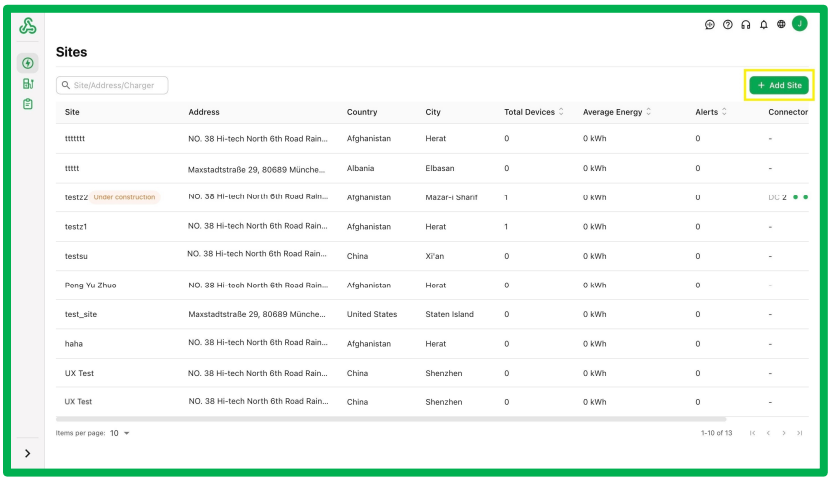


Figure 4-5 Sites Screen

6. Click on the "**Add Site**" button on the upper right of the screen. The fields marked with asterisk are mandatory. Then click on the **OK** button to proceed.



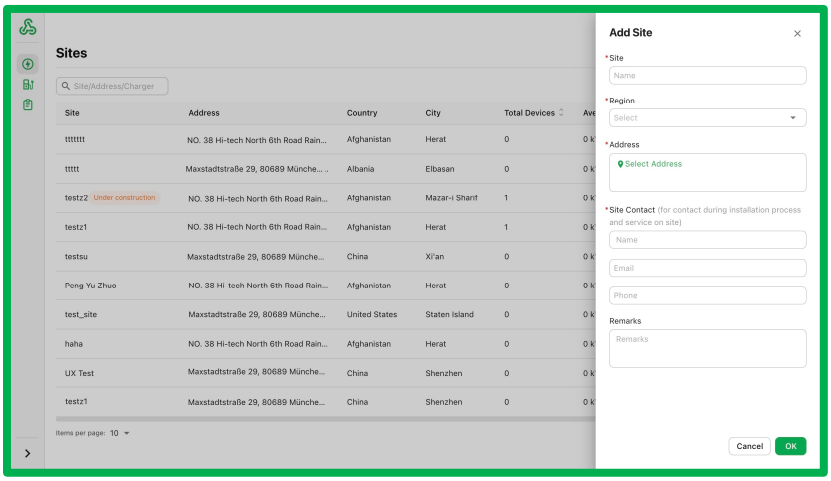


Figure 4-6 Adding Sites Screen

NOTICE

- You can choose to enter your phone number or email.
- If you choose to enter your email, you will receive notifications concerning the installation ticket has been confirmed or cancelled, the installation work has been started or completed.

7. Click "**Enter Site Creation Guide**" to proceed.

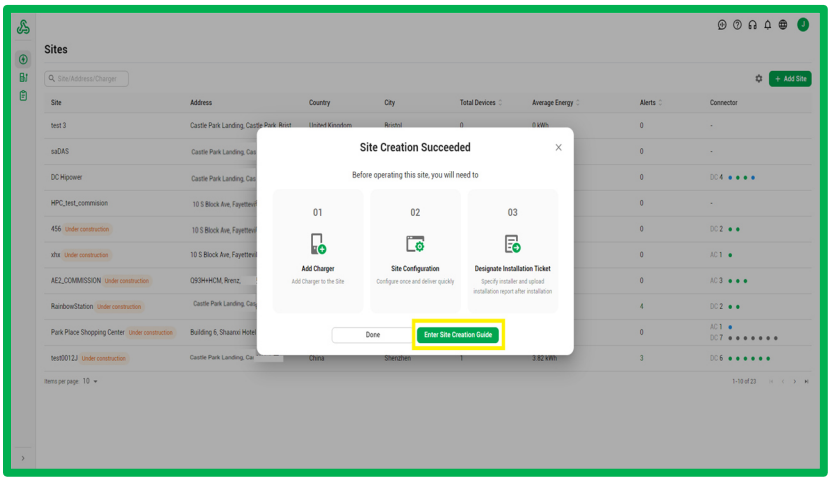


Figure 4-7 Site Creation Succeeded Screen

8. On the Add Charger screen, click the **box** to the left of the serial number to select the charging station as required. Then click on the **Next** button to proceed.

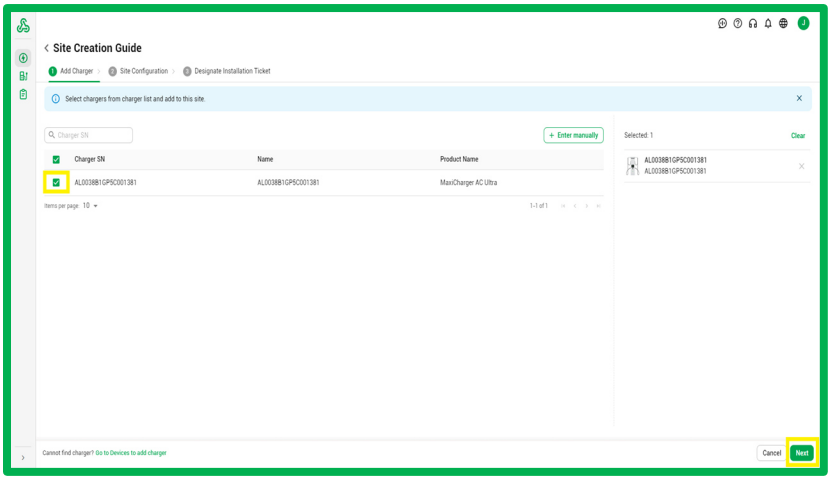


Figure 4-8 Adding Charger Screen

9. A prompt will appear. Determine whether to use the existing site configuration.

a) Click on the **No** button to start setting up a new site configuration.

b) Click on **Use And Assign Ticket** to use the existing site configuration and designate the installation ticket directly. Then skip **Steps 10** to **15** to proceed.

c) Click on the **Yes** button to use the existing site configuration. Then skip **Steps 10** to **14** to continue.

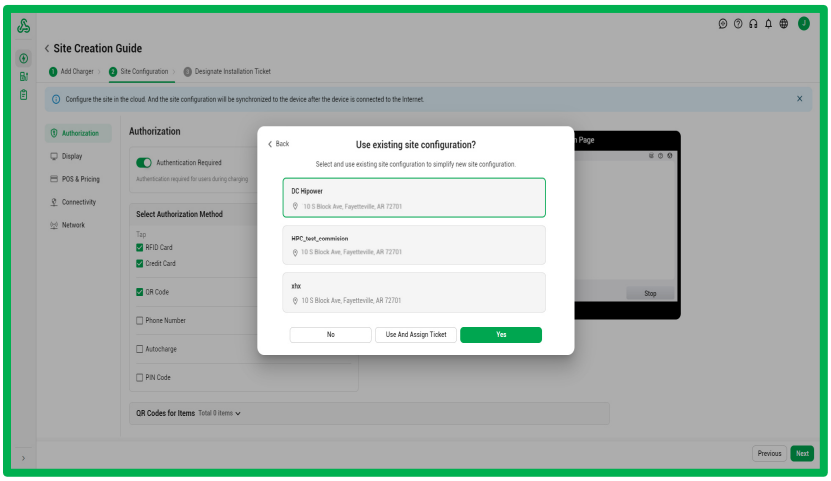


Figure 4-9 Selecting Existing Site Configuration

10. **Authorization Configuration**. Determine whether to enable the authentication function.

a) If the authentication function is not needed, insert the charging handle into the charging port on the EV to start a charge session directly.

b) If the authorization function is needed, toggle to enable the Authorization function.

1) Choose any of the following methods to start a charge session by tapping the **box** to the left of it.

- RFID card
- Credit card (optional)
- Scan the QR code on the screen
- Phone number
- Autocharge
- Plug & charge
- PIN code

2) Drag and drop the icon of the authorization methods and position them on the screen as required.

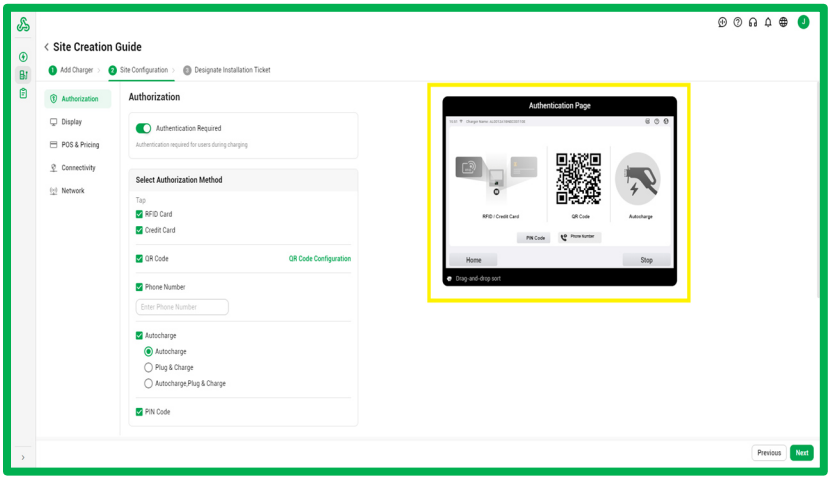


Figure 4-10 Selecting Authorization Methods

3) Add the URL of the items contained in the QR Code for accessing related details of the charging handle.

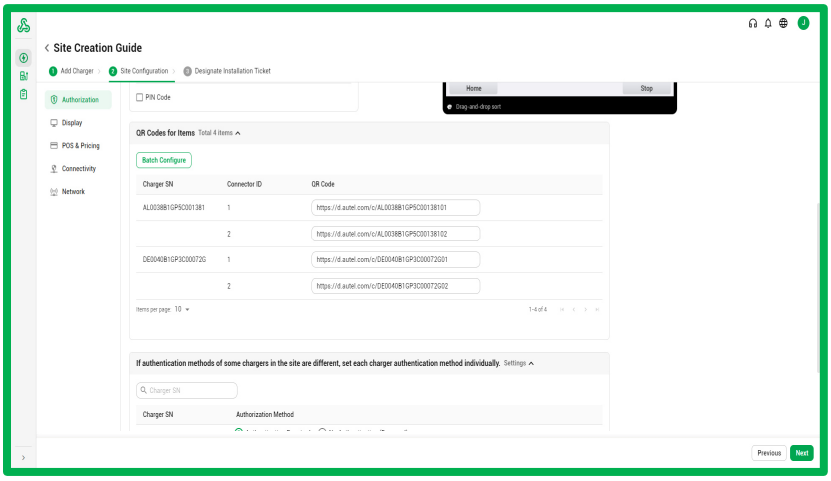


Figure 4-11 Adding the URL Screen

4) If the authorization methods of some charging stations at the site are different, select the authorization method for each charging station individually.

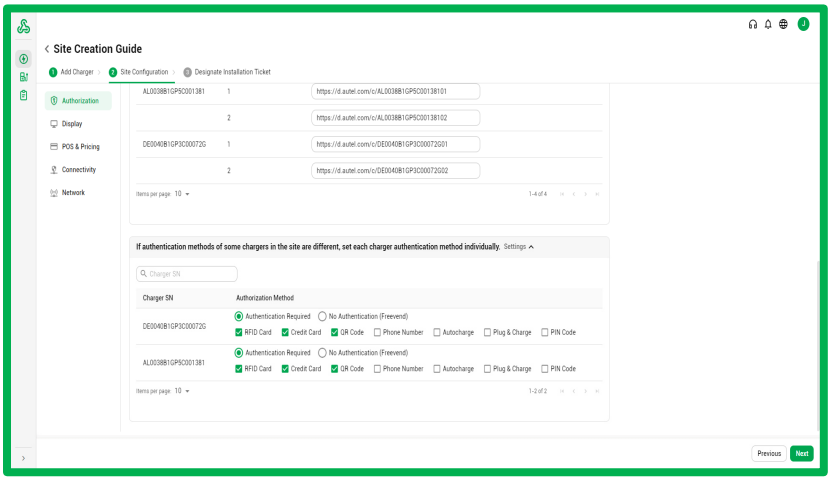


Figure 4-12 Select the Authorization Method for Each Charging Station

5) Click on the **Next** button to proceed.

11. **Display Configuration**. Select **Display** on the left column.

1) Input the customer service hotline and choose where to position it on the standby (Home) screen.

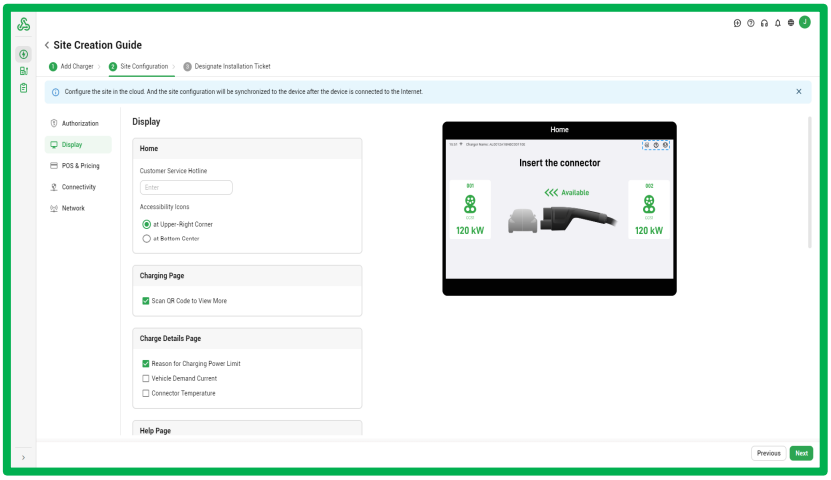


Figure 4-13 Setting the Standby (Home) Screen

2) Choose whether to place the QR Code on the Charging screen for accessing the charging details.

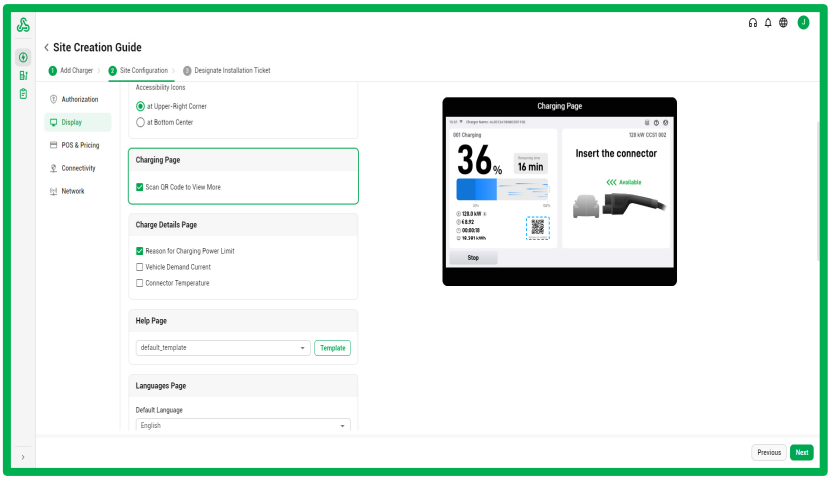


Figure 4-14 Setting the Charging Screen

3) Choose the items to be displayed on the Charging Details screen.

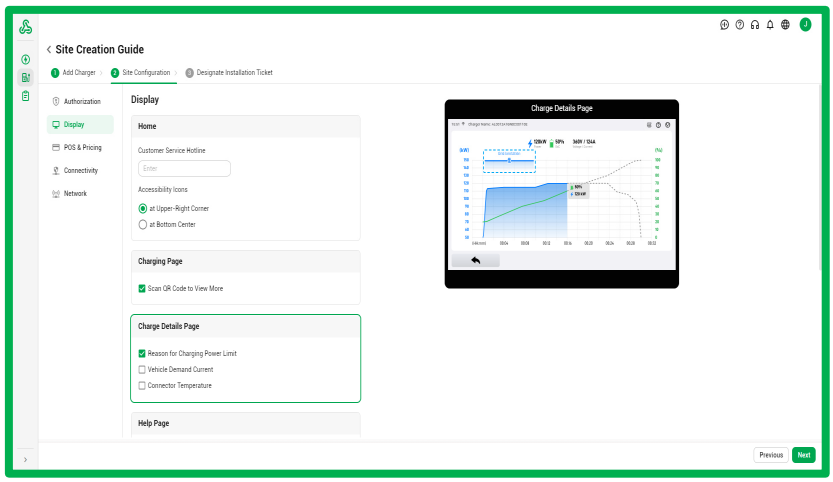


Figure 4-15 Setting the Charging Details Screen

4) Choose the template for the **Help** screen. You can also customize the template as required.

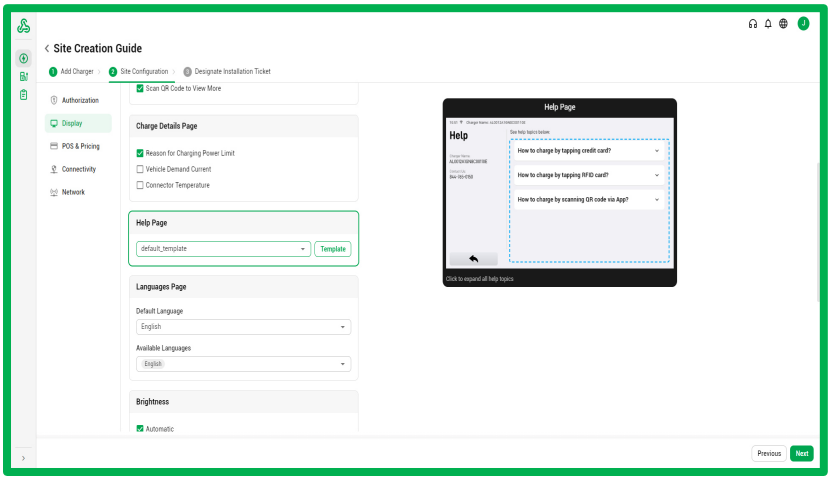


Figure 4-16 Selecting the Template for the Help Screen

5) Set the default language and add the available languages for the charging station.

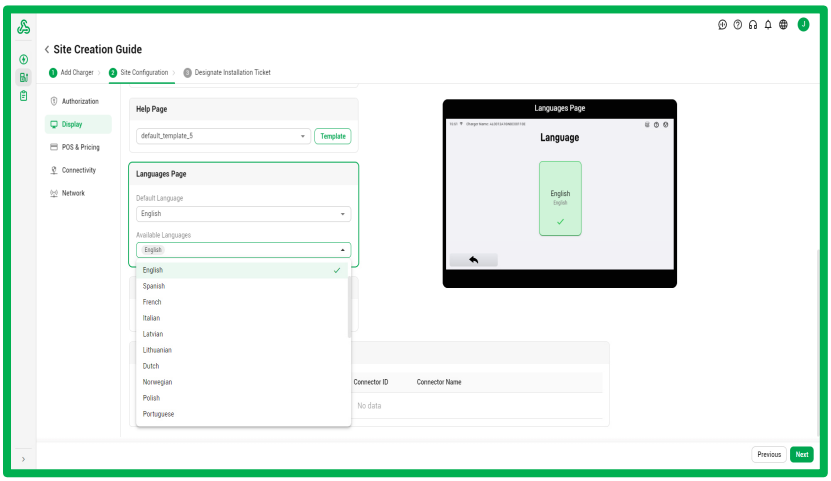


Figure 4-17 Setting the Default Language

6) Choose whether the charging station should automatically detect the ambient brightness.

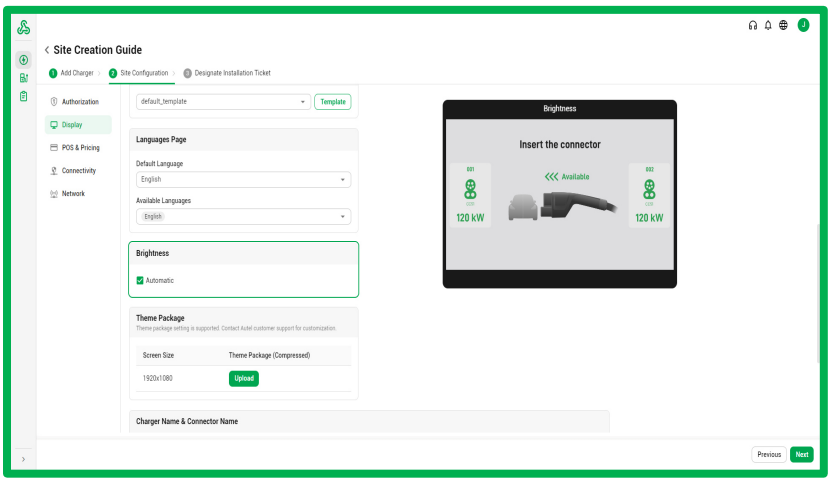


Figure 4-18 Setting the Ambient Brightness Detection

7) Set up the theme package, or contact Autel customer support for customization.

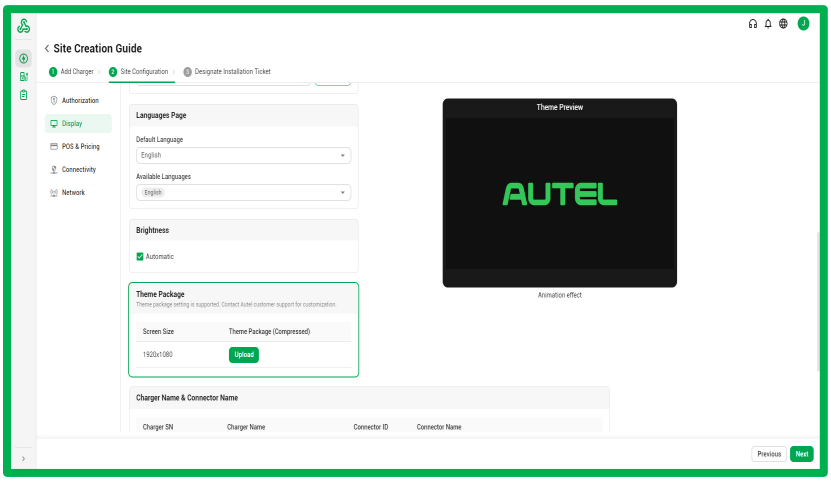


Figure 4-19 Setting the Theme Package

8) Name the charger and the connector.

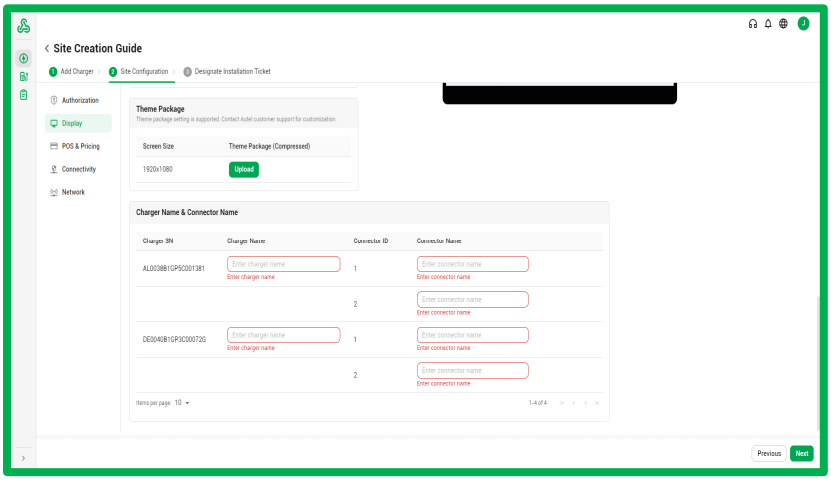


Figure 4-20 Naming the Charger and the Connector

9) Click on the **Next** button to proceed.

12. **POS & Pricing Configuration.** Select **POS & Pricing** on the left column. Choose the **POS Model**, **Function Mode**, **Pricing Method**, **Working Method** and set the **Pre-authorized Amount** according to the real situation. Then click on the **Next** button to proceed.

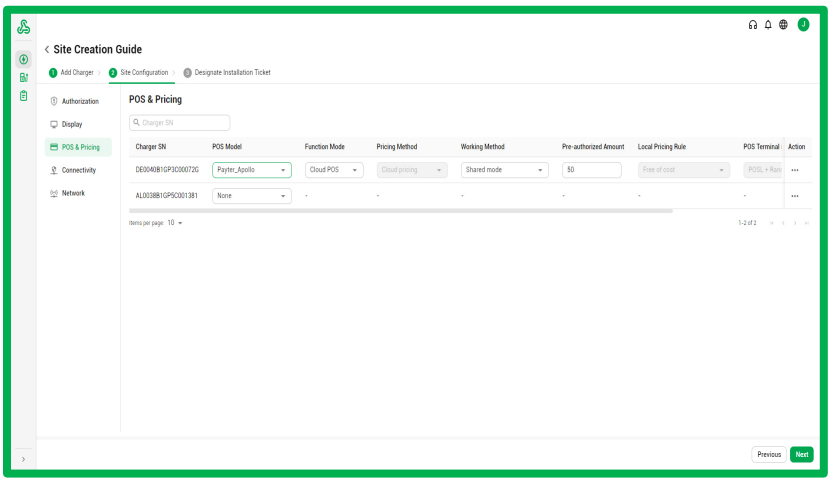


Figure 4-21 POS & Pricing Configuration Screen

13. **Connectivity Configuration**. Select **Connectivity** on the left column. Choose the OCPP Server for the charging station and decide whether to set a unique ChargeBox ID and authorization key for each charging station. Click on the **Next** button to proceed.

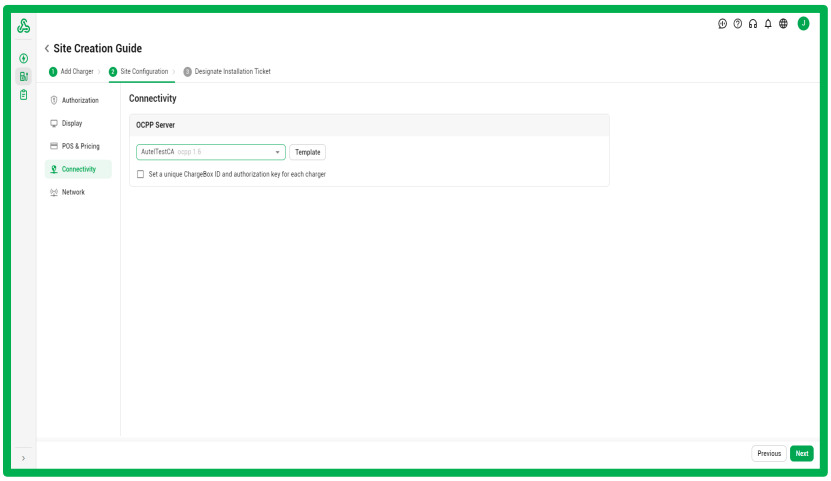


Figure 4-22 Connectivity Configuration Screen

14. **Network Configuration**. Select **Network** on the left column. The charging station can be connected to the Internet via Wi-Fi, cellular network or Ethernet. Choose the desired method for Internet connection.

a) It is recommended to configure the Wi-Fi for the charging station by inputting the network name and its password. Then click on the **Next** button to proceed.

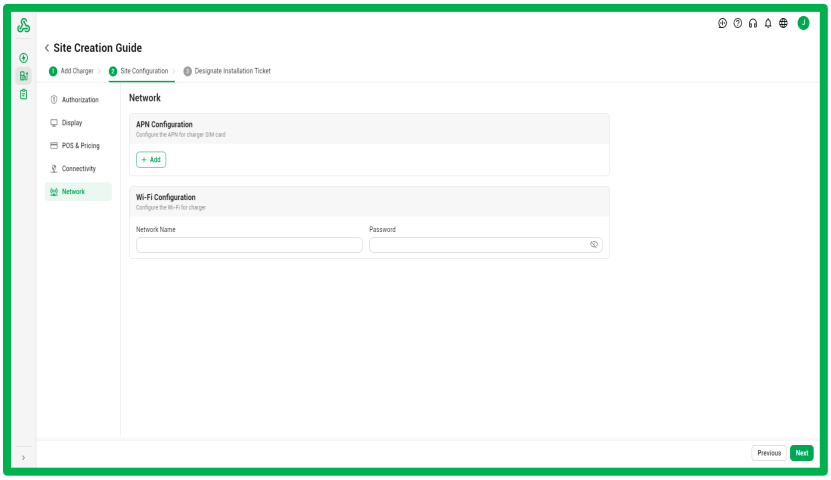


Figure 4-23 Wi-Fi Configuration Screen

b) When connecting to the Internet via cellular network and the APN of the SIM card used need to be configured, contact the service provider of the SIM card to obtain related information of APN. Then click on the **Add** button and configure the APN according to the on-screen prompts. The fields marked with asterisk are mandatory.

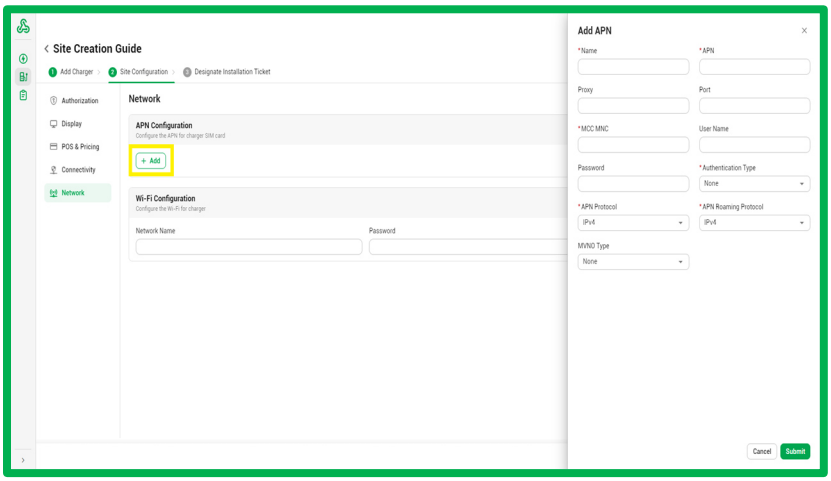


Figure 4-24 Adding the APN Screen

Click on the **Next** button to proceed.

NOTICE

When connecting to the Internet via Ethernet or cellular network that does not require APN configuration, there is no need to scan the QR code with the Autel Evops app to synchronize the configuration to the charging station. After the installation is completed and the charging station is powered on, the configuration will be automatically synchronized to the charging station, which will be activated and restarted automatically. After that, the charging station can be remotely controlled on the Autel Operation and Maintenance Platform.

15. Choose the installation time and installation contractor, then assign the installation ticket to the installation contractor. Click on the **Done** button to finish the configuration.

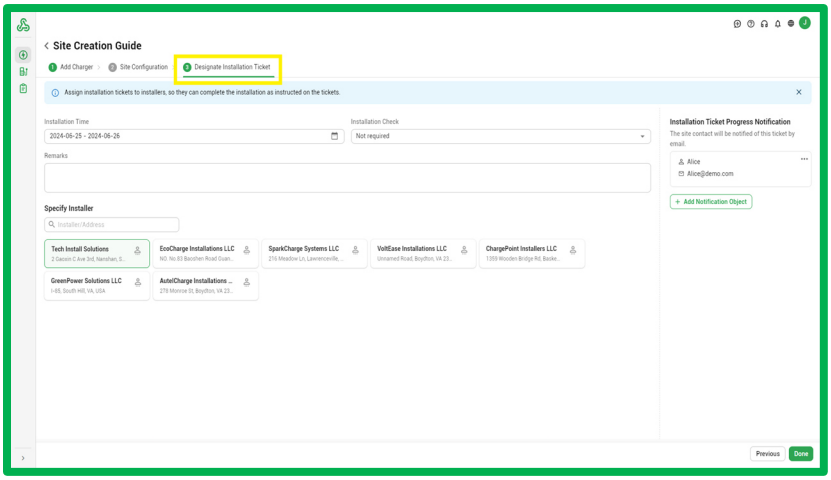


Figure 4-25 Designating the Installation Ticket Screen

➢ **For the installation contractor**

1. Refer to **Step 1** to log in to the Autel Operation and Maintenance Platform.

2. Click on the **ticket icon** at the upper left corner of the screen to enter the Ticket screen. Then choose the ticket to be received.

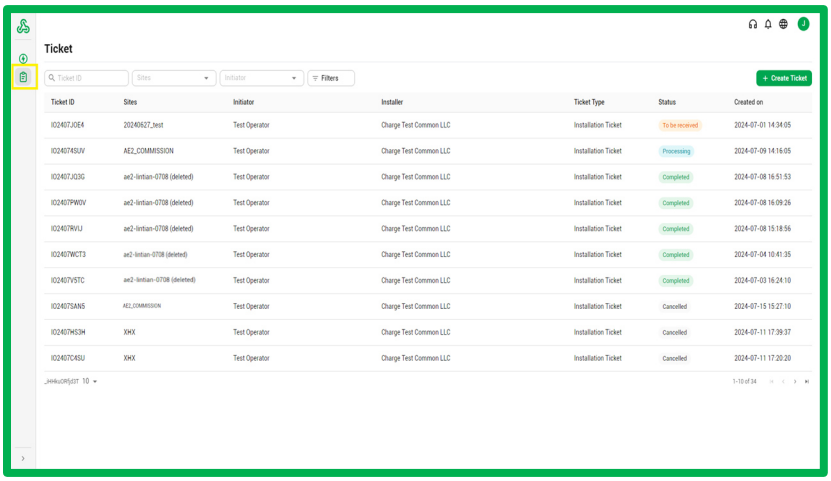


Figure 4-26 Ticket Screen

3. Click on the **Confirm Received** button at the upper right corner of the screen to take the order. Then assign installer to install the charging station.

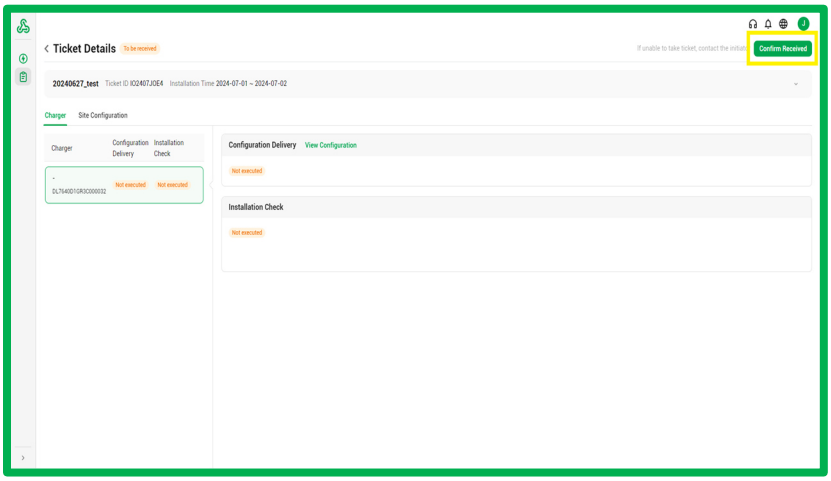


Figure 4-27 Ticket Details Screen

The installer will accept the assignment and install the charging station.

4.2 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. Prepare the foundation for the cabinet. Refer to *Space Requirements.*
3. Complete the electrical design. Refer to *Electrical Design.*
4. Prepare the cables, including the AC input wire, PE wire, and Ethernet cable (if no cellular network is available).
5. Ensure that the cable slack is sufficient to guide the cables into the cabinet.

NOTICE

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

4.2.1 Location Requirements

- Ensure the charging station's installation location can sufficiently reach the parked EV with the chosen charging cable length. The standard length of a charging cable is 5-meter.
- 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 it will be easy to add future stations.

- 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 charging station 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.

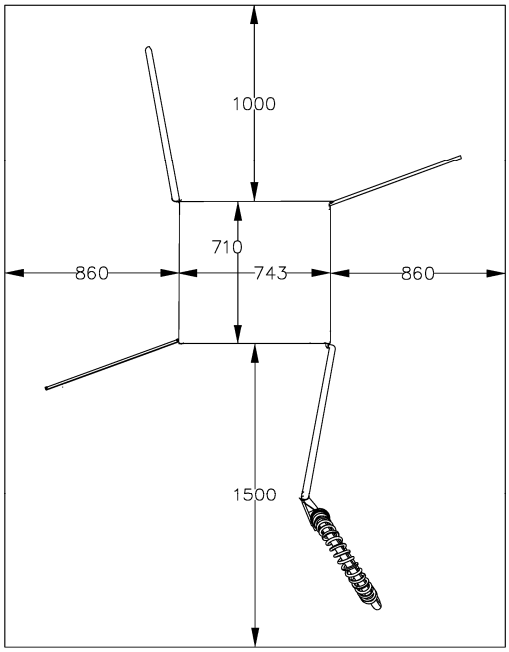
NOTICE

While Autel tests the charging station 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.

4.2.2 Space Requirements

1. The space requirements are as below:

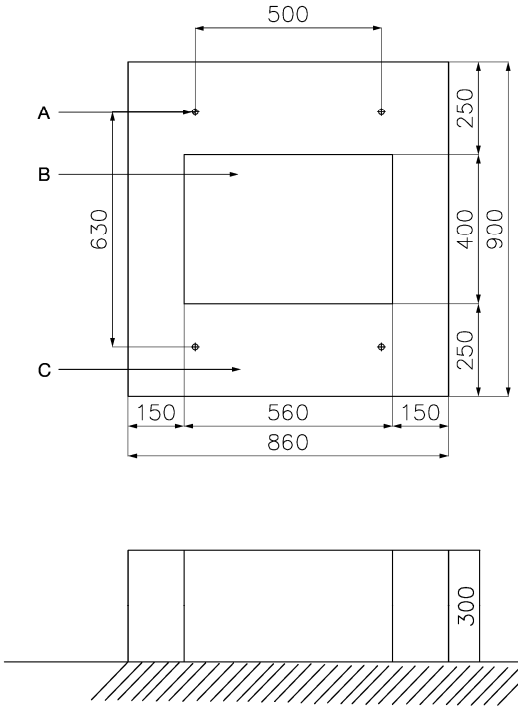


Unit: mm

Front

Figure 4-28 Space Requirements

2. Prepare the cable well and foundation as recommended below:



Unit: mm

Figure 4-29 Foundation

A. Mounting Hole B. Cable Well C. Foundation

NOTICE

- Find the four M16 X 150 expansion bolts from the package and remove the nuts and gaskets from them. Set the nuts and gaskets aside. Then embed the four bolt bodies when pouring the concrete into the foundation. The bolt bodies should be 40 mm above the surface.
- Apart from using the dimensions mentioned above, the drilling template in the package can also be used to locate the mounting holes on the charging station's foundation.

4.2.3 Electrical Design

The charging station 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.

The table below describes the recommended cable length reserved from the cable exit to power cabinet.

Table 4-1 Recommended Cable Length Reserved

No.	Cable Connection	Cable Length
1	AC input cable/PE cable	600 mm
2	Ethernet cable	1700-2000 mm

4.2.3.1 Use of RCD

When the grid type is TT or IT, an external RCD is required, and the following settings need to be adjusted:

1. Trip threshold: 30 mA
2. Trip delay: ≤ 100 ms

4.2.3.2 Grounding Requirements

Ensure that a grounding conductor that complies with local codes is properly grounded to earth at the service equipment.

4.2.3.3 Wiring Requirements

Refer to *Table 5-2 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 charging station to ensure that the service wiring at the installation location supports the charging station power requirements.

4.3 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.

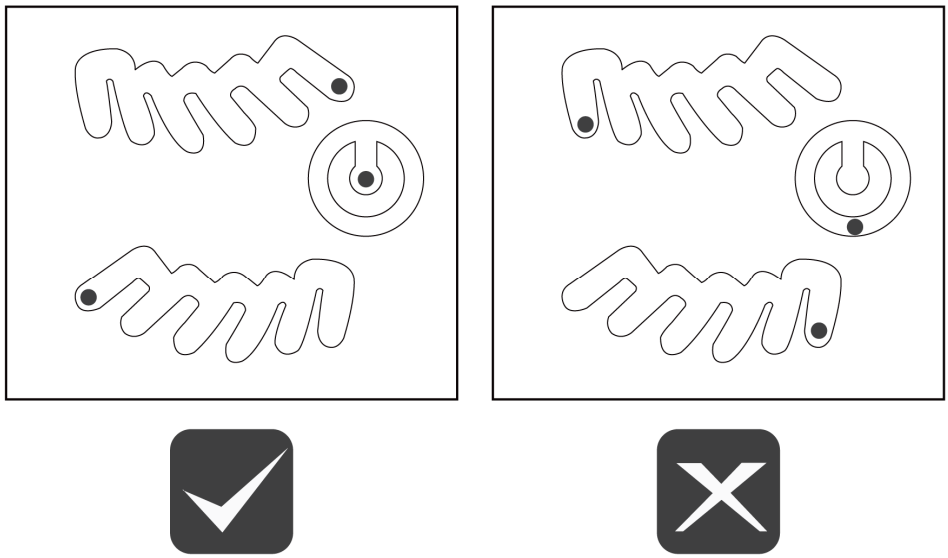


Figure 4-30 Tilt and Inversion Indicators

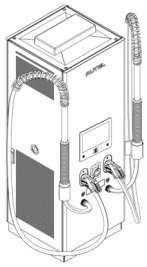
2. Remove the outside packaging and interior protection materials using appropriate tools.

3. Inspect the charging station and the parts for installation for damage. If you find damage or the parts are not consistent with the order, contact your local dealer.

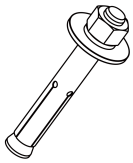
4. Ensure that all parts are delivered according to the order.

4.4 Packing List

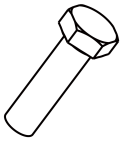
MaxiCharger
1 PC



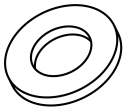
Expansion Bolt
(M16 x 150)
4 PCS



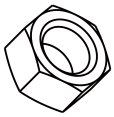
Bolt (M10 x 35)
8 PCS



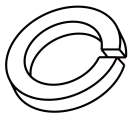
Flat Gasket (Size 10)
14 PCS



Hex Nut (M10)
6 PCS

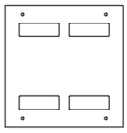


Spring Washer
(Size 10)
8 PCS



Cabinet Door Key
4 PCS

Drilling Template



Packing List
1 PC

4.5 Recommended Tools

The following tools are recommended when installing the charging station.

- Multimeter
- Voltage Tester
- Tape Measure
- Brush
- Cellular Signal Detection Device
- Wire Stripper
- Cable Lug
- Crimping Plier
- Power Drill
- Drill Bit (16 mm)
- Philips Screwdriver
- Socket Wrench (8mm/16 mm)
- Fireproof mortar

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 charging station. 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 charging station 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.

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 charging station 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 charging station to the internet. Refer to *Connecting to the Internet*.
6. 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 charging station.

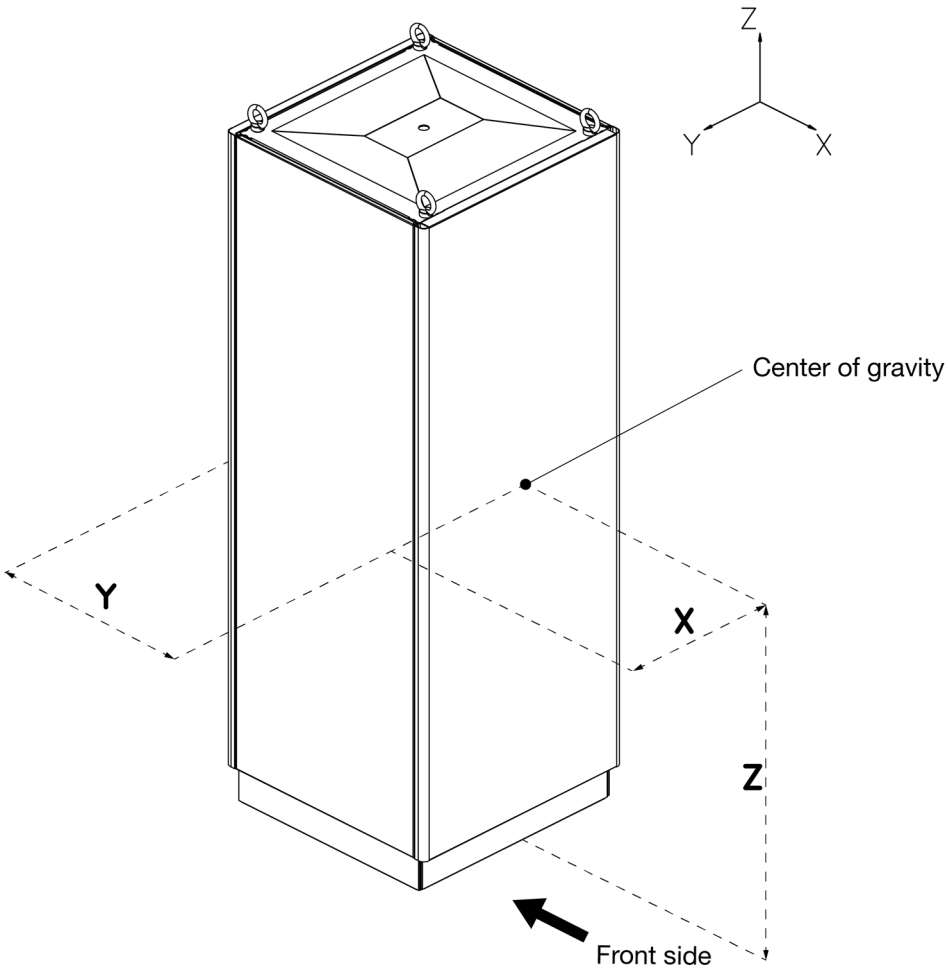


Figure 5-1 Center of Gravity

Parameter	Specifications
X	391 mm
Y	380 mm
Z	1200 mm

5.3 Moving the Cabinet to the Site

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 charging station.

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 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.

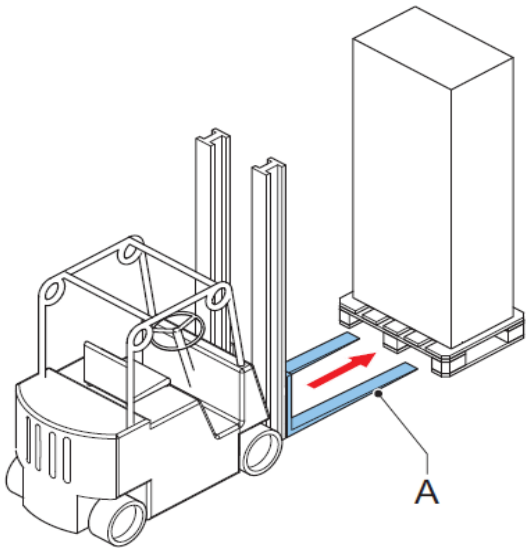


Figure 5-2 Transporting the Cabinet by Forklift

5.3.2 Hoisting the Cabinet

STEP 1

Use the cabinet door key to open the left and right door. Then remove the four screws (**A**) using a Philips screwdriver to remove the left and right base covers. **Set them aside.**

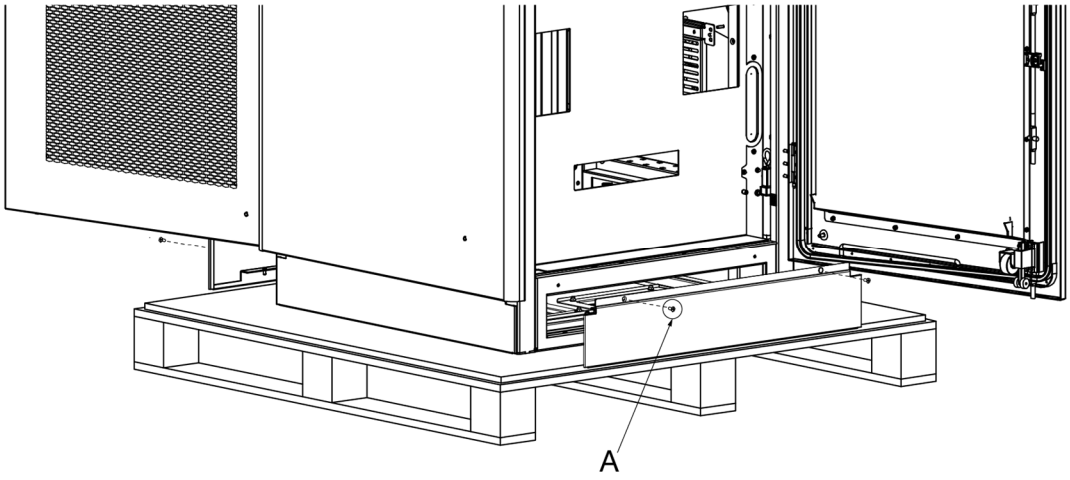


Figure 5-3 Removing the Base Covers

STEP 2

Remove the cabinet from the pallet by removing the bolt (**A**), spring washer (**B**), steel gasket (**C**), and nylon gasket (**D**)**.**

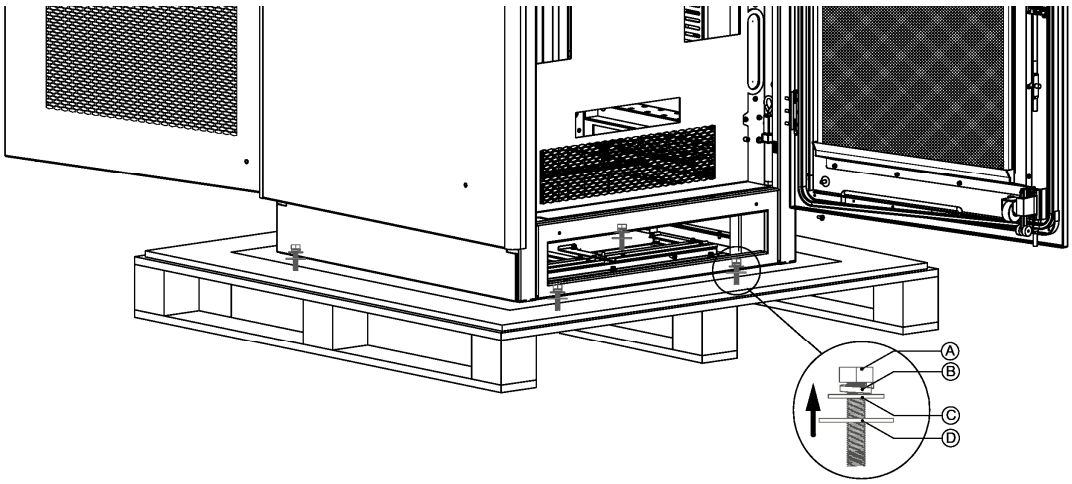


Figure 5-4 Removing from the Pallet

STEP 3

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

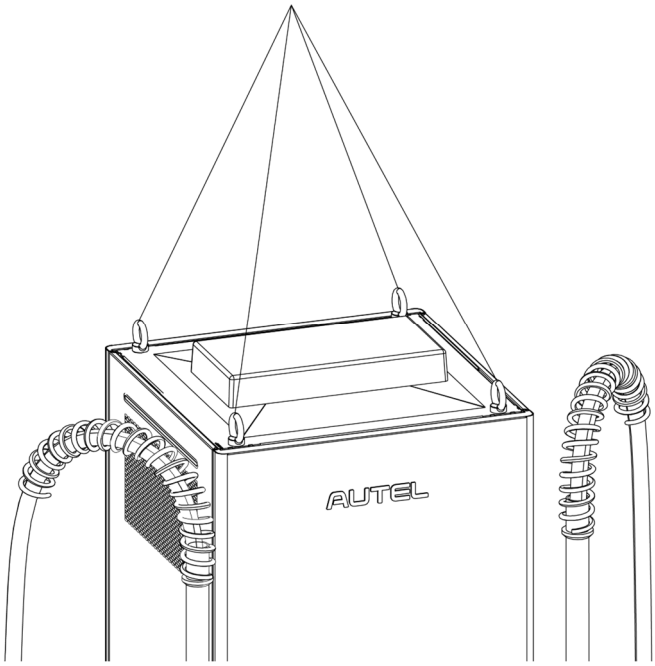


Figure 5-2 Hoisting the Cabinet

5.4 Installing the Cabinet

STEP 1

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

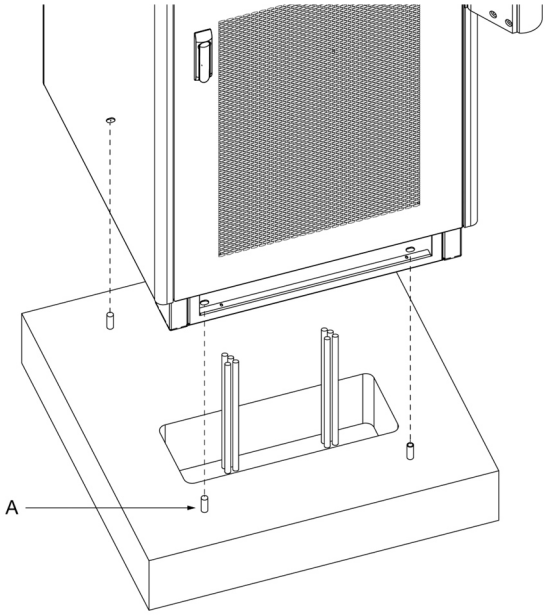


Figure 5-6 Lowering the Cabinet

STEP 2

Reinstall the gaskets and nuts which were removed earlier and tighten them using a 16 mm socket wrench to secure the cabinet onto the foundation.

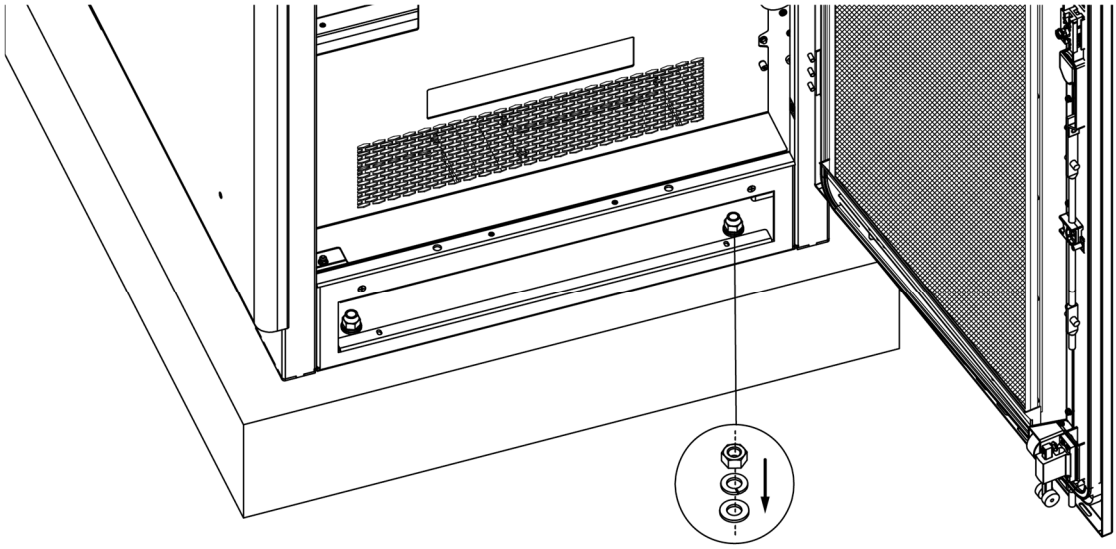


Figure 5-7 Securing the Cabinet onto Foundation

5.5 Electrical Wiring

DANGER

Hazardous voltage

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

Table 5-2 AC Input Specifications

Parameter	Specification
Wire Shielding (optional)	If the local regulations require shielded wires, connect the wire shielding to the PE bus at both ends of the wire.
Material	XLEP recommended
Recommended Cable Gauge	185 mm^2 x 3 + 95 mm^2 x 1 or 95 mm^2 x 3 x 2 + 95 mm^2 x 1, single core, 2 routes (Max. 240 mm^2 x 3 + 120 mm^2 x 1, single core, 2 routes)
Recommended Cable Lug	AC Input Cable: DT185-16/DT95-10 PE Cable: DT95-10
Diameter of the Phase Conductors	Refer to the local regulations.
Diameter of the PE Conductor	Refer to the local regulations
Surface and Diameter	Based on the current rating of the charging station and local regulations.
Conductor	Copper
Maximum Temperature of the Input Wires	90 ° C

NOTICE

- 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.
- XLPE insulated power cable is recommended.
- The charging station 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.

STEP 1

Remove the four M5 nuts by hand or using a Philips screwdriver to remove the insulation barrier. **Set them aside.**

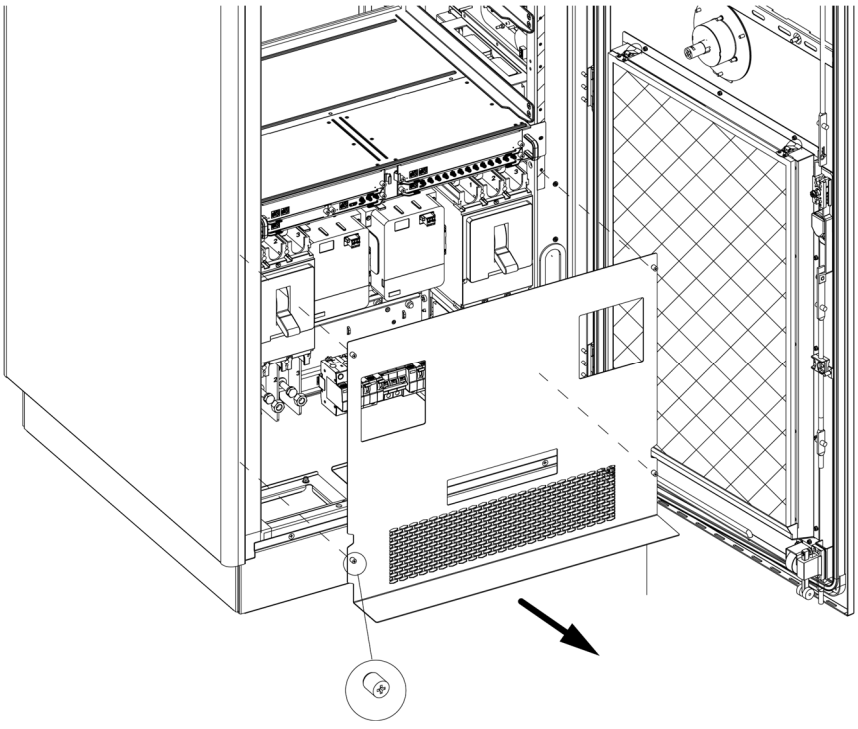


Figure 5-8 Removing the Insulation Barrier

STEP 2

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 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 M10 x 35 bolt (**A**), spring washer (**B**), flat gasket (**C**) and M10 hex nut (**D**) to attach the wires to the connectors accordingly and tighten them to 20.5 ± 2.5 N·m.

5. Follow the steps above to connect the L1, L2, and L3 wires at the other route.

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

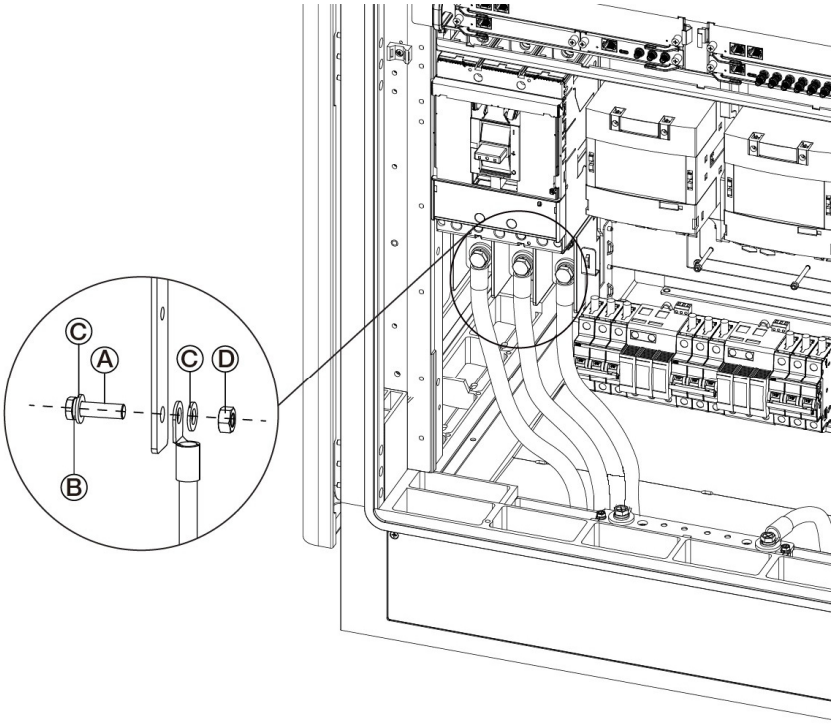


Figure 5-9 Connecting the AC Input Wires (1)

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

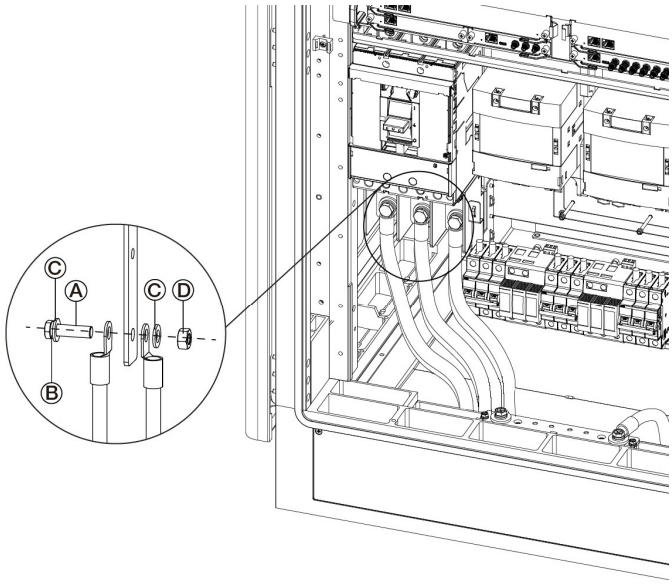


Figure 5-10 Connecting the AC Input Wires (2)

STEP 3

1. Cut the PE wire of the power cable to the correct length to reach the cabinet as shown.

2. Use the wire stripper to remove 20 mm of the insulation from the end of the PE wire. Ensure the stripped length is compatible with the cable lug.

3. Use a crimping plier to attach the cable lug to the end of the wire.

4. Use an M10 x 35 bolt (**A**), a spring washer (**B**) and a flat gasket (**C**) to attach the PE wire to the cabinet and tighten the them to 20.5 ± 2.5 N·m.

5. Follow the steps above to connect the other PE cable.

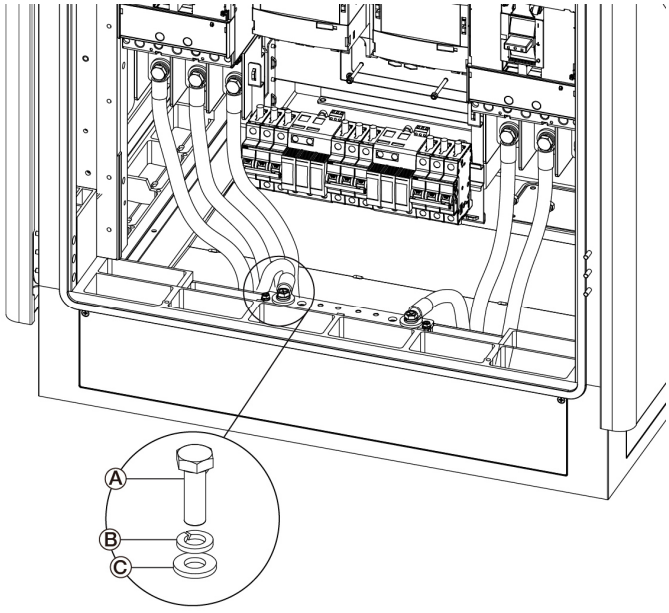


Figure 5-11 Connecting the PE Cable

7. Reinstall the insulation barrier.

5.6 Connecting to the Internet

The charging station 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 RBU GE port at the back of the control module as shown.

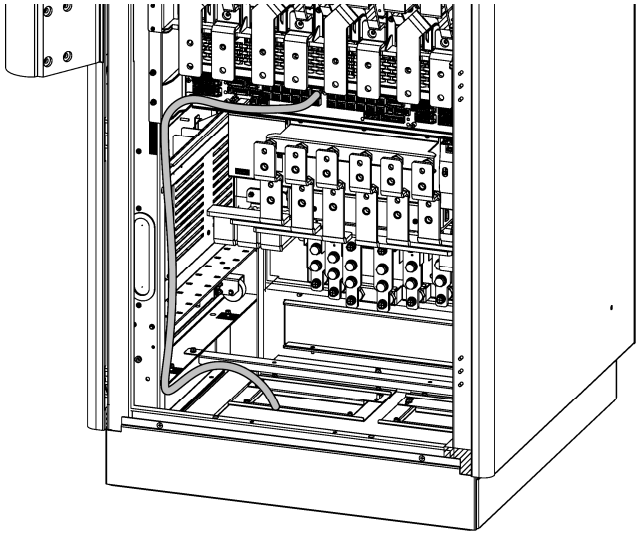


Figure 5-12 Connecting the Ethernet Cable

5.6.2 Installing the SIM Card

1. Pull out the RBU at the control module.
2. Slide to the right the **left** SIM card slot cover.
3. Insert the SIM card into the tray. Ensure the card is placed correctly.
4. Close the SIM card slot cover.

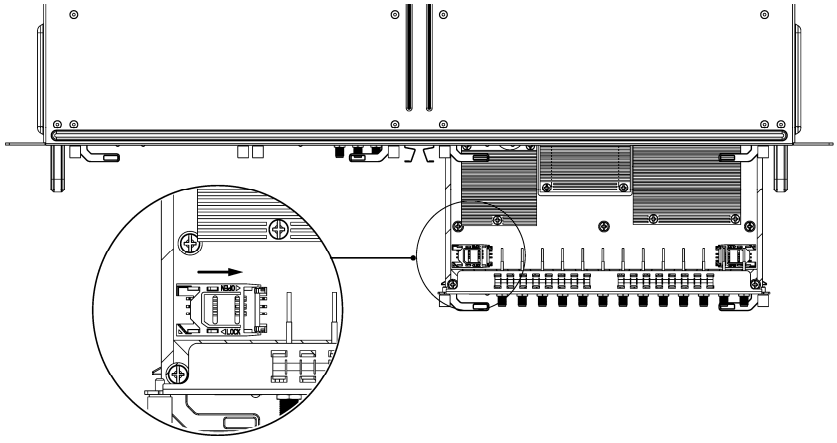


Figure 5-13 Installing the SIM Card

5.7 Finishing Installation

1. Reinstall the left and right base covers.

2. Close the left and right doors and lock them using the cabinet door key. Ensure no debris are left inside.

5.8 Preparing for Commissioning

DANGER

Hazardous voltage

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

1. Ensure that the site complies with these requirements:
   - The charging station 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 charging handle of the charging station 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 charging station
   - Longitude and latitude of the charging station. If there are more than one charging station 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 charging station
   - Specification of the external fuse at the electrical panel
   - Date of installation completion
   - Contact information of the contact person on site
   - Special remarks

5.9 Synchronizing Configuration

Power on the charging station and synchronize the configuration to the it.

1. Download the Autel Evops app.

NOTICE

- Make sure all Autel charging stations and the Autel Evops app are running the latest software versions.
- Contact your installation contractor or Autel local distributor to obtain the account and password for logging to the Autel Evops app.

---

2. Log in to the Autel Evops app using your account and password.

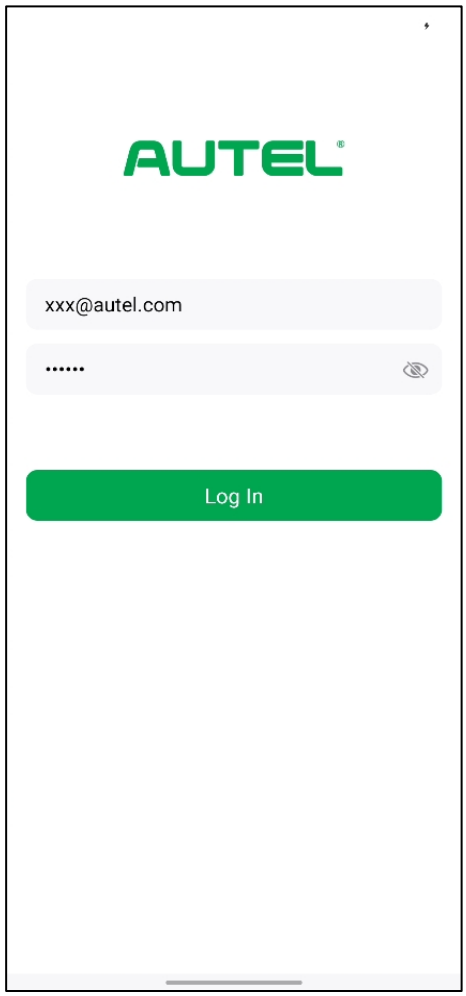


Figure 5-14 Log-in Screen

3. On the Dashboard screen, click on **To be processed** to check the ticket details, then click on the **Start Configuration** button to proceed.

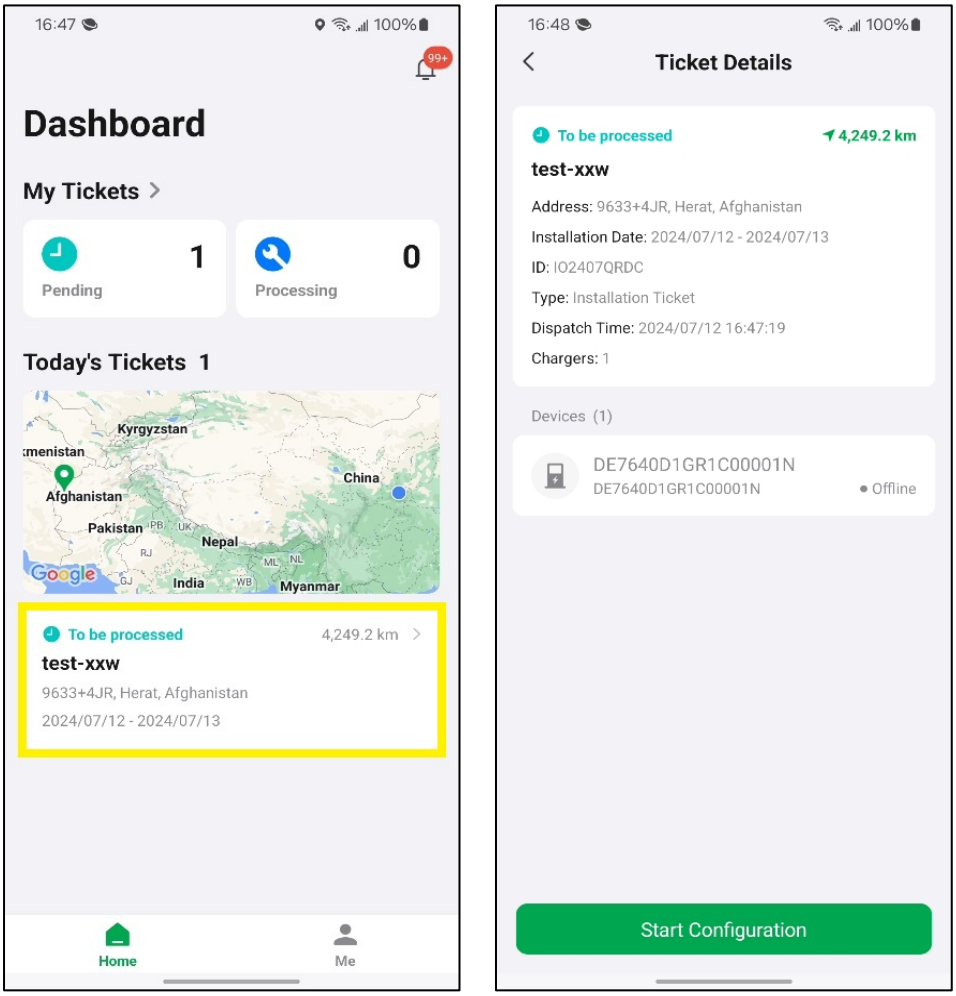


Figure 5-15 Dashboard and Ticket Details Screen

4. Click on the **Scan** button and scan the QR code on the screen of the charging station to verify the charging station.

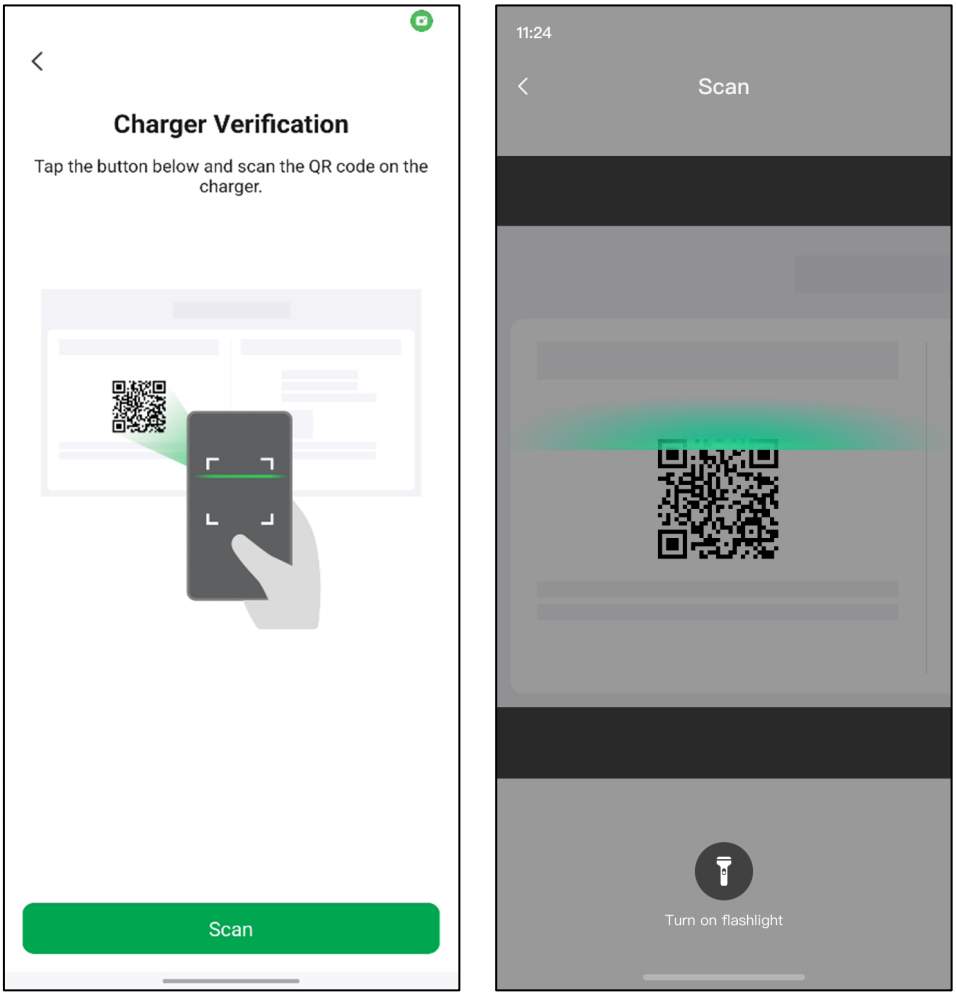


Figure 5-16 Charger Verification and Scanning the QR Code Screen

5. Network Configuration. Select Wi-Fi Configuration or APN Configuration as required.

a) Wi-Fi configuration.

1) Click on **Wi-Fi Configuration**.

2) If the Wi-Fi has been configured during the site creation and configuration, its name and password will be entered by default. Or manually selecting another Wi-Fi and entering its password is also available.

3) Click on the **Next** button to proceed.

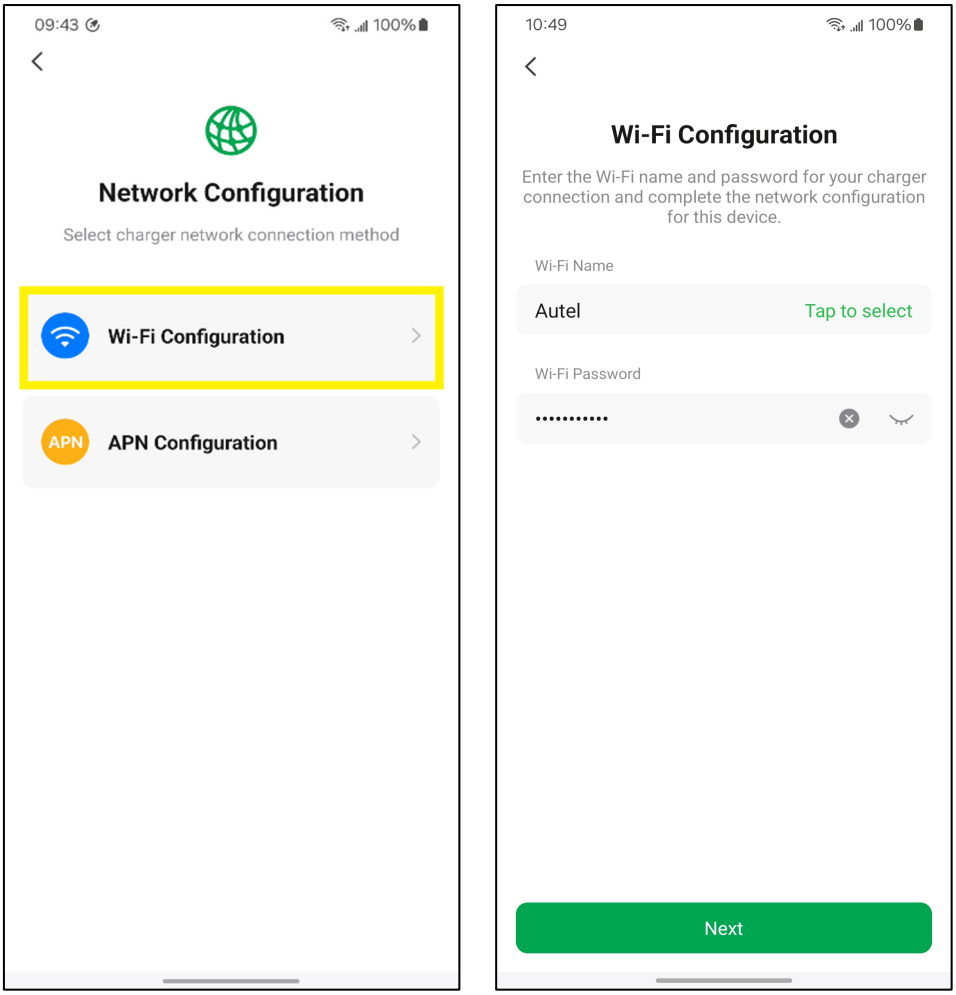


Figure 5-17 Wi-Fi Configuration Screen

4) Hold your phone near the charging station to connect to hotspot of the charging station.

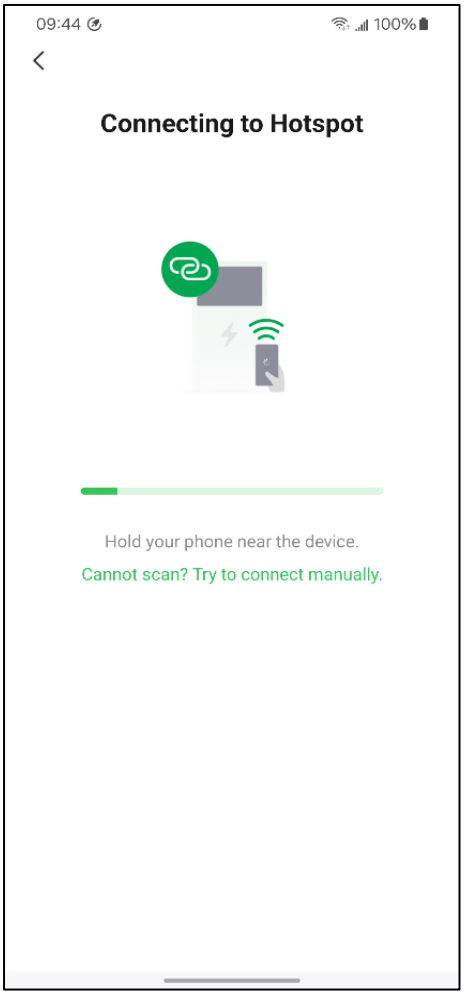


Figure 5-18 Connecting to Hotspot Screen

b) APN configuration.

1) Click on **APN Configuration**.

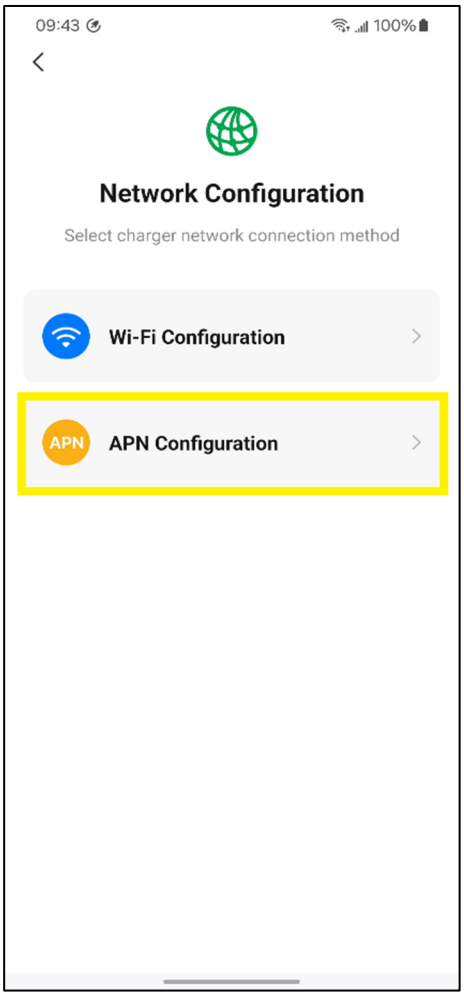


Figure 5-19 APN Configuration Screen

2) Hold your phone near the charging station to connect to hotspot of the charging station.

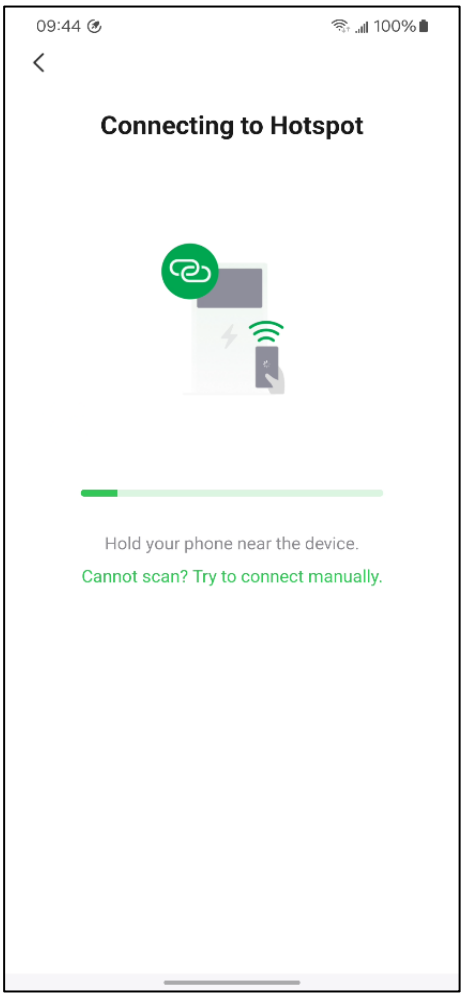


Figure 5-20 Connecting to Hotspot Screen

3) Enable at least one SIM card cellular data switch and click on the **Next** button to proceed.

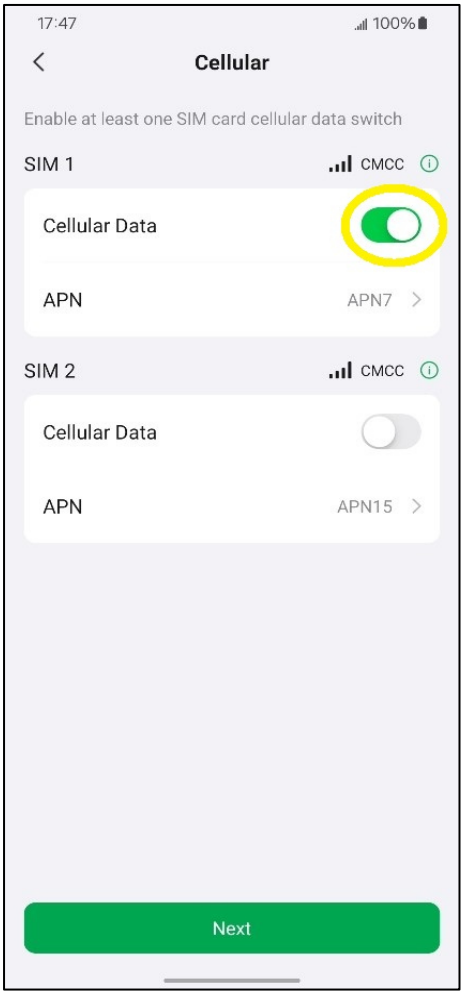


Figure 5-21 Enabling SIM Card Cellular Data Switch

6. After the charging station is connected to the network, the configuration will be synchronized to the charging station.

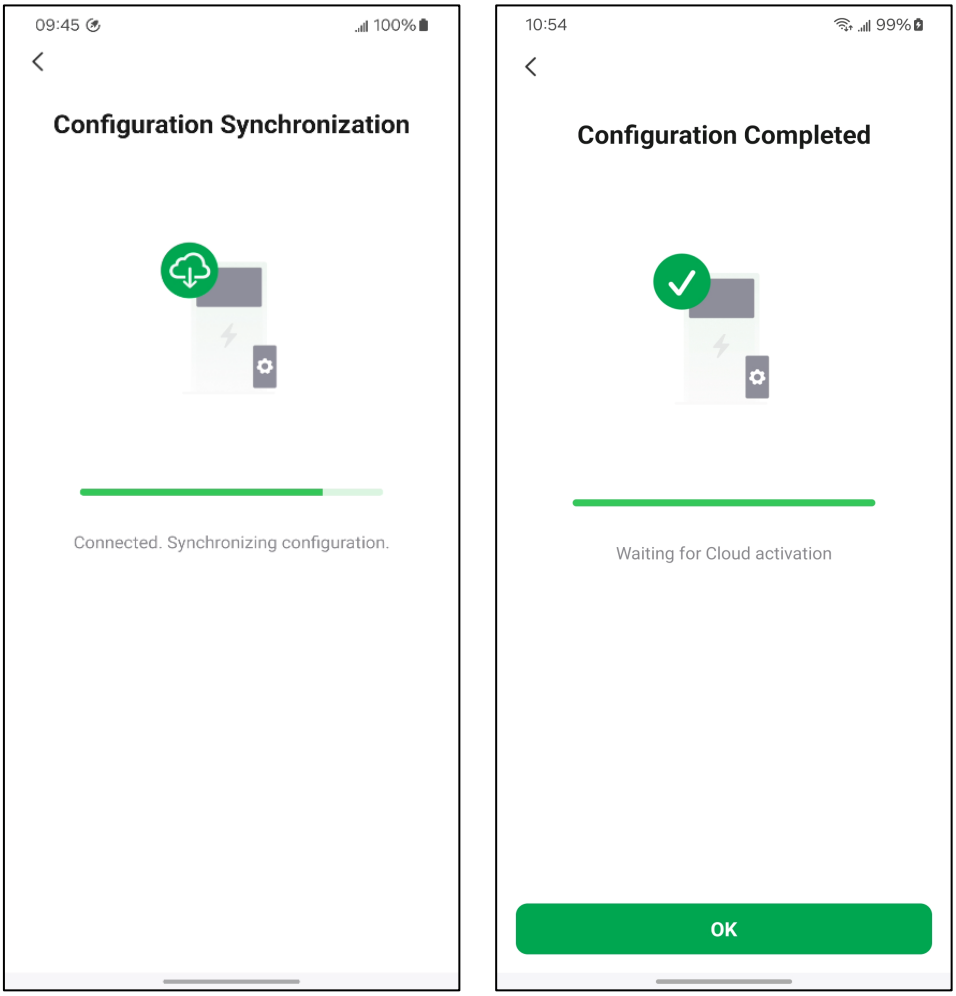


Figure 5-22 Configuration Synchronization Screen

At the same time, the charging station will be activated.

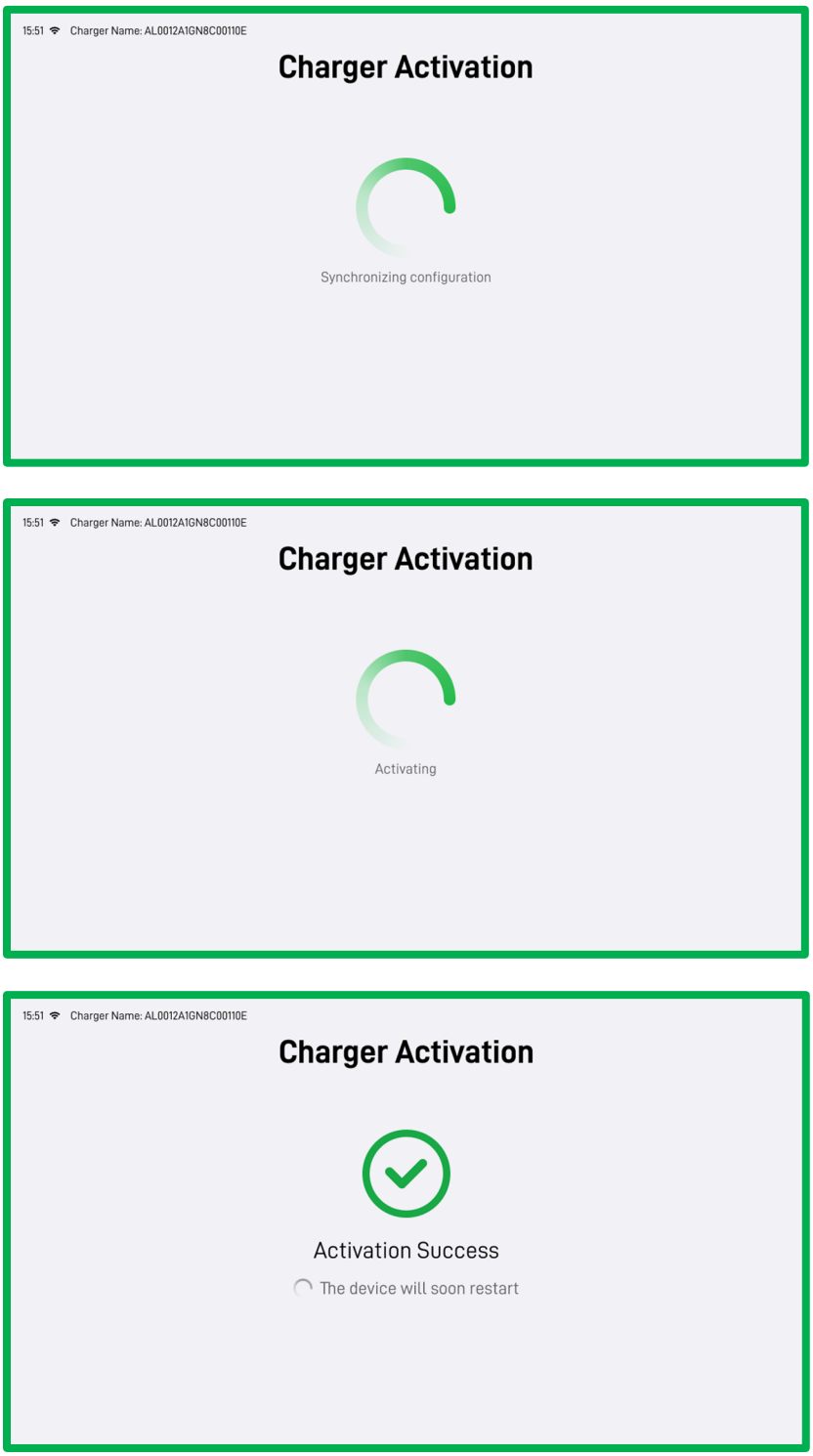


Figure 5-23 Charger Aviation Screen

Now the configuration synchronization is complete and the charging station will be restarted.

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 "**coin**" icon or the "**globe**" icon on the upper-right corner to enter the Pricing Details Screen.

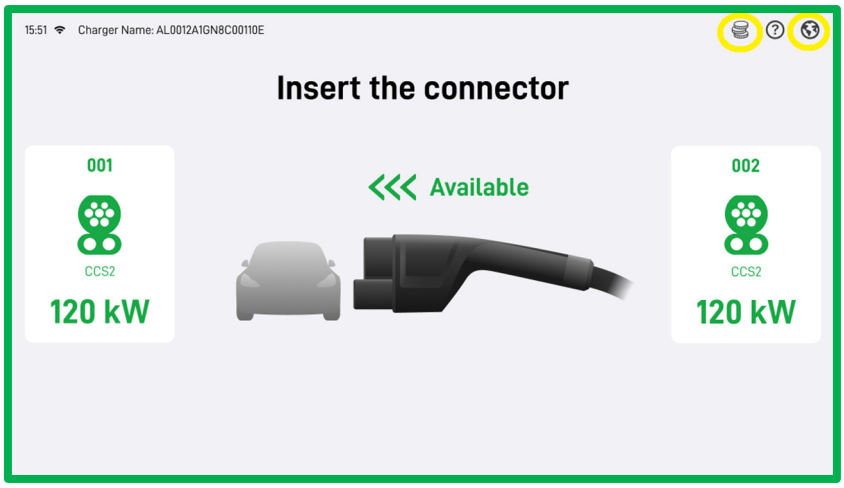


Figure 5-24 Standby Screen

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

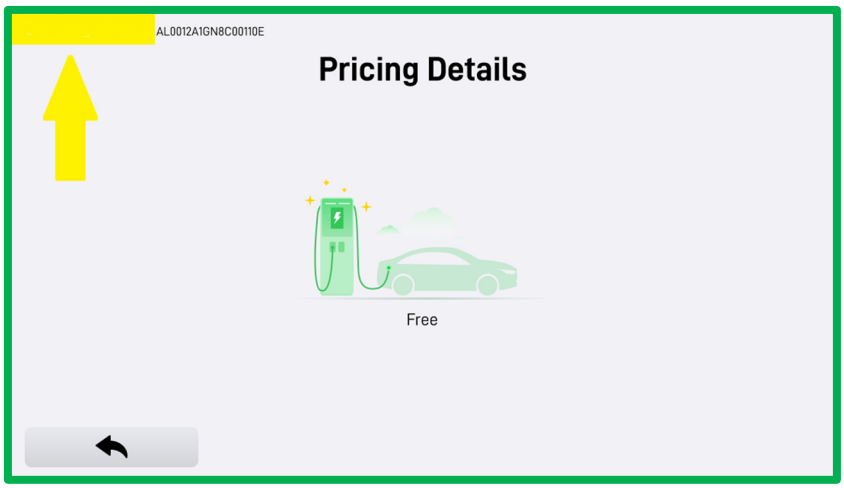


Figure 5-25 Pricing Details Screen

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

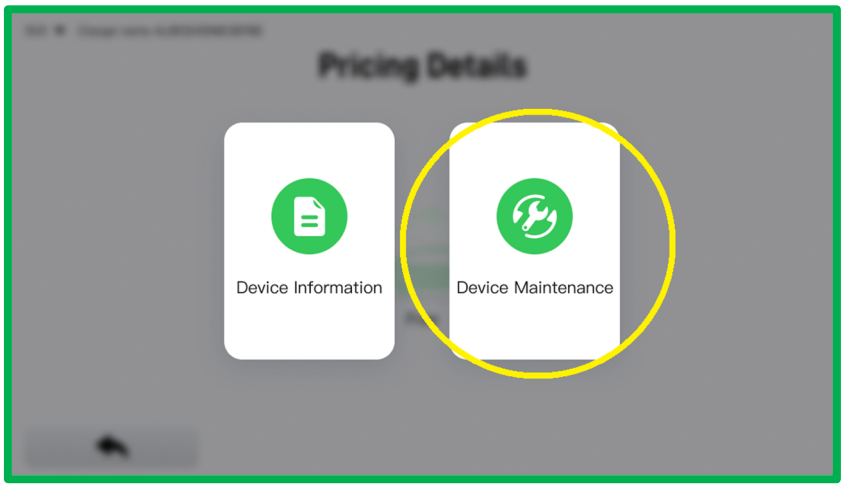


Figure 5-26 Selecting "Device Maintenance" Screen

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

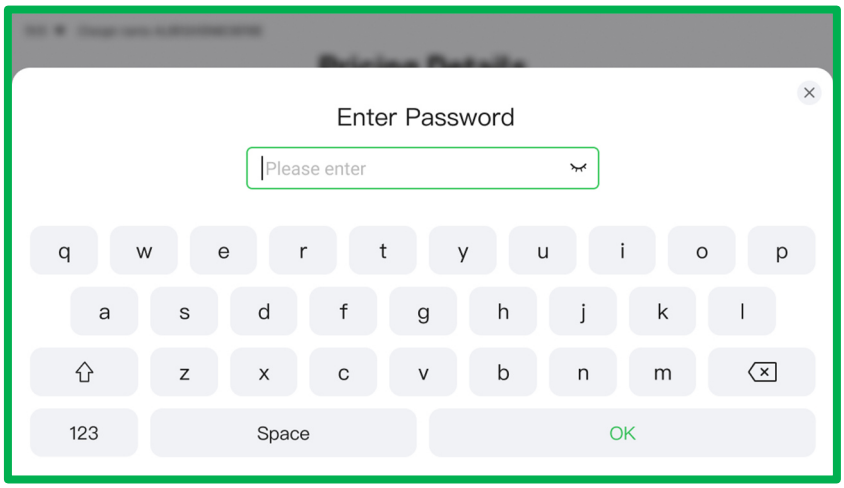


Figure 5-27 Entering Password Screen

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

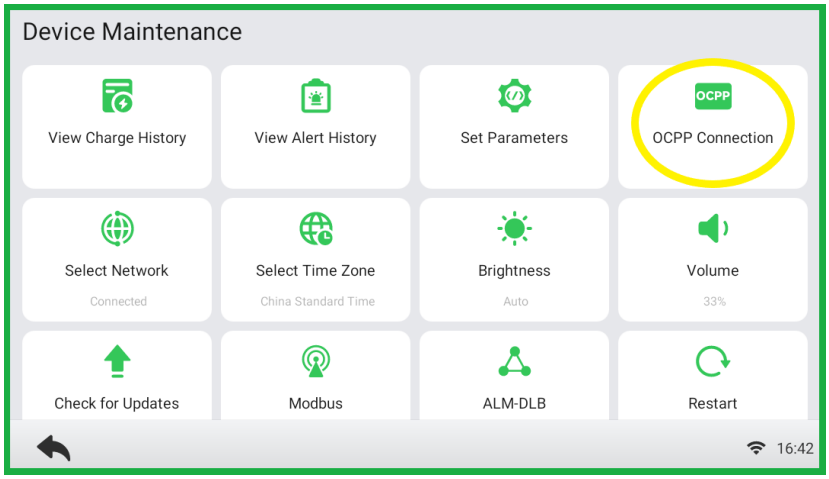


Figure 5-28 Device Maintenance Screen

6. Set the Server URL.

Figure 5-29 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 charging station, 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 charging station 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 the instructions for emergency stop and charge session to the user.
- The manufacturer or a trained technician should perform the commissioning work. Contact the manufacturer when the charging station is ready for commissioning.
- The space around the charging station shall not be blocked by snow or other objects.
- Ensure that the maintenance work has been carried out on the charging station.

6.2 Powering Up the Charging Station

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

6.3 Emergency Situations

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

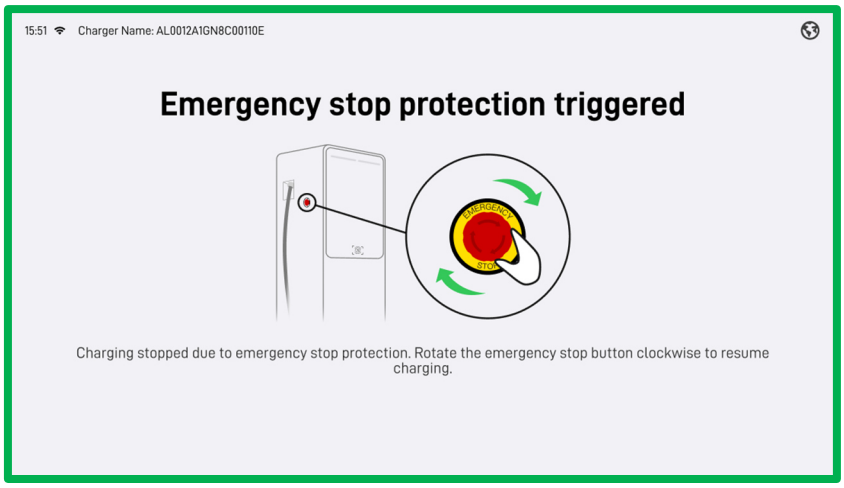


Figure 6-1 Fault Message Screen

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

6.4 Charge Sessions

General charging procedure:

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

6.4.1 Standby Screen

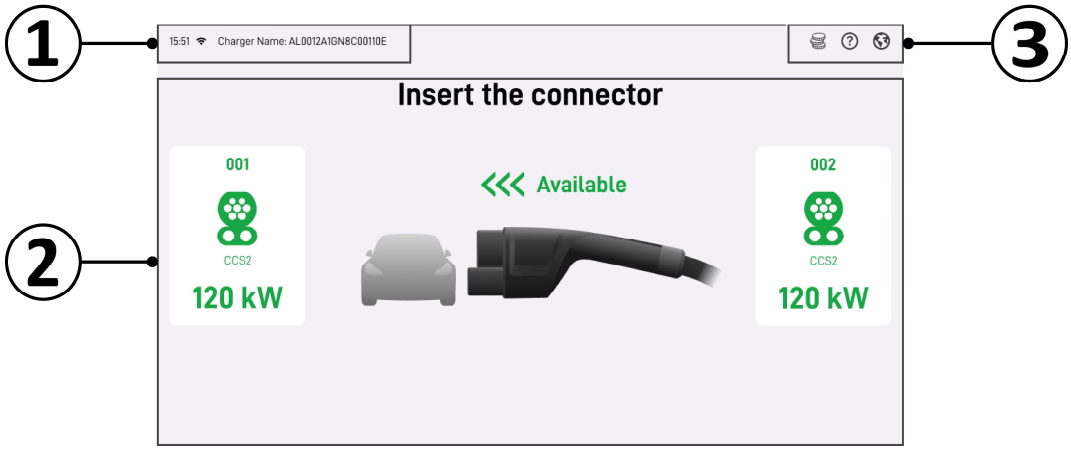


Figure 6-2 Standby Screen

1. Time, Internet icon and charger name — an x appearing at the lower corner of the Internet icon indicates the charging station is not connected to the Internet
2. Standby screen
3. Pricing details, user guide and language options

After a charging handle is successfully connected to the EV, the charging station can automatically recognize the charging handle and the corresponding charging handle'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 charging handle on the touchscreen to exit the standby screen.

6.4.2 Authorization

CAUTION

- Before starting a charge session, observe the screen for any abnormality, such as an error message. Check the surroundings and the charging station for any abnormality or damage as well.
- **DO NOT** operate the charging station 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:

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

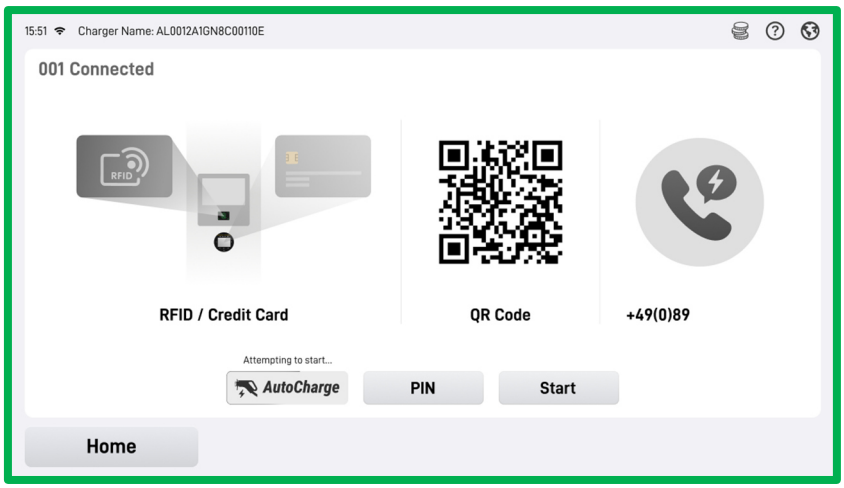


Figure 6-3 Authorization Screen

6.4.3 Start Charging

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

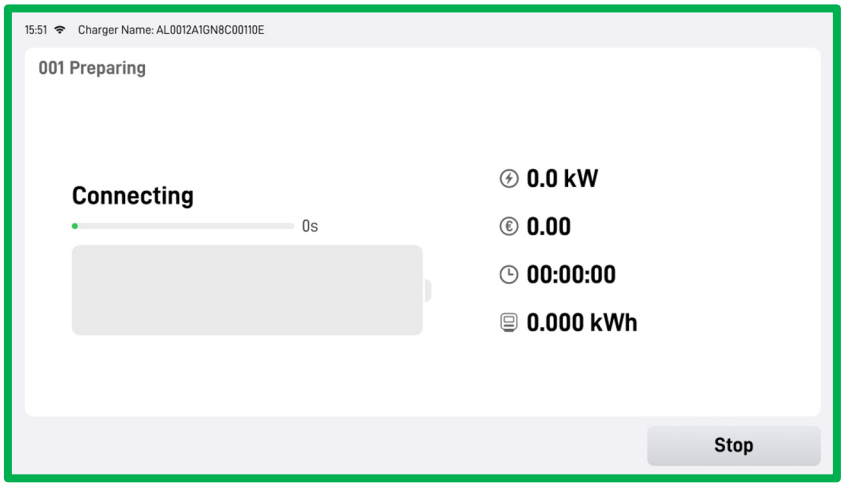


Figure 6-4 Connecting Screen

6.4.4 Charging

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

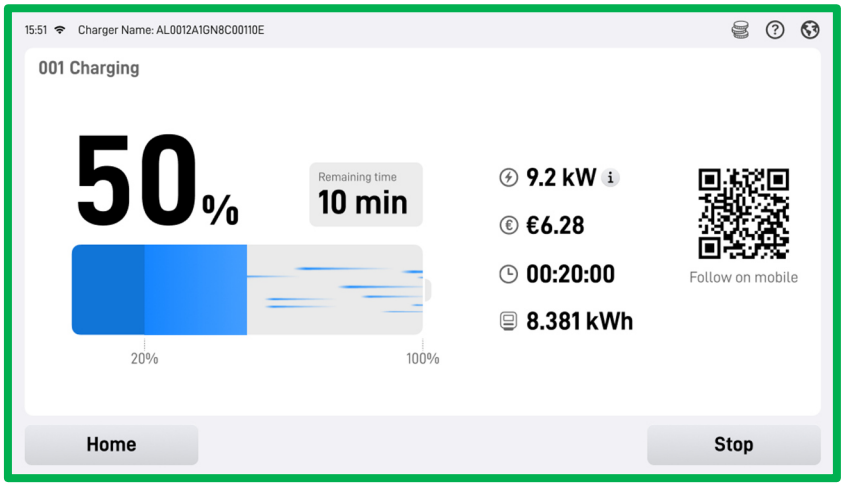


Figure 6-5 Charging Screen

6.4.5 Stop Charging

- Credit Card/Plug & charge/Autocharge/PIN/Telephone: Tap the **Stop** button on the touchscreen.
- QR Code/RFID 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.

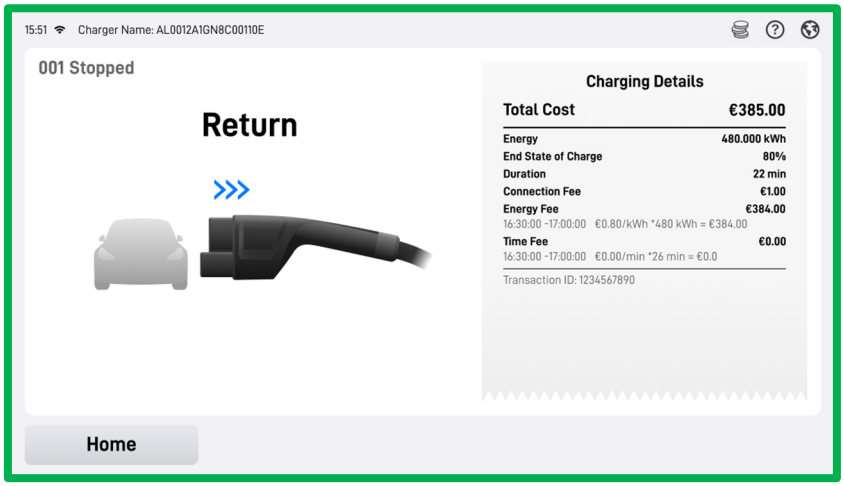


Figure 6-6 Charging Details Screen

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 charging handle to the socket on the charging station.

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 Charging Handle Connection Error

If the charging handle 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.

7. Maintenance

7.1 Routine Maintenance

Routine maintenance can keep the charging station 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 charging station during the entire maintenance procedure.
- 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 charging station 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 charging station.
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 Cleaning and Replacing the Air Filters

The charging station is equipped with two air inlet filters and two air outlet filters 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 filters:

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

2. Open the left-side door of the charging station. When the cabinet door is open, the internal components of the charging station should not be exposed to rain, snow or harsh environments.

3. Manually unscrew the screw (**A**).

4. Manually pull up while moving and turning left the air inlet filters to remove them from the fixing board as shown.

5. Clean the air inlet filters of debris or dust and reinstall the cleaned filters. Or install the new air inlet filters.

6. Close the left-side door of the charging station.

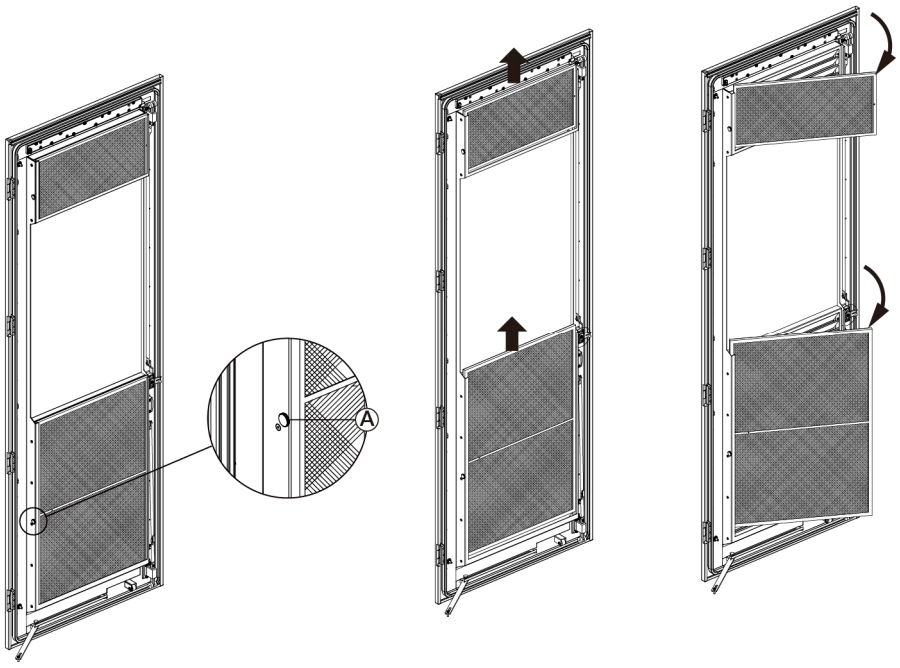


Figure 7-1 the Air Inlet Filter

To clean the air outlet filters:

The air outlet filters are at the right-side door of the charging station. Refer to the steps above to proceed.

7.2 Inspection and Maintenance

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

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

WARNING

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

7.3 Remote Maintenance

The charging station 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
Charging Handle	Every 3 months	Check for cracks or ruptures.
Input Cable	Every 3 months	Check for cracks or ruptures.
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. Technical Specifications

8.1 General Specifications

Table 8-1 Product Specifications

	480 kW (Air Cooling)
AC Input	
AC Input Capacity	520 kVA
Earthing System	3P + PE
Input Voltage	3-phase 400 VAC ± 10% (2 routes)
Input Frequency	50 Hz
Grid Type	TN-S, TN-C, TN-C-S, TT (Requires external RCD)
Power Factor	≥ 0.99
Overvoltage Category	AC Side (Input) OVC: III
Harmonic Distortion (THDi)	< 5%
Maximum Current (each route)	415 A
Input Distribution	AC 630 A x 3P circuit breaker Single transformer, 2 routes (240 kW each)
DC Output	
Output Power	480 kW
Output Voltage	150-1000 V
Max. Number of Outputs	2 or 4
Charging Mode	CCS2/CHAdeMO
Minimum Adjustable Power	40 kW
Output Current	380 A (Max. 500 A)
Peak Efficiency	>=96.5%

	480 kW (Air Cooling)
General Characteristics	
Dimensions (W x D x H)	782 x 782 x 2150 mm
Net Weight	Approx. 718 kg
Mounting	Floor Standing
Touchscreen	15.6-inch LCD Touchscreen 8-inch LCD Touchscreen (Optional) 27-inch LCD Touchscreen (Optional)
Connectivity	4G/5G (Dual SIM Card) Wi-Fi Ethernet
Software Update	OTA updates via web portal, FTP, FTPS, HTTPS
Cable Length	5 m 7.5 m (Optional)
Energy Metering	Accuracy: 1%
Standby Power	<50 W
Short Circuit Current	35 kA
Emergency Button	Yes
Enclosure Type	Zinc Aluminum Magnesium Alloy
Internal RCD	Optional
Enclosure Rating	IP54/IK10
Communication to the EV	ISO/IEC 15118 with PnC DIN 70121 CHAdeMO 1.2
User Interface	
Status Indication	Standard
RFID Protocols	ISO 14443 A/B ISO/IEC 15693 MIFARE

	480 kW (Air Cooling)
Credit Card Readers	Nayax VPOS/Onyx Payter P66/P68/Apollo PAX IM30 Worldline Valina
Communication Protocols	OCPP 1.6J (OCPP 2.0.1 Optional)
Cable Management System	Standard
User Authentification	AutoCharge Plug & Charge APP RFID Card QR Code Credit Card (Optional)
Environmental Specifications	
Humidity	<95% RH, non-condensing
Operating Altitude	2000 m (De-rating begins from 2000 to 4000 m)
Operating Temperature Range	−35 to +55 °C (+40 to +55 °C with power de-rating , derating strategy TBD)
Storage Temperature Range	−40 to +70 °C
Noise	<65 dB@1 m/25 °C/full load
Safety and Compliance	
Protection	Surge, overcurrent, undervoltage, overvoltage, tilt sensor, access protection, over-temperature protection, short circuit and overload protection
EMC Compliance	EMC Class A
Safety Standards	IEC 61851-1 IEC 61851-23 IEC 61851-21-2 IEC 61000

	480 kW (Air Cooling)
Certification	CE UKCA TR25 ETSI EN 303645
Warranty	
Design Life	10 Years
Warranty	24 months, warranty extension possible

AUTEL®

www.autelenergy.com