User Manual

tuncmatik
www.tuncmatik.com pure power

Tuncmatik AC Public Charger
7 kW – 11 kW – 22 kW
Electric Vehicle Charger
User Manual

info@tuncmatik.com / www.tuncmatik.com

Table of Contents

1. Safety Instructions 1
2. Technical Specifications 3
3. Introduction 5
    3.1. Product Overview 5
    3.2. Back Description 6
4. Packaging 7
5. Installation 8
    5.1. Pre-Installation 8
    5.2. Location Selection 8
    5.3. Regional Conditions 8
    5.4. Input power distribution installation recommendations 9
    5.5. Cable Reach 11
    5.6. Construct Foundation 11
    5.7. Dimensioned Drawing 14
    5.8. Space Requirement 15
    5.9. Single Pedestal Installation 16
    5.10. Back-to-Back Pedestal Installation 22
    5.11. Wall-Mount Charger Installation 23
6. Charging Process 25
    6.1. Display and Usage 25
    6.3. Server Ethernet (LAN) Connection 31
    6.4. SIM Card Installation 33
    6.5. WiFi Settings 38
7. LED Operation 44
8. Precautions 45
9. EPO Operation 46
10. Routine Maintenance 47
11. Trouble Shooting 48

1. Safety Instructions

Read and follow the instructions and warnings in this Manual before attempting to install this product. Keep this Manual for future reference.

Please follow the below safety precautions to prevent bodily injuries and property damages.

Warning: When the product is running, it should pay attention to ventilation, heat dissipation and keep the environment clean. Avoid installation in places with frequent occurrence of storm, rainstorm, lightning and other severe weather.

Warning: During installation, if any abnormal phenomena such as cracking, loose case lock, water leakage are showing up, all operations shall be stopped immediately and professionals shall be informed in time to deal with them.

Warning: Do not put inflammable, explosive or combustible materials, chemicals, combustible steam and other dangerous goods near the charge pile.

Warning: Please keep the charging plugs clean and dry. If there is any dirt, please wipe it with a cleaning cadre. It is strictly prohibited to touch the charging core with hands when it is powered.

Warning: It is strictly prohibited to use the charge pile when the charge plugs or charging cable is defective, cracked, worn, and the charge plugs line is exposed. If any, please contact the staff in time.

Warning: In case of rain and thunder, please use electricity carefully. It is better to stop charging.

Warning: Do not attempt to disassemble, repair or modify the charging station. For repairs or modifications, please contact the staff. Improper operation may result in damage, water leakage, electricity leakage, etc.

Warning: It is forbidden to insert and unplug the plug during the charging process to ensure the safety of life and the vehicle during the charging process.

Warning: It is strictly prohibited to continue to use this product for charging in case of failure.

Warning: If any leakage or insulation failure occurs during the operation of the product, please press the emergency power off button immediately.

Warning: Obvious maintenance marks shall be set up. Isolation and protection measures shall be added to live parts that may be near by operators to avoid contact.

CAUTIONS

CAUTION: Wrong installation and testing of the charger will cause potential damage to the vehicle battery, assembly, and the charger itself.

CAUTION: Do not operate the charger in temperatures outside its operating range of -35°C to +55°C.

NOTE:

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by our company for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

2. Technical Specifications

Model	**7KW**	**11KW**	**22KW**
Charging Type	Charging Mode 3 Case C		
Outlet Options	AC Type 2 (IEC 62196-2)		
Input/ Output Current rating	32A, single phase	16A, three phase	32A, three phase
Input/ Output Power rating	Up to 7.4 kW	Up to 11 Kw	Up to 23 kW
Input/ Output voltage	220-240VAC	380-415VAC	380-415VAC
Input Frequency	50 Hz or 60 Hz		
Number of EV Served	Up to 1		
Cable Length	5.0 m, Optional: 7.5m		
Distribution Systems	TT, TN , Split-phase		
Connector Type	1P + N + PE	3P + N + PE	3P + N + PE
Protection	Overcurrent, overvoltage, undervoltage, ground fault, integrated surge protection		
Overvoltage Category	Type III		
Energy Metering	Revenue grade energy meter		
Cellular Communication	GSM, 4G, LTE		
User in interface			
Connectivity	Ethernet (RJ45)		
User Authentication	RFID, QR code		
User Interface	4.3" touchscreen LCD		
Status Indication	3 indicators		
Communication Protocols	Proprietary and OCPP 1.6J (Optional)		
RFID Reader	ISO/IEC 14443 A/B Mifare RFID reader		
Emergency Button	Yes		
Configuration			
Software Upgrade	Over-the-air (OTA)		
Language System	English, Turkish		
General characteristics			
Protection Rating	IP65 and IK10 (cabinet) / IK08 (touchscreen)		
Housing Material	Standard: PC		
Operational Altitude	Up to 2000 m		
Operating Temperature	-35 °C to +55 °C		

Starage Temperature	-40 °C to +80 °C
Humidity	< 95%, non-condensing
Mounting	Wall-mount or pedestal stand (Cable can be wrapped around the hanger) Stored shall be located at a height between 0.5m and 1.5 m above ground level.
Dimensions (D x W x H) mm	110 x 282 x 407
Net Weight (kgs)	7
Compliance Standards	
Codes and Standards	IEC 61851-21-2, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12
Safety Standards	IEC/EN 61851-1, EN 62311, EN 62479, IEC 62423, IEC 61008-1, IEC 61008-2-1

*Product specifications are subject to change without further notice

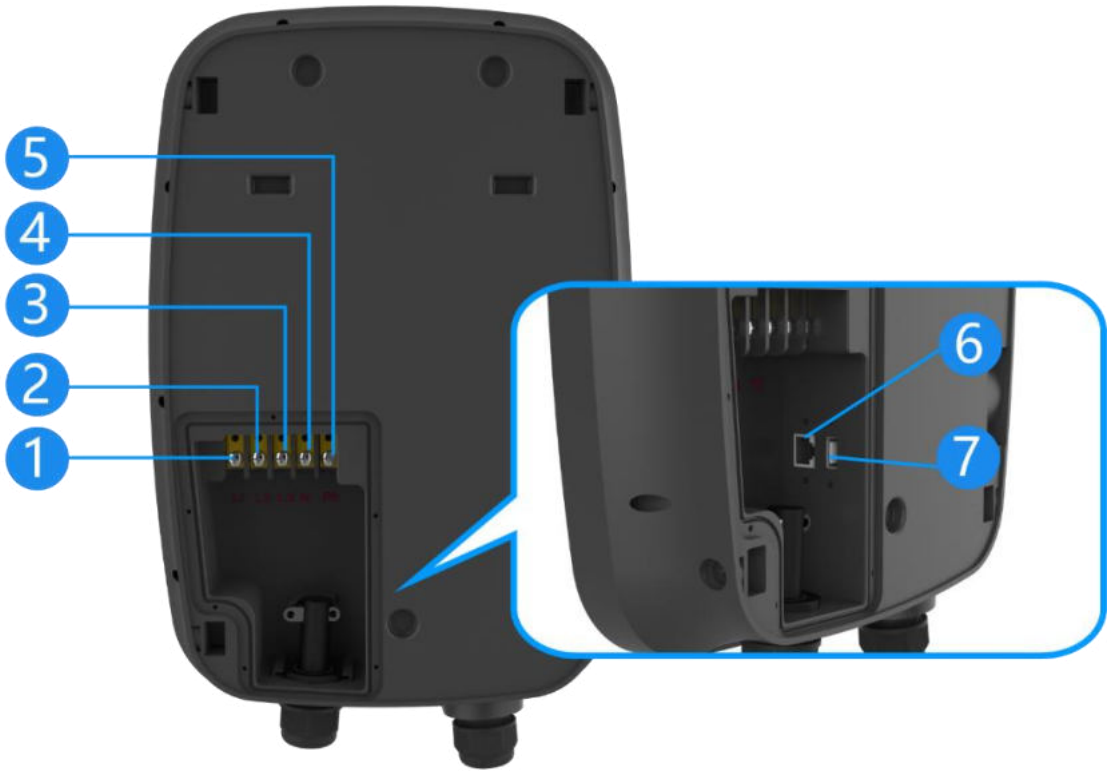
3. Introduction

The AC EV charger comes with a charging plug. The maximum output power of 23kw, with 99% efficiency. For ease of operation, the electric car charger is equipped with a 4.3-inch industrial touch screen, a standard Ethernet connection, and an embedded RFID reader with WI-FI features to communicate with LAN routers, vehicles, action devices, and other chargers.

3.1. Product Overview

1. LED pilot lamp
2. Touch screen
3. NFC
4. Nozzle
5. EPO button
6. Upper part of the pedestal
7. Back plate of the pedestal
8. Middle baffle
9. Lower part of the pedestal
10. Back plate of the pedestal
11. Pedestals base

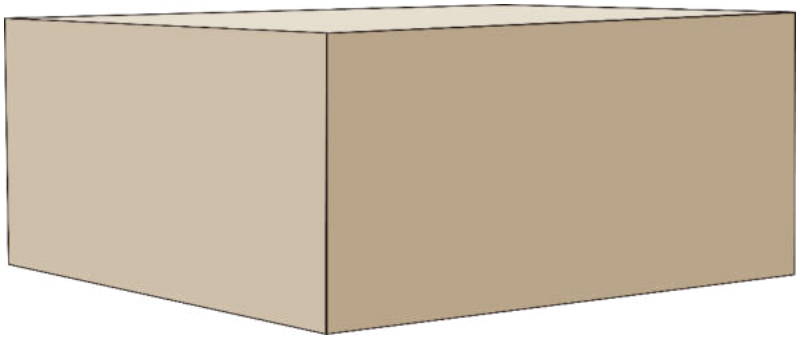
3.2. Back Description



1. Input terminal L1
2. Input terminal L2
3. Input terminal L3
4. Neutral terminal
5. Grounding terminal (PE)
6. RJ45 Ethernet port
7. USB port

4. Packaging

The charger is delivered in a carton packaging. The following figure shows the packaging for the charger.



NOTE: The charger must be stored in its original packaging in a dry environment between -40 °C to +80 °C.

It is recommended to ship the charger to its final destination in its original packaging and unpack it there.

5. Installation

5.1. Pre-Installation

	• Danger to life due to improper installation! • Ignoring environmental conditions when handling electricity can lead to hazardous situations.

Before performing any installation activities, carefully read each item listed in this chapter that is critical to the installation process.

5.2. Location Selection

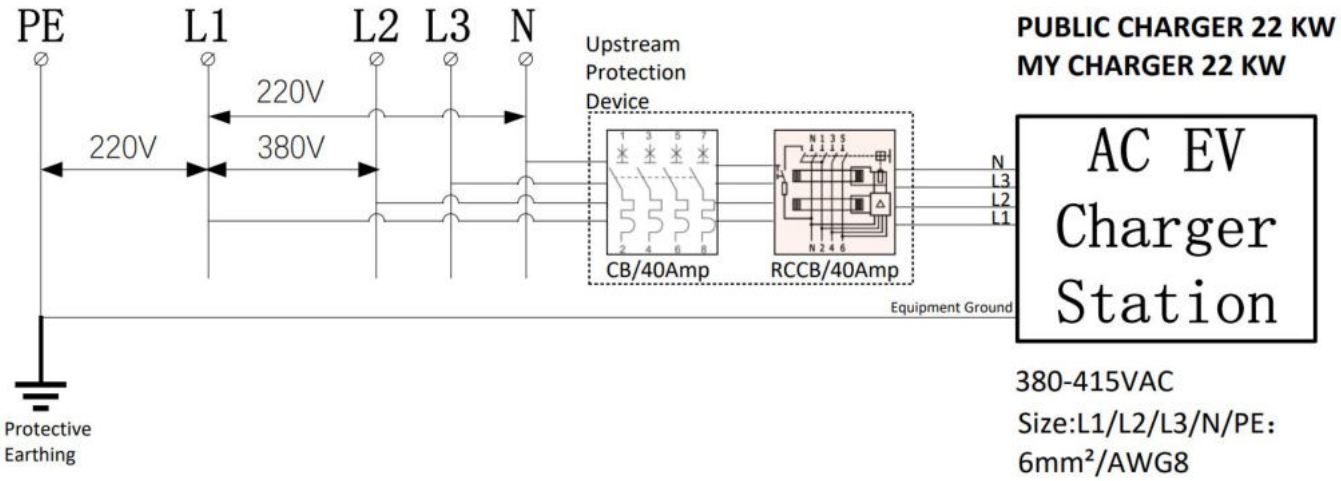
Consider before choosing where to install:

- Meets all criteria regarding charger placement and location.
- Accessible Design Standards.
- Make sure the installation location complies with cellular signal strength standards.

5.3. Regional Conditions

- Area is dry and well ventilated.
- The area is not exposed to dust, high temperatures, explosive gases, flammable materials or corrosive fumes.
- Wiring and conduit needed to connect the charger to the board.
- The location of the charging port when the vehicle is parked.
- Space clearance requires minimum dimensions for airflow and service channels.

5.4. Input power distribution installation recommendations



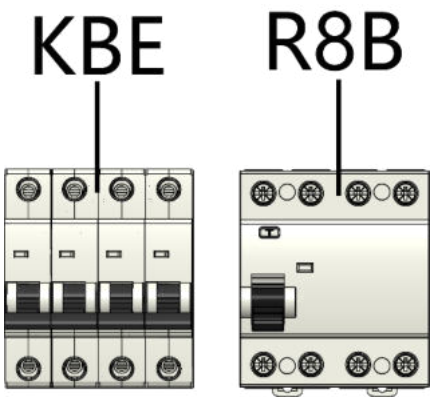
- Please configure CB (Circuit-breakers) and RCCB(Type B RCCB) before installation

The recommended specifications of Circuit-breakers and Type B RCCB are shown in the following table:

Component	Manufacturer/ trademark	Type/ model	Value / rating	Standard
Circuit-breakers with overcurrent protection	Wenzhou Aoelec Electrical Co., Ltd.	KBE	Ue= 415V~(3P+N); 50/60Hz, In=40A,	IEC/EN 60898-1
Type B RCCB	Wenzhou Aoelec Electrical Co., Ltd.	R8B	Un= 415V~(3P+N); 50/60Hz, In=40A, IΔn=30mA, Type B;	IEC 62423,IEC 61008-1,IEC 61008-2-1

NOTE:

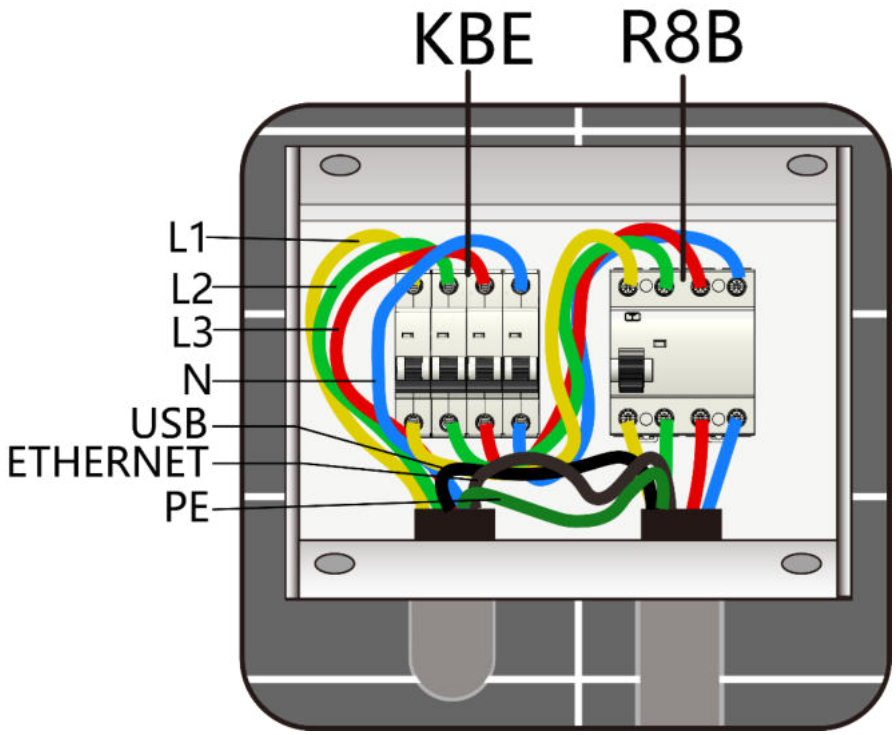
- The Type B RCCB test button shall be tested every month.
- The KBE and R8B are recommended for Circuit-breakers and Type B RCCB, respectively.



Warning: Before using this type of charging pile, Circuit-breakers and RCCB with similar

standard certification parameters must be configured, if you do not configure the Circuit-breakers and RCCB that meet the certification parameters of similar standards, you will bear the dangerous consequences!

- Before installing the charging station, you need to configure the wire box and then connect the wires.



⚠	**CAUTION:** The screwdriver torque is 6kgf.

5.5. Cable Reach

In the default configuration, the Charging station comes with a cable length of 500cm. Figure 5.1 below shows the Charging station's operating radius (5m).

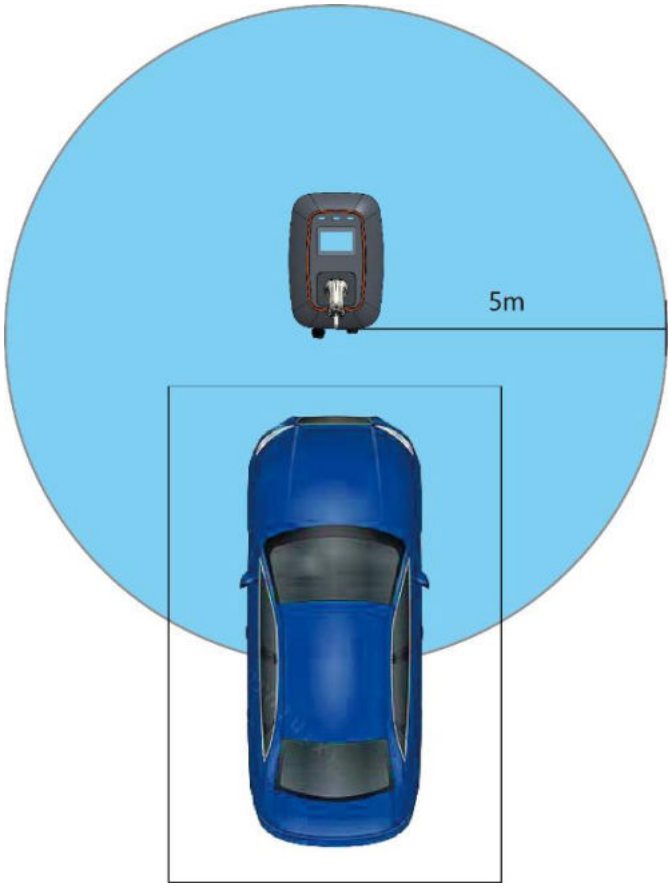


Figure 5.1

5.6. Construct Foundation

- The Charger Pedestal can be built on a concrete foundation, the flat surface of the foundation should not be less than the dimension of 400 mm * 400 mm.
- When preparing the foundation base and cabling pay regard to positions of cable through holes and expansion bolts, which was dimensioned in Figures 5.2 & 5.3.

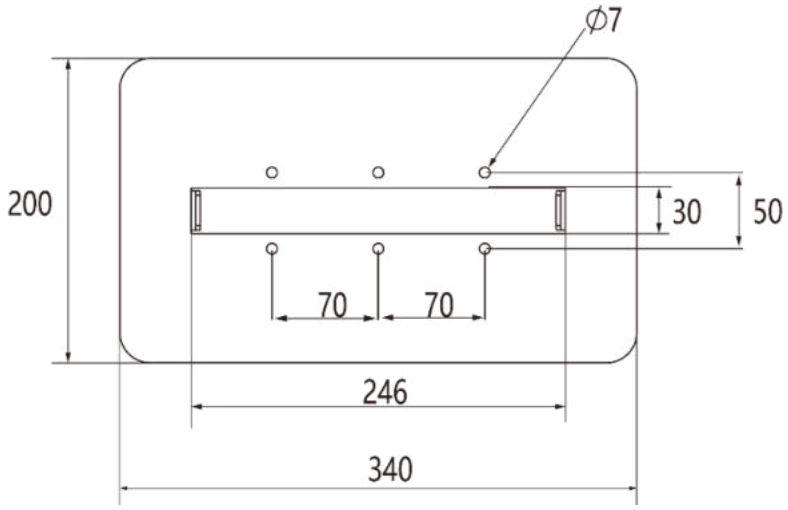


Figure 5.2 Construct Foundation for Pedestal Charger

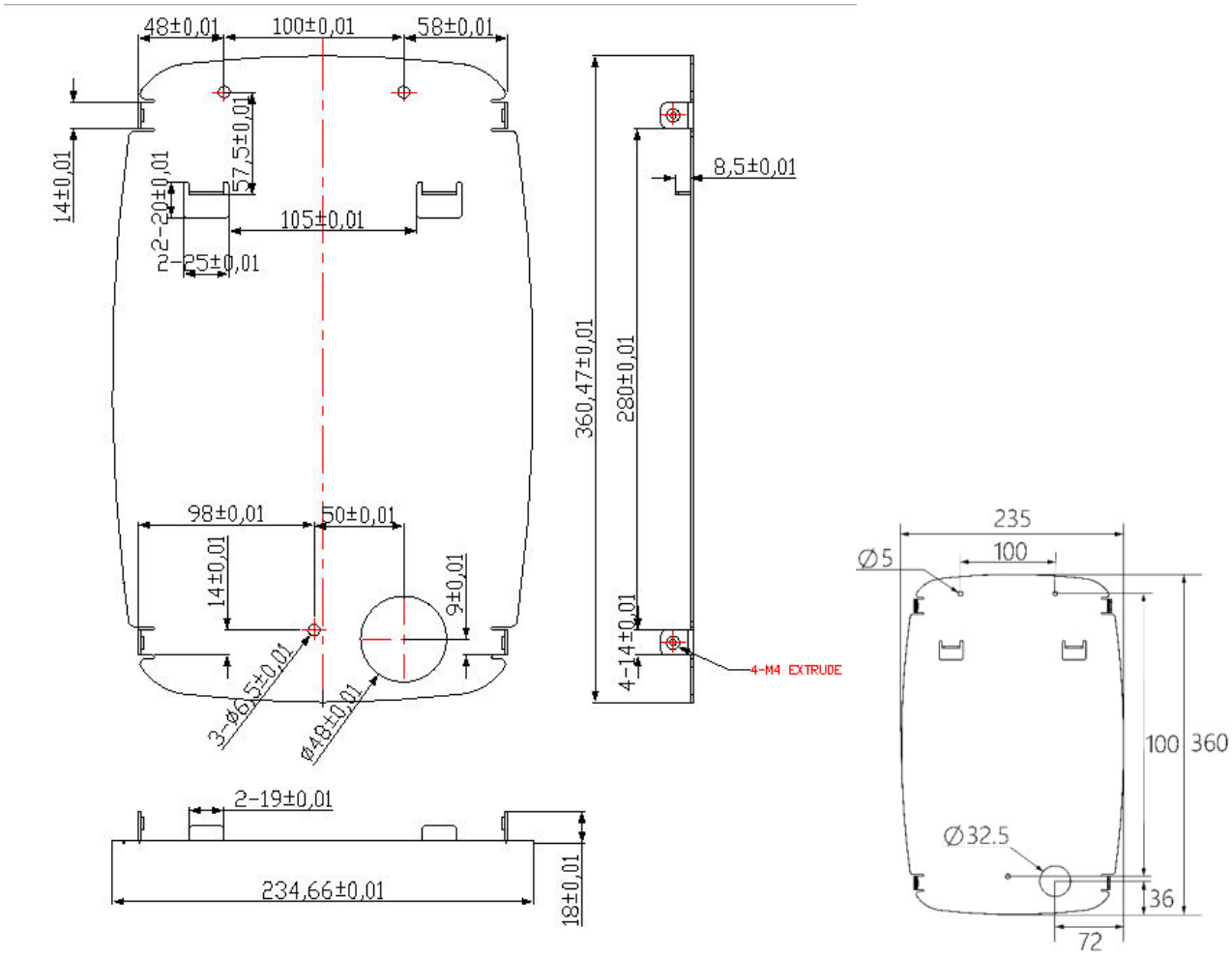


Figure 5.3 Construct Foundation for Wall-Mount Charger

The height of the foundation is determined by the topography and natural environment of the site. Depending on rainfall and drainage, a height of between 15 cm and 30 cm above the ground is recommended. The foundation must be about 80 cm deep in the ground due to frost protection.

NOTE:

- The unit must be mounted on solid and flat stone slabs or walls.
- Different types of slate require expansion bolts, or choose appropriate screws for installation, and in some cases drill holes.
- The laying of power cables shall comply with relevant national and industry standards and specifications.
- The cable selection specification should be selected according to the number of equipment and the type, power, voltage and current level of the installed equipment.
- When laying the cable, it is strictly forbidden to expose it.
- When the cable is buried directly, the buried depth should not be less than 0.8m to prevent freezing.
- The selection of power cable specifications should be selected according to the installation environment and fire protection requirements.

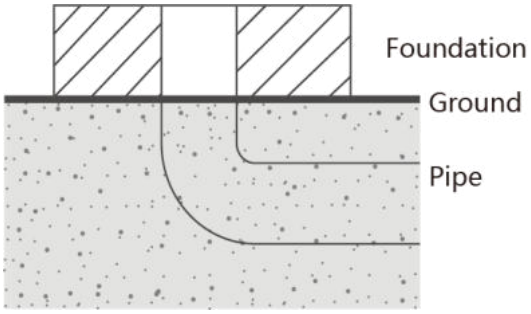
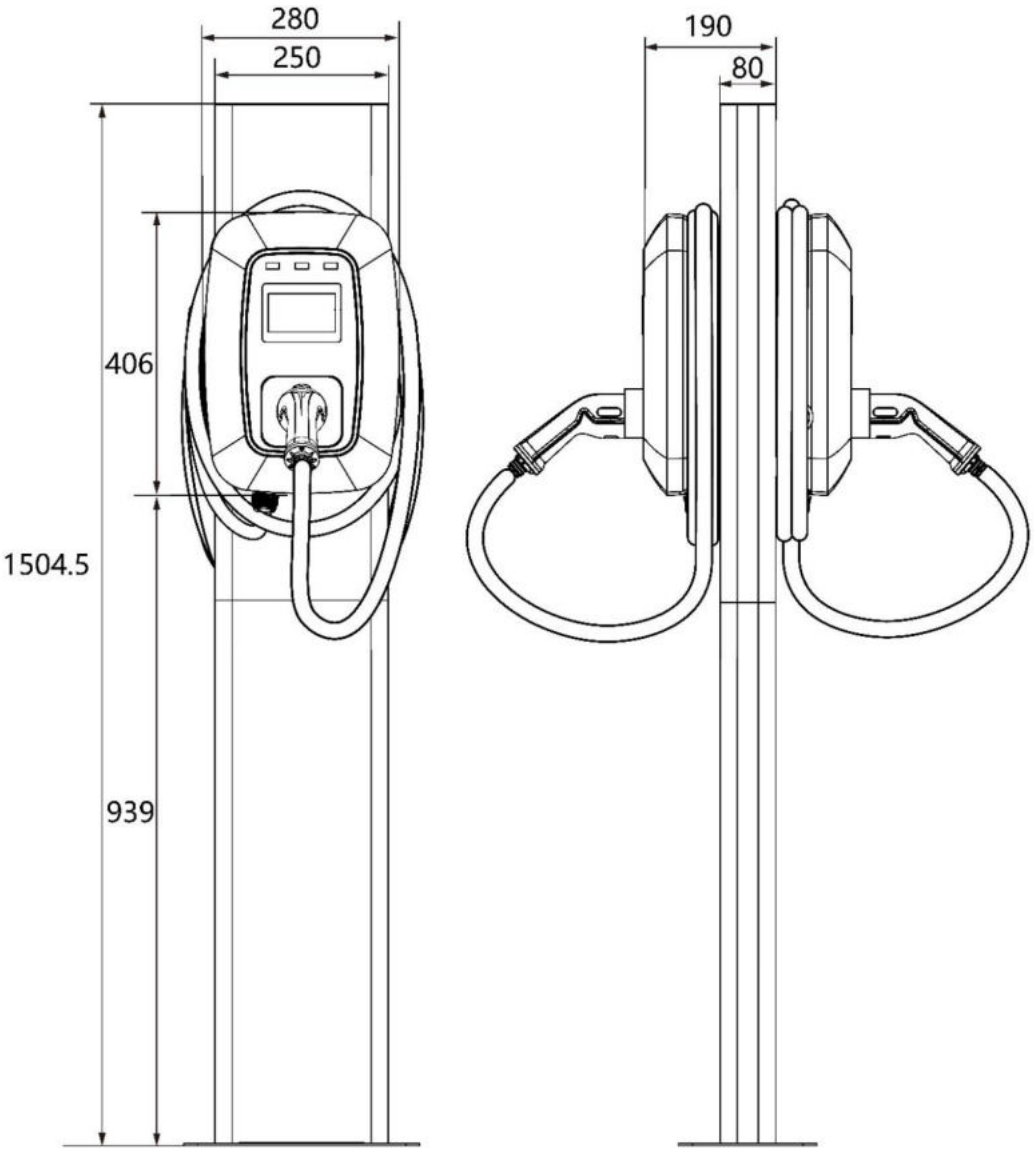
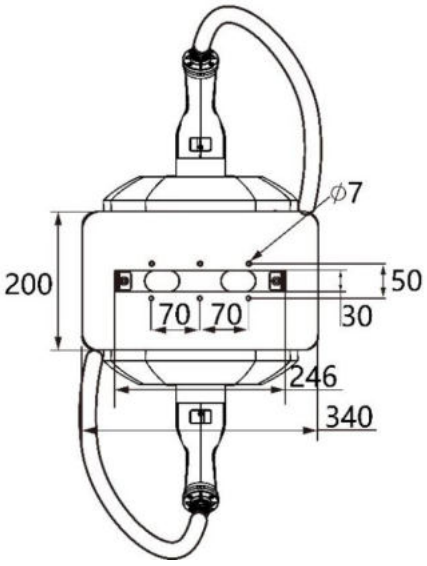


Figure 5.4

5.7. Dimensioned Drawing





5.8. Space Requirement

When installing the charger, make sure to keep a minimum distance from objects that may be around the charger to allow for adequate airflow, and secondly, to leave room for possible repair or operations.

The following diagram shows the recommended minimum distances during on-site installation:

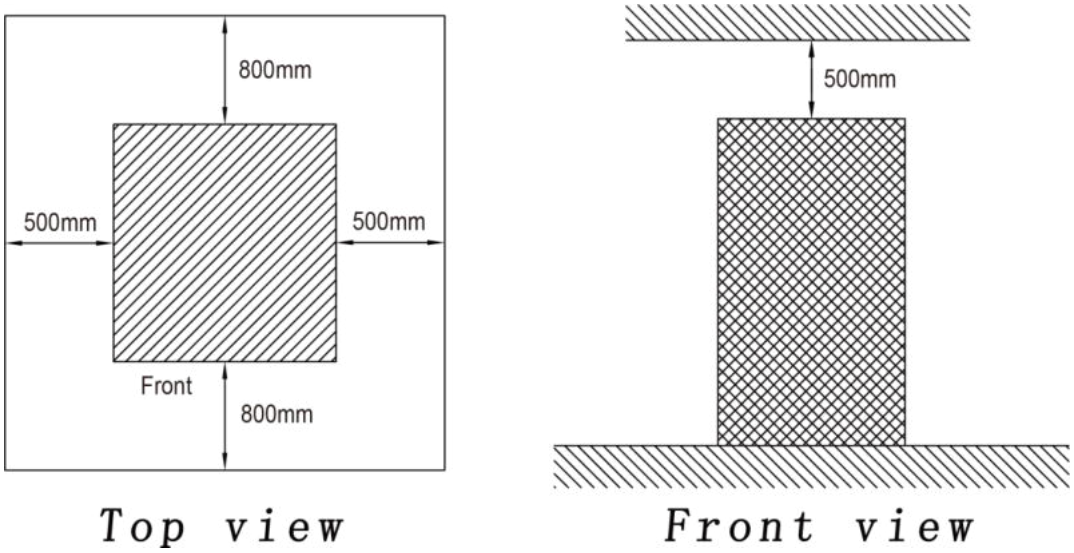


Figure 5.5 Clearance dimensions for Pedestal Charger

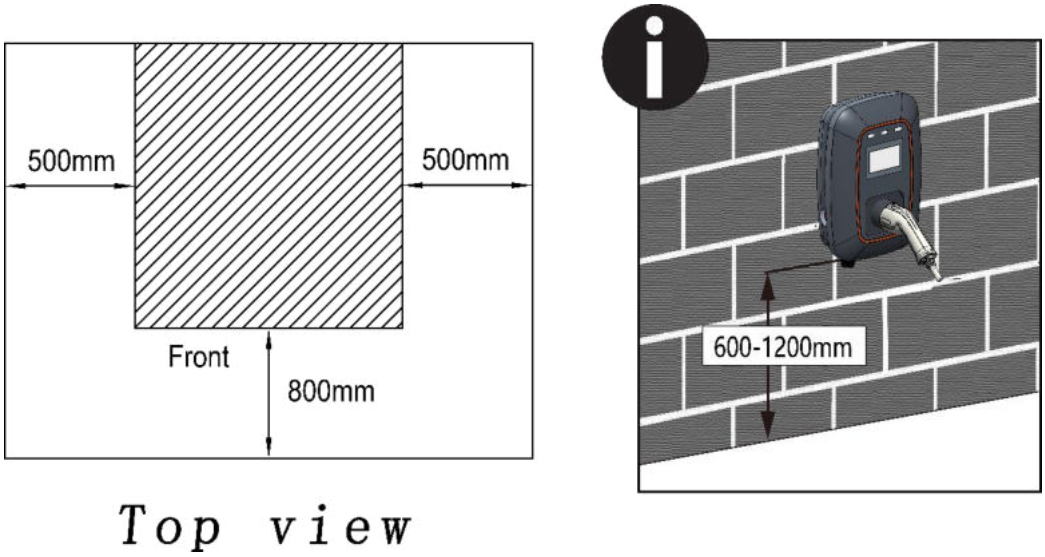


Figure 5.6 Clearance dimensions for Wall-Mount Charger

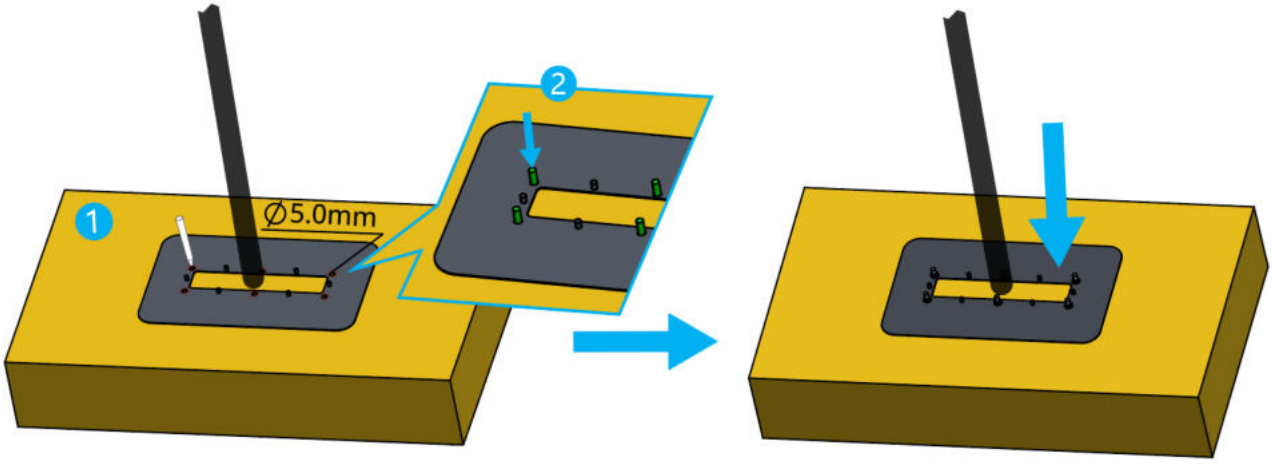
NOTE: Clearance dimensions are published for airflow and service access only. Consult your local safety regulations and standards for other requirements in your local area.

5.9. Single Pedestal Installation

5.9.1. Pedestal Installation

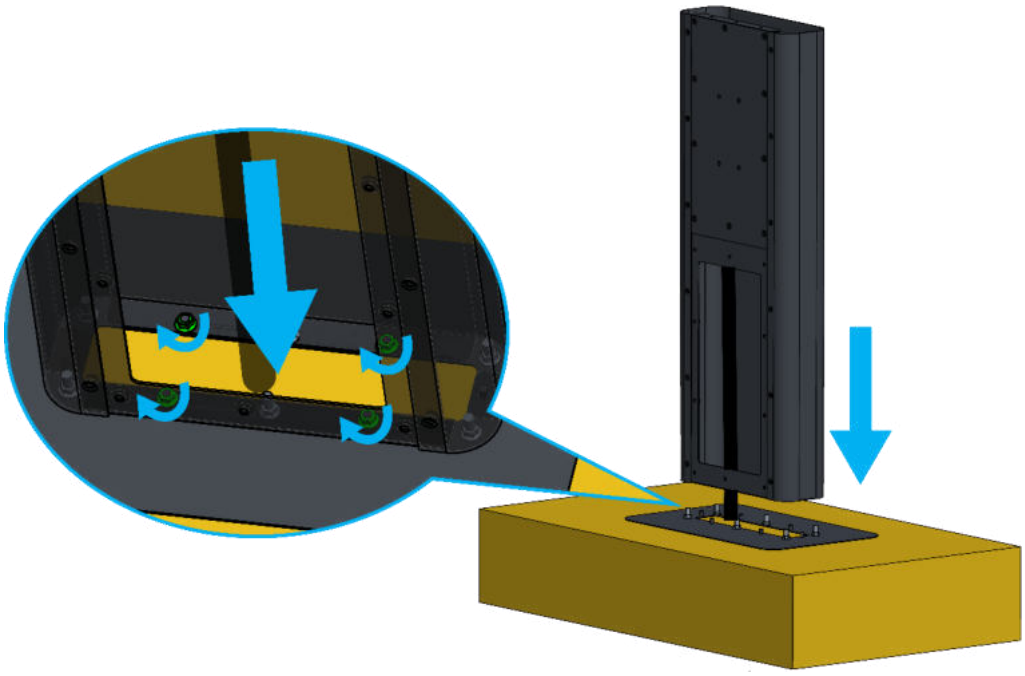
Step 1 : **The pedestal base installation**

1. There is installation template sheet inside of pedestal package. Thread this sheet through the cable and place it on the stone slab and mark six holes first. Then, apply stud bolts on six holes.
2. Align the holes on the mounting plate with the six stud bolts on the stone slab and fix them with six M6 nuts.



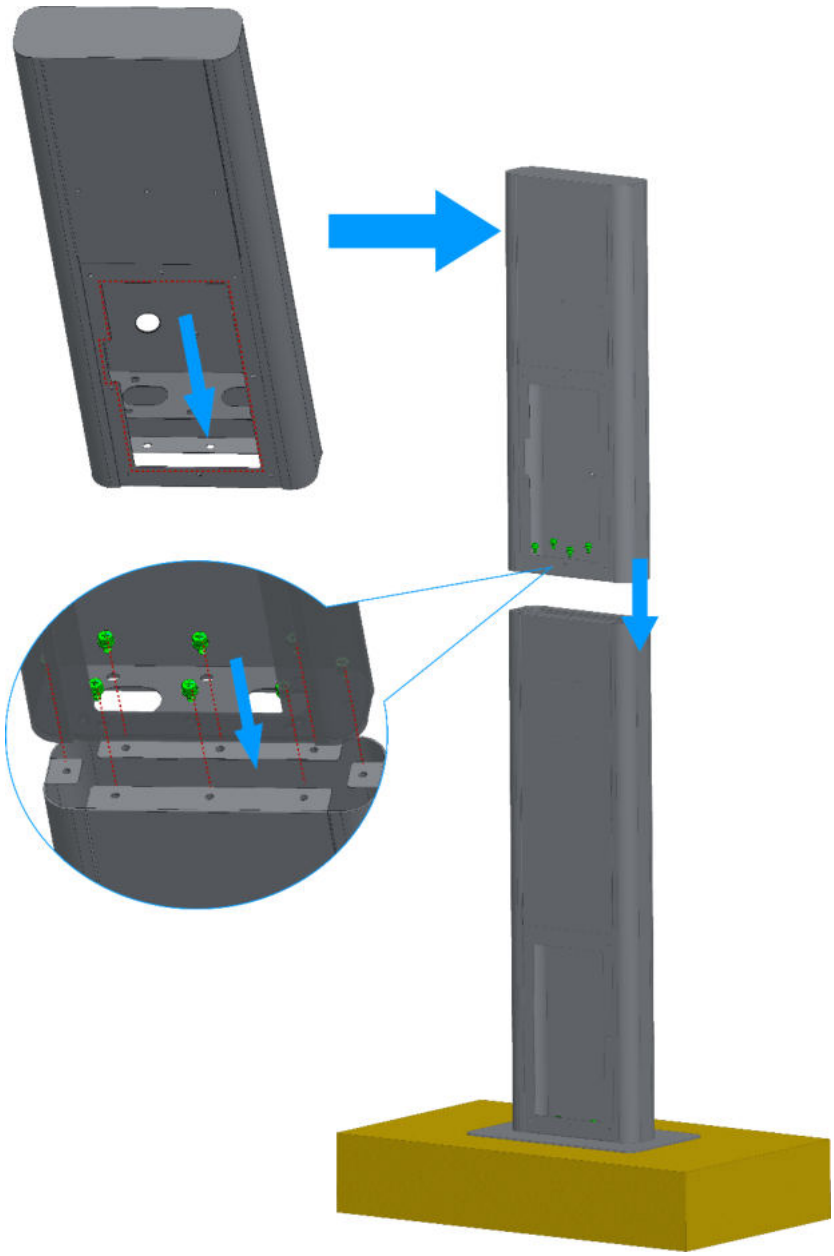
Step 2 : **The lower part of the pedestal installation**

- Align the lower part of the charger pedestal with the screws on the slab and fasten them with four M5 nuts.



Step 3 : **The upper part of the pedestal installation**

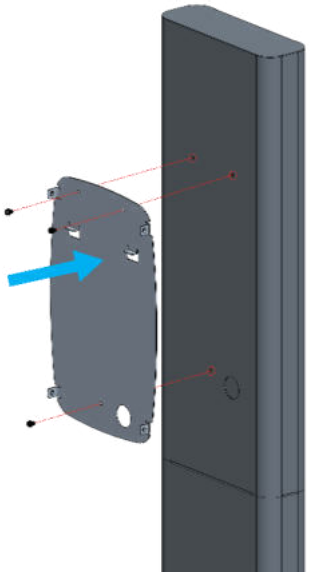
1. Place the middle baffle on the inner base plate of the upper part of the pedestal.
2. Place the upper part of the column into the corresponding screw hole of the lower part, and fasten it with six M6 nuts.



5.9.2. Charger station Installation

Step 1：**Mounting plate installation**

- Align the holes on the mounting plate with the three holes on the pedestal and fasten with three M5 screws.

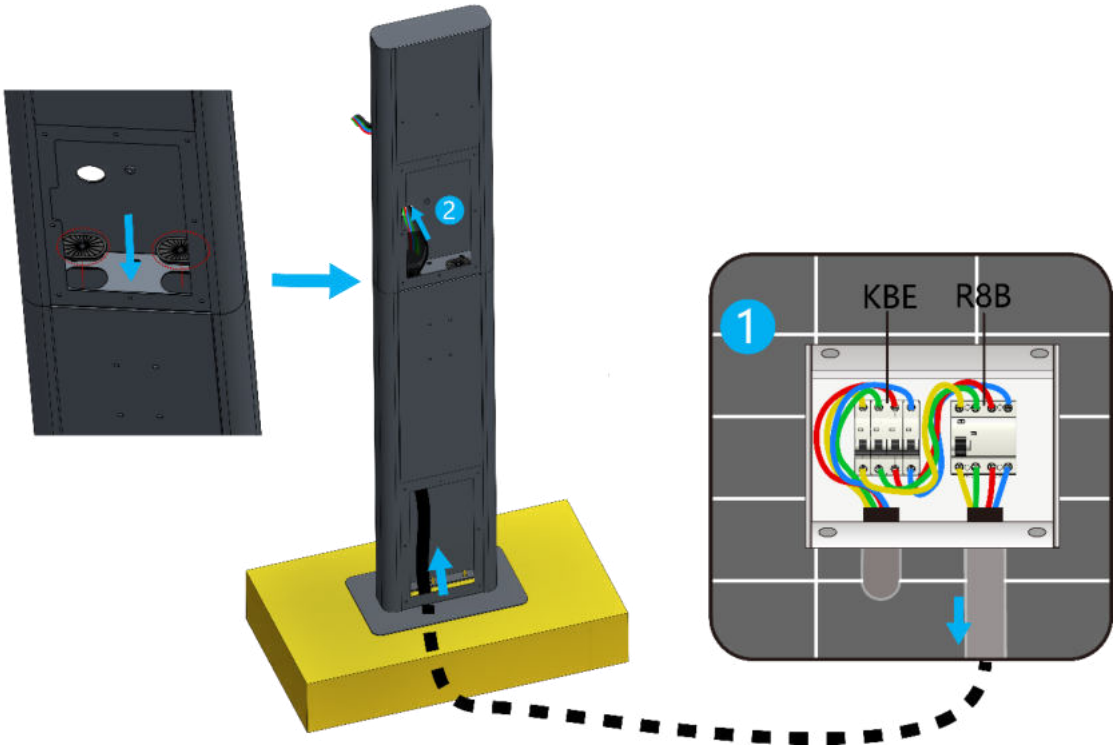


Step 2：**The line protection device installation**

- Place the line protection device to the hole corresponding to the middle baffle.

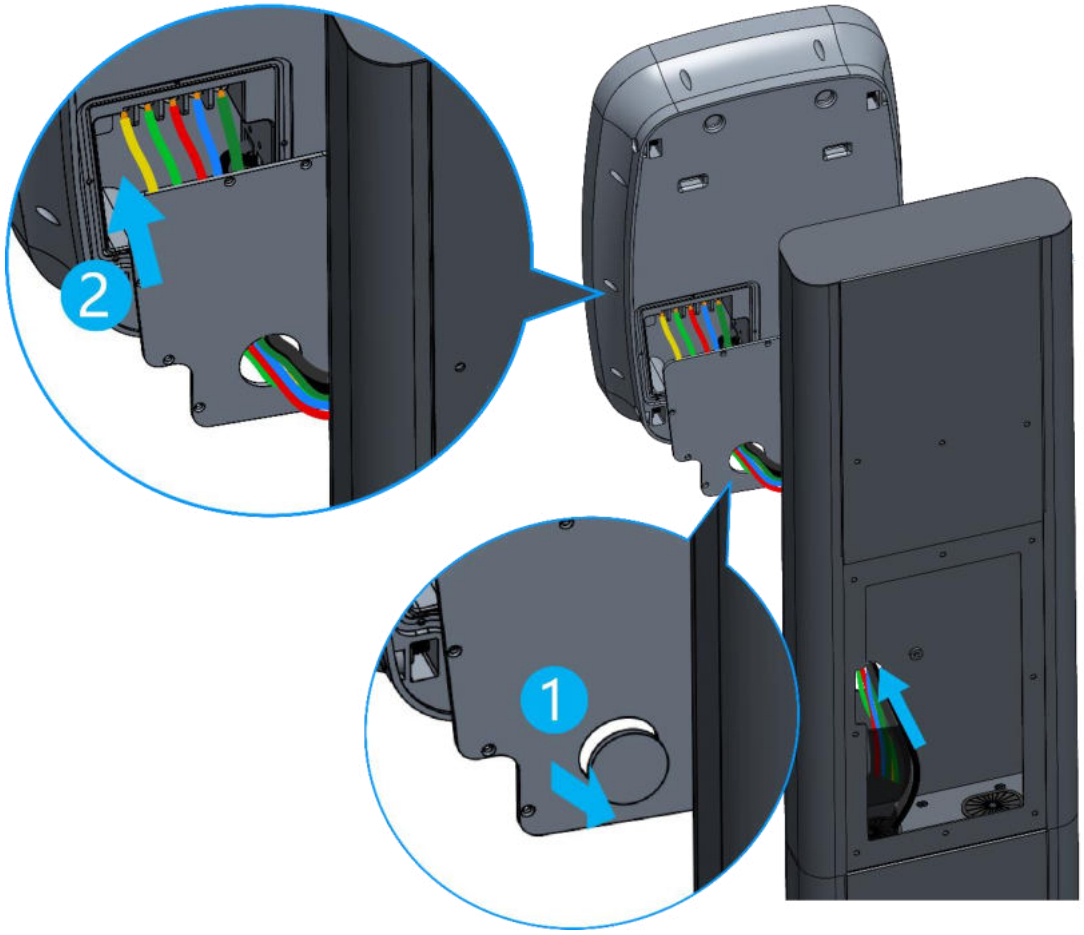
Step 3：**Pass through the wire into the charger**

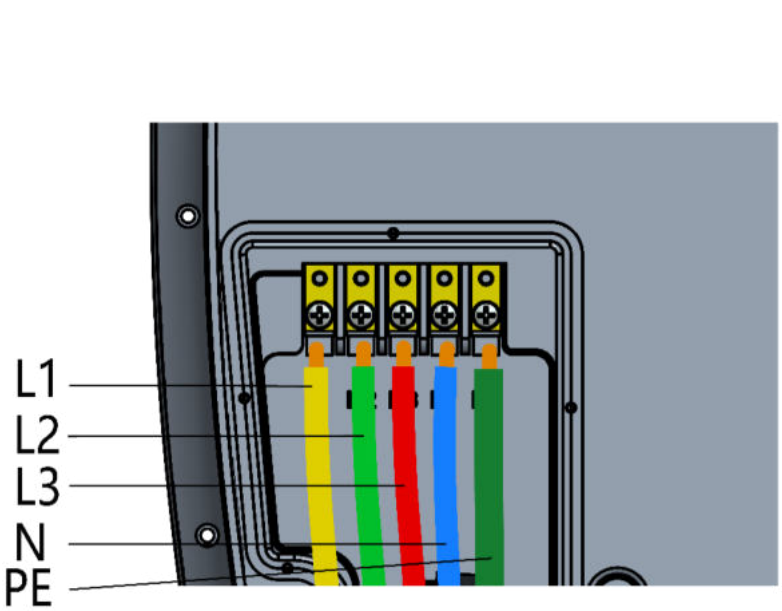
- Install the wire box upstream of the charging pile.

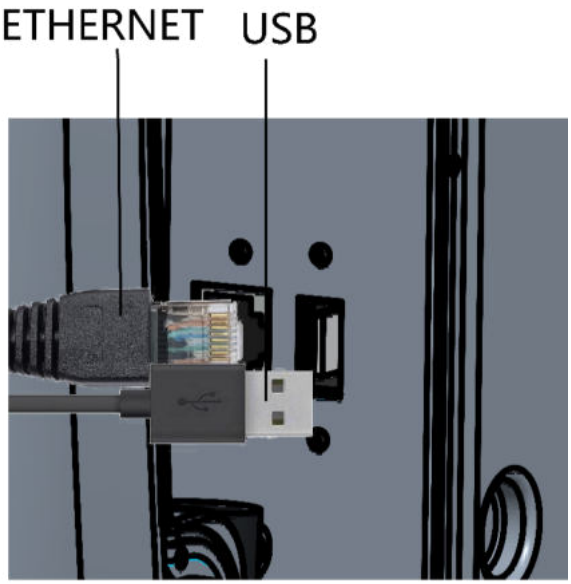


Step 4: Connect the wires

1. Knock off the round hole parts on the cover plate.
2. Install the L1, L2, L3, N, GROUND wires and ethernet and USB cables. Details of all wire connection is listed as following figure.

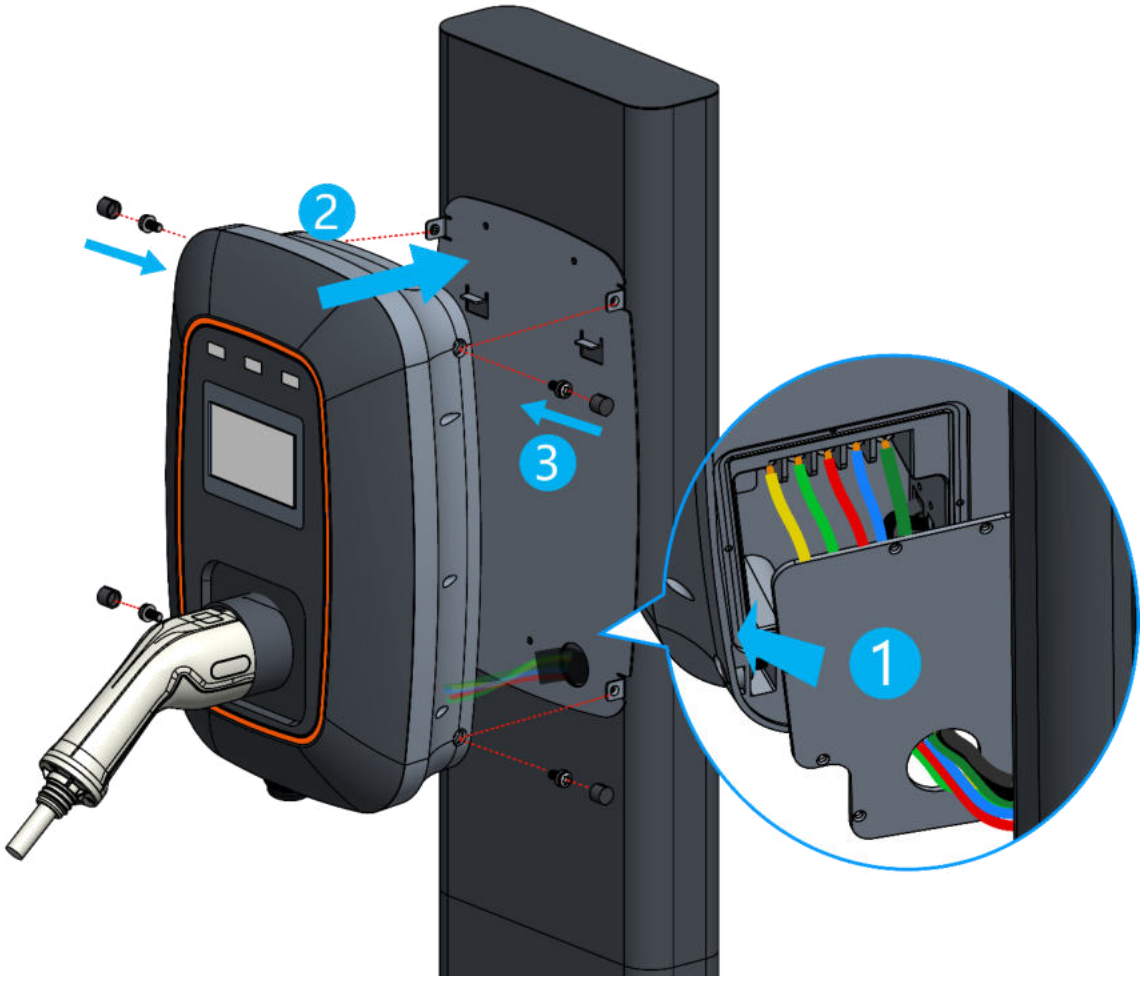






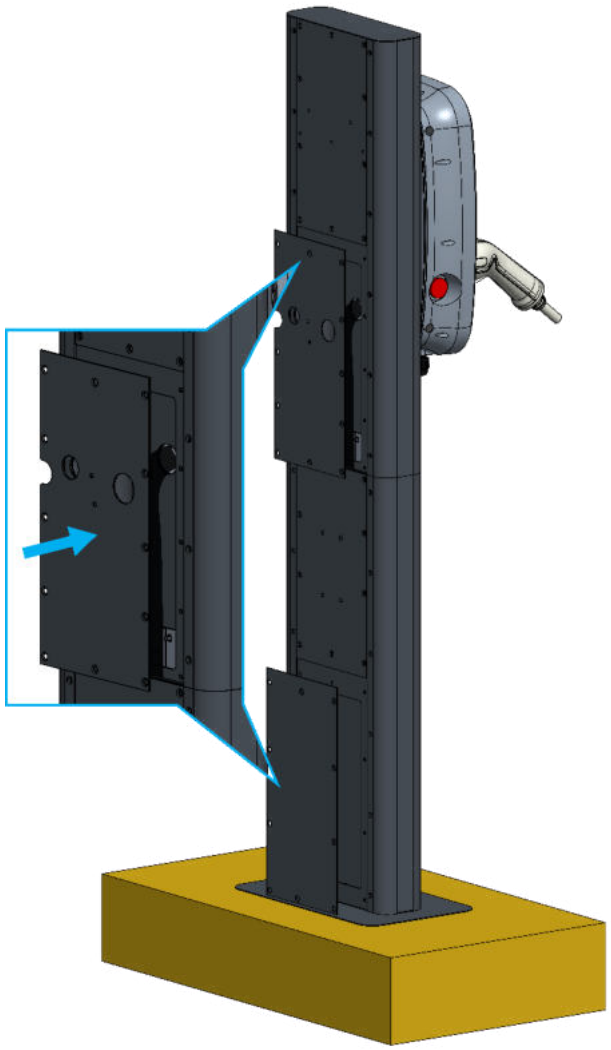
Step 5 : **Main case installation**

1. Attach the backplane to the chassis.
2. Align the main case backplane with the corresponding slots on the mounting plate.
3. Lock four screws from both sides and plug the rubber plug.



Step 6: Back plate installation

- Install the two backplanes of the charger base to complete the assembly.

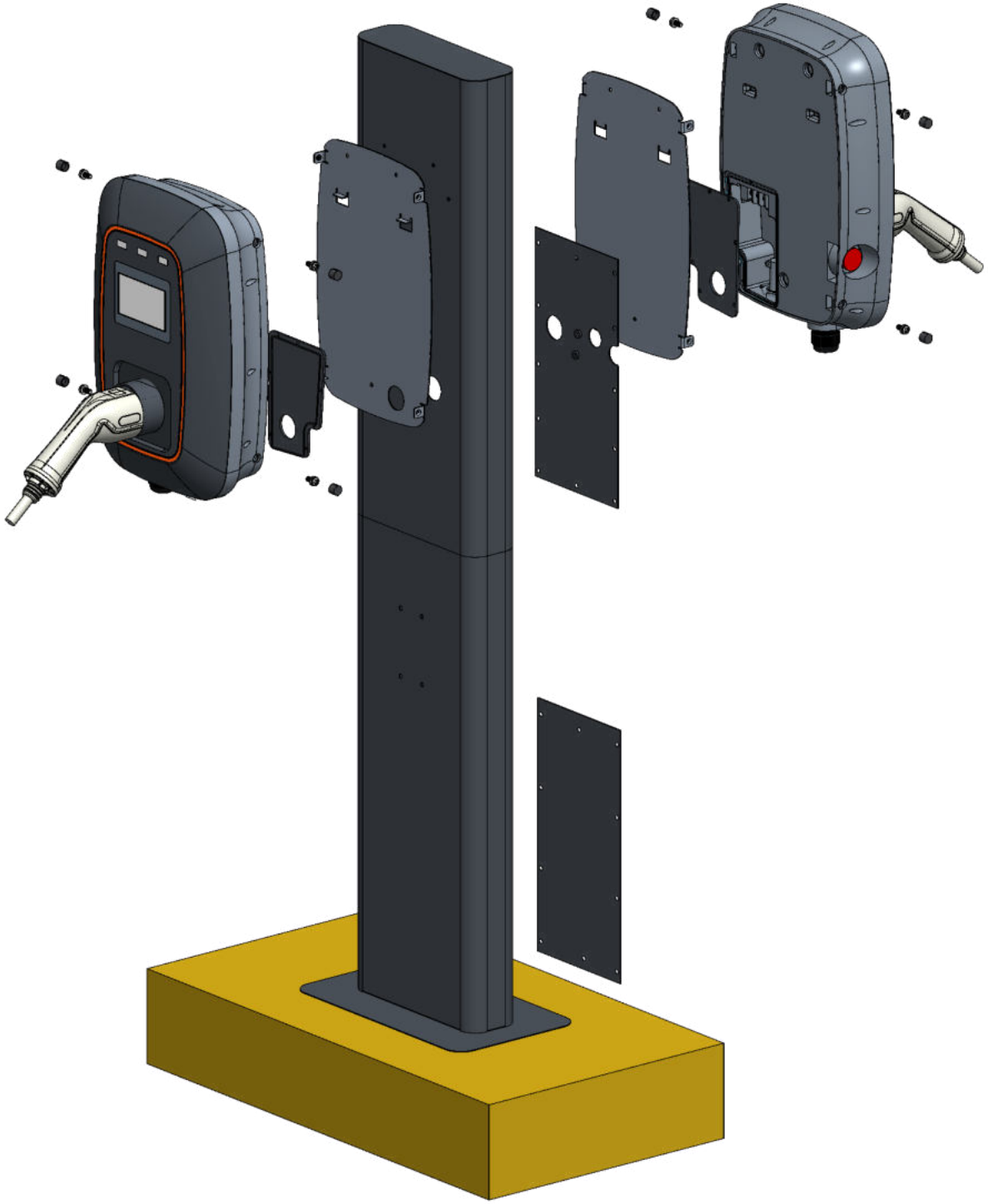


NOTE:

- Before charging the pedestal, recheck all electrical connections after all wiring is complete.
- After all chargers are powered on, the LCD screen will display the status of the chargers.

5.10. Back-to-Back Pedestal Installation

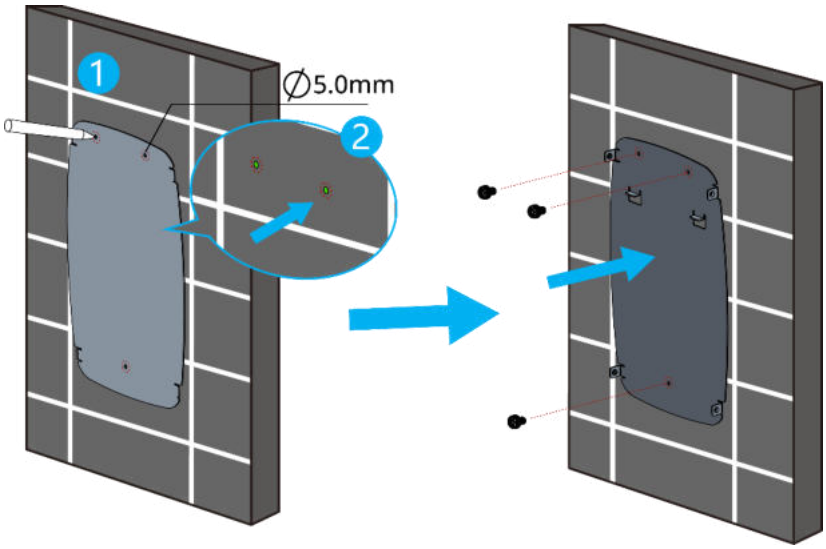
The installation method of back-to-back pedestal is the same as that for single pedestal. You can refer to the installation method of single pedestal.



5.11. Wall-Mount Charger Installation

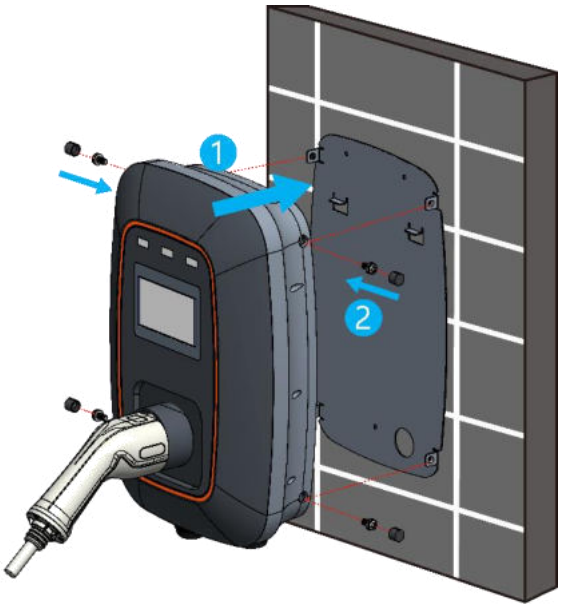
Step 1 : Mounting plate installation

1. There is installation template sheet inside of package. Put this sheet on the wall and mark three holes first. Then, apply stud bolts on three holes.
2. Align the holes on the mounting plate with the three stud bolts on the wall and fix them with three M5 screws.

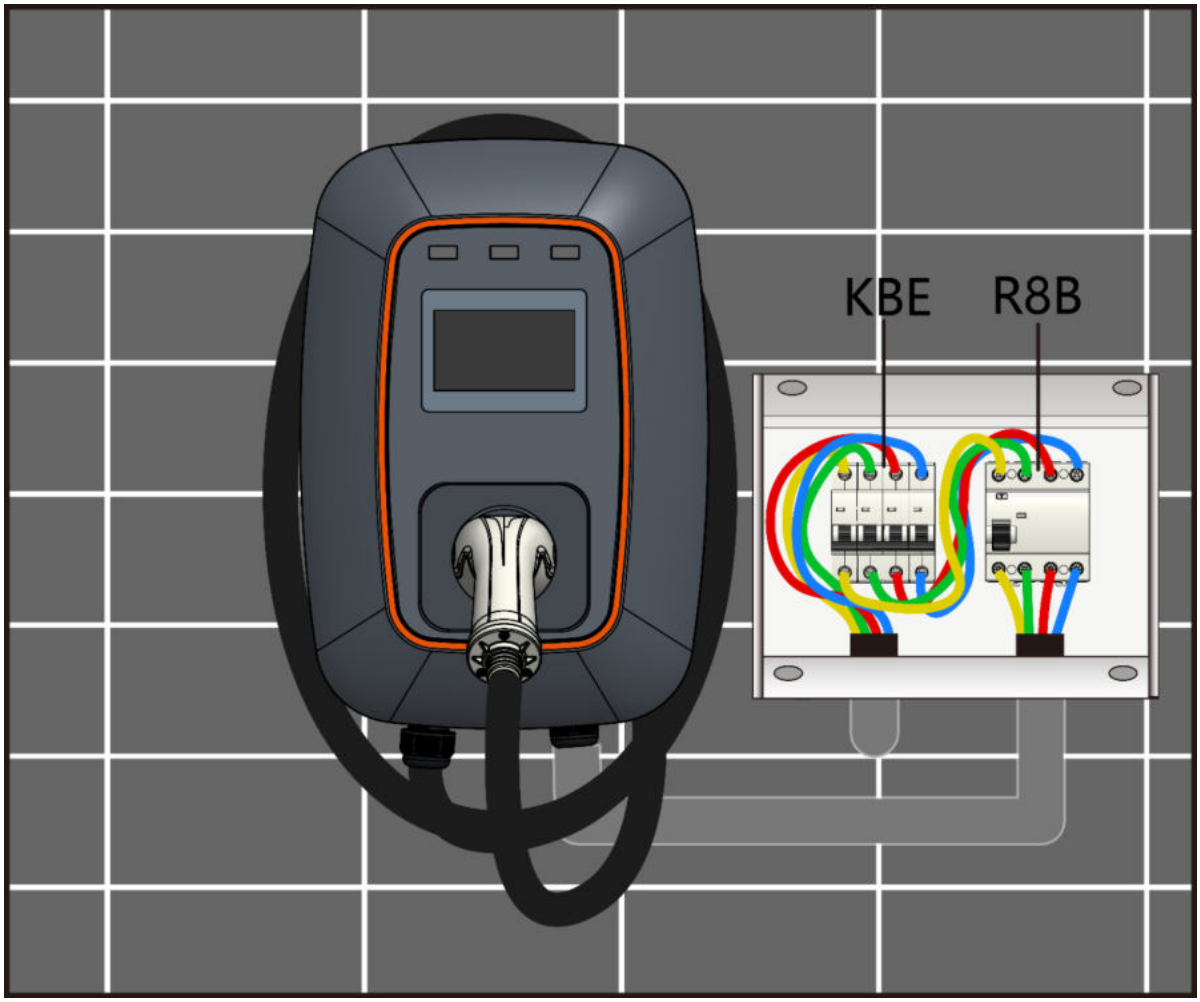


Step 2 : Main case installation

1. Align the main case backplane with the corresponding slots on the mounting plate.
2. Lock four screws from both sides and plug the rubber plug.



Step 3：**Connect the Charger**



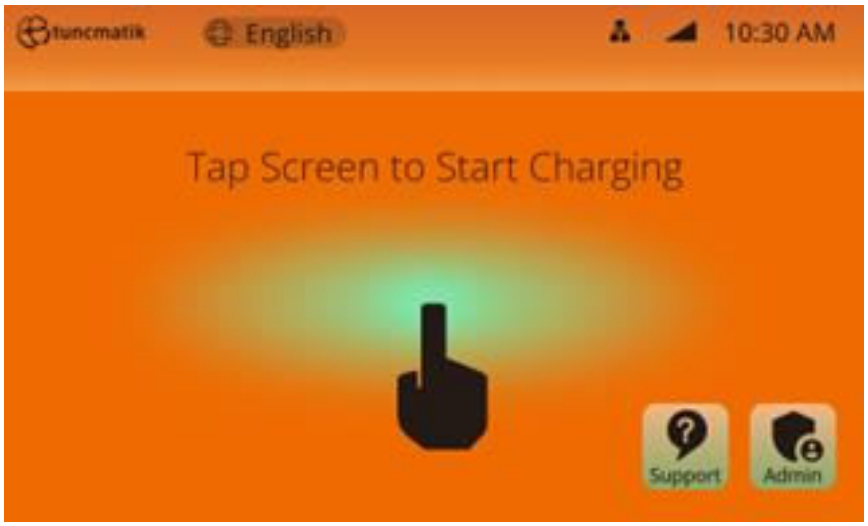
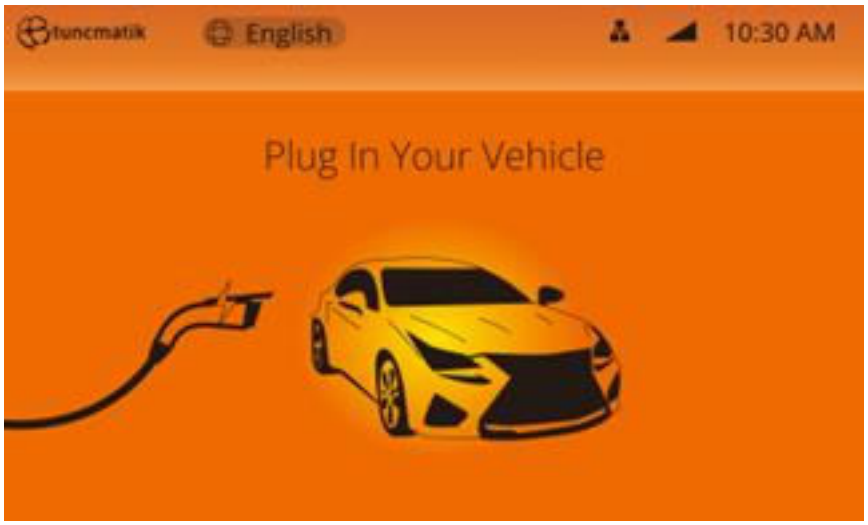
NOTE：

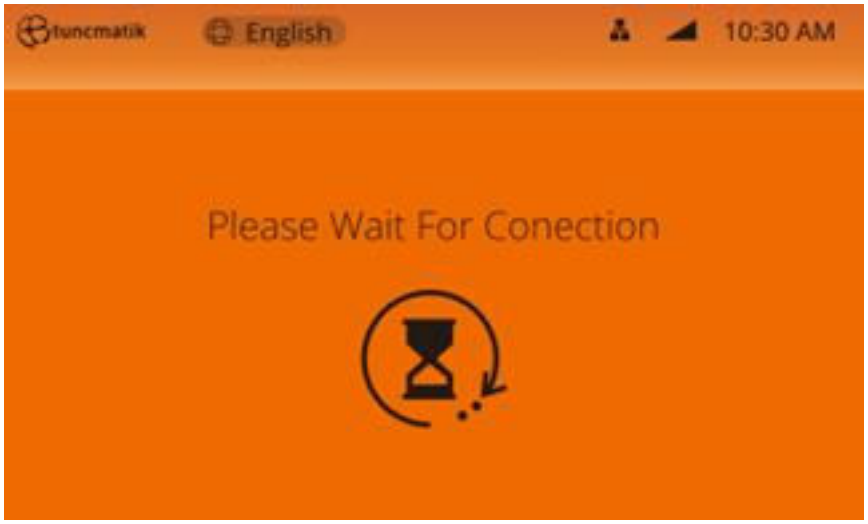
- Before charging the wall charger, recheck all electrical connections after all wiring is complete.
- Once all chargers are powered on, the LCD screen will display the status of the chargers.

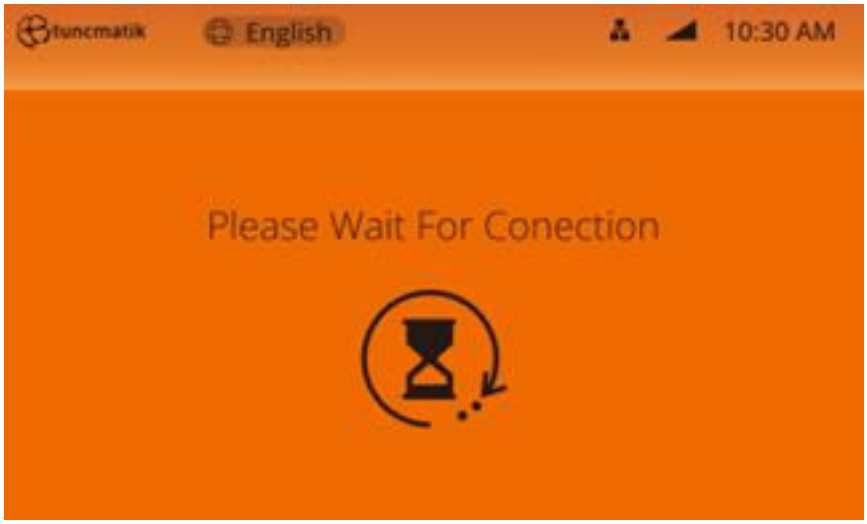
6. Charging Process

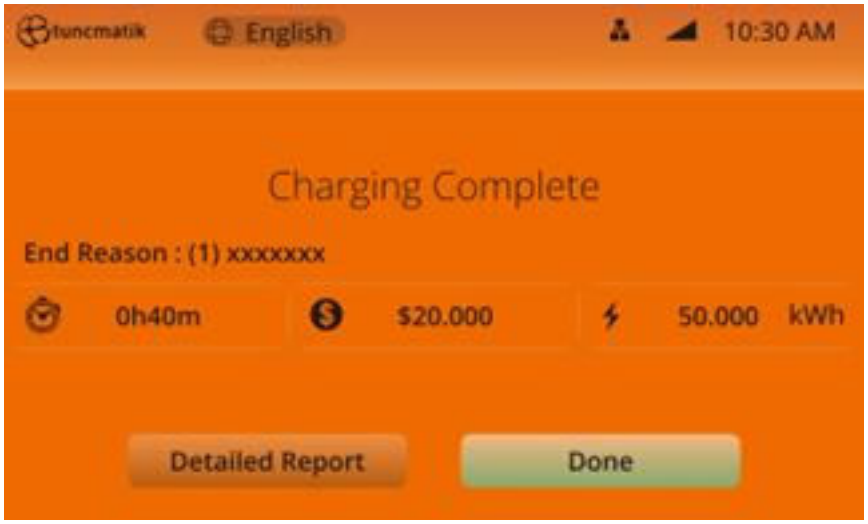
6.1. Display and Usage

6.1.1. User operation steps

Operating steps	Operating interface
Step 1: ● Touch the screen and swipe the card, and then connect the Socket (step2-1). ● Touch the screen and connect the Socket first, then swipe the card (step2-2).	
Step2-1: If the card has been swiped, it will prompt to connect the Socket, then connect.	

<table>
<tr>
<td>Step 2-2:
If the Socket has been connected, please tap the card.</td>
<td>
</td>
</tr>
<tr>
<td>Note:
It takes a while to connect the Socket.</td>
<td> 
</td>
</tr>
<tr>
<td>Step 3:
Select charging method: auto full, charge by time, or charge by cost.</td>
<td>
</td>
</tr>
</table>

<table>
<tr>
<td>Step 4:
Once the authorization is complete, this charger will start charging.</td>
<td> 
</td>
</tr>
<tr>
<td>Step 5:
While the vehicle is charging, charging data can be viewed on the LCD screen via the touchscreen.</td>
<td>
</td>
</tr>
<tr>
<td>Step 6:
After the charging is completed, it will pop up message to ask for tap the card again and finish the charging. Please tap the card near the induction area.</td>
<td>
</td>
</tr>
</table>

Step 7: It will display the charging capacity, charging amount, and charging time as the final screen. When charging is complete, put the charging plug back in place.	

NOTE: During charging period, if it's necessary to stop charging, simply touch " " icon on the right bottom corner.

6.1.2. Charging Page Description

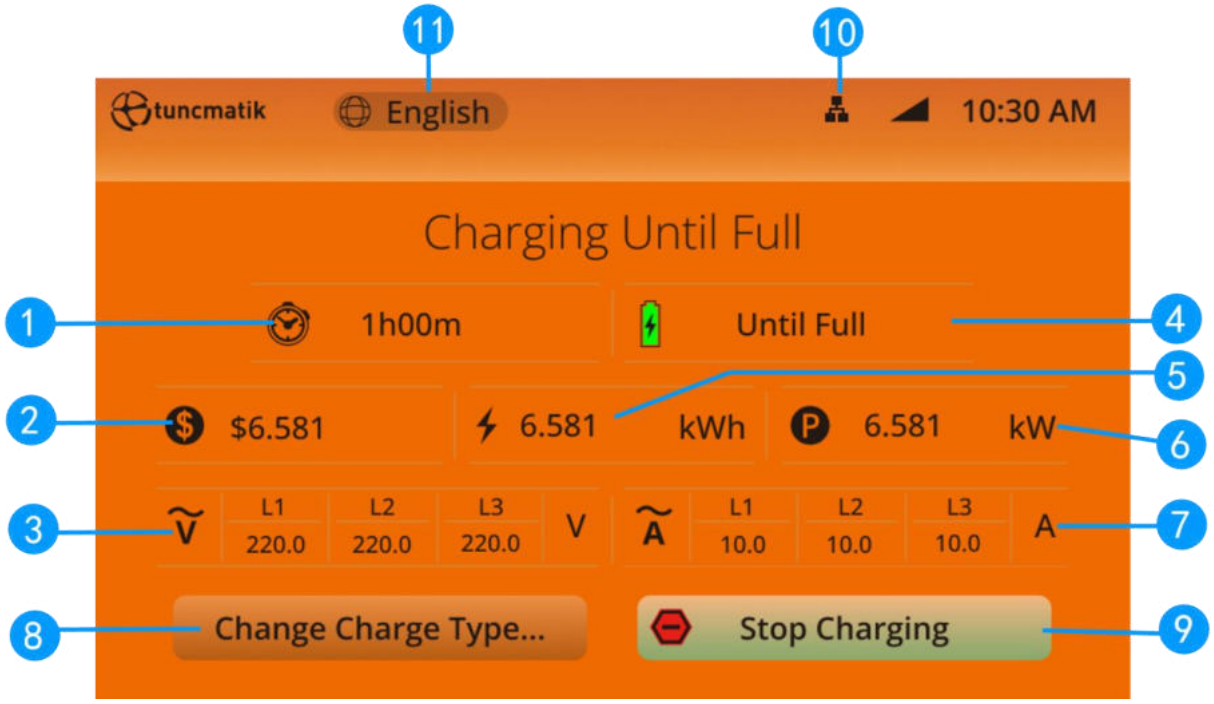


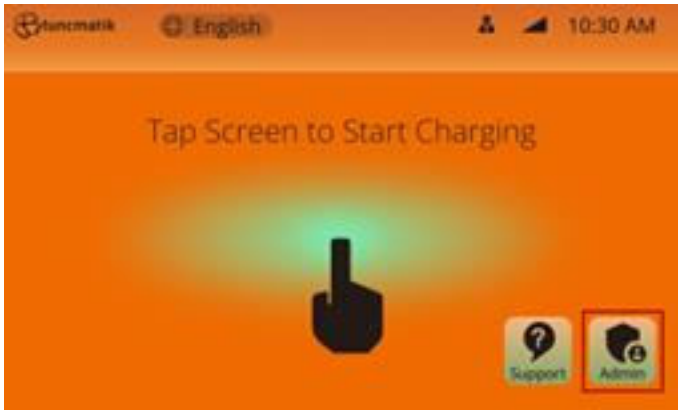
Figure 6-1 Real-time charging interface

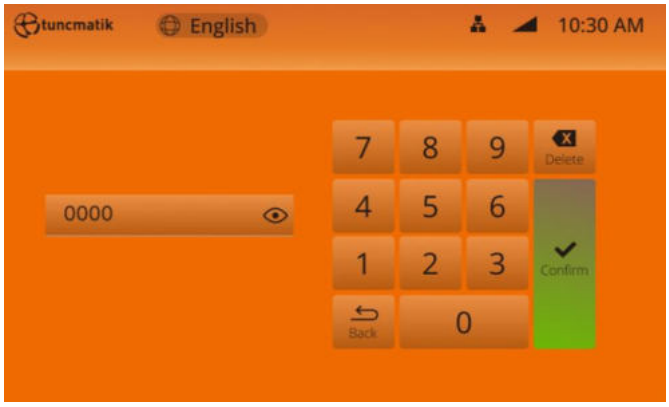
1. Charging time
2. Charging cost
3. Charging voltage
4. Charging method

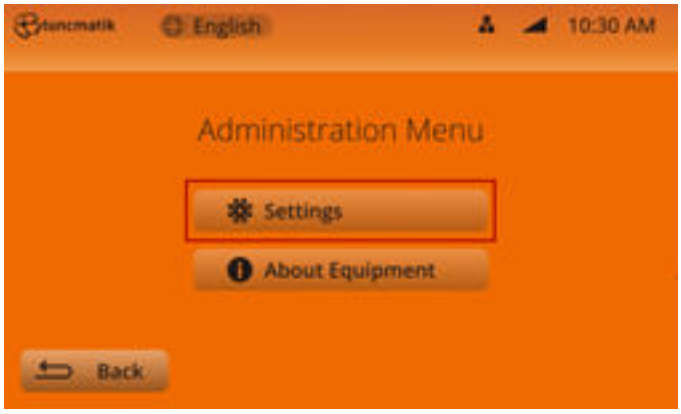
5. Charging capacity
6. Charging power
7. Charging current
8. Change charge type
9. Stop button
10. Network status
11. Language selection

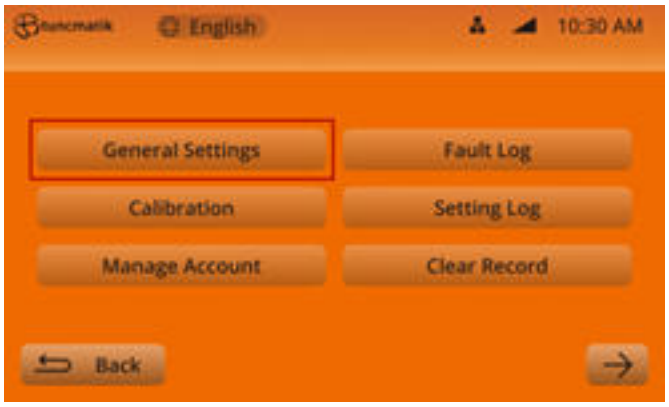
6.1.3. LCD Password Settings

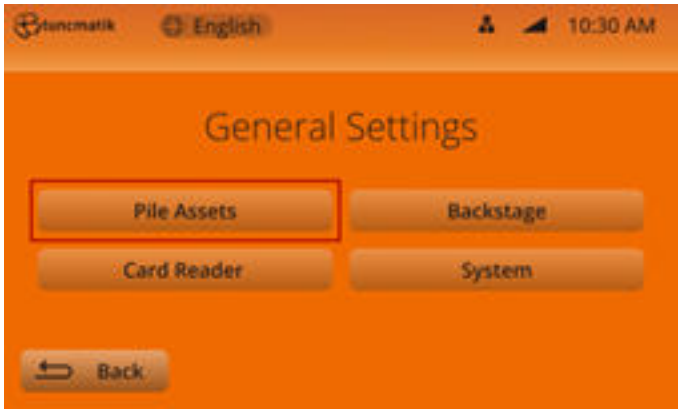
Admin>Password>Settings> General Settings>Pile Assets>Password
NOTE: The initial password is 0000

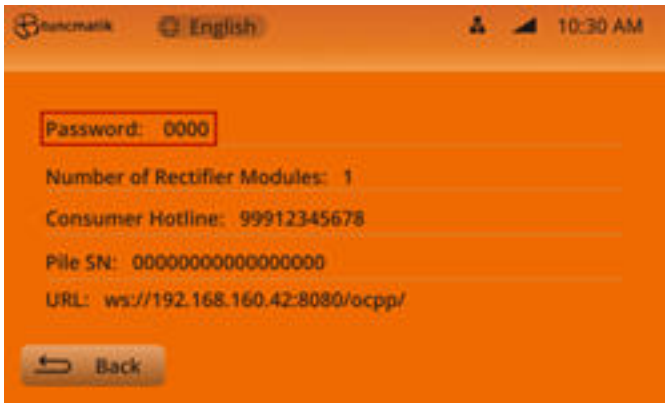


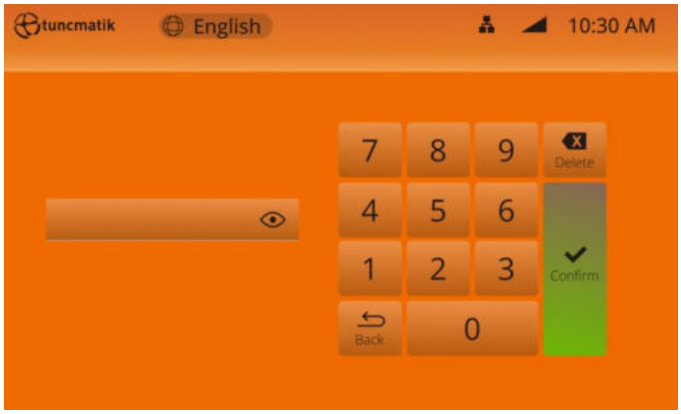






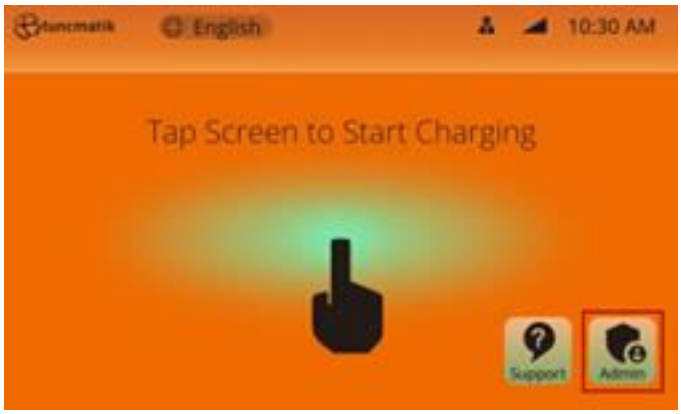


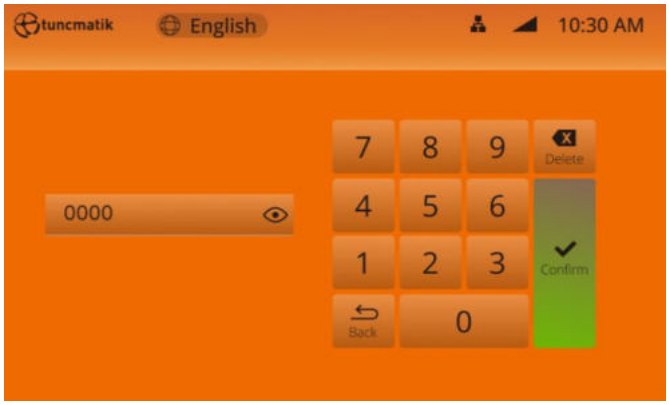


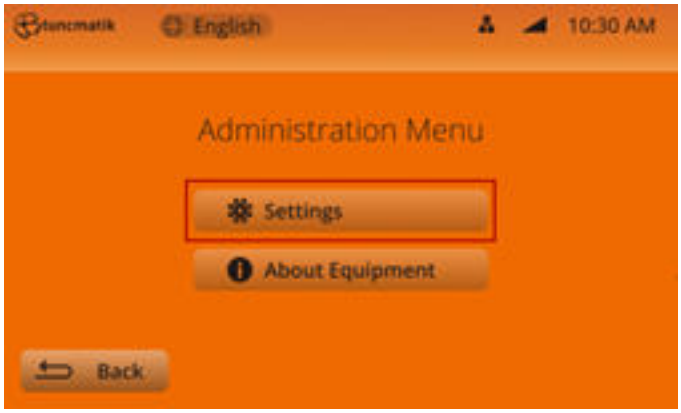


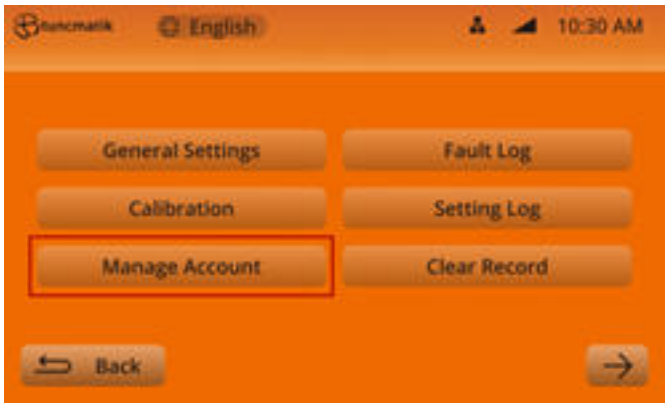
6.2. Manage Account

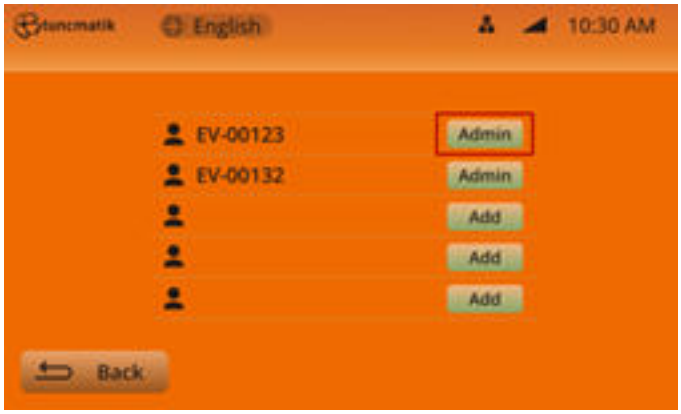
Admin>Password>Settings>Manage Account>Admin>Change Password

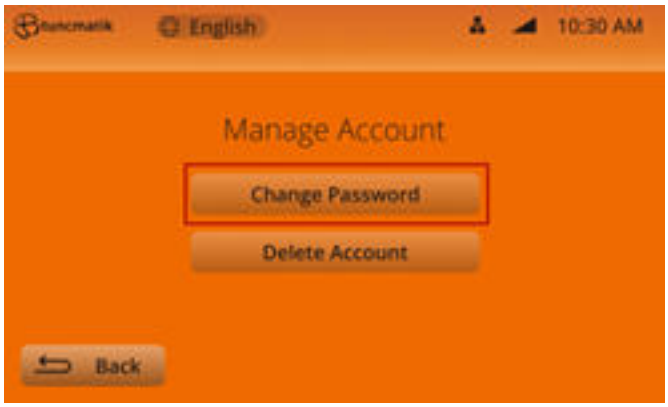


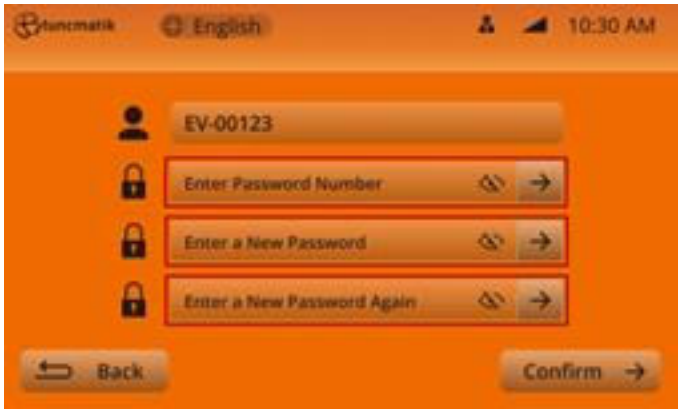






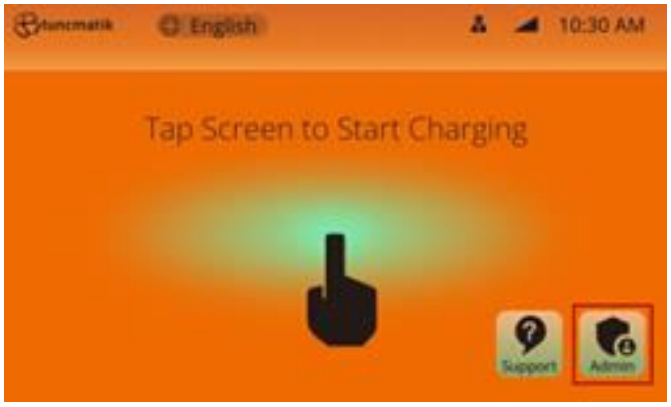


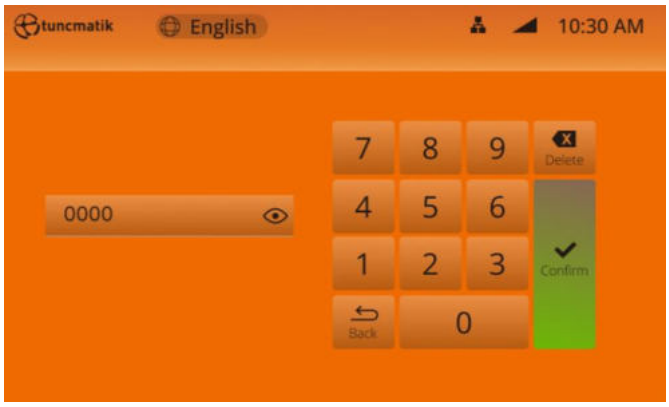


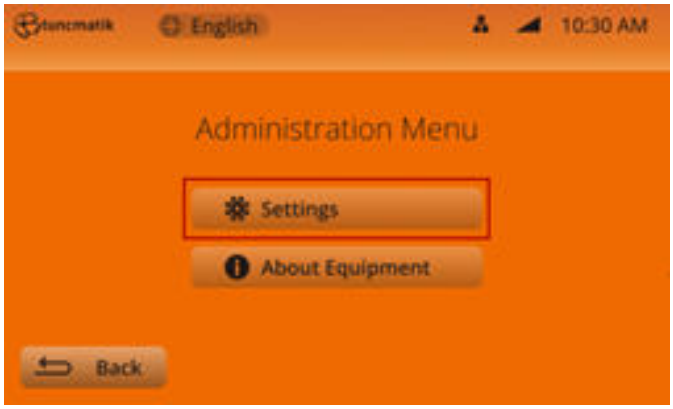


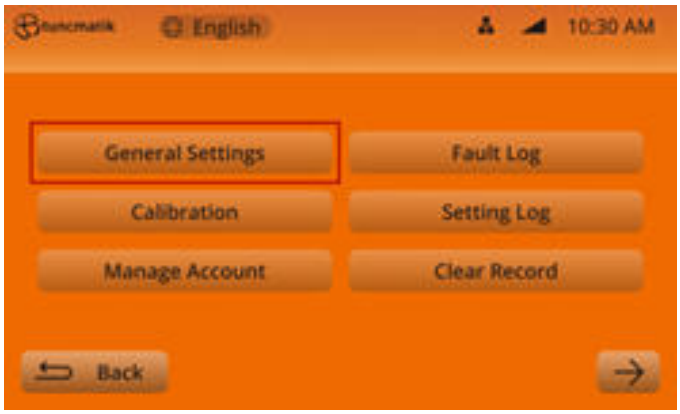
6.3. Server Ethernet (LAN) Connection

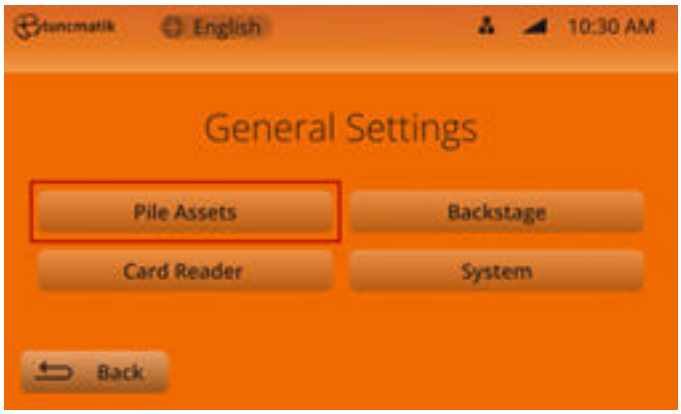
The Wi-Fi logo will be activated after the following settings are set up to confirm around the "Server Connection".

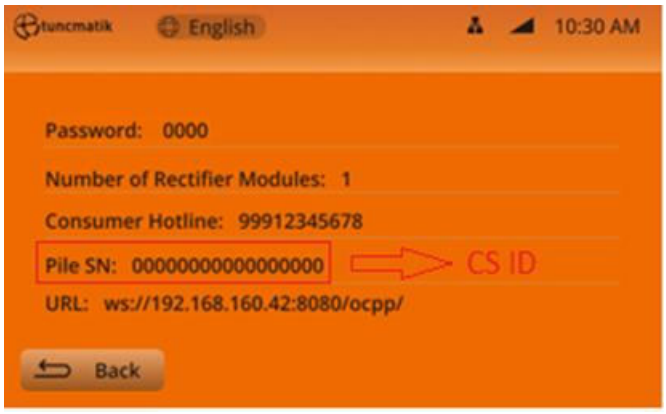

English
10:30 AM
Tap Screen to Start Charging
Support
Admin

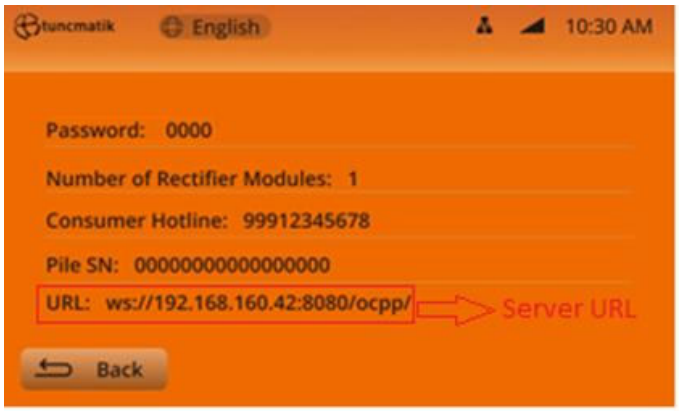

English
10:30 AM
0000
7
8
9
Delete
4
5
6
1
2
3
Confirm
Back
0

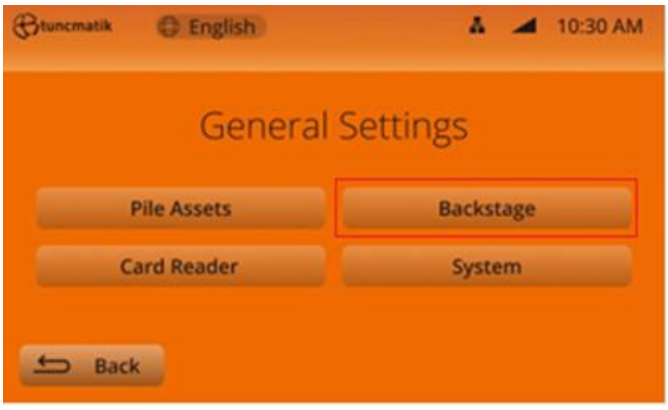

English
10:30 AM
Administration Menu
Settings
About Equipment
Back

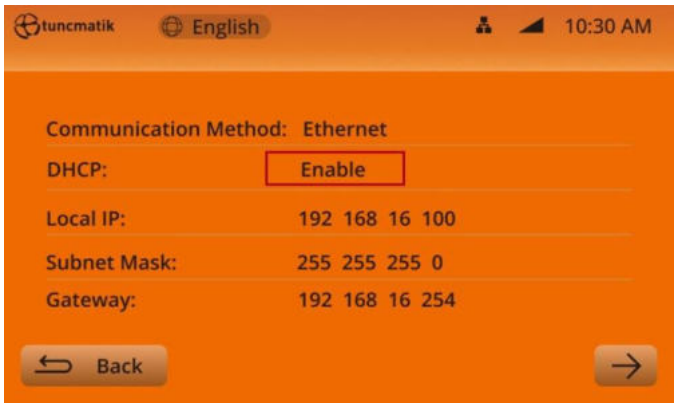

English
10:30 AM
General Settings
Fault Log
Calibration
Setting Log
Manage Account
Clear Record
Back

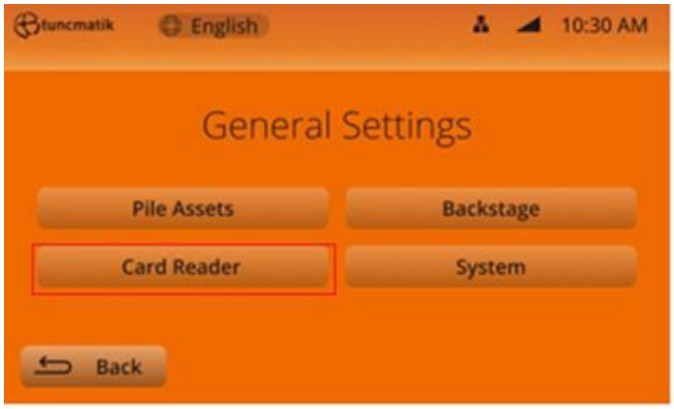

English
10:30 AM
General Settings
Pile Assets
Backstage
Card Reader
System
Back

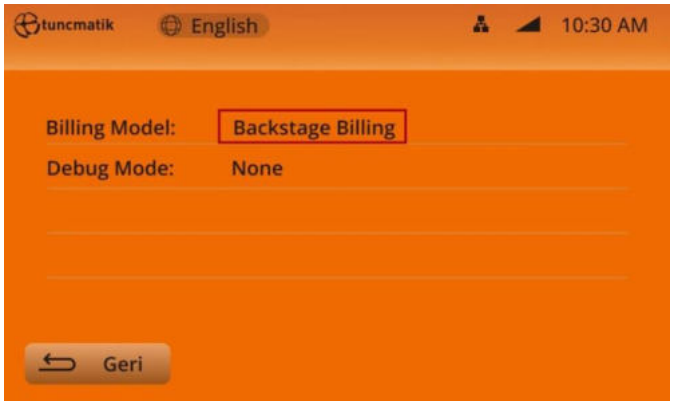

English
10:30 AM
Password: 0000
Number of Rectifier Modules: 1
Consumer Hotline: 99912345678
Pile SN: 00000000000000000
CS ID
URL: ws://192.168.160.42:8080/ocpp/
Back


English
10:30 AM
Password: 0000
Number of Rectifier Modules: 1
Consumer Hotline: 99912345678
Pile SN: 00000000000000000
URL: ws://192.168.160.42:8080/ocpp/
Server URL
Back


English
10:30 AM
General Settings
Pile Assets
Backstage
Card Reader
System
Back





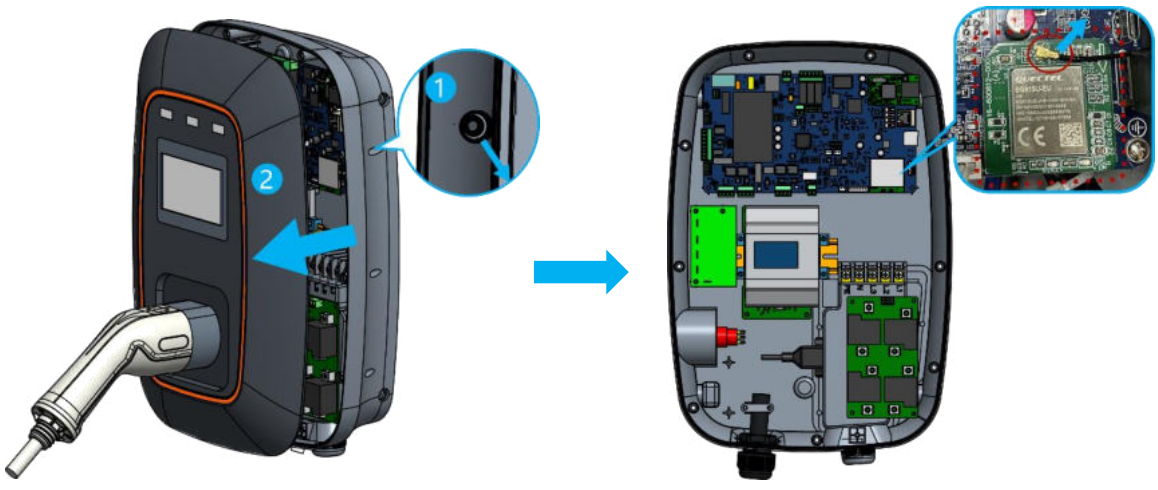


6.4. SIM Card Installation

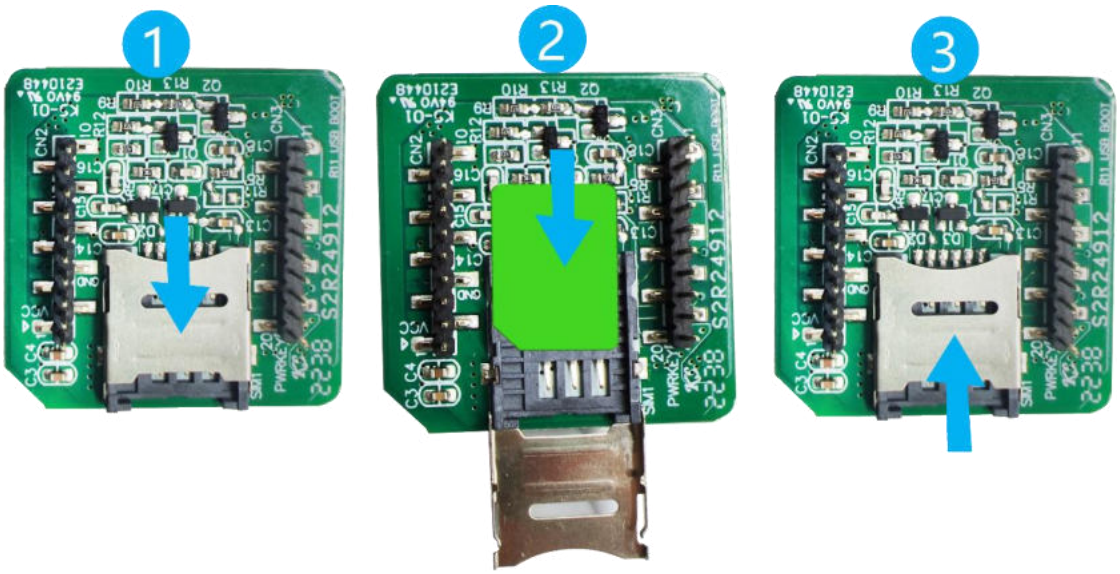
1. Loosen the screws on the front cover of the charging station and open it on.

⚠	**CAUTION:** Screwdriver torque is 6kgf.

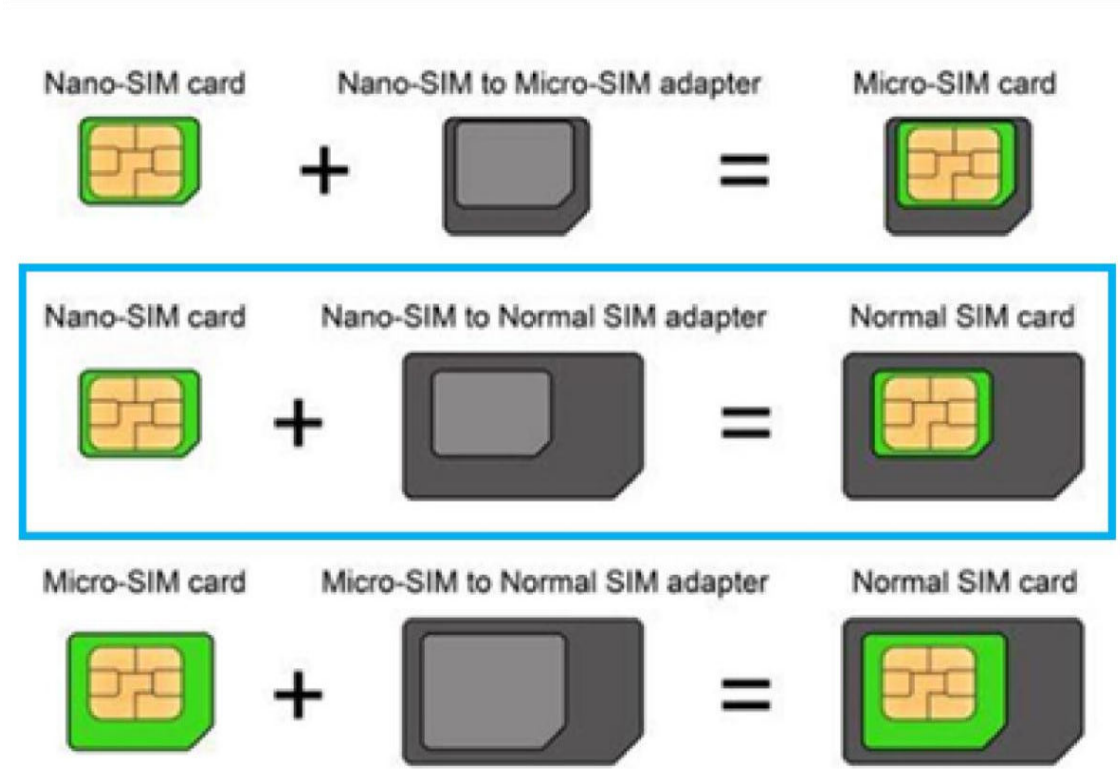
2. Remove the SMA signal cable from the 4G-MODULE, then remove the 4G-MODULE.



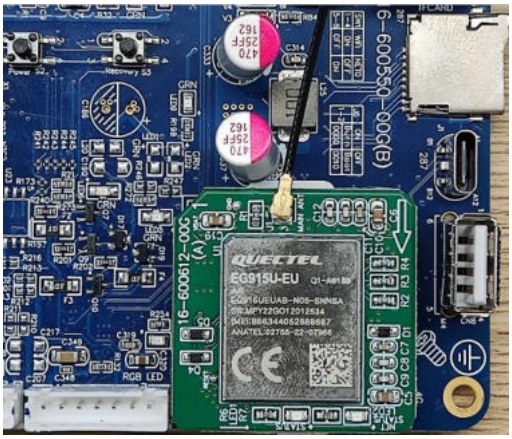
3. Insert the 4G card.



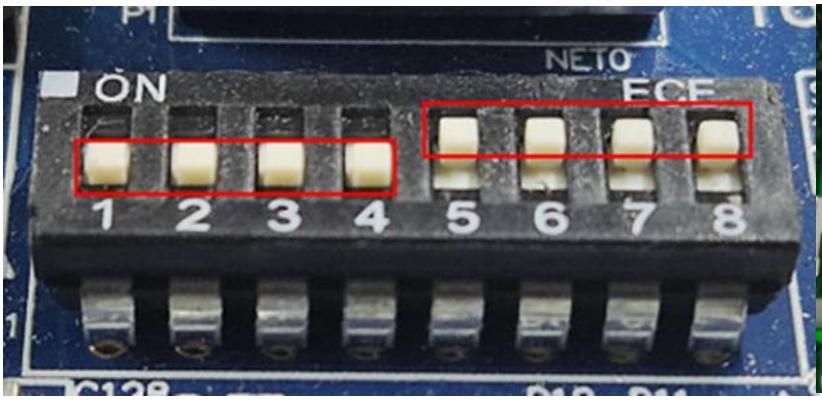
NOTE: Nano-SIM card should be selected

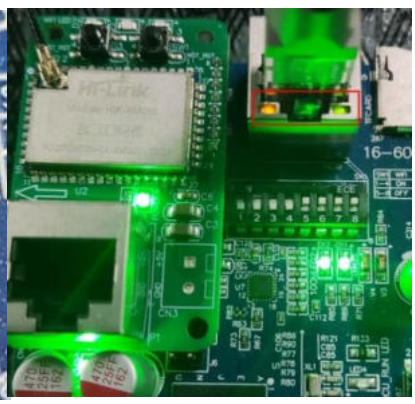


4. Connect the 4G-MODUL and SMA signal cables back to their original positions.

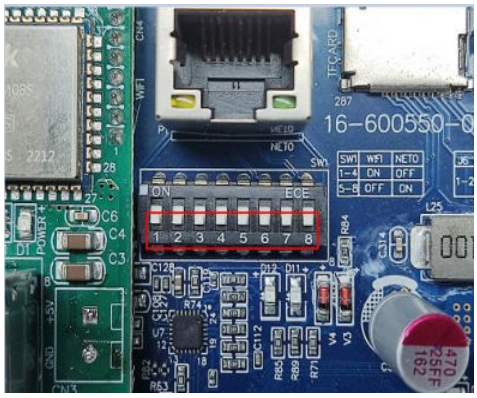


5. In GSM and LAN cable connection SW1 Switches should be in the following position.





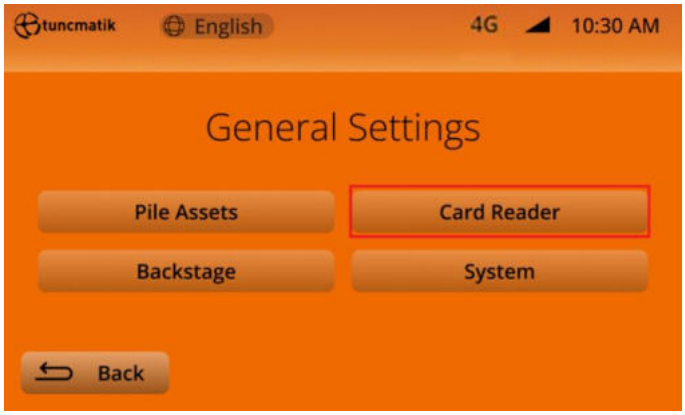
NOTE: Wi-Fi settings will be reset if SW1 Switch 1-8 is turned off as below.

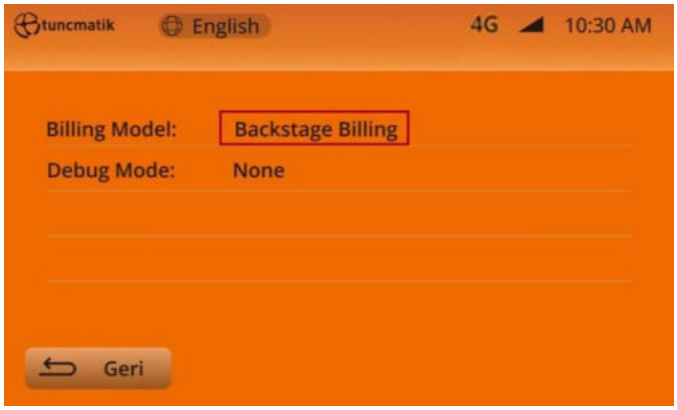


6. Install the front cover of the charging station, then the SIM card is installed successfully

7. Turn the charging station back on, under the Setting from the Menu, go to Background and set DHCP to Enable. Then select the Billing option under the Card Reader Menu as Background Billing. Enter the IP settings of your SIM card to Local IP and Gateway.

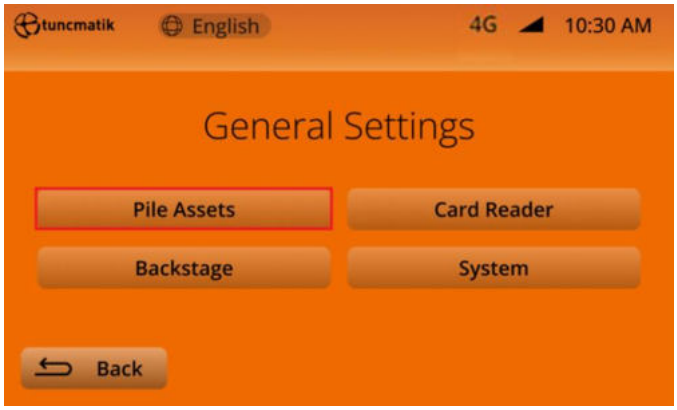
NOTE: Set up DHCP first, and then set up the billing model.





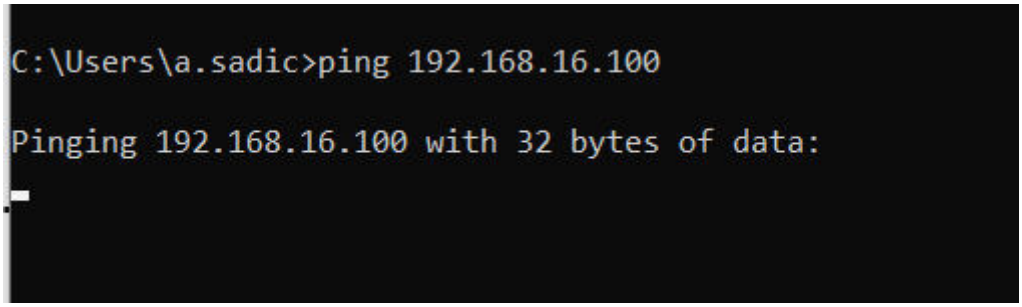
8. If APN sim is used in the "4G Settings" tab, the APN server name is written. If Data SIM is used, it's left blank. This means automatic APN server name.

9. From the "General Settings" menu, find the "Module SN" selection under the "Active Modules" tab and enter the CS ID you defined to the station on your server below.



10. After waiting for about 2 minutes, the AC Charging Station will be connected to the server. To confirm that this connection is established, you should see that the connection icon is active.

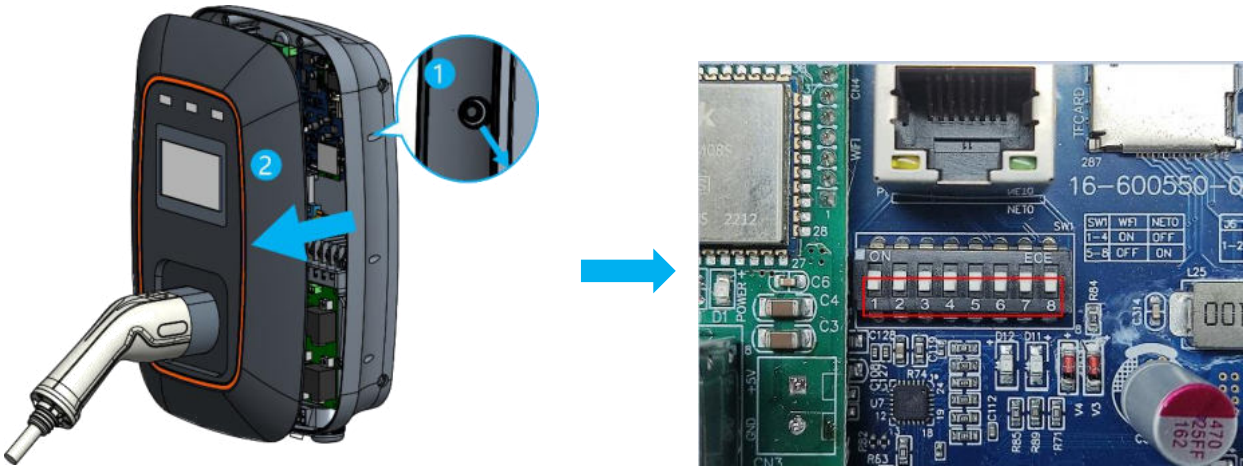
11. You can control your connection by pinging the address 192.168.16.100 from the CMD screen on your computer as follows.



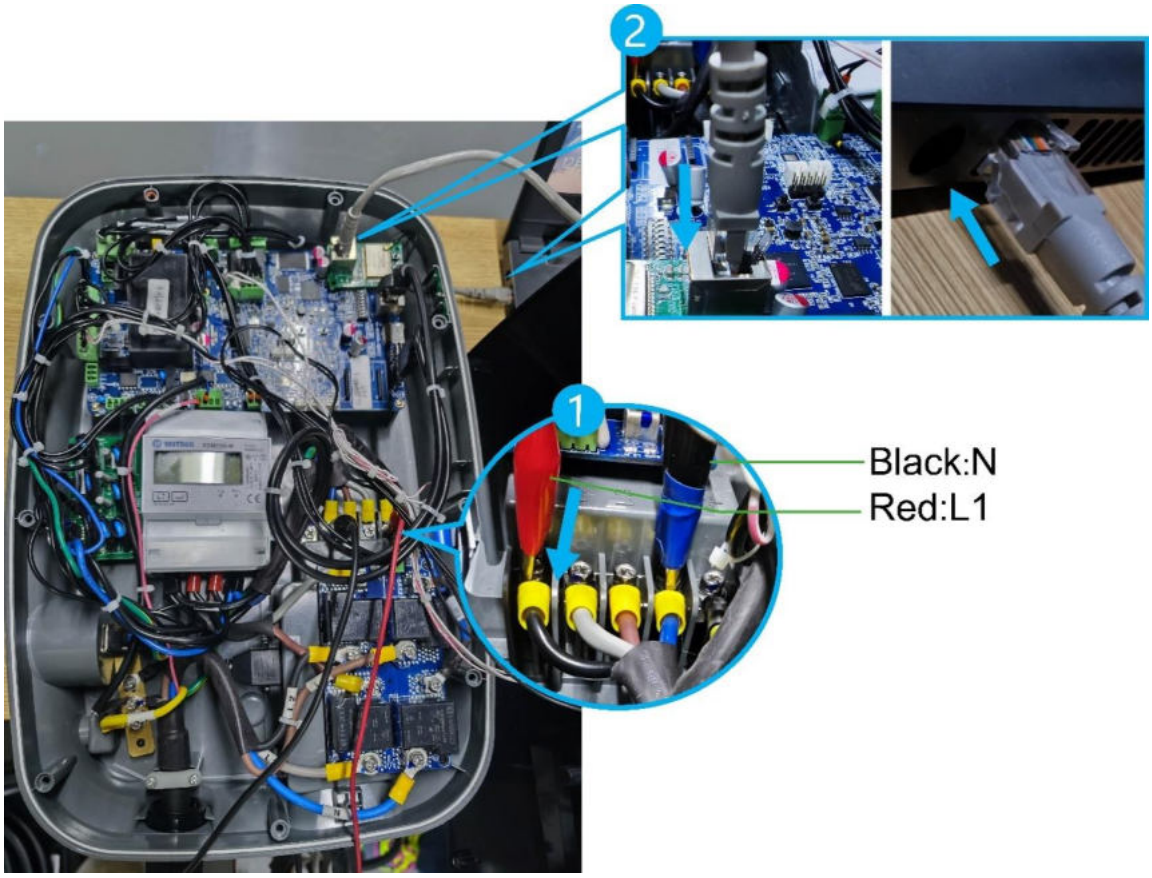
NOTE: IP address representation. You should ping the IP received on your device.

6.5. WiFi Settings

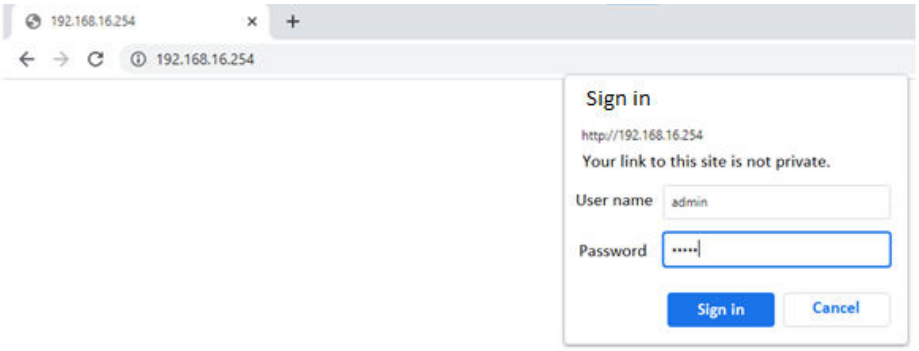
1. Loosen the screws on the front cover of the charging station and open it on.
2. Reset the DIP switch.



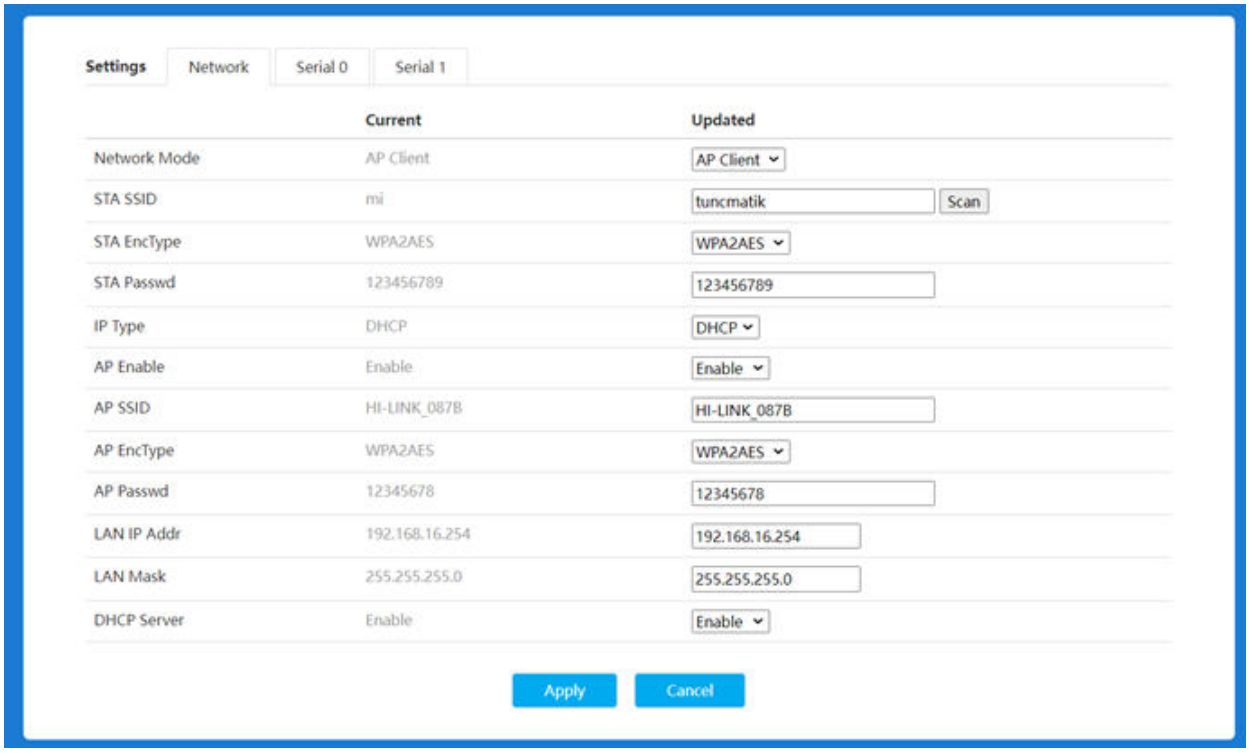
3. Connect the charging station to the power supply, then connect the WiFi module and the laptop with a network cable.



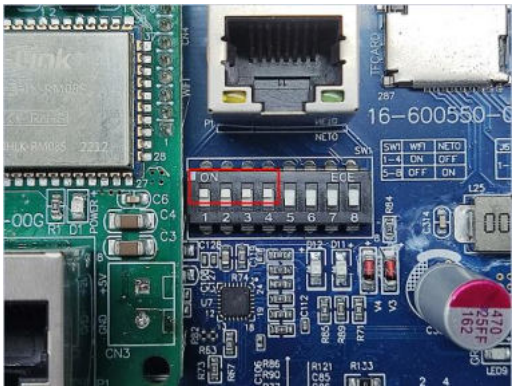
4. Enter 192.168.16.254 in the browser, and a dialog box for entering the user name and password will pop up. Both username and password are admin.



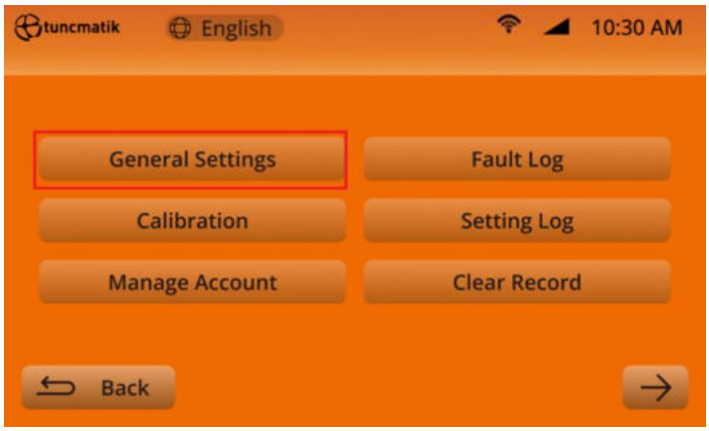
5. After logging in, select AP Client mode and set the parameters by picture.
   - Network Mode：AP Client
   - STA SSID: Please enter the WIFI name of the bridge router.
   - STA Enctype：WPA2AES
   - STA Password: Please enter the WIFI password of the bridged router.
   - IP Type：DHCP
   - AP Enable: Enable
   - LAN IP Addr：192.168.16.254
   - LAN Mask：255.255.255.0
   - DHCP Server：Enable

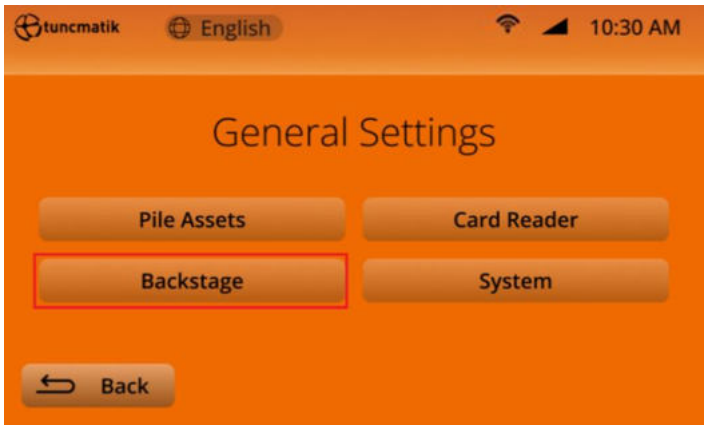


6. After the parameters are set, click Apply to exit and unplug the network cable.
7. Dial the DIP switches 1-4 to ON, and 5-8 to the digital side.

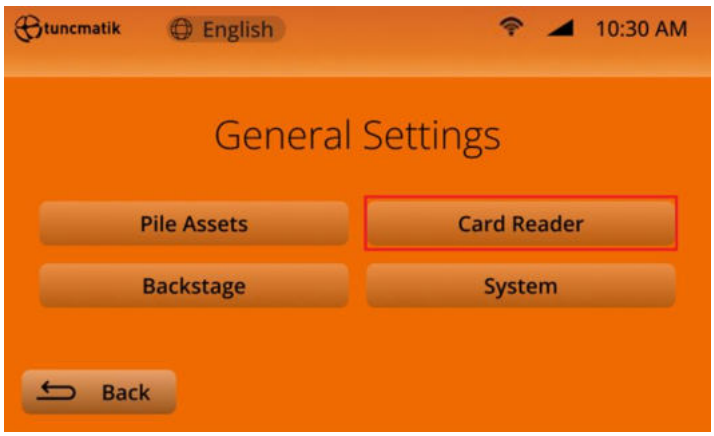


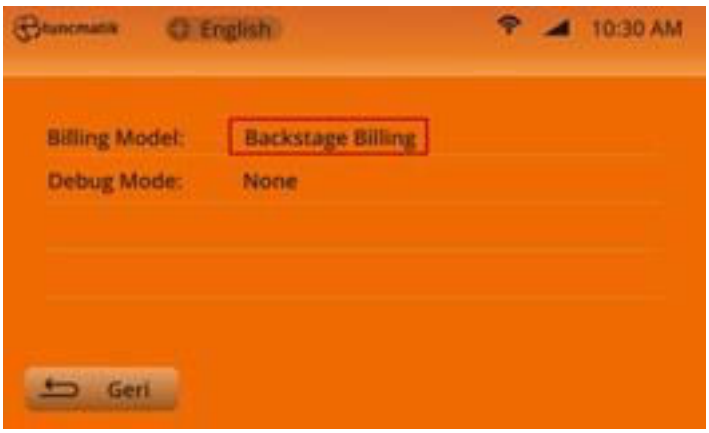
8. Charging station is powered back on, DHCP needs to select Enable on the screen, and then modify the billing model to backstage billing through the screen.





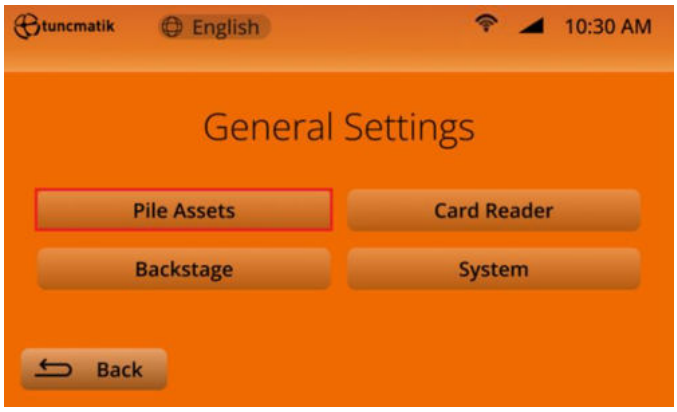
9. Then, from the "Card Reader" section, set the "Billing Model" to "Billing in the Bacgrund" as follows.

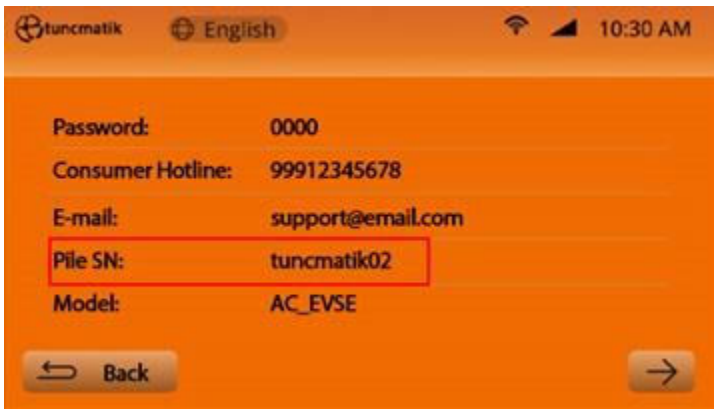




10. From the "Wi-Fi Settings" tab, enter the Wi-Fi setting you are using as follows.

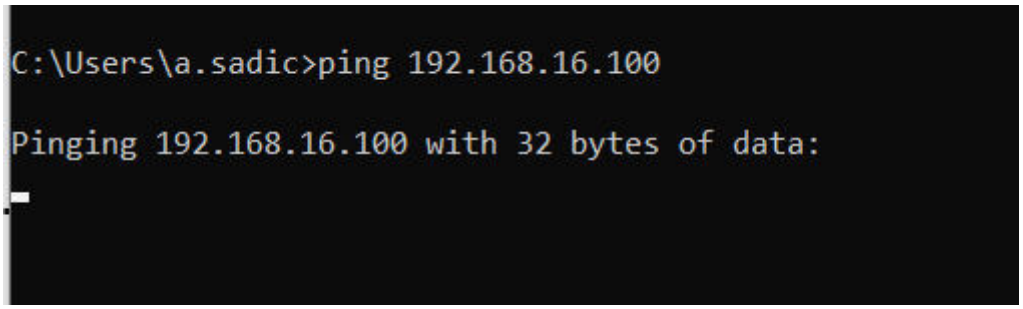
11. From the "General Setting" menu, find the "Module SN" section under the "Active Modules" tab and enter the CS ID you defined to the station n your server below.





12. After waiting for about 2 minutes, the AC Charging Station will be connected to the server. To confirm that this connection is established, you should see that the connection icon is active.

13. After waiting for about 40s, the IP address assigned by the WIFI module to the control board will be automatically recognized: 192.168.16.100.



14. Install the front cover of the charging station.

7. LED Operation

Idle **Charging** **Fault**

State	Description	EV Pole LED
State A	(Idle)	EV Green LED
State B	Vehicle Connected	EV Blue LED
State C	Charging	EV Blue LED
State F	Fault	EV Red LED

8. Precautions

- If the screen shows a machine failure, do not operate, please contact the staff.
- When the charging light (blue light) blinks, it is charging. At this time, please do not plug or unplug the charging gun to avoid electric shock.
- If it needs to be fully charged, please confirm that the balance of the IC card is sufficient when swiping the card. Charging will be automatically terminated if the balance is insufficient during the charging process.
- Follow the charger's operating instructions when operating.
- Be careful not to overexert when unplugging the charging cable.
- In case of emergency, please press the emergency stop switch. Charging can not be carried out at this time.

9. EPO Operation

When any of the following situation occurs, please press EPO button to forcibly disconnect the AC contactor, and the control receives the EPO information to forcibly stop the charging processing, and provides a warning on the screen.

- Fire alarm, electric shock or leakage occurs on this charger.
- Internal fault, can't stop charging, internal wiring problem occurs on this charger.
- Water enters inside of cabinet or abnormal buzzer alarm is activated.
- It's necessary to move charger location.

NOTE: If you press the button by mistake, simply turn the button to the right to resume this action.

10. Routine Maintenance

Due to the influence of ambient temperature, humidity, dust and vibration, the internal devices of the charger will wear out, which leads to the potential failure of the charger. Therefore, it is necessary to carry out daily and regular maintenance of charger to ensure their normal operation and its service life.

- Regularly check if the cabinet structure is loose and sliding.
- Check if the connecting wire is worn and the charging connector is connected firmly.
- Regularly check if any internal components is damage, loose or burned out.
- Regularly check if AC incoming line and ground wire are firmly connected.
- Check the dust accumulation in the cabinet once a month and clean it in time to ensure the heat dissipation.
- Please be sure to keep the cabinet door closed and locked when nobody is on duty.

NOTE: Only professional electricians or persons with professional qualifications can operate the contents of this chapter.

	CAUTION: Do not leave screws, washers and other metal parts in the charger for maintenance, otherwise the equipment may be damaged. After the completion of equipment maintenance, it is necessary to check the cabinet to ensure the normal operation of the charger.
	Warning: During equipment maintenance and overhaul, please be sure to cut off the AC side power supply of the charger.
	Warning: During equipment maintenance, necessary measures shall be taken to prevent the charger from being energized by mistake.

Maintenance Item	Maintenance Cycle
Check the cable and connection regularly, check whether all the cable connection is loose, if loose, must be tightened; Check connection terminals and insulation for discoloration or peeling, replace damaged or corroded terminals, and replace damaged cables.	3 months
Check whether the warning label is firm or clear, and replace it accordingly.	3 months
Regularly check whether there is abnormal sound during the operation of the charger.	3 months
Check the emergency stop function regularly: check whether the emergency stop switch is normal.	3 months

NOTE: If the charger is used in a harsh environment, please carry out routine cleaning according to the actual usage.

11. Trouble Shooting

Fault Code	Fault Description	Possible cause & What to do
E015	Charging gun is not in place	After charging, put the gun wire back in place.
E017	Failed to send bill	The charging station is connected to the background, and the bill is uploaded after charging, but no reply is received from the background, please contact the background.
E018	Bill delivery timed out	The charging station is connected to the background, and the bill is uploaded after charging, but no reply is received from the background, please contact the background.
E023	CM_CARD_NO_EXIST_ERR	The account does not exist, please check whether the card is authorized
E026	The charging condition reaches the user set value	When the charging condition reaches the set value (such as set time, set fee, set time, etc.), please pull out the gun and return to the original position.
E029	CM_LINK_ERR	Wrong pilot voltage, please contact after-sales service
E036	PRO_AC_INPUT_OVER_VOLTAGE	AC input overvoltage, check input voltage
E037	PRO_AC_INPUT_LOW_VOLTAGE	AC input undervoltage, check input voltage
E039	Background Communication Abnormal	The charging station is set to background charging mode, but communication with the background is lost. Check network equipment.
E043	Emergency stop switch action	Please turn the E-STOP knob to enable the charger. If the second attempt to start fails, please call the customer service.
E044	AC power loss	The AC circuit breaker has been disconnected. Check if the input is tripped.
E046	PRO_AC_ INPUT_FREQ_OUT	Input frequency is out of range, please check the input frequency
E049	PRO_LOSS_PE	Please check if PE is lost
E062	Account does not exist	The card number (account number) is not recorded in the background, please record again.
E064	The card has an unclosed record	Please return to the original charging station for settlement, or reissue the card.
E065	Service password error	Please enter the correct password.
E080	Vehicle Control Guidance Failure in Charging	The gun was pulled out during charging.