3 Installation instructions

3.1 Equipment dimensions

1. The shape and dimension of the charger are shown in ***Figure 3.1-A.***

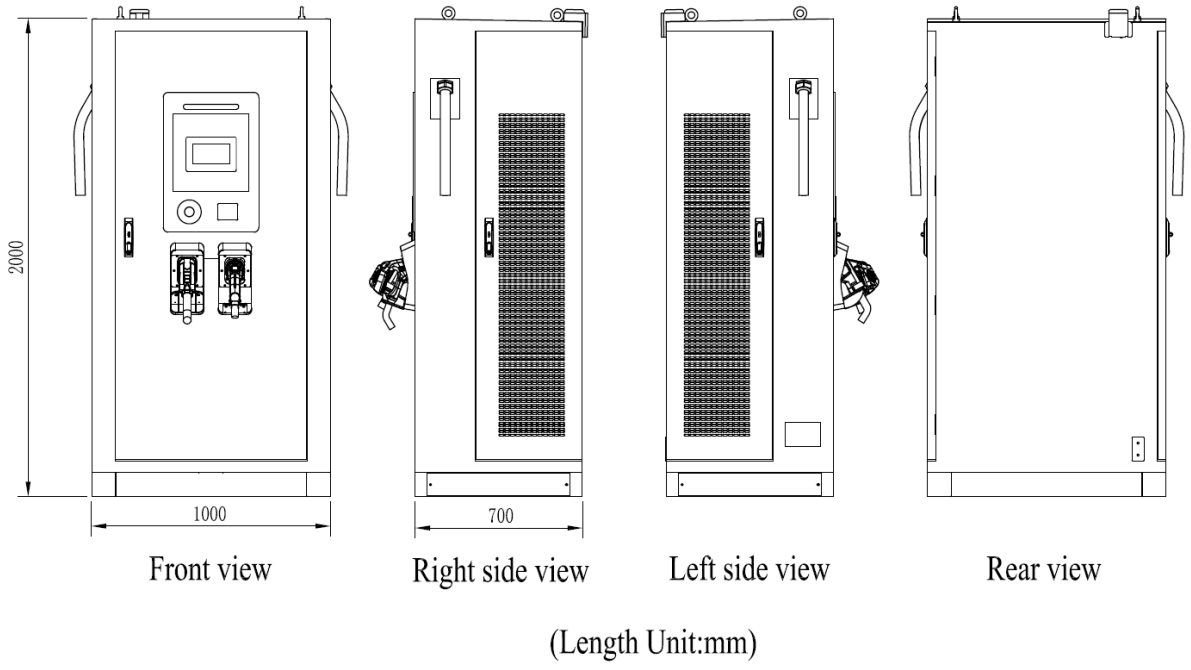


Figure 3.1-A Outline and dimension of charger

2. The hole size of charger base is shown in ***Figure 3.1-B.***

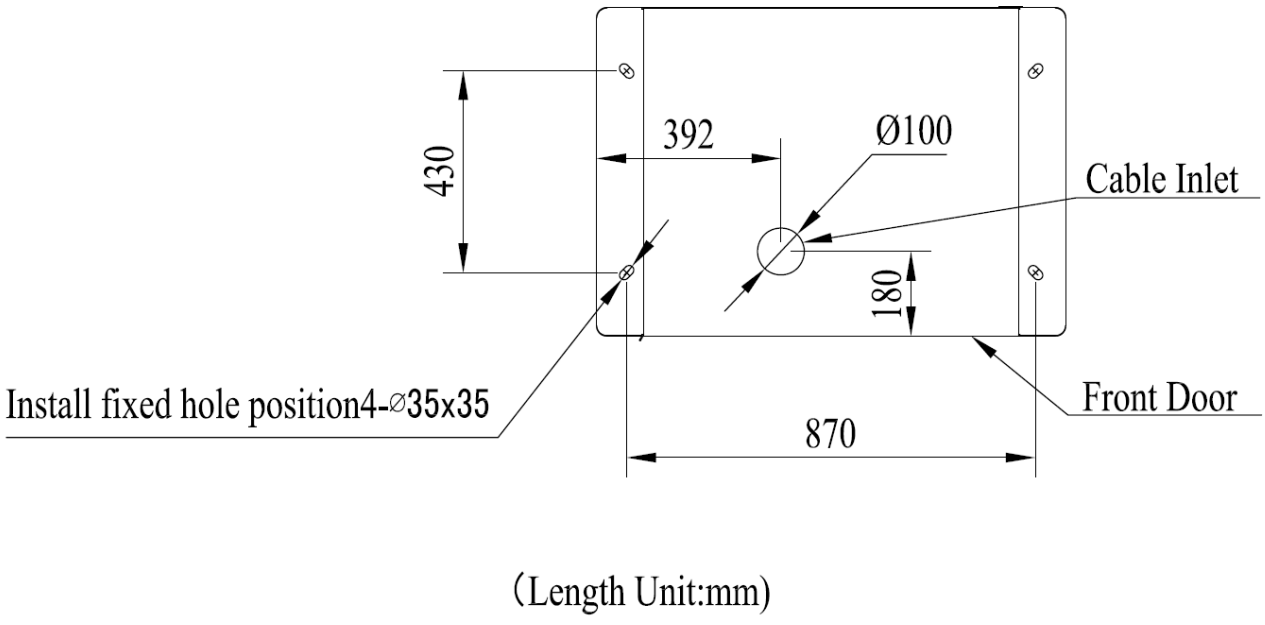


Figure 3.1-B Hole size of charger base

3.2 Equipment installation requirements

1. The charger is opened in front, left and right, and the connectors are used from both sides. Space should be reserved around. See ***Figure 3.2-A*** for the reserved size;

2. Installation on the foundation of channel steel or concrete; The cable shall be embedded in advance, the reserved length of Ethernet cable should not be less than 3000mm; the length of power cable reserved shall be 600 mm ± 20 mm, and the protruding of the base through which 5 wires pass shall be less than 30 mm, as shown in ***Figure 3.2-B***;

3. The height of the installation foundation is recommended to be 200 mm ± 20 mm, and the vertical inclination of the installation shall not exceed 5 °. See ***Figure 3.2-B*** for details;

4. Install 4 stainless steel M12 * 80mm expansion bolts between the base and the cabinet. Note that the bolts need to be equipped with M12 stainless steel flat gasket.

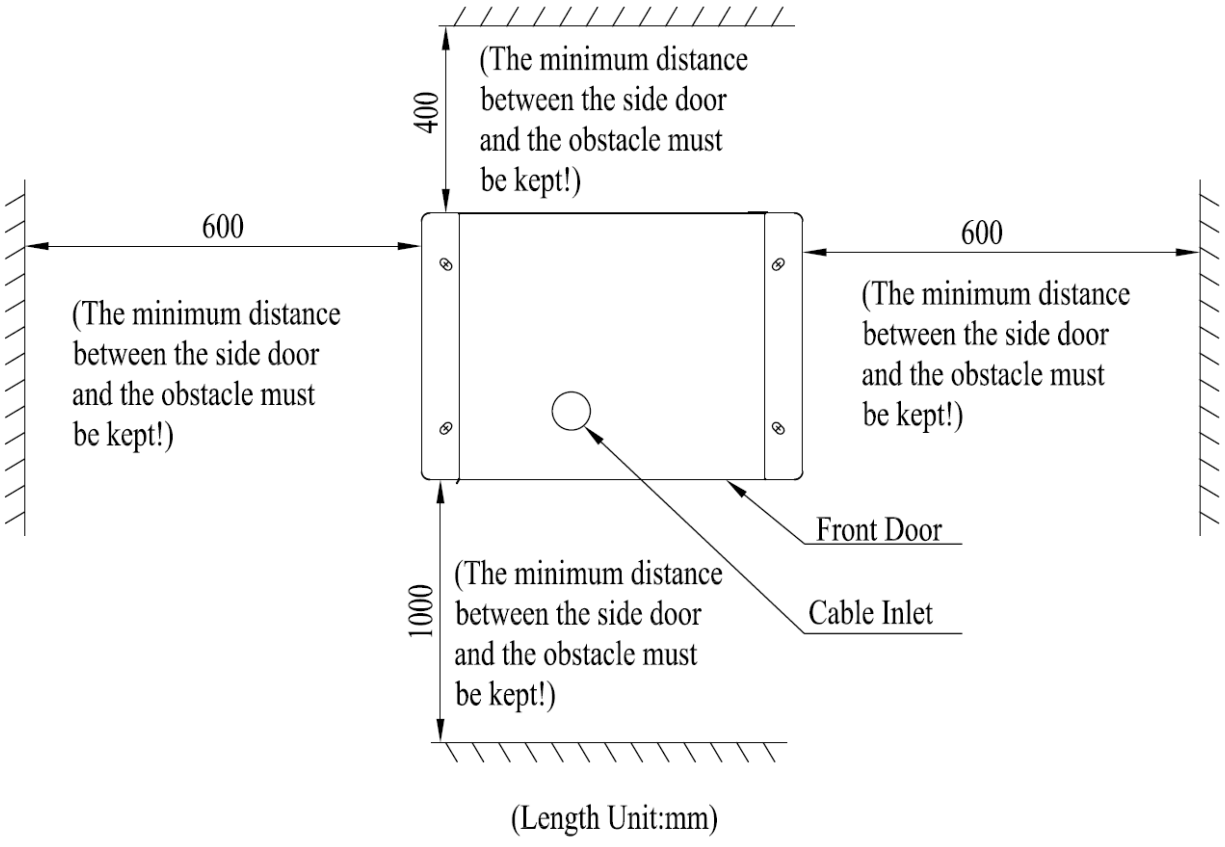


Figure 3.2-A Requirements for charger placement

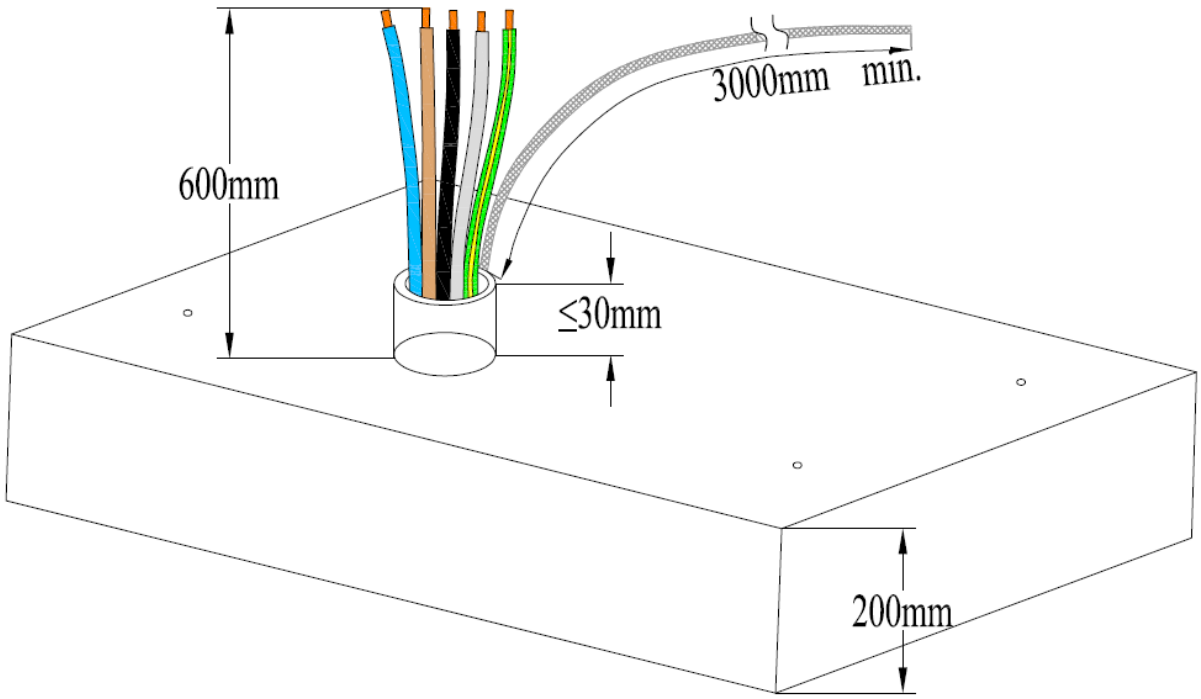


Figure 3.2-B Base and cable reservation requirements

3.3 Construction of distribution cables

3.3.1 Layout requirements of distribution cables

1. The input cable of the system is introduced from the inlet hole at the bottom of the charger, and the cable shall be laid through the cable trench.

2. The AC cable adopts copper core wire, and the cross-sectional area of the cable shall adapt to the load.

3. The outdoor power cable shall be laid according to the power specification. The power cable and the signal cable must be separated, and the signal cable should be put through the tube separately to avoid the pressure loss and interference of the communication signal.

4. The cable shall not be laid in the area easily damaged by mechanical damage, corrosive medium emission, humidity, strong magnetic field and strong electrostatic field interference. If necessary, please take corresponding protection or shielding measures.

5. The AC input cable starts from the user's distribution switch and connects to the copper bar of the charger's inlet cable switch. Protection devices shall be provided at the user's power distribution.

6. The color of AC input cable is brown (L1), black (L2), gray (L3), blue (n), yellow green (PE). If the input cable has only one color, it is necessary to paste cable number identification (or tube with mark).

3.3.2 Process requirements of distribution cables

1. Cable laying shall be free from external force, distortion and damage of insulation layer.

2. It is strictly forbidden to twist, flatten, break the protective layer and wear the protective layer seriously.

3. The protective pipe shall be cleaned before the cable passes through the pipe, and the wire shall not be damaged.

4. The cable arrangement shall be tidy. The binding should be neat and should not be crossed.

5. Sufficient allowance (no less than 600mm) shall be reserved for each wire of the cable, and the bending degree shall be consistent.

6. Crimp the terminal of the cable head, and there should be no gap on the penetration surface of the terminal after crimping.

7. When pressing the lug of inlet cable, the heat shrinkable tube should be set between the cable and the lug, and the inside and outside of the tube should be smooth without damage and crack. Before setting the heat shrinkable tube, the sundries on the cable shall be removed, and there shall be no burr and iron filings on the surface to prevent damage to the tube. The color of the tube shall be in accordance with the phase sequence. When the tube is heat shrinkable, the flame should be avoided to spray on the inside of the cabinet to prevent burning the internal components and cables of the cabinet. The appearance of heat shrinkable casing should be flat, smooth, uniform shrinkage, no dust and crack.

8. Attention should be paid to the wiring sequence when pressing RJ45 connector for Ethernet cable. Check whether the pressing is qualified after pressing.

3.3.3 Cable specifications for AC input (Recommended)

Capacity (kW)	Cable specification （ YMvKas mb）	Capacity of superior distribution switch	Screw specification (diameter: mm)	Cable terminal
60kW	4*35mm²+35mm²	160A	L1/L2/L3/ N/PE：M8	L1/L2/L3/N/PE: DT35-8
80kW	4*50mm²+50mm²	200A	L1/L2/L3/ N/PE：M8	L1/L2/L3/N/PE: DT50-8
100kW	4*95mm²+95mm²	250A	L1/L2/L3/ N/PE：M12	L1/L2/L3/N/PE: DT95-10
120kW	4*120mm²+120mm²	315A	L1/L2/L3/ N/PE：M12	L1/L2/L3/N/PE: DT120-12
140kW	4*150mm²+150mm²	350A	L1/L2/L3/ N/PE：M12	L1/L2/L3/N/PE: DT150-12
160kW	4*150mm²+150mm²	400A	L1/L2/L3/ N/PE：M12	L1/L2/L3/N/PE: DT150-12

3.3.4 Internal wiring diagram of equipment

The internal AC input cables are N, L1, L2, L3 and PE from left to right. The cabinet grounding is divided into two parts, one is the grounding bar inside the cabinet, and the other is the grounding of cabinet shell, as shown in ***Figure 3.4-A***.

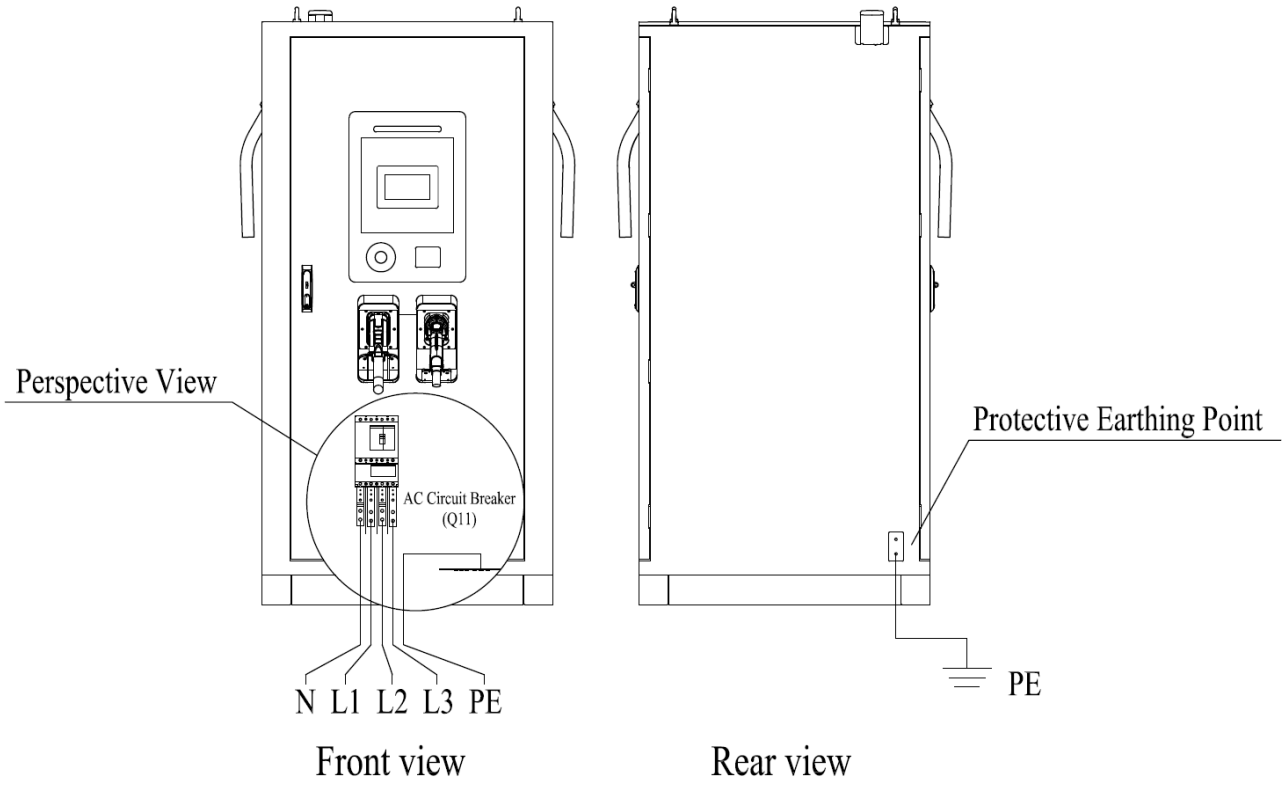
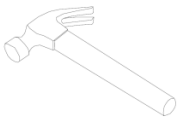
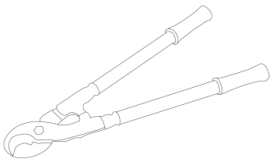
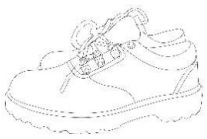
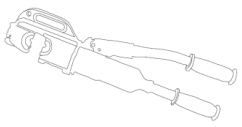
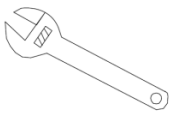
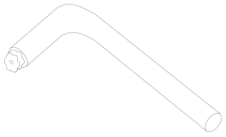
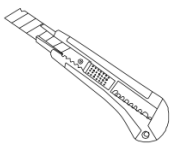


Figure 3.4-A Internal wiring diagram of charger

3.4 Installation steps of charging equipment

Tools required

S/N	Tools	Num	Drawing	S/N	Tools	Num	Drawing
1	Claw hammer	1		7	Cross screwdriver	1	
2	Herringbone ladder	1		8	Electric drill Equipped with φ 16mm drill bit	1	
3	Insulating gloves	1		9	Cable clipper	1	
4	Insulation shoes	1		10	Hydraulic clamp	1	
5	Adjustable wrench	1		11	Anti theft wrench	1	
6	Art knife	1					

3.4.1 Unpacking the outer package of the cabinet

Tools required: herringbone ladder, claw hammer, art knife, protective gloves

- With the help of the herringbone ladder, straighten the metal card on the top of the packing material with a claw hammer, and remove the upper cover plate. As shown in ***Figure 3.4.1-A***.

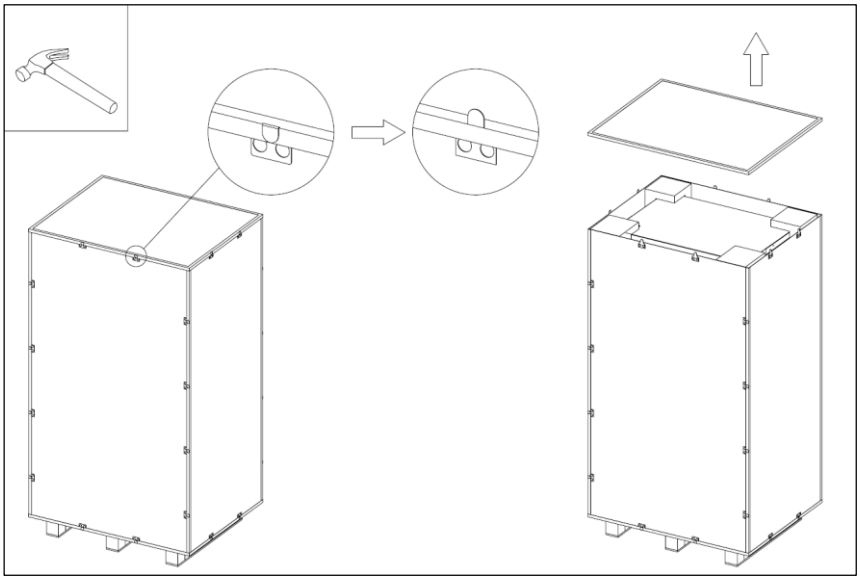


Figure 3.4.1-A

- Straighten all metal cards with a claw hammer, remove the surrounding wood boards, cut the PE bags wrapped around the cabinet with the art knife, and remove the PE bags and foam. As shown in ***Figure 3.4.1-B***.

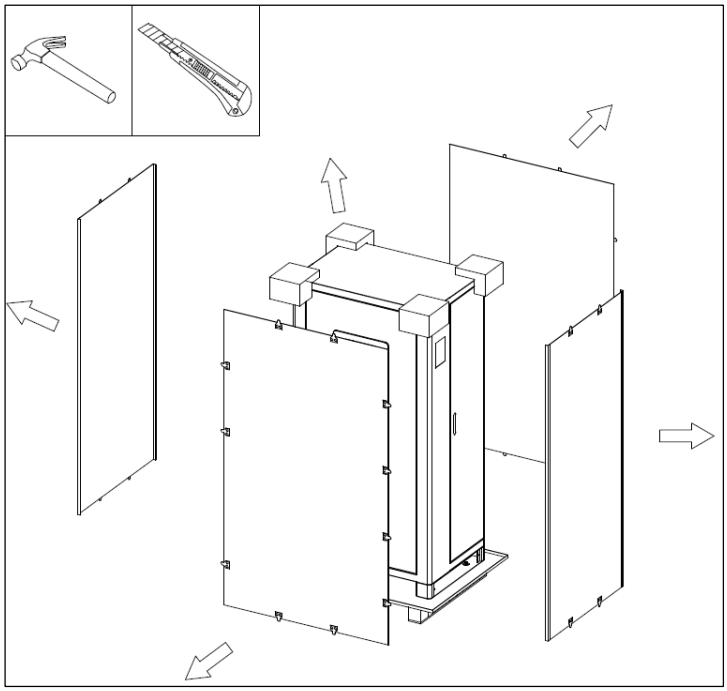


Figure 3.4.1-B

- Use a wrench to remove the four M12 bolts around the base, as shown in ***Figure 3.4.1-C***.

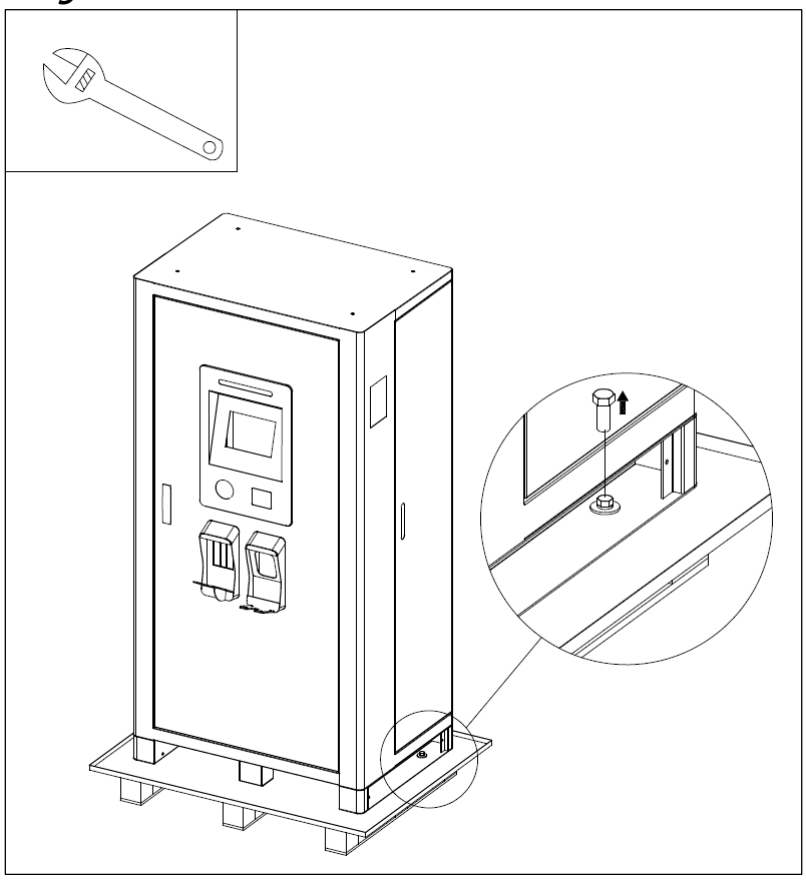


Figure 3.4.1-C

3.4.2 Foundation drilling

Tools required: electric drill, φ16mm drill bit, protective gloves

- Lay the control paper on the cement installation base, and the cable hole of the mouldboard corresponds to the cable hole of the base. As shown in ***Figure 3.4.2-A***. The hole size is shown in ***Figure 3.4.2-B***.

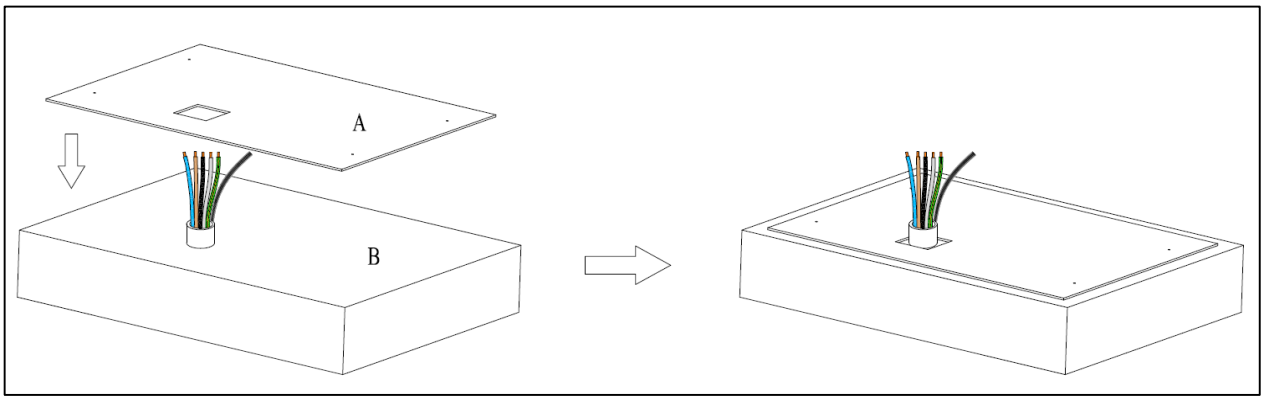


Figure 3.4.2-A (A: mouldboard, B: Mounting base)

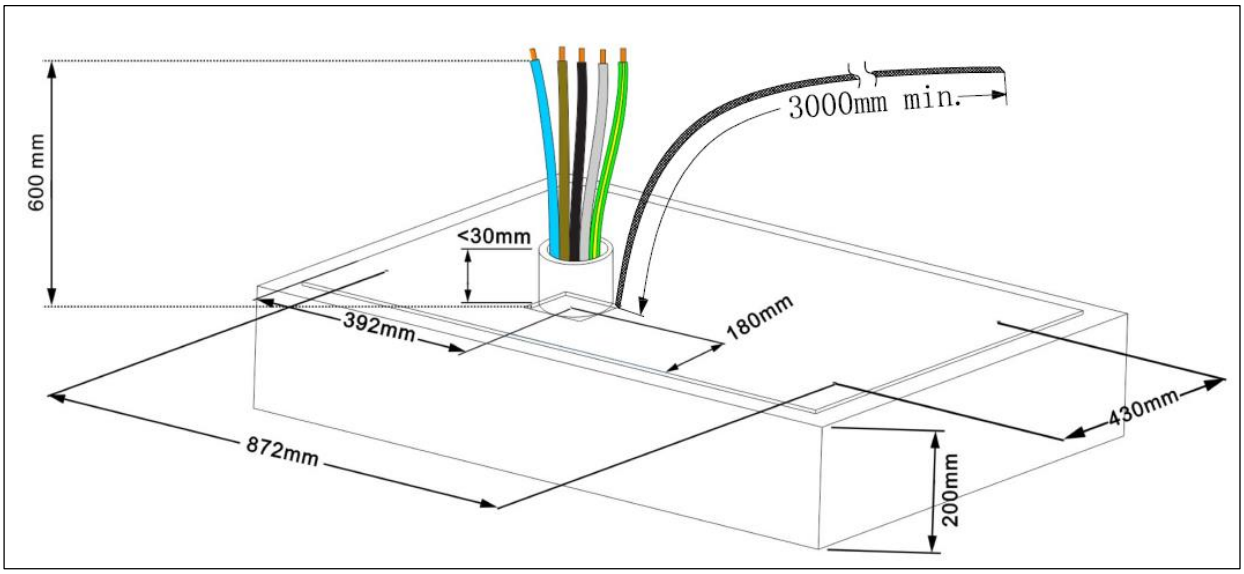


Figure 3.4.2-B

- Fix the control paper, and drill four mounting holes with a diameter of φ16 mm and a depth of 80-85 mm on the cement mounting base with an electric drill corresponding to the hole position on the cardboard.
- Knock four M12 * 80 expansion bolts into the holes with a claw hammer, and then screw out the screw part, so that the expansion bolt casing is embedded in the base mounting hole. As shown in ***Figure 3.4.2-C***.

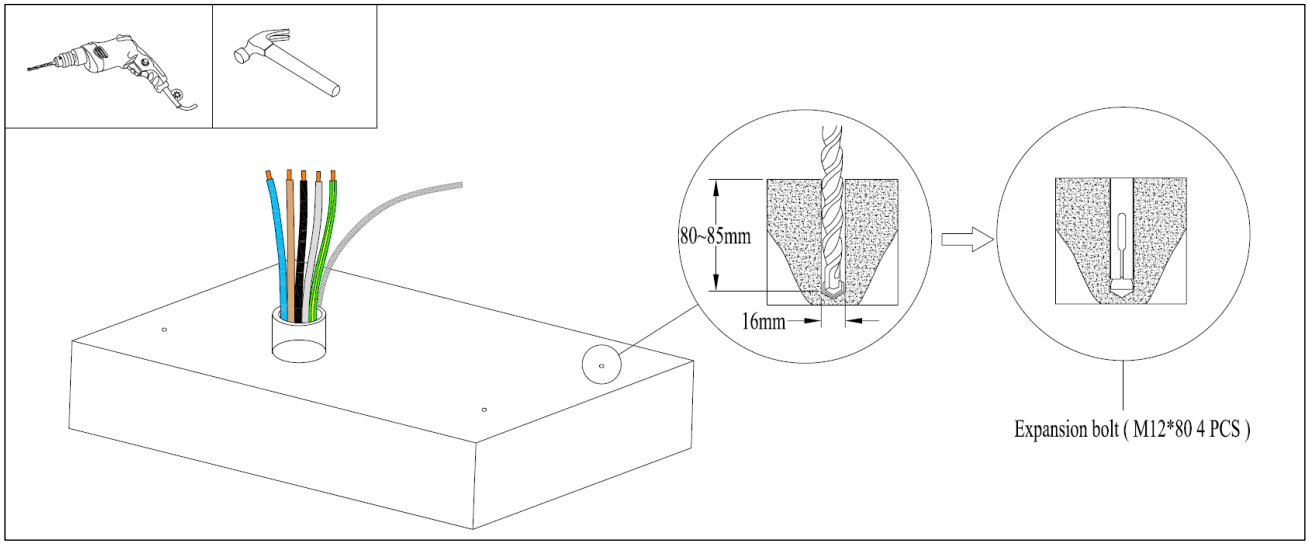


Figure 3.4.2-C

3.4.3 Placing charger

- Use forklift to transport the cabinet to the installation base, and use the crane to lift the cabinet. It is shown in ***Figure 3.4.3-A***.

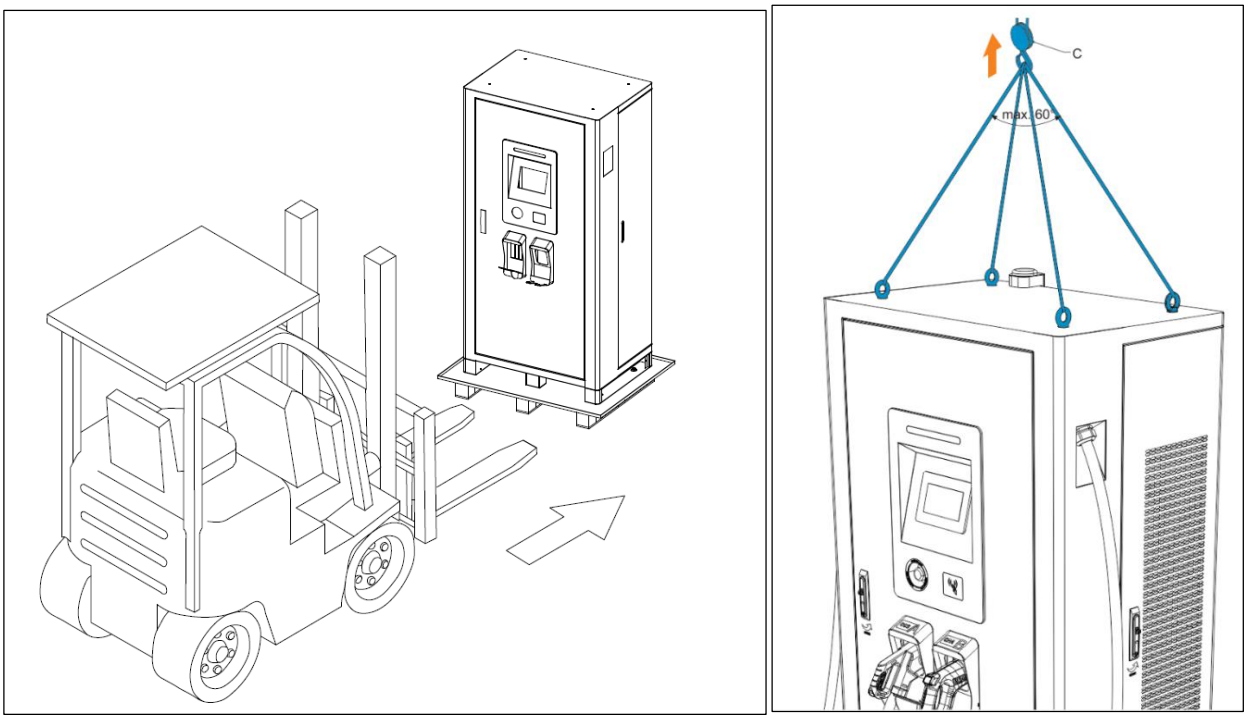


Figure 3.4.3-A

- Suspend the cabinet above the cement base, open the front door of the cabinet, and extend the embedded cable from the bottom of the cabinet through the inlet hole (the rubber film of the inlet hole needs to be punctured). At this time, slowly lower the cabinet and pull the remaining cables out from the front door until the cabinet is completely placed on the base. As shown in ***Figure 3.4.3-B***.

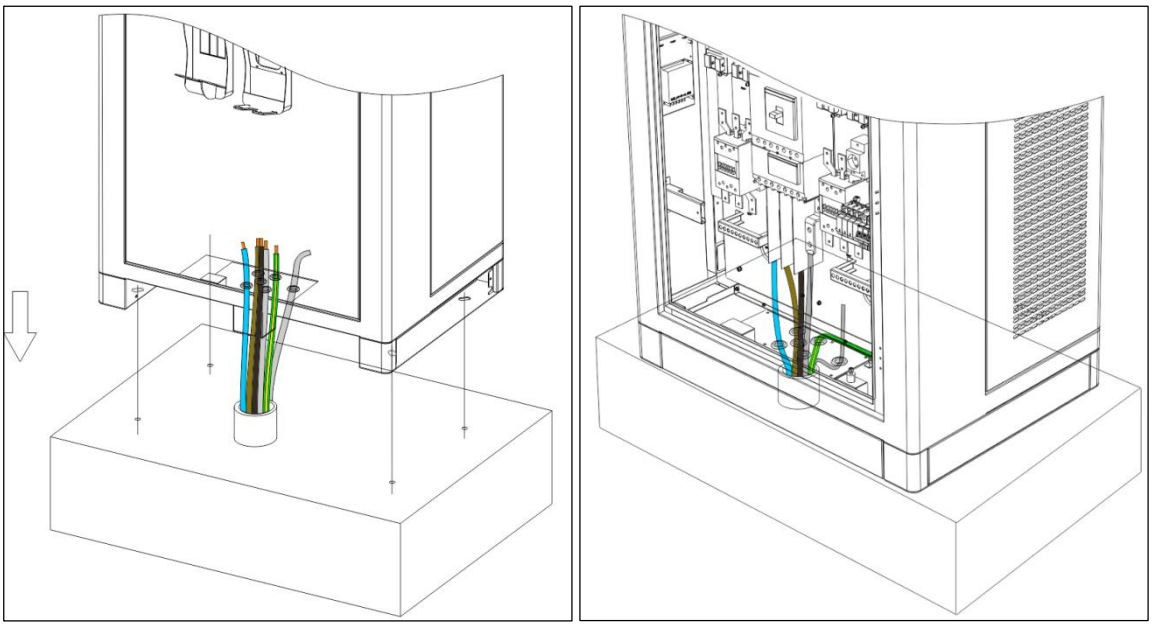
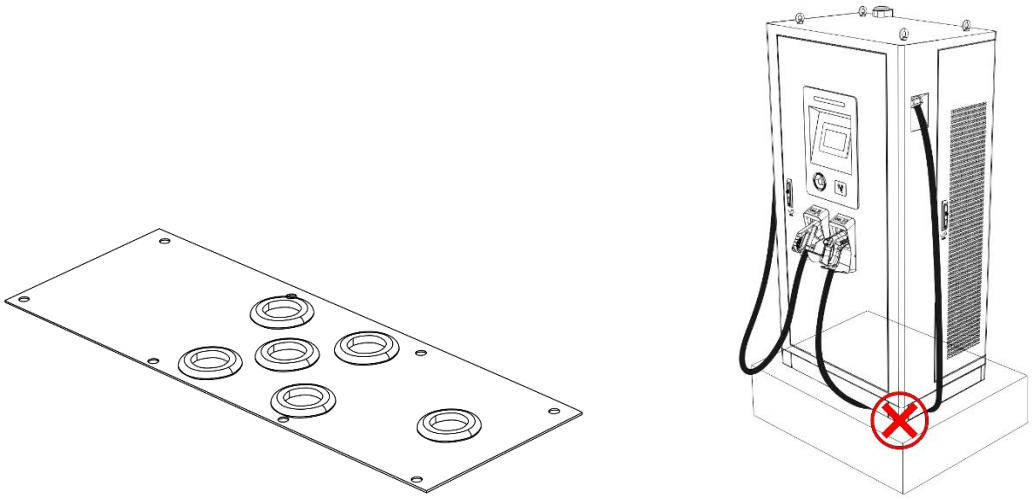


Figure 3.4.3-B

Note:
① it is necessary to match the mounting hole of the cabinet base with the hole on the cement base;
② The inlet cable sealing plate of the cabinet can be removed, but the protection coil shall be avoided from damage during the removal process. The inlet cable sealing plate is shown in ***Figure 3.4.3-C- (1)****.*
③ During operation, please pay attention not to damage the cable and charging connector wire. As shown in ***Figure 3.4.3-C-(2)****.*



(1) The inlet cable sealing plate is removable (2) Do not press the charging connector cable

Figure 3.4.3-C

- Install M12 * 80 (4 pcs)expansion bolts on the drilled installation holes around the base, and tighten the bolts to ensure the cabinet is fixed reliably, as shown in ***Figure 3.4.3-D****.*

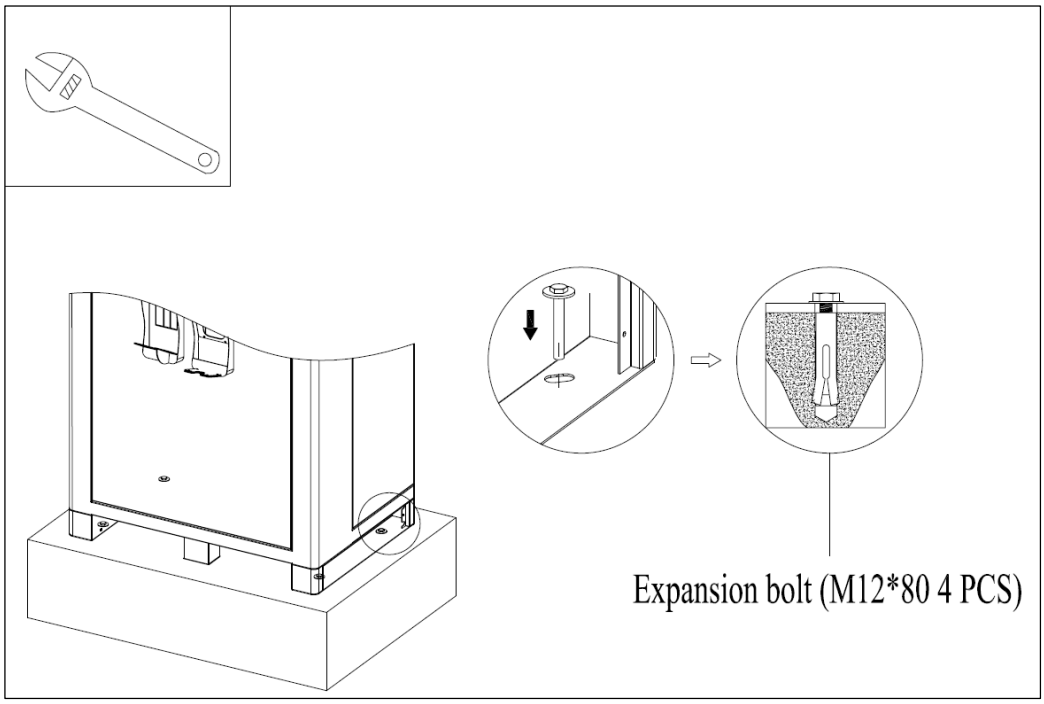


Figure 3.4.3-D

- Install the front and rear sealing plates of the base, as shown in ***Figure 3.4.3-E***.

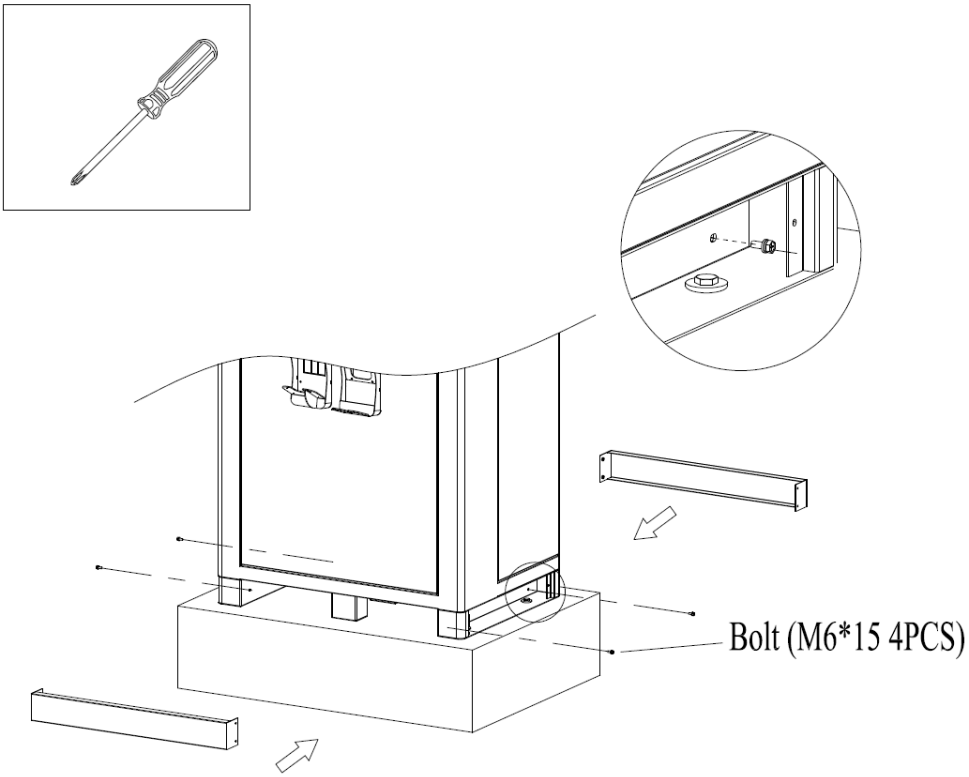


Figure 3.4.3-E

*Note: first install the front and rear sealing plates in the direction of the arrow, and then install the M6 * 15 screws from the left and right sides for fastening.*

- Install the left and right sealing plates as shown in ***Figure 3.4.3-F***.

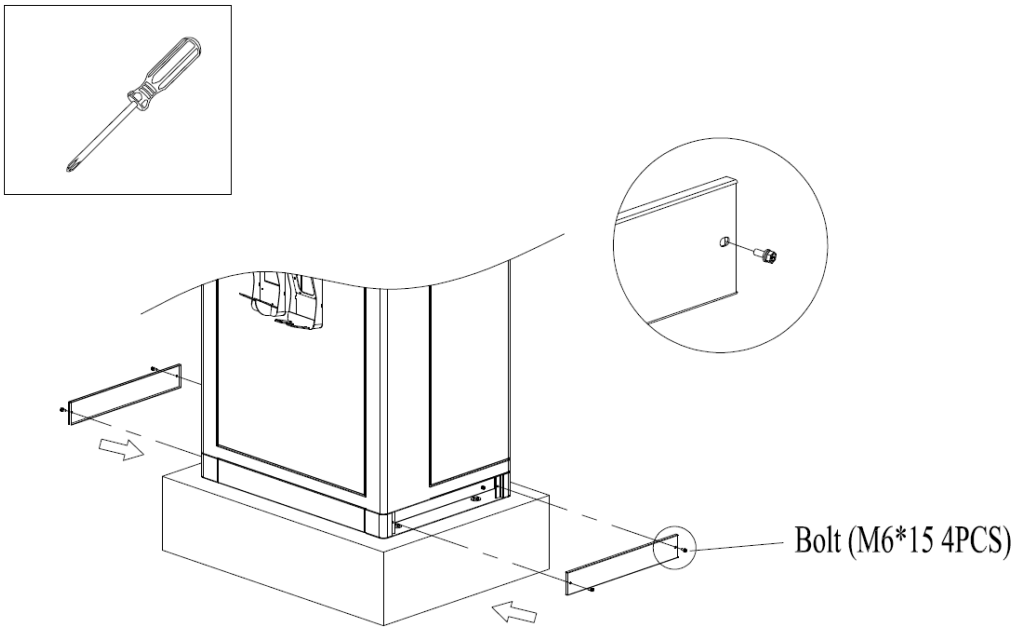


Figure3.4.3-F

3.4.4 Installation steps of inlet cable

- Use the cable clipper to cut the cable to the appropriate wiring length, press the lug with hydraulic clamp and put on the heat shrinkable tube.
- Fix the cable lug on the copper bar with the screw of M12, the torque is 25-30N· m, and the force is calibrated, as shown in ***Figure 3.4.4***.

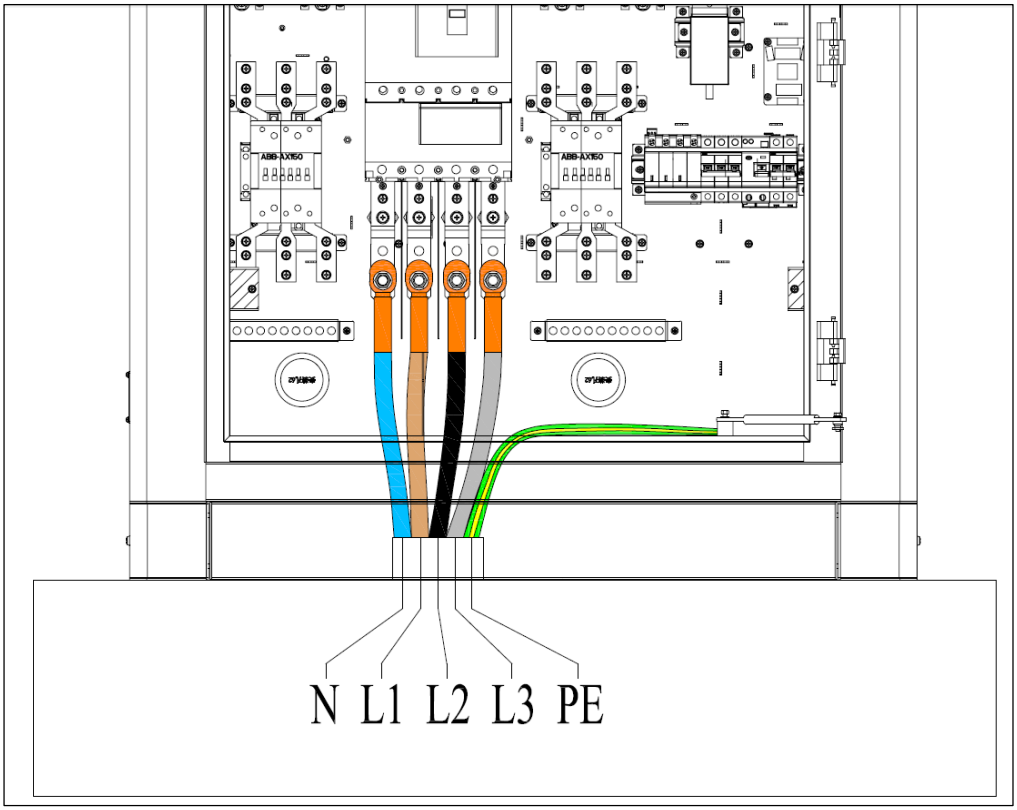


Figure 3.4.4

3.5 Router installation

Fix the router in the reserved position with M3*8 screws (2 pcs), as shown in ***Figure 3.5***:

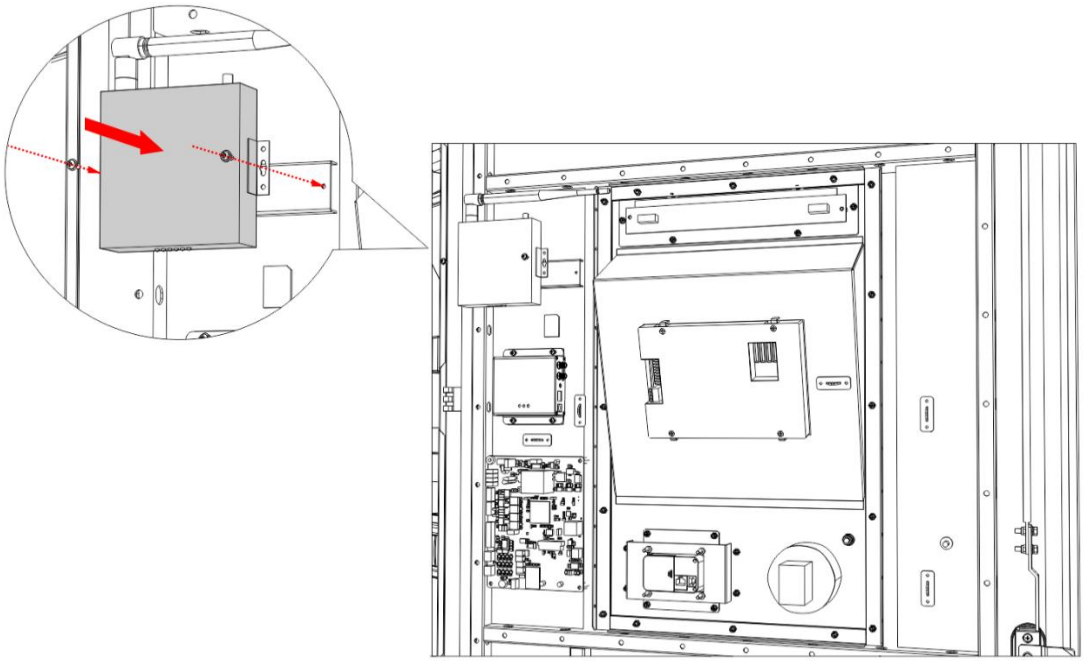


Figure 3.5

3.6 Installation of host and slave card reader module

3.6.1 Installation of host card reader module

Fix the host card reader module in the reserved installation position with M3*8 screws(4 pcs). As shown in ***Figure 3.6.1***.

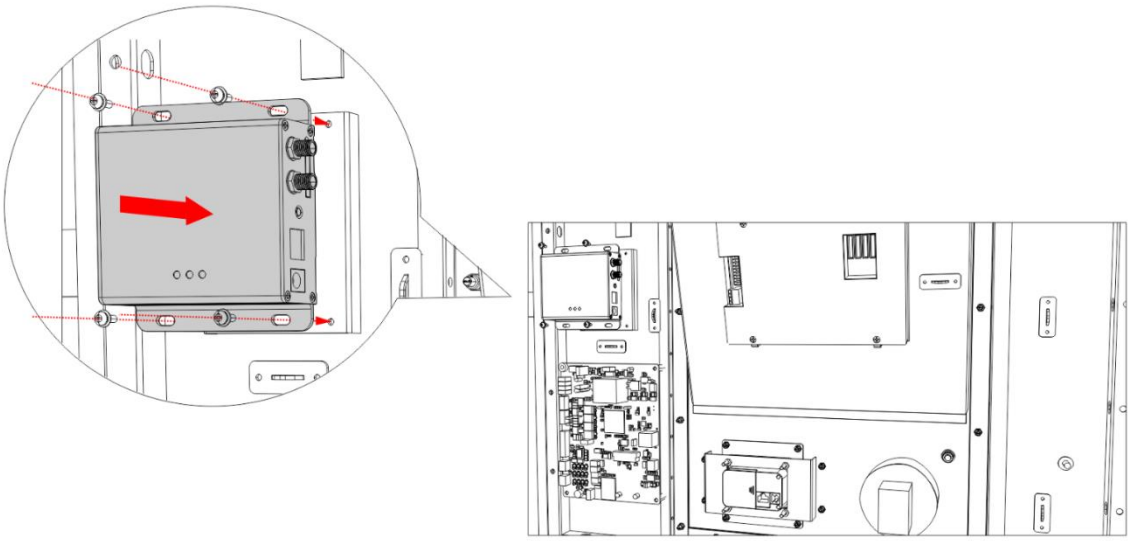


Figure3.6.1

3.6.2 Installation of slave card reader module

- First, remove the fixed parts of the slave card reader and keep the removed M5 nut(total:4pcs);
- Fix the slave card reader on the fixed part of the slave card reader with M5 nut(total:4pcs);
- Use the four M5 nut to fix the fixed parts of the card reader installed with the card reader in the original position.

As shown in ***Figure3.6.2***.

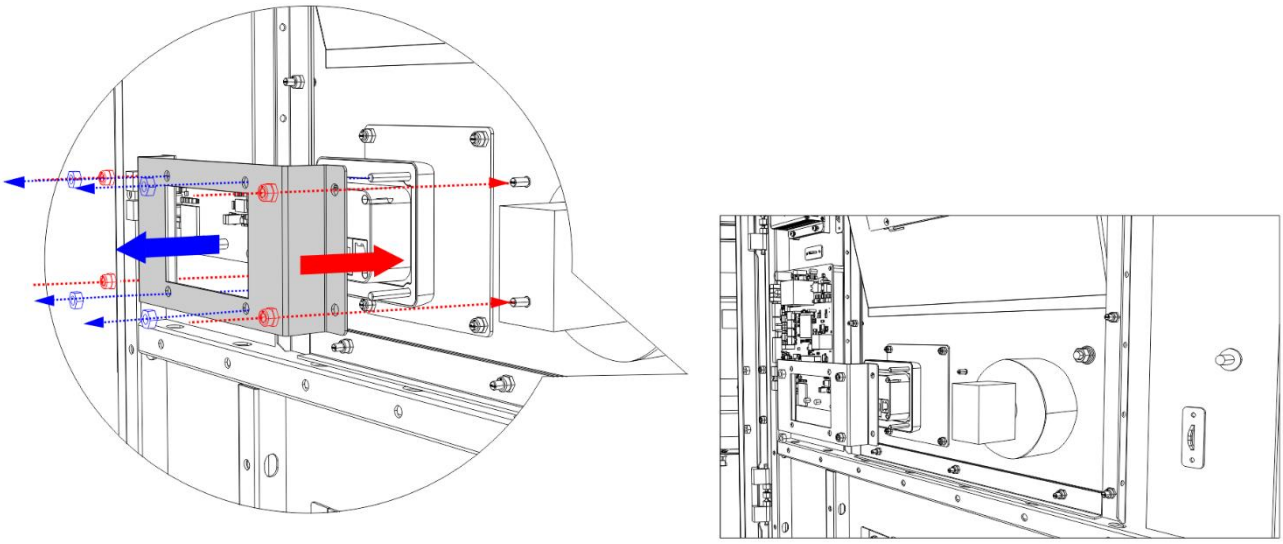
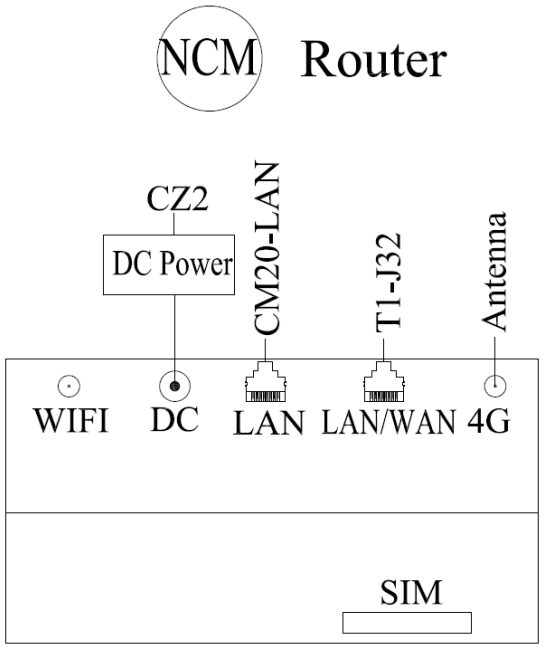


Figure 3.6.2

3.7 Wiring of router and card reader

Since the router, host card reader, and subordinate card reader are installed on site, cable connections need to be wired according to the following instructions.

3.7.1 Router (NCM) wiring diagram

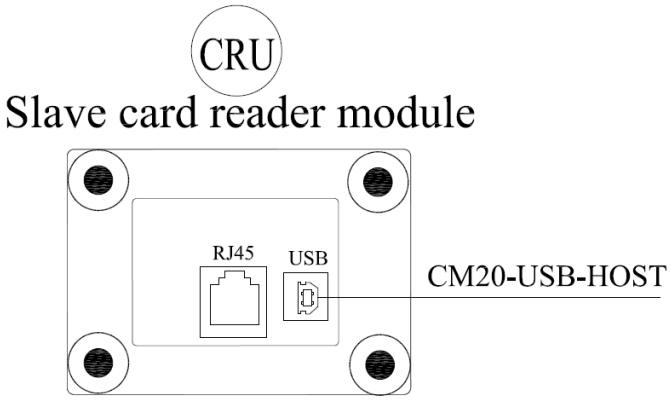


Note

The SIM card needs to be inserted into the router(NCM) and the following cables needs to be connected:

- Antenna, connected to '4G' port, the antenna cable has been reserved in the wiring position.
- T1-J32, connected to 'LAN/WAN' port, the T1-J32 cable has been reserved in the wiring position.
- CM20-LAN, connected to 'LAN' port.
- DC Power, connected to 'POWER' port, the DC Power cable has been reserved in the wiring position.

3.7.2 Slave card reader module (CRU) wiring diagram

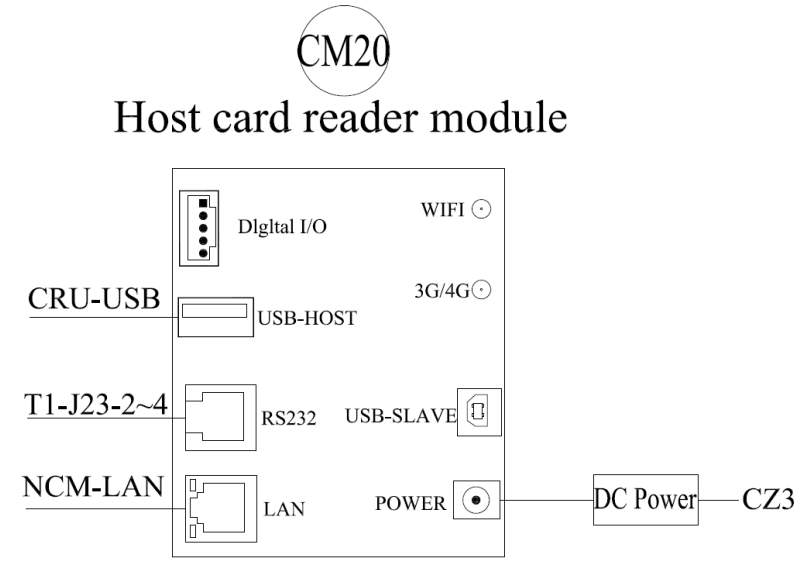


Note

The following cables of slave card reader module (CRU)only needs to be connected :

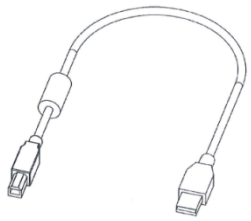
- CM20-USB-HOST, connected to 'USB' port.

3.7.3 Host card reader module (CM20) wiring diagram



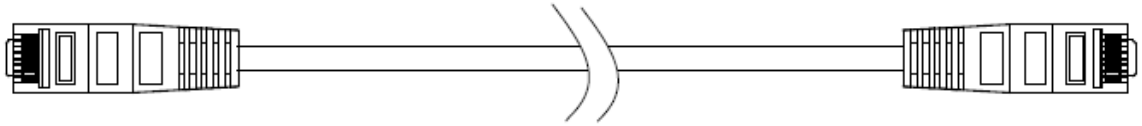
Note: the following cables of the host card reader module (CM20) needs to be connected

- CRU-USB, connected to 'USB-HOST' port, the CRU-USB cable style is shown below:



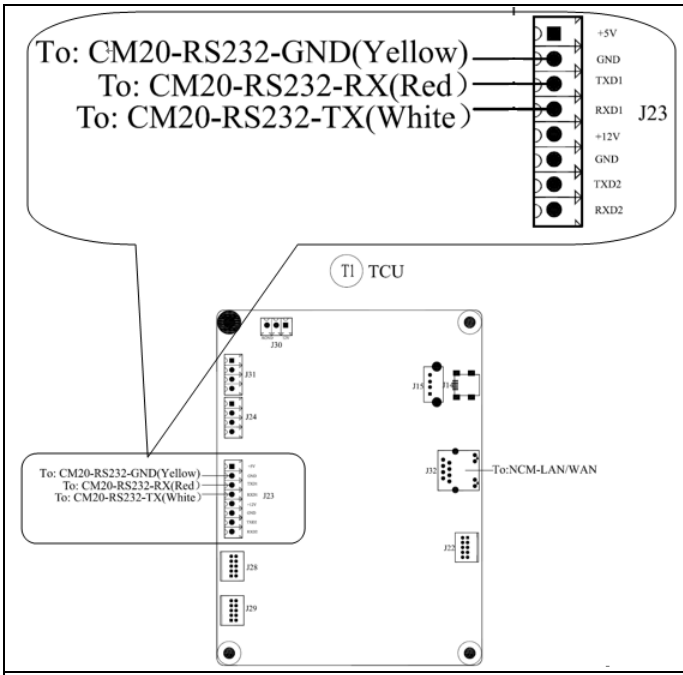
- T1-J23-2~4, connected to 'RS232' port, the cable has been reserved in the wiring position, the T1-J23-2~4 cable style is shown below:

- NCM-LAN, connected to 'LAN' port, the NCM-LAN cable style is shown below:



- DC Power, connected to 'POWER' port, the DC Power cable has been reserved in the wiring position.

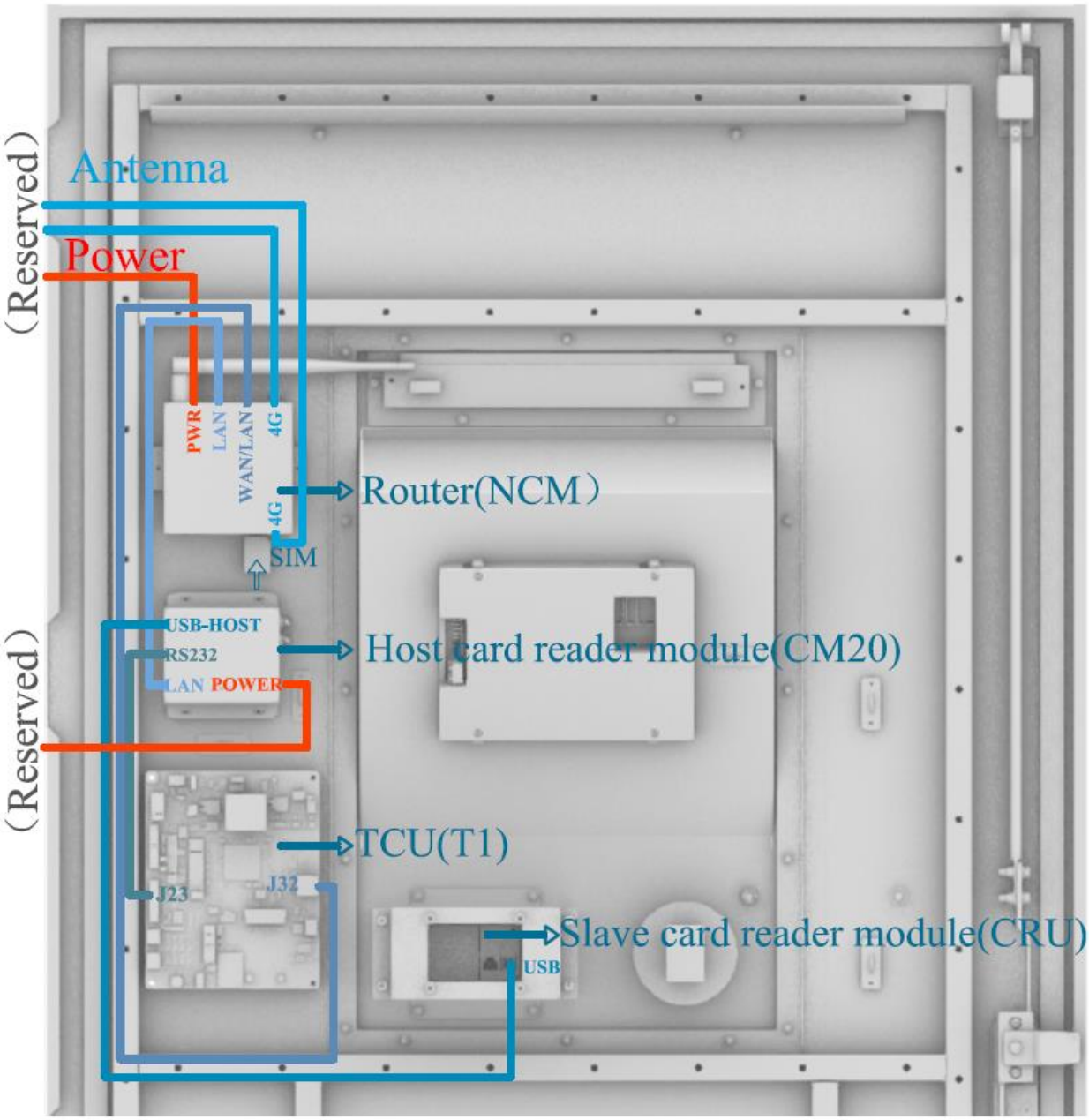
3.7.4 TCU(T1) wiring diagram



Note: the following cables of the TCU(T1) needs to be connected:

- CM20-RS232, the yellow wire connected to 'J23-2' port, the red wire connected to 'J23-3' port, the white wire connected to 'J23-4' port, the CM20-RS232 cable has been reserved in the wiring position.
- NCM-LAN/WAN, connected to 'J32' port, the NCM-LAN/WAN cable has been reserved in the wiring position.

3.7.5 Overall wiring diagram



3.8 Inspection after installation

Stability

After the pile is installed, shake the cabinet from different directions, and there should be no obvious loosening and shaking.

Clean up

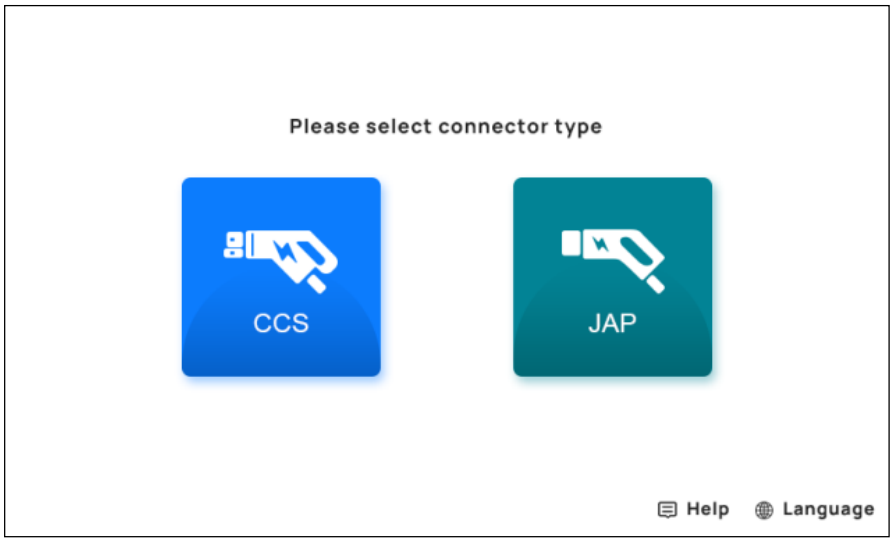
- Dispose of all transportation and packaging materials in accordance with local regulations.
- Clean up the sundries inside and around the cabinet, such as small section of cable, binding tape, screw / nut, desiccant, etc. Do not leave installation tools on site or in the cabinet (record the type and quantity of tools to prevent omission).
- Wipe the insulation with anti-static cloth. Do not use any corrosive solvent.
- 4. Inspection
- Check whether the base is fixed and sealed.
- Check whether the internal components of the equipment are tight and reliable.
- Check whether the electrical connection and wiring are correct and complete, whether the connection is reliable, and whether the grounding is reliable.
- Check whether the cable terminal is loose, and calibrate the screw fixing the terminal.
- Check whether the cable is broken, damaged and scratched.
- Check whether the protection level of the equipment meets the requirements, especially the cable entrance at the bottom of the pile.
- Check appearance, marking, integrity, cleanliness.
- Check the installation of the equipment according to the foundation installation drawing.

4 Operation interface

4.1 Charging process

Note: when the charger is in standby mode, the screen is in the energy-saving mode. Before operation, touch the screen with your finger to light up the screen!

4.1.1 Standby interface



Tip: select CCS connector or Jap connector according to the socket type of the car. The following is the process of selecting CCS, and the Jap steps are consistent with CCS.

4.1.2 Waiting for connector insertion interface

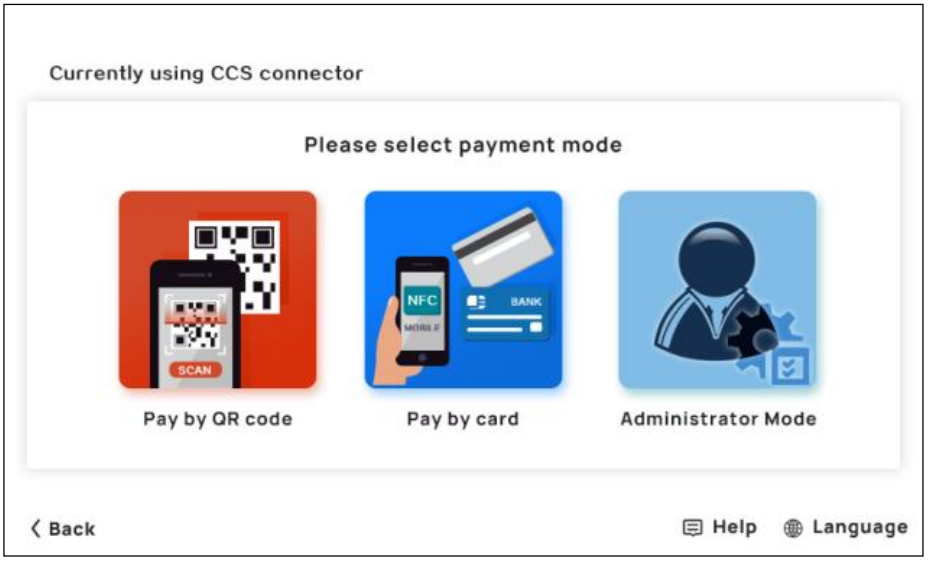
Tip: connecting the connector to the car will jump to the connector insertion interface.

4.1.3 Connecting interface

Prompt: click next to enter the interface of charging mode selection.

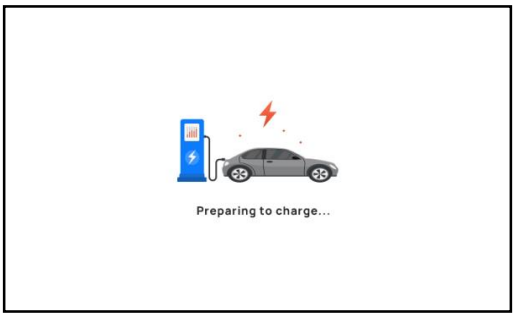
4.1.4 Select charging mode interface

Notice: click the payment method you want to enter the next charging operation.

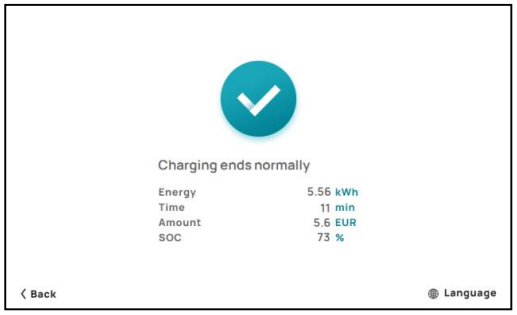


Code scanning charging interface process

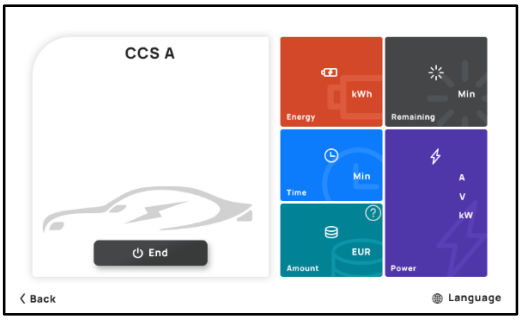
Scan the QR to enter the start charging interface .



Charging interface



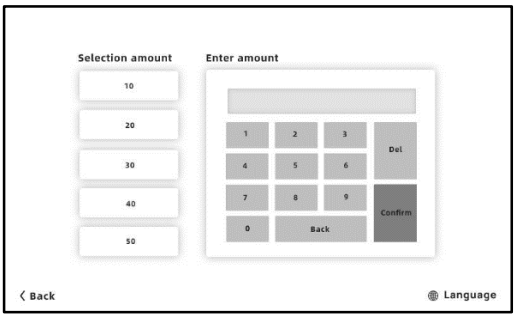
Click "end" to end charging and enter the settlement interface .



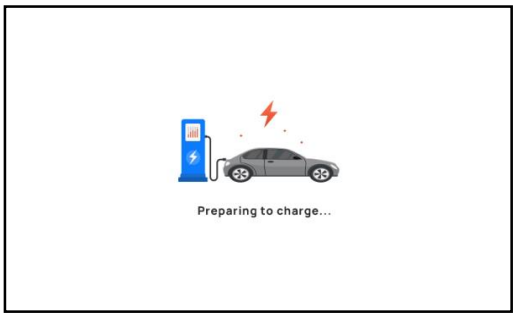
Tip: after charging, click back. If the other charging connector is in charging state, it will jump to the charging interface of the other charging connector, otherwise it will jump to the main interface.

Interface process of pay by card charging

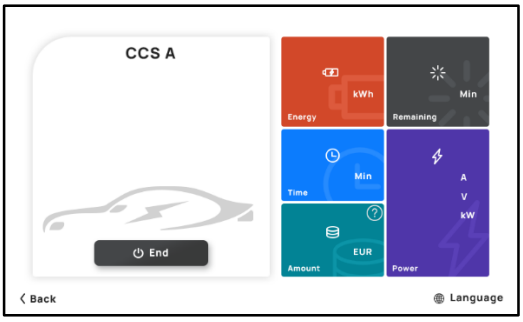
Select or enter the precharge amount to enter the card swiping interface.



Pay by card according to the interface prompt to enter the charging start interface.

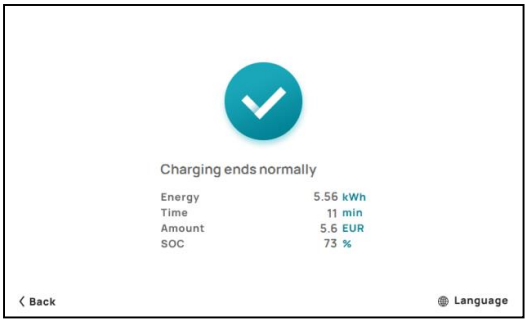


Charging interface.

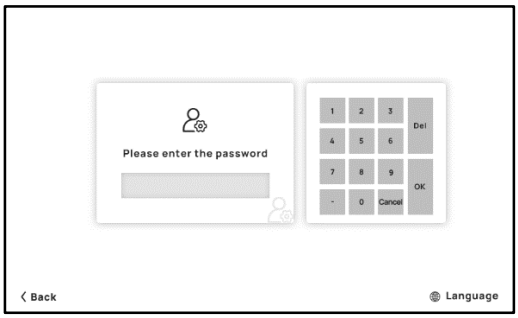


Click "End" to end charging and enter the pay by card interface.

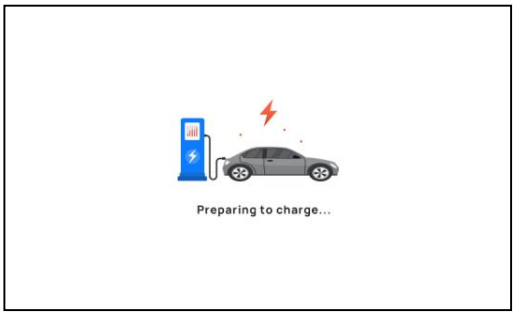
Enter the settlement interface after paying by card according to the interface prompt.



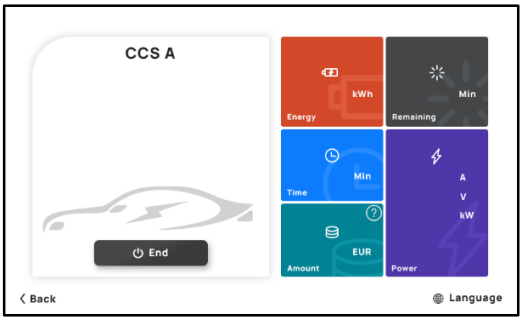
Password charging interface process



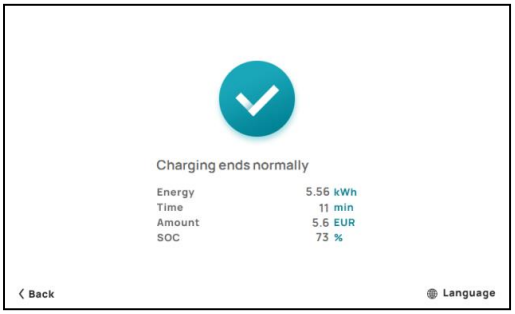
Enter the password to enter the start charging interface .



Charging interface.



Click "end" to end charging and enter the pay interface.



Tip: click the input box to pop up a small keyboard. Enter the complete password through the keyboard and click OK to verify the password. After passing the verification, it will jump to the password start charging interface (password setting: administrator > Settings > TCU > function > offline charging password).

5 Simple troubleshooting

Analysis and treatment of common faults
Refer to the maintenance manual for detailed treatment

S/N	Name of alarm or fault	Processing method
1	Lightning protection failure	● Check the status of lightning arrested. If the visual window of lightning protection is red, it means it is damaged, please replace it.
2	Emergency stop fault	● Please check whether the emergency stop button is pressed and not pulled out. If the fault has been solved, please pull up the emergency stop button.
3	Over temperature protection of air outlet	● Please check whether the air duct of the system is blocked and whether there is too much dust on the dust screen. ● Please check whether the air outlet fan of charger works normally. If the fan fails, please replace the fan.
4	Access protection	● Please check whether the cabinet door is completely closed; ● Confirm that the door is closed, but the alarm still appears. Please check the status of the micro switch. If it is damaged, please replace it.
5	Charging module failure	● Check the module fault code, confirm the fault type and find the fault cause. ● Pull out the fault module and replace the spare module. ● Check whether the alarm light of RCD device is on. If the lamp is on, it indicates that the system has leakage fault,
6	RCD action	● It is necessary to check whether there is insulation fault in the circuit at the back end of RCD; ● Check whether the casing is reliably grounded.

Notice: in order to prevent personal electric shock accident, all switches of the equipment and front-end power distribution switch of the equipment shall be disconnected during fault detection and treatment, and protective measures shall be taken.

6 After-sales service

If you have any questions or questions, please contact the equipment supplier.
Before contacting the equipment supplier:

- Please check the troubleshooting measures in the chapter "5. Simple troubleshooting".
- Please record the model and serial number of the equipment (name plate of the equipment) and the failure time.