AC Charger manual

AC006 -- AC Wallbox series

AC006 -- AC Wallbox series

www.cnchargepoint.com

CONTENT

1. SAFETY PRECAUTIONS

1.1SAFETY PRECAUTIONS

Before starting the operation, please read the operation instructions and precautions carefully to reduce the occurrence of accidents. The "CAUTION, WARNING, DANGER" items in the product and product manual do not represent all the safety precautions to be followed, but only serve as a supplement to various operational safety precautions.

When operating the company's products and equipment, you must abide by the safety regulations of the relevant industry, and strictly abide by the relevant equipment precautions and special safety instructions provided by Nanjing PowerCore Technology Co., Ltd.

1.2IDENTIFICATION DESCRIPTION

	Indicates an operation or situation where extreme care must be taken with hazardous voltages.
	Important safety information, where extreme caution must be exercised or in situations.
	Indicates a burn hazard from a hot area or an area with hot parts.
	Protective earth connection point.
	Alternating current.
	Indicates that the action described must be performed using employer-supplied clothing and/or personal protective equipment.

1.3ELECTRICAL SAFETY

HIGH VOLTAGE

	When the power supply system is running, some parts have high voltage, and direct contact or indirect contact with these parts through non-insulated objects will bring fatal danger. Construction operations on high-voltage lines may cause fire or electric shock accidents. The installation and routing of AC cables must comply with local laws and regulations. Only personnel qualified for high voltage and alternating current work can perform various high voltage operations.

🕮 The installation of AC power equipment must comply with the safety regulations of the relevant industry, and the personnel who install the AC equipment must be qualified for high voltage, alternating current and other operations.

🕮 It is strictly forbidden to wear watches, bracelets, rings and other conductive objects on the wrist during operation.

🕮 When the cabinet is found to be wet or wet, please turn off the power immediately. When operating in a humid environment, moisture should be strictly prevented from entering the equipment.

🕮 On the switches and buttons that are not allowed to be operated during the installation process, the prohibition of operation signs must be hung up.

TOOL

	Special tools must be used when carrying out various operations with high voltage and alternating current.

THUNDERSTORM

	It is strictly forbidden to conduct high voltage and alternating current in thunderstorm weather.

During thunderstorms, strong electromagnetic fields are generated in the atmosphere. Therefore, in order to avoid lightning damage to the equipment, it is necessary to do a good grounding of the equipment in time.

STATIC ELECTRICITY

	Static electricity generated by the human body can damage static-sensitive components on circuit boards, such as large-scale integrated circuits (ICs). Before touching the device, holding the plug-in board, circuit board, IC chip, etc., in order to prevent the static electricity of the human body from damaging the sensitive components, you must wear an anti-static wristband, and the other end of the anti-static wristband should be well grounded.

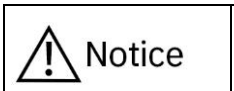
SHORT CIRCUIT

	It is strictly forbidden to short-circuit the power distribution of the power system or short-circuit the non-grounded pole to the ground during operation, which will cause equipment burnout and personal safety hazards.

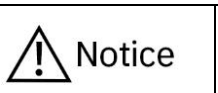
- The polarity of cables and interface terminals must be strictly checked during live work.
- The power distribution operation space is compact, and the operation space should be carefully selected before any operation.
- Operation must use insulated tools.
- When operating with electricity, you must pay attention to keeping the hands, wrists and arms in a tense state to prevent accidents caused by excessive tool or human activity when the tool slips.

1.4 OTHERS

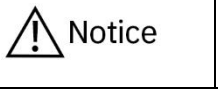
SHARP CORNERS OF OBJECTS

	When handling the device by hand, wear protective gloves to prevent cuts from sharp objects.

POWER CABLE

	Before connecting cables, verify that the cable labels are correct.

SIGNAL LINE

	Signal cables should be bound separately from power cables, and the binding spacing should be at least 15mm.

2.PRODUCT DESCRIPTION

2.1SERIAL NUMBER DESCRIPTION

AC006	T1	11	A01	PC	ROU012003000 2
1	2	3	4	5	6

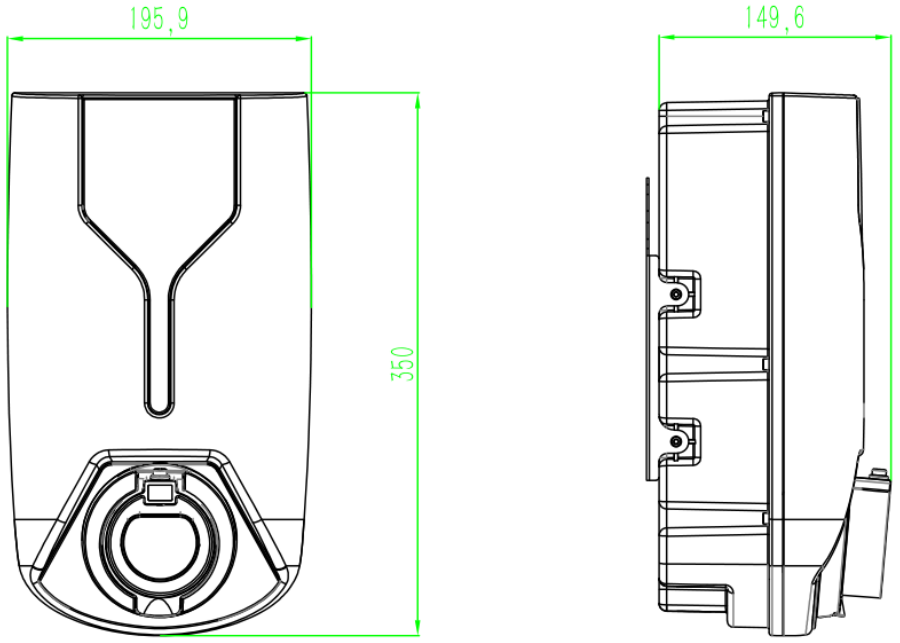
6	PILE ID NUMBER ROU01 2003 0002 - CUSTOMER ROMARIA 01, MADE IN MARCH 2020, PILE 0002, HERE FOUR DIGITS IN DECIMAL.
5	MANUFACTURER
4	BOM VERSION：
3	CHARGING POWER: 7: AC CHARGER RATED POWER 7KW 9: AC CHARGER RATED POWER 9KW 11: AC CHARGER RATED POWER 11KW 22: AC CHARGER RATED POWER 22KW
2	CHARGING STANDARD: T2: TYPE2 AC CABLE VERSION T2S: TYPE2 AC SOCKET VERSION T1: TYPE1 AC CABLE VERSION
1	PRODUCT NUMBER: AC006 - PLASTIC SHELL AC CHARGER

2.2 PHYSICAL DIMENSION

Application scenarios	Parking lot/family garage/parking space	
Material	Plastic cabinet	
Installation	Wall-mounted	
Cable layout	Bottom entry	
Weight	Socket	4.1KG（N.W）

	cable	7.3KG（N.W）
Cable length	⩾5m（CABLE Model）	
Socket	Type1 or Type2（SINGLE OUTPUT）	
Cabinet size	195.9x149.6x350（mm）	

Dimensions



Appearance drawing

1. Film stickers	2. Indicator light	3. Socket
4. Emergency stop	5. Backplane fixing screws	6. Cable entry hole

7. Network cable hole (optional network cable interface)	8. Cable wire hole (optional charging gun wire)	

2.3 TECHNICAL PARAMETER

Parameter	AC006(type2)	AC006（type1）

Input voltage	230VAC（1P+N+PE） ±10% 400VAC（3P+N+PE） ±10%	230VAC（L1+L2+PE） ±10%
Input frequency	50Hz/60Hz	50Hz/60Hz
Rated power	7kW（1p)/11kW(3p)/22kW（3p）	7kW/9kW/11kW（L1-L2）
Measurement accuracy	⩽±1%	⩽±1%
Output voltage	Same as input voltage	Same as input voltage
Output current	SINGLE PHASE:32A THREE PHASE:16A/32A	32A/40A/48A
User Interface	Emergency stop button, led indicator, card reader (optional)	Emergency stop button, led indicator, card reader (optional)
charging method	Plug and charge, APP (timed start and stop), Swipe card (optional)	Plug and charge, APP (timed start and stop), Swipe card (optional)
interface standard	Type2 （Socket/Cable）	Type1
The internet	2.4G WiFi/Ethernet	2.4G WiFi/Ethernet
ocpp	OCPP 1.6J	OCPP 1.6J
Application site	Indoor/Outdoor	Indoor/Outdoor
Operating temperature	-20℃ ~ +50℃	-20℃ ~ +50℃
Working humidity	5% ~ 95% no frost	5% ~ 95% no frost
Altitude	<2000m	<2000m
Protection class	IP54	IP54
Cooling method	Free cooling	Free cooling
Leakage detection	30mA AC, 6mA DC	CCID20

2.4 FEATURES

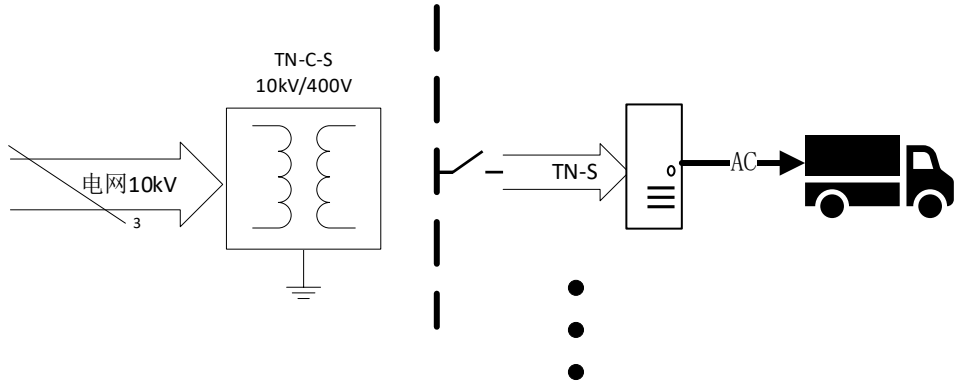
AC006 AC charger has modern appearance design and user-friendly operation experience. It is mainly used for household use. It is an intelligent IoT charger. It can be used for Bluetooth distribution network through mobile APP, and it is easy to start and stop the charging pile anytime, anywhere. More functions are all in the APP.

- Safety
  - Multiple hardware protection functions
    - Overcurrent protection (software protection)
    - Emergency stop protection
    - Leakage protection (software protection)
  - Comprehensive software protection function, which can provide multiple protections.
  - IP54
- Intelligent
  - Terminal charging pile and cloud OCPP platform intelligent IOT
  - Start or stop the charging pile regularly
  - Remote diagnosis, remote upgrade
  - Support Type1 and Type2 standards (choose one of two)
  - Support OCPP1.6+ (later can be directly upgraded to 2.0)
- Convenient
  - Wireless communication
  - Support energy demand corresponding, plug and charge expansion function
- Optional function
  - Home load balancing
  - Swipe card function

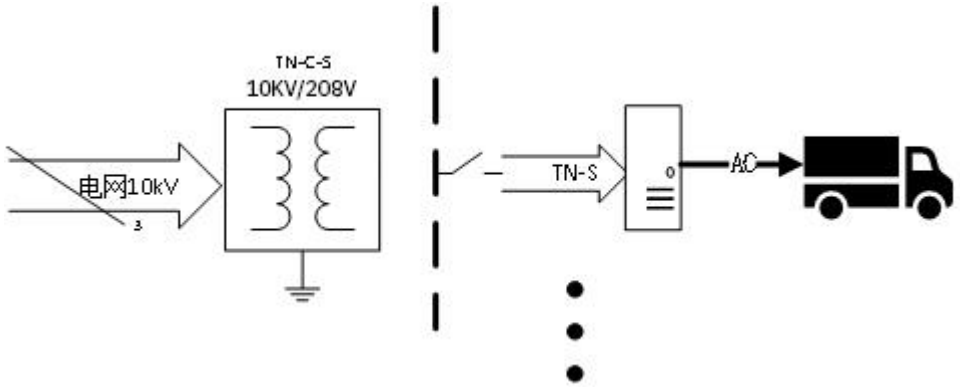
3.SYSTEM STRUCTURE

3.1 ELECTRIC

Transformer-Switch-Charger-Car(Type2)

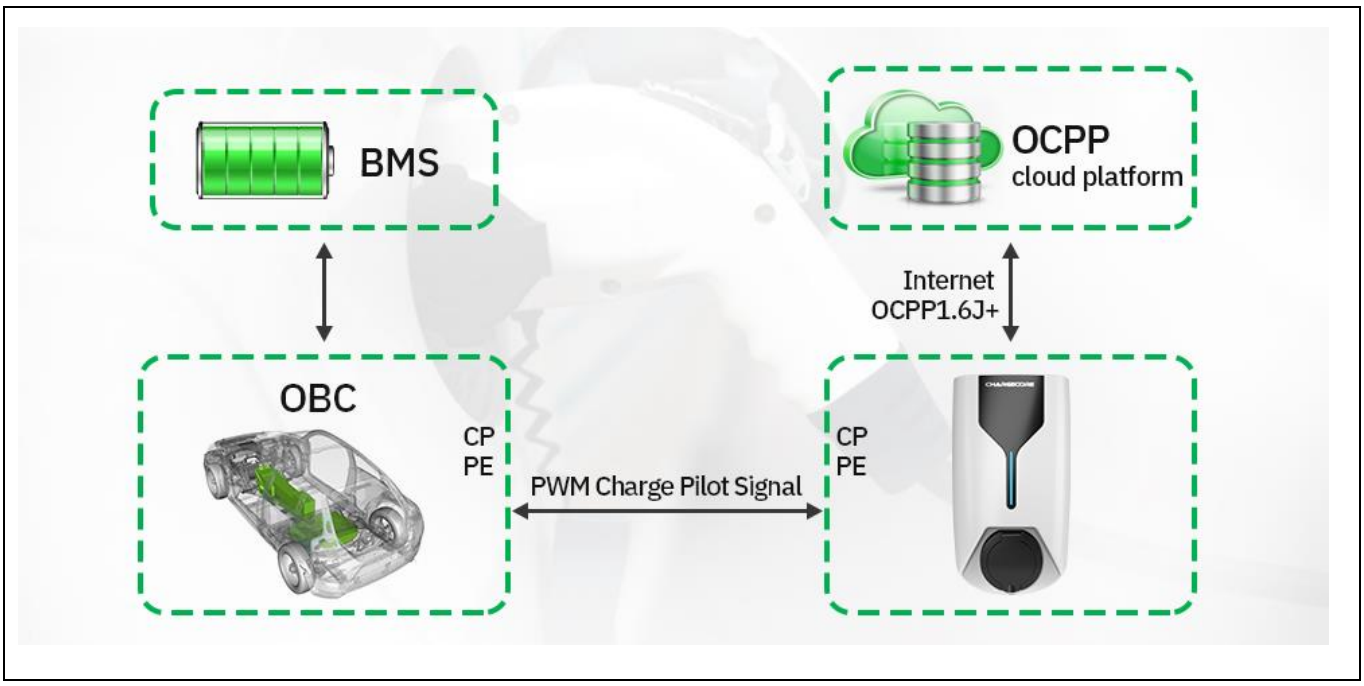


Transformer-Switch-Charger-Car(Type1)



3.2COMMUNICATION

Communication Architecture Diagram


BMS
OCPP
cloud platform
Internet
OCPP1.6J+
OBC
CP
PE
PWM Charge Pilot Signal
CP
PE

4.INSTALL

4.1INSTRUCTION

4.1.1SAFETY INSTRUCTIONS

The working voltage and current inside the charging system are high. In order to ensure personal safety, the following regulations should be observed at all times:

- Only personnel who have received training on the charging system and have sufficient knowledge of the charging system can install it. During installation, the safety precautions and local safety regulations following the catalog should always be followed.
- If you want to operate inside the charging system, make sure that the charging system is not charged. The mains input to the charging system must be disconnected.
- The wiring of power distribution cables should be reasonable and protected to avoid accidental contact when operating the power supply equipment.

4.1.2OPEN BOX TO CHECK

Only after the goods arrive at the installation site, the packing box can be unpacked for inspection. When inspecting the goods, first unpack the packing box with the packing list storage box, take out the packing list, and check item by item against the packing list. Secondly, check the number and serial number of the box identification, the correctness of the equipment packing, the number and type of accessories and the integrity of the items.

After the product arrives, confirm whether the package is damaged and whether the label is complete and correct. If there is any abnormality, please notify the carrier immediately, and take a photo to collect evidence. You can sign and indicate it first, and immediately contact the manufacturer to discuss and deal with it.

- According to the packing list, check whether the product accessories and accompanying documents are complete (refer to the shipping list), and properly keep the accessories and documents.
- Visual inspection to ensure that the product is free of abnormal conditions such as collision, scratches, cracks, dents, rust, damage, peeling paint surface, etc.
- Check whether the equipment has abnormal conditions such as crushing, rusting, and damage.
- Sign and receive documents, record the situation, save the documents in time, scan and distribute or hand them over to related parties.
- See the accompanying documents for the packing list.

4.2 PREPARE

4.2.1TOOL PREPARE

UNIVERSAL TOOL

NAME	DESCRIPTION	QTY

ELECTRIC IMPACT DRILL	DRILLING	1PCS
IMPACT DRILL (Ø6)	DRILLING	1PCS
TAPE MEASURE (5M)	MEASUREMENT	1PCS
LEVEL	MEASUREMENT	1PCS
1/PHILLIPS SCREWDRIVER	UNPACKING / ENCLOSURE / WIRING	1PCS EACH
CABLE STRIPPER	STRIP OFF THE INSULATING JACKET	1PCS
DIAGONAL PLIERS	CUT THE CABLE	1PCS
INSULATION TAPE	INSULATION TAPE INSULATION WRAP CONNECTION	1PCS
PERSONAL PROTECTIVE EQUIPMENT	ENSURE OPERATOR SAFETY AND HEALTH	1PCS

4.2.2VENUE SPACE REQUIREMENTS

This model AC006 wall-mounted AC charger can be configured with Type1 or Type2 charging cable or socket. The system can be installed outdoors (for safety reasons, it should not be used in rain or snow if standing water reaches the charging point connector).

In order to ensure the safe and reliable operation of the equipment, ventilation and maintenance requirements, sufficient installation space should be reserved.

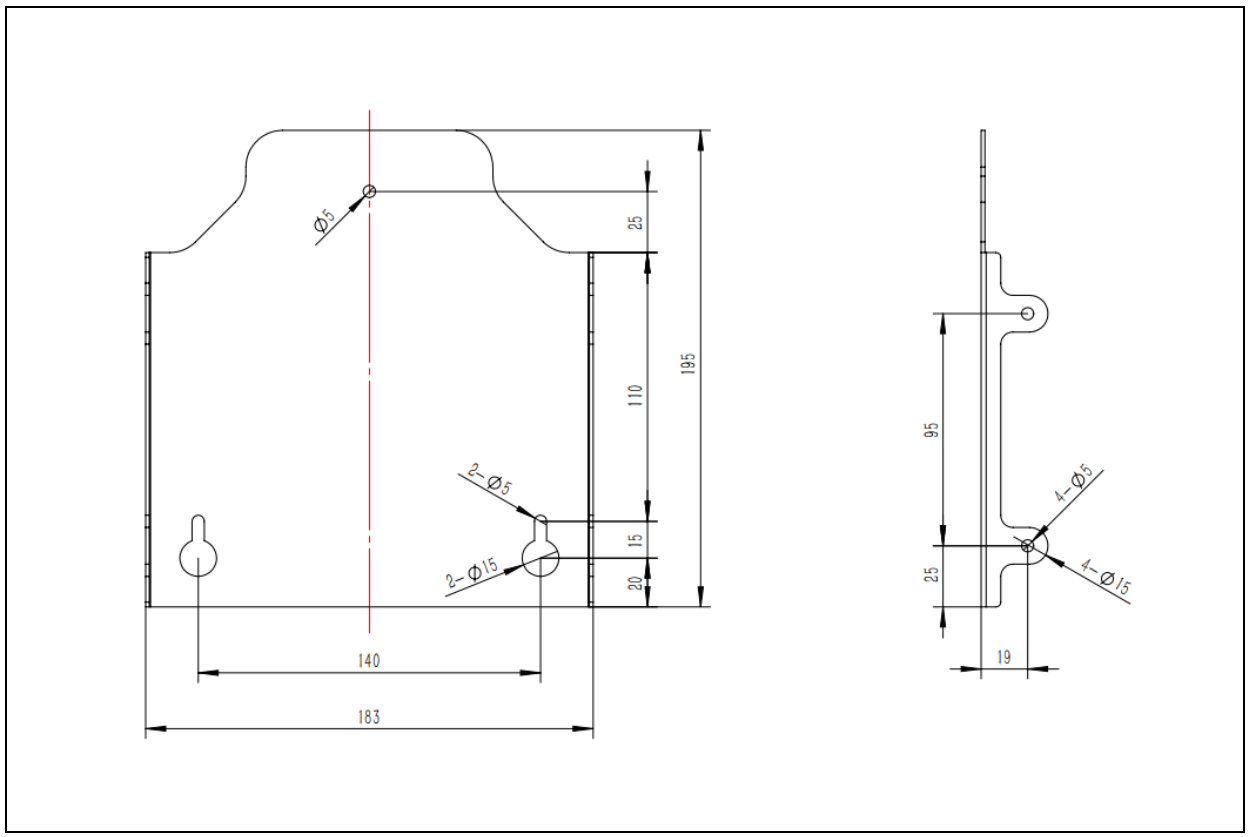
4.2.3CIVIL/FOUNDATION REQUIREMENTS

When using the back panel to hang on the wall, you must ensure that the wall has a certain level of flatness and strength to ensure that the charging pile is installed securely.

The installation surface is pre-buried with 4 M6*30mm expansion screw holes.

- The back panel is hung on a solid wall and can be fixed with expansion screws

Backplane bracket



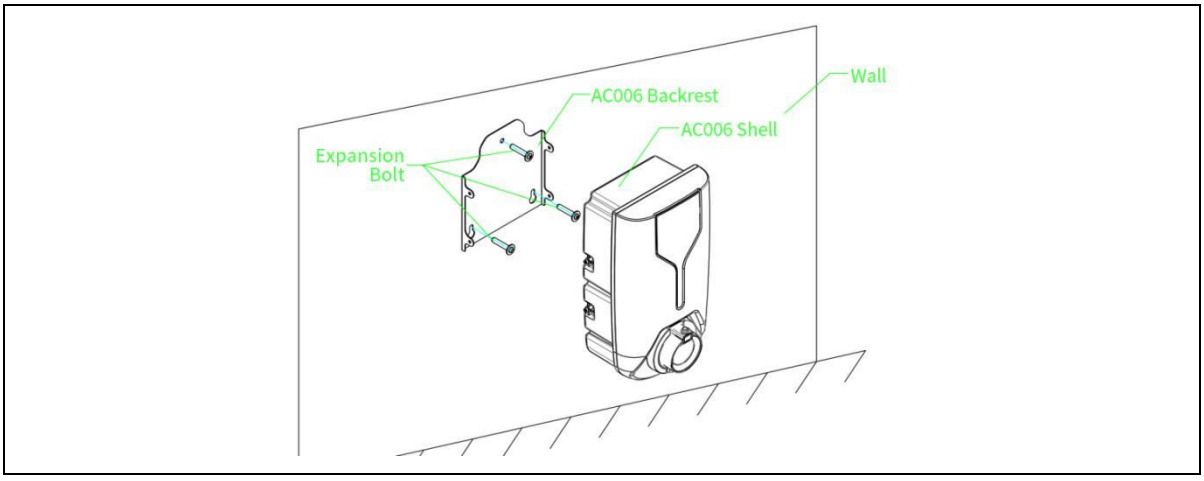
4.3INSTALLATION NOTES

4.3.1CABINET INSTALLATION INSTRUCTIONS

1） FIXED IN PLACE

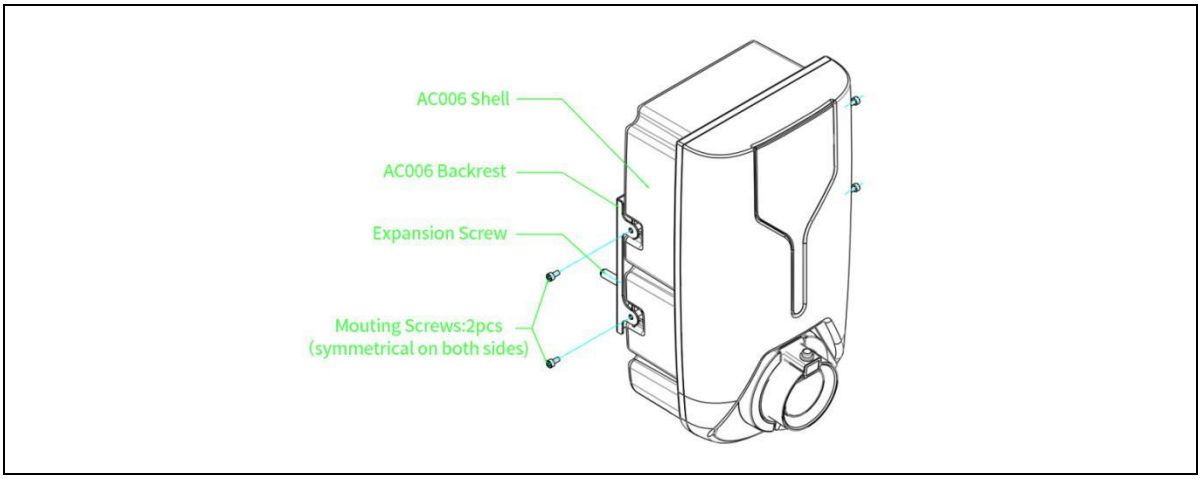
a）Fix the base to the wall

- Carefully and slowly descend, placing the charging station precisely in place
- Take care to ensure that the cables have been exposed along the gland to the inside of the cabinet
- Take care to ensure that the cabinet holes are aligned with the bolt holes
- Tighten these retaining nuts



b) keep the device upright

Place the charger on the hanger and lock the charger.



4.3.2ELECTRICAL REQUIREMENTS

Cable type: TN-C-S/TN-S, confirm whether it needs to be shielded according to local laws or regulations

- If there is a shielding layer, both ends of the shielding network must be connected to the PE safety ground wire.
- Cable diameter requirements are determined by the contractor or electrical engineer based on power, distance and industry standards, or recommended requirements:
  - Using ZR-YJV-multi-core sheathed power cable
  - The voltage class is 450/750V or higher voltage class
  - At least a temperature resistance level of 90 ° C should be achieved.
- It is recommended that the power distribution input wire diameter of the charging pile should not be lower than the following recommended values, and should have independent circuit breakers and leakage protection (the following table shows the current-carrying capacity of YJV22 (armoured) cables directly applied in the soil at 25° C as a reference , according to the actual cable material and laying method to determine the specific wire diameter)

Power（kW）	7（TYPE2)	11（TYPE1)	11（TYPE2)	22（TYPE2)
Input voltage（V）	220V	240（L-L）	400	400
Input current（A）	32	48	16	32
Recommended cable diameter	⩾6mm^2	⩾8AWG	⩾4mm^2	⩾6mm^2

4.3.3INTERNET CONNECTION REQUIREMENTS

Wireless WIFI access is used by default. It is necessary to confirm that the local signal strength is sufficient and stable, otherwise a signal amplifier needs to be installed.

If there is no local WIFI communication signal, a standard wired Internet connection can be used. The wired connection must meet the following requirements:

- RJ45 Ethernet
  - Network cable type: Category 5 or above, 8P+PE, shielded cable
  - Recommended line length within 75m, more than 75m line length, need customized engineering solution
- Minimum bandwidth required
  - Uplink：128 kbps

- Downlink：4 Mbps

- Required connection reliability: 99.9%

FOR SPECIAL CONFIGURATION, PLEASE CONTACT OUR COMPANY

4.3.4CONNECT THE POWER CABLE

Note: Before making electrical connections, place all switches, fuses, etc. in the OFF position

When installed, the charging pile needs to be connected with an additional TYPEB grade leakage protector

- CONNECT THE GROUNDING CABLE

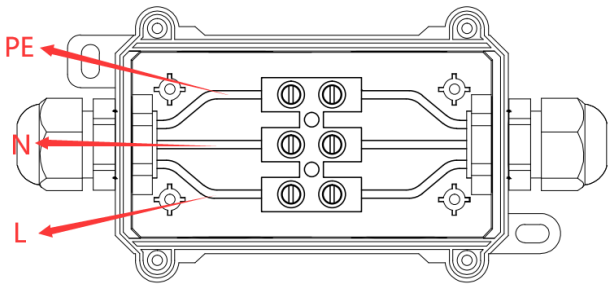
The charging system adopts the common grounding method, and uses the grounding cable to connect the grounding copper bar of the charging integrated cabinet and the main grounding bar of the engineering installation.

- CONNECT AC INPUT

  - The AC input cable is wired from the user's power distribution switch, and the cable is connected to the output terminal of the user's switch when the power is finally ready. The user distribution switch should have protection devices such as overcurrent, short circuit, lightning strike, etc. The capacity of the distribution switch is recommended not to be less than 1.5 times the actual load capacity.
  - The L1 phase, L2 phase, L3 phase and N neutral cable of the AC input cable should use brown, black, gray and blue cables respectively. If the cable has only one color, it is necessary to paste the wire number mark or mark the two ends of the cable with insulating tapes of different colors.
  - The cables are not allowed to be broken, damaged or scratched.

The AC input can be introduced through the charging pile junction box and connected to the corresponding binding posts (terminals) in sequence.

Phase/neutral stud/identification diagram (take a single item as an example)



5.OPERATION DEBUGGING

5.1INSTRUCTIONS

5.1.1POWER-ON PROCESS

Ensure that the charging pile is installed stably, the wires are wired correctly and reliably, and the charging pile can be powered on. After the charging pile is powered on, the indicator light should be flashing blue or always on. Please refer to the appendix below for the description of the status of the indicator light: Description of the status of the indicator light.

5.1.2CHARGING OPERATION

There are three ways to start charging: plug and play, mobile phone APP, and credit card charging (optional).

Before charging, please make sure that the charging cable is firmly inserted into the charging port of the vehicle.

If you need to use the APP to start charging, please use the APP to scan the QR code on the side of the charging pile when using it for the first time, and turn on the Bluetooth of the mobile phone for Bluetooth networking. After the networking is completed, follow the APP prompts to charge.

Click the charging pile information in the APP to obtain the output capability of the charging pile and the information of the running status. When the running status is an alarm, charging cannot be performed. It needs to be charged after troubleshooting according to the fault identification or common fault problems.

When the set value is reached or the vehicle sends a stop command, the charging pile automatically stops charging.

5.1.3EMERGENCY OPERATION

The emergency stop alarm is not part of the normal charging operation. Only when there is an abnormality or misoperation, please refer to this part.

Emergency stop: only when an emergency occurs, press the "emergency stop button" on the side, and the system will cut off the output power.

Reset by pressing the emergency stop button again!

Do not use the "emergency stop button" for normal shutdown.

Emergency stop button + location map

5.1.4FORCED PULL-OUT RECOVERY

It is forbidden to forcibly unplug the charging connector during the charging process!

- If the normal stop operation fails to stop, it is recommended to press the emergency stop button.
- Then unlock it manually, prohibiting the forced drawing of the connector.

6.AFTER-SALES SERVICE

6.1AFTER-SALES SERVICE

1. Two-year warranty on all parts.

2. During this period, if any parts are damaged excluding non-quality factor damage, we will provide free accessories for customers to replace by themselves. Does not include non-quality factor damage.

3. One-on-one technical engineer support.

6.2DISCLAIMER

The product equipment needs to be used normally within a certain range of conditions. If one of the following conditions causes an accident or damage, the company will not be responsible for it.

- All damage caused by human factors and use in abnormal working environment
- Failures and damages caused by not using the instructions or using the environment in accordance with the instructions
- Damage caused by poor transportation after delivery
- Normal wear, abrasion, cracking and impregnation, etc.
- Products that do not belong to our company (such as fakes)
- Without the consent of the company, disassemble, repair, modify the product, etc.

- Damage caused by other force majeure (such as flood, fire, lightning strike, typhoon, earthquake, abnormal voltage)
- Exceeding the service life is not within the scope of our warranty

6.3MAINTENANCE

6.3.1 ON-SITE MAINTENANCE

This device is an IoT-type charger with intelligent functions such as pre-charging self-check, daily regular self-check, online monitoring of electrical components and operating parameters.

- Normal operation, only daily cleaning and maintenance, no need for repair and maintenance
- If the operation is abnormal, please refer to Appendix: Operation Instructions for General Troubleshooting, and contact the Neckray Customer Service Center or local supplier in time

6.3.2 REMOTE MAINTENANCE

The charger has the function of connecting with the device cloud platform to monitor the status of the charger in real time. When connected to the PowerCore platform, the platform can provide complete remote diagnosis, remote service, and remote upgrade services, and can timely discover and locate actual problems in the actual operation process, and provide corresponding solutions accordingly to help the operation center realize remote services. , can remotely upgrade the software, solve the problems of end users, and realize unattended operation.

- The system conducts self-checks every day, and reports any abnormality to the background
- If the operation is abnormal, please contact the customer service center or local supplier in time
- Lengcare service engineers can query logs, update configurations and programs, and implement remote maintenance actions such as remote management, diagnosis, configuration, and upgrade.

7.APPENDIX

7.1 INDICATOR STATUS DESCRIPTION:

LIGHT STATUS	INSTRUCTION
RED LIGHT	CHARGER FAILURE
GREEN LIGHT	CHARGING
BLUE LIGHT	CHARGER STANDBY
BLUE/GREEN/RED LIGHT IS ALWAYS ON	ONLINE
BLINKING BLUE/GREEN/RED LIGHT	OFFLINE

7.2 GENERAL TROUBLESHOOTING INSTRUCTIONS

NO.	FAULT PHENOMENON	POSSIBLE REASON	SUGGESTED TREATMENT
1	LIGHT DOES NOT SHINE	THE AC INPUT OF THE CHARGER IS OUT OF POWER.	CHECK WHETHER THE INPUT POWER SUPPLY OF THE CHARGING PILE IS NORMAL: THE VOLTAGE OF EACH PHASE OF THE AC THREE-PHASE INPUT IS ABOUT 230V, AND THE LINE VOLTAGE IS ABOUT 400V. CHECK WHETHER THE INPUT CABLE HAS LEAKAGE OR SHORT CIRCUIT. IF THE CHECK INPUT IS NORMAL, PLEASE TRY TO POWER OFF AND RESTART. IF THE FAULT IS STILL NOT ELIMINATED, PLEASE CONTACT OUR COMPANY'S SERVICE PERSONNEL TO DEAL WITH IT.
2	CAN'T LOCK THE CHARGING CONNECTOR	THE PLUG OF THE CHARGING GUN IS NOT WELL CONNECTED WITH THE CHARGING PORT OF THE CAR OR THE ELECTRONIC LOCK OF THE CHARGING GUN IS FAULTY.	THE PLUG OF THE CHARGING GUN IS NOT WELL CONNECTED WITH THE CHARGING PORT OF THE CAR OR THE ELECTRONIC LOCK OF THE CHARGING GUN IS FAULTY.
3	CAN'T UNLOCK CHARGING CONNECTOR	THE ELECTRONIC LOCK OF THE CHARGING GUN IS FAULTY OR STUCK.	THE USER CAN RESTART THE CHARGING PILE BY PRESSING THE EMERGENCY STOP OR POWER OFF. IF THE FAULT IS STILL NOT ELIMINATED, PLEASE CONTACT THE COMPANY'S SERVICE PERSONNEL FOR FURTHER PROCESSING.

4	THE STATUS OF THE INDICATOR LIGHT IS ABNORMAL	THE CHARGING PILE IS PRESSED FOR EMERGENCY STOP OR THE CHARGING PILE IS FAULTY	PLEASE REFER TO THE APPENDIX FOR THE DESCRIPTION OF THE STATUS OF THE INDICATOR LIGHTS OF THE CHARGING PILE TO CHECK THE MEANING OF THE INDICATOR LIGHTS, AND TRY TO POWER OFF AND RESTART. IF THE RED LIGHT IS FAULTY OR FLASHING, PLEASE MAKE SURE THAT THE EMERGENCY STOP BUTTON IS PRESSED FIRST. IF IT IS PRESSED, PLEASE PRESS IT AGAIN TO RESET. IF THE FAULT IS STILL NOT ELIMINATED, PLEASE CONTACT OUR COMPANY'S SERVICE PERSONNEL FOR FURTHER PROCESSING.
	OTHER ISSUES NOT COVERED ABOVE. THERE MAY BE MANY REASONS, PLEASE CONTACT OUR COMPANY.		

7.3 TOXIC AND HAZARDOUS SUBSTANCES OR ELEMENTS IDENTIFICATION TABLE (ROHS)

PART NAME	TOXIC AND HAZARDOUS SUBSTANCES OR ELEMENTS					
	PB	HG	CD	CR^{6+}	PBB	PBDE
CABINET/SUBRACK/ COPPER BAR	×	○	○	○	○	○
POWER MODULE	×	○	○	○	○	○
MONITORING MODULE	×	×	○	○	○	○
POWER DISTRIBUTION DEVICE	×	○	×	○	○	○
MADE OF BOARD	×	○	○	○	○	○
HARDWARE	×	○	○	○	○	○
WIRES	×	○	○	○	○	○

○: INDICATES THAT THE CONTENT OF THIS TOXIC AND HAZARDOUS SUBSTANCE IN ALL HOMOGENEOUS MATERIALS OF THE PART IS BELOW THE LIMIT REQUIREMENT SPECIFIED IN SJ/T-11363-2006

×: INDICATES THAT THE CONTENT OF THE TOXIC AND HAZARDOUS SUBSTANCES IN AT LEAST ONE HOMOGENEOUS MATERIAL OF THE PART EXCEEDS THE LIMIT REQUIREMENT SPECIFIED IN SJ/T11363-2006

EXPLANATION ON THE ENVIRONMENTAL PROTECTION USE PERIOD: THE ENVIRONMENTAL PROTECTION USE PERIOD OF THIS PRODUCT (MARKED ON THE PRODUCT BODY) REFERS TO THE TOXIC AND HARMFUL SUBSTANCES CONTAINED IN THIS PRODUCT FROM THE DATE OF PRODUCTION UNDER NORMAL CONDITIONS OF USE AND COMPLIANCE WITH THE SAFETY PRECAUTIONS OF THIS PRODUCT. THE PERIOD DURING WHICH A SUBSTANCE OR ELEMENT DOES NOT CAUSE SERIOUS EFFECTS ON THE ENVIRONMENT, PERSONS AND PROPERTY.

SCOPE OF APPLICATION: ELECTRIC VEHICLE WALL-MOUNTED AC CHARGING PILE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

MPE Requirements

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.

To ensure compliance, operations at closer than this distance is not recommended.