EV Charger
User Manual

Important Safety Instructions Related To Risk of Fire or Electric Shock

WARNING: When working with electrical products, basic precautions should always be followed. This manual contains important instructions for ECA-NH1606S, ECA-NH3206S, ECA-NH4006S, ECA-NH4806S models, needs to be observed during installing, operating and maintaining.

1.Please read all instructions before using this product.

2.Use of this device around children should be done under supervision.

3.Do not stick your fingers into the EV connector.

4.Do not use this product if the flexible power cord or scooter cable is frayed, has torn insulation, or has any other damage.

5.Do not use this product if the housing or EV connector is broken, cracked, open, or otherwise damaged.

6.Indicate the ambient temperature grade: -30°C to 50°C.

7.Note the following or something similar: “To reduce the risk of fire, connect to a circuit providing the following function”. @ampere's maximum branch circuit overcurrent protection shall be in accordance with the National Electrical Code ANSI/NFPA 70, and Canadian Electrical Code Part 1 C22.1.

Instructions de sécurité importantes relatives au risque d'incendie ou de choc électrique

AVERTISSEMENT : Lors de l'utilisation de produits électriques, des précautions de base doivent toujours être prises. Ce manuel contient des instructions importantes pour les modèles ECA-NH1606S, ECA-NH3206S, ECA-NH4006S, ECA-NH4806S, qui doivent être respectées lors de l'installation, de l'utilisation et de l'entretien.

1) Veuillez lire toutes les instructions avant d'utiliser ce produit.

2. l'utilisation de cet appareil en présence d'enfants doit se faire sous surveillance.

3 Ne mettez pas vos doigts dans le connecteur EV.

4. n'utilisez pas ce produit si le cordon d'alimentation flexible ou le câble du scooter est effiloché, si l'isolation est déchirée ou s'il est endommagé de quelque manière que ce soit.

5. n'utilisez pas ce produit si le boîtier ou le connecteur EV est cassé, fissuré, ouvert ou autrement endommagé.

6 Indiquer la température ambiante : -30°C à 50°C.

7. notez la mention suivante ou une mention similaire : "Pour réduire le risque d'incendie, branchez l'appareil sur un circuit assurant la fonction suivante". La protection maximale contre les surintensités du circuit de dérivation de @ampere doit être conforme au Code national de l'électricité ANSI/NFPA 70 et au Code canadien de l'électricité, partie 1 C22.1.NFPA 70, and Canadian Electrical Code Part 1 C22.1.

SAVE THESE INSTRUCTIONS

CONSERVER CES INSTRUCTIONS

CONTENTS

Abbreviations

S/N	Abbreviations	Description
1	EV/PHEV	Electric vehicles, either BEV (battery electric vehicles) or PHEV (plug-in hybrid electric vehicles)
2	EVSE	Electric Vehicle Supply Equipment
3	KW	Kilowatt
4	A	Ampere (unit of current)
5	V	Volts (unit of voltage)
6	Hz	Hertz (unit of frequency)
7	RFID	Radio Frequency Identification

Safety Instructions

In this manual, the following warning labels and precautions are used on AC EV Chargers:

WARNING

For use with Electric Vehicles.
Ventilation Not Required.
To avoid a risk of fire or electric shock, do not use this device with an extension cord.
This device is intended only for charging vehicles not requiring ventilation during charging.
THE SUITABILITY OF THE USE OF FLEXIBLE CORD IN ACCORDANCE WITH CE CODE, PARTI

CAUTION

To reduce the risk of electric shock, connectonly to properly grounded outlets.
Do not use this product if there is any damage to the unit.
Risk of electric shock, Do not remove cover or attempt toopen the enclosure. No user serviceable parts inside. Refer servicing toqualified service personnel.

AVERTISSEMENT

Pour les véhicules électriques
véhicules électriques.
Ventilation non requise.
Pour éviter tout risque d'incendie ou de choc électrique, n'utilisez pas cet appareil avec une rallonge.
Cet appareil est destiné uniquement à la charge de véhicules ne nécessitant pas de ventilation pendant la charge.
LA PERTINENCE DE L'UTILISATION DE CORDONS FLEXIBLES CONFORMÉMENT AU CODE CE, PARTIE

ATTENTION

Pour réduire le risque de choc électrique, ne branchez l'appareil que sur des prises correctement mises à la terre.
N'utilisez pas ce produit si l'appareil est endommagé.
Risque d'électrocution, ne pas retirer le couvercle ou tenter d'ouvrir le boîtier. Aucune pièce réparable par l'utilisateur ne se trouve à l'intérieur. Confier l'entretien à un personnel qualifié.

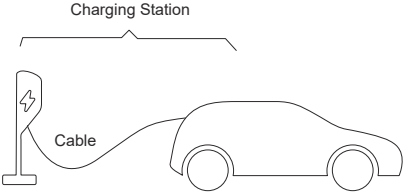
Standard

▶ Safety Standard
Complies with UL 2594 UL 2231 UL 1998 UL991

▶ Radio Frequency Standard
47CFR Part 15 (2020)
ANSI C63.4 (2014)
ICES-003 Issue 7: October 2020+

▶ Energy Star Standard.
ENERGY STAR® Program Requirements for Electric Vehicle Supply Equipment (EVSE) Version 1.0, 1.1 and 1.2

▶Charging Connection
The connections for charging are shown below



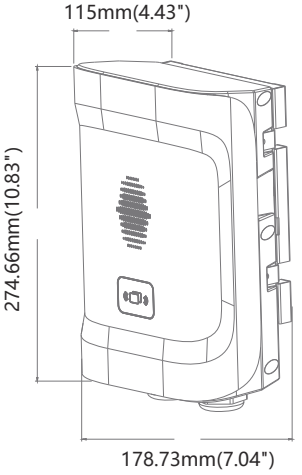
1 Product Information

1.1 Type

Welcome to our AC EVSE

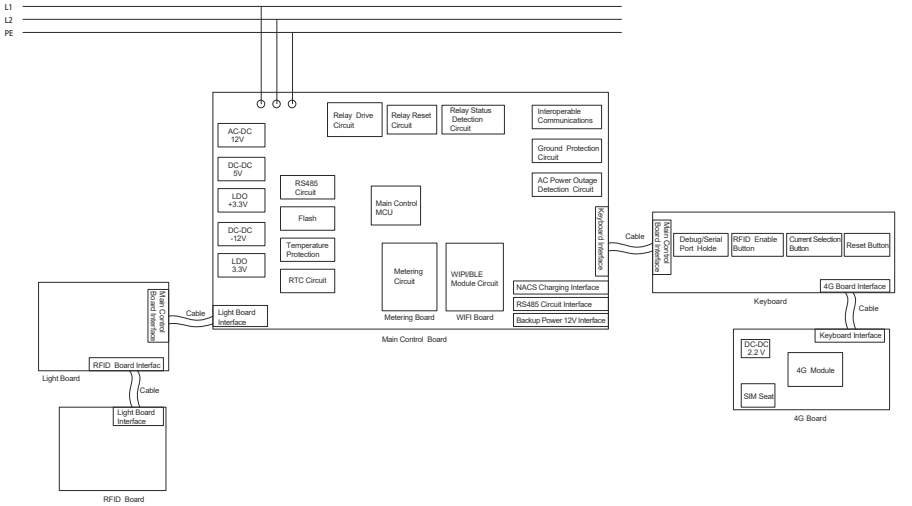
1.1.1 Shape and Size

The shape and size of the AC EVSE is shown in the figure below:

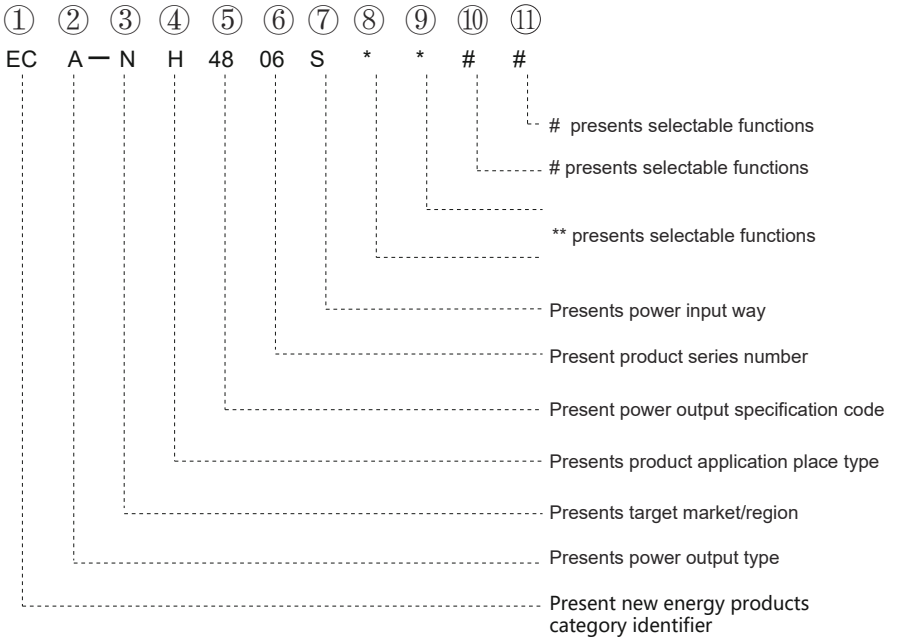


1.1.2 Block Diagram

The block diagram of EVSE is as follows:



1.2 Model definition



Description of Model Number

1. Double XX capital letters for new energy product line category identification.

Products category	New energy electrical vehicle charger equipment	New energy storage equipment	New energy photovoltaic equipment
Code	EC	ES	EP

2.One X capital letter represents the type of power output that can be supported.

Power output type	AC Power	DC power	Multi-mode: AC & DC compatible
Code	A	D	M

3. A capital X represents the market area code in which the product can be placed.

Market/ Region	Europe	Americas	UK	China	Japan	Korea	Russia
Code	E	N	U	C	J	K	R

4. One X capital letter represents the product product application place type.

Application type	Household/Home-use	Commerical- use	Multi-use: household &commercial
Code	H	C	M

5. Double XX/triple XXX digits represent product power output specifications.

Power output	AC mode are marked by maximum output current			
	16A	32A	40A	48A
Code	16	32	40	48

6. The two-digit XX represents the product series number, following the principle as follows.

Upgrade from 01-99 according to product development plan.

7. One X capital letter represents the supported power input methods.

Power input method	Single Phase (both Phase)	Three phases	Multi- input: Single-phase & three-phase co-existence
Code	S	T	M

8. ** capital letter represents the communication function, the range is AA-ZZ, defined as follows.

AA	WiFi/BLE+4G+RS485
BB	WiFi/BLE+4G

9.One digit # represents the option of the input line, the range is 0-9 ,defined as follows.

0	Hardwired via pigtail
1	NEMA 14-50 P
2	NEMA 6-50 P
3	NEMA 5-20 P

10. One digit # represents the front shell color scheme of the electric stake, ranging from 0-9, defined as follows.

0	Standard face shell color: RAL 7040(gray frame zone)+RAL 9005（the center area is black)+RAL 9006（card tap area）	1	Customized color 1
2	Customized color 2	3	Customized color 3
4	Customized color 4	5	Customized color 5
6	Customized color 6	7	Customized color 7
8	Customized color 8	9	Customized color 9

1.3 Specifications

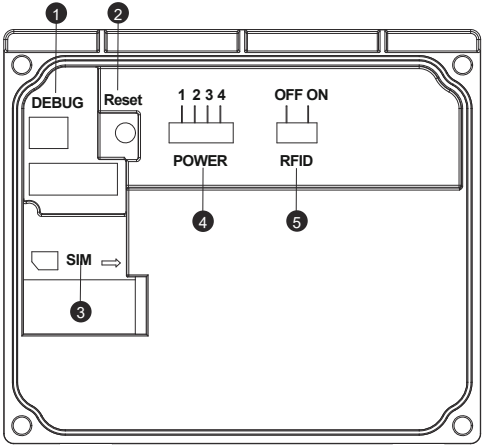
RD10 American Standard AC EV Charging Specifications							
Category	Specifications & Parameters						Option
	Model	Rated input/ output voltage	Rated input current	Rated output current	Max power	Charge Coupler	
Power Specification	ECA-NH 1606S	120/208/ 240VAC 60Hz	16A	16A	3.84kW	SAE J1772 TYPE1 /16A	Optional
	ECA-NH 3206S	208/ 240VAC 60Hz	32A	32A	7. 68kW	SAE J1772 TYPE1 /32A	Optional
	ECA-NH 4006S	208/ 240VAC 60Hz	40A	40A	9.6kW	SAE J1772 TYPE1 /40A	Optional
	ECA-NH 4806S	208/ 240VAC 60Hz	48A	48A	11.52kW	SAE J1772 TYPE1 /48A	Optional
Power Wiring	Hardwired via pigtail :L1/L2/PE | L/N/PE						Optional
	NEMA 14-50P (selection of rated current not exceeding 40A)						Optional
	NEMA 6-50P (selection of rated current not exceeding 40A)						Optional
	NEMA 5-20P (selection of rated current not exceeding 16A)						
Communication	4G CAT.4						
	Dual mode :wifi 2.4g/ble 5.0 【customer order module compatible】						
	RS485						Optional
OCPP Version	OCPP 1.6J						Optional
User Interface & Control	RGB LED light						

User Interface & Control	Power option switch	
	Reset switch	
	RFID enable switch	
	Emergency button	Optional
Firmware Upgrade	Over the air(OTA) 【Network communication module selected】	
	Local update possible	
User Authentication	RFID 【supports ISO14443-compliant type A, mifare one (MF1) cards】	Optional
	APP	Optional
Power Meter	Measurement error accuracy less than 1%	Optional
Memory	Flash rom（128M bit）	
Real Time Clock	Supercapacitor	
Protection Function	CCID20	
	Over voltage protection	
	Under voltage protection	
	Over-current protection	
	Over load protection	
	Short circuit protection	

Protection Function	Ground protection	
	Over-temp protection	
	Surge protection 6 kV @ 3,000A	
	Fault self-test	
Environmental	Enclosure protection: type 4,IK08	
	Operating emperature: -30 ~ 50℃（-22 to 122℉）	
	Storage temperature: -40 ~ 75℃（-40 to 167 ℉）	
	Humidity: up to 95%, non-condensing	
	Altitude: ≤2000m	
	Cooling method: natural cooling	
Mechanica Parameter	Net weight: 5.7 KG(Hardwired via pigtail) 6.3KG (NEMA 14-50P) [Weight based on 25ft cable length]	
	Product outline size: H*W*D (274.66 mm *178.73 mm *115 mm)	
	Cable length: 18ft or customization	
Regulation	Safety regulations: ETL（UL2231 UL2594 UL1998 UL991）	
	Energy efficiency: Energy Star （Requirements for Electric Vehicle Supply Equipment (EVSE) Version 1.0, 1.1 and 1.2）	
	Wireless certificate: FCC / IC	
Warranty	2 Years Or Other	

2 Operate

2.1 About Interface



S/N	Name Label	Function	Parameters/Specifications
1	DEBUG	Debug Port	
2	Reset	Configure Reset Switch	
3	SIM	4G Card Slot	
4	POWER	Power Configuration Switch	1、2、3、4
5	RFID	RFID Enable Switch	OFF/ON

2.2 Switch

In the end use process, 48A charging state need to use the permanent connection method recommended to use 6AWG

3 Function Introduction

3.1 Configure the Network

Configure Wifi network

Step 1:

Turn on the power to the charging pile, open the mobile APP or computer, find the hotspot named "ECA-NH", and connect to it without a password. (If you do not find a hotspot named "ECA-NH", please restart the power supply of the charging pile). Network distribution can be carried out in the following way.

Step 2:

In the settings, enter the corresponding WIFI SSID, secret, and OCPP Server in the WIFI setting items, and wait for feedback from the APP; make corresponding confirmations and modifications.

Configure 4G network

If the product uses 4G for networking, you need to put the traffic card into serial number 3 of [5. Interface], and note that the direction of the card needs to be the same as the direction of the model, otherwise it may not be connected to the Internet.

3.2 Operatibn Guide

1 Charging Preparation

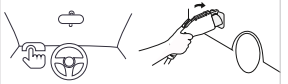
Option 1: Plug and charge
1. When the charging post is normally connected with APP, set the product to "Plug and Charge" mode through the "Settings" item;
2. The next time you use the charging post, you don't need APP or swipe card to start charging, just plug the Charge coupler into the car charging socket, the charging post can start charging by itself.

Option 2: APP start and stop
You can download the APP according to the prompts, register an account according to the prompts, and add WIFI distribution network according to the prompts;

Option 3: Tap RFID card to start
Use the RFID card provided in the packaging box, and Pull the RFID switch of the charging pile to ENABLE to use the RFID card for charging; if the pull-out switch is at the DISABLE position, you cannot use RFID for charging.

2 Connecting Charging Connector

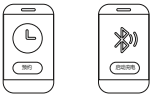
Open the cover of the car charging socket, and connect the charging cable to the car socket stably. Make sure the connection is successful.



3 Start Charging

Option 1: Plug and charge
The charging mode is configured as plug and charge, when step 2 is completed, the car is ready to start charging.

Option 2: APP start and stop
When using it for the first time, turn on the APP and configure the charging mode to scheduled charging, or when there is no WIFI signal, you can connect to the electric pile through the Bluetooth of the mobile phone to start charging.



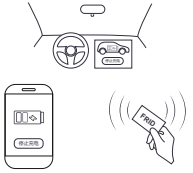
Option 3: Tap RFID card to start
Put the RFID card close to the card-tapping area to start charging by tapping the card, and tap the card again during the charging process to end the charging.

4 Charging:

During the charging process, you can check the current vehicle charging voltage, charging current, charging time, charging power, and charging capacity through the mobile APP.

5 End Charging

End charging via center console, app, tap FRID card and direct pull of charge coupler.



6 Billing Information

Billing information can only be viewed when the app is activated in charging mode: order data information such as current charging power, charging time, etc. can be displayed on the mobile APP .

3.3 Troubleshooting

When an abnormal state occurs during charging，you can check the relevant fault information through the mobile APP，and when the light bar makes corresponding prompts，please remove the charge coupler from the vehicle socket.

Fault Code	Handling Method
Leakage	Disconnect charging vehicle, check power supply, power off and restart. Observe whether the fault recurs. If the fault recurs, repair is required. If it doesn't recur, change another car to conduct a comparison test. If it does not recur after changing the car, it means the car is leaking electricity.
Grounding Abnormality	Check the grounding condition of the charging pile and eliminate the problem of poor installation and wiring，If the fault still occurs after confirming that the grounding is good, repair is required.
Relay Abnormality	It is recommended to restart after a power outage，It is recommended to restart after a power outage.
Overcurrent	Check the power configuration and disconnect the charging vehicle. If the fault is restored, it is a power compatibility issue. If it cannot be restored, repair is required.
Overload	Check the power configuration and disconnect the charging vehicle. If the fault is restored, it is a power compatibility issue. If it cannot be restored, repair is required.
Overtemperature	1. Check whether the charging pile is covered or installed in a high-temperature environment that exceeds the specifications. 2. After cooling down, recheck whether it will occur. If the fault recurs, repair is required.
Overvoltage	1. Check whether the grid voltage is abnormal. 2. Check whether the input cable is connected correctly.
Undervoltage	1. Check whether the grid voltage is abnormal. 2. Check whether the input cable is connected correctly.

CP Communication Abnormality	Cut off the power and restart, replace the vehicle and charge it. If the fault recurs, it needs to be returned to the factory.
Meter Abnormality	Power off and restart. If the fault recurs, repair is required.
Card Reader Abnormality	Power off and restart. If the fault recurs, repair is required.
WIFI Cannot be Networked	1. Use other devices to confirm whether the WIFI hotspot can access the Internet normally. 2. Power off and restart. If the fault recurs, repair is required.
BLE Cannot Connect	1. Confirm whether the Bluetooth settings of the mobile phone are correct and whether the pairing is successful. 2. Power off and restart. If the fault recurs, repair is required.
4G Module Communication Failure	It is recommended to restart after a power outage. If the fault recurs, repair is required.
4G Cannot be Connected	1. Confirm whether the SIM traffic card is normal and whether the card is in good contact. 2. Power off and restart. If the fault recurs, repair is required.

4 Product Installation

4.1 Labels

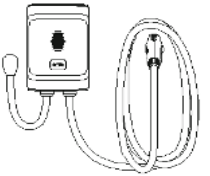
WARNING
For use with Electric Vehicles. Ventilation Not Required.
To avoid a risk of fire or electric shock, do not use this device with an extension cord.
This device is intended only for charging vehicles not requiring ventilation during charging.
THE SUITABILITY OF THE USE OF FLEXIBLE CORD IN ACCORDANCE WITH CE CODE, PART I.

CAUTION
To reduce the risk of electric shock, connectonly to properly grounded outlets.
Do not use this product if there is any damage to the unit.
Risk of electric shock, Do not remove cover or attempt toopen the enclosure. No user serviceable parts inside. Refer servicing toqualified service personnel.

AVERTISSEMENT
Pour les véhicules électriques véhicules électriques. Ventilation non requise.
Pour éviter tout risque d'incendie ou de choc électrique, n'utilisez pas cet appareil avec une rallonge.
Cet appareil est destiné uniquement à la charge de véhicules ne nécessitant pas de ventilation pendant la charge.
LA PERTINENCE DE L'UTILISATION D'UN CORDON FLEXIBLE CONFORME-MENT AU CODE CE, PARTIE I.

ATTENTION
Pour réduire le risque de choc électrique, ne branchez l'appareil que sur des prises correctement mises à la terre.
N'utilisez pas ce produit si l'appareil est endommagé.
Risque d'électrocution, ne pas retirer le couvercle ou tenter d'ouvrir le boîtier. Aucune pièce réparable par l'utilisateur ne se trouve à l'intérieur. Confier l'entretien à un personnel qualifié.

4.2 Packing List

Material Name	Quantities （PCS）	Illustration
AC Charger	1	
Socket	1	
M6 Expansion Screws	3	
M4 Anti-theft Screws	2	

4.3 Check and Confirm

When unpacking, please carefully confirm the following points:

- ▶ According to the packaging list, whether the accessories are missing.
- ▶ Whether there is any damage during transportation.
- ▶ Whether the model and specification on the nameplate of the machine are consistent with the order requirements.
- ▶ If any damaged or missing parts are found, do not start the machine and contact the supplier as soon as possible.
- ▶ Please keep the box and packaging materials for 1 month for future disposal. Paper packaging is recyclable.

4.4 Preparation

In order to ensure long-term stable operation of the product, it is recommended to avoid the following installation problems:

- ▶ This product is an electrical device. Handle with care and avoid severe vibration and shock.
- ▶ EVSE cannot be transported by dragging the charging connector and charging cable.
- ▶ EVSE cannot be used in extreme weather, especially when the ambient temperature is too low or too high, which will affect the use of EVSE.

It is recommended to install EVSE in a ventilated and cool place away from direct sunlight and rain. To ensure good ventilation, you should install the EVSE vertically with enough space. Installation tools before installing AC EVSE, you should prepare at least the following tools:

Multimeter


Electric Impact Drill(D8mm+D6mm）


Wrench（10mm）


AWG23-7 Tube Terminal Crimping Pliers


Phillips Screwdriver（D5mm）


Electric Batch（With plum blossom hole T20.T25 bit）


Utility Knife


Anti-static bracelet


Heat Coupler

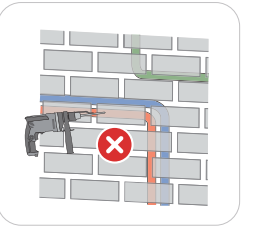

Wire Strippers

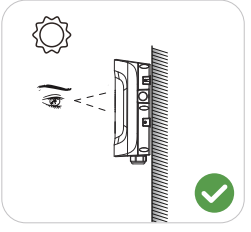

Marker Pen

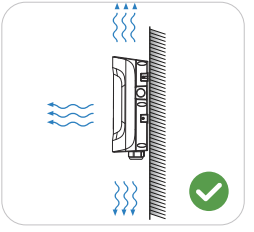

Rubber Hammer

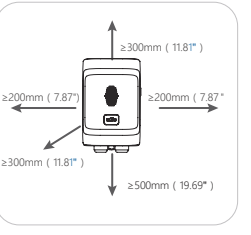
4.5 Installation Step

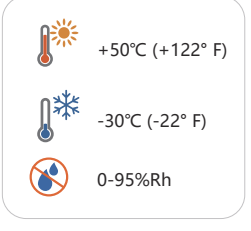
Location Requirements

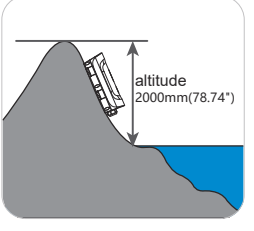


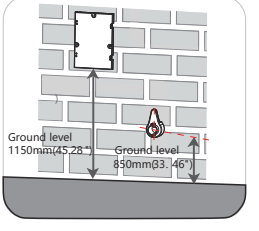




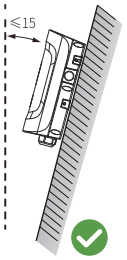


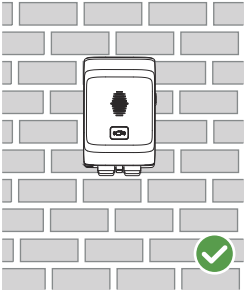






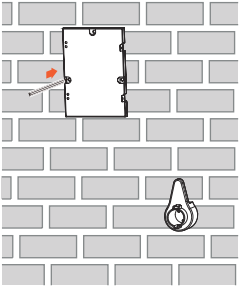
Angle Requirements



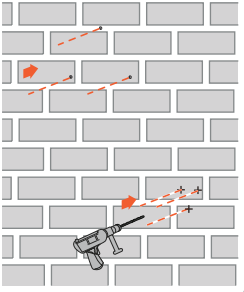


Wall-mounted Installation Steps

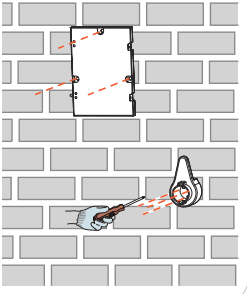
1 Install the wall-mounted version and trace holes on the wall

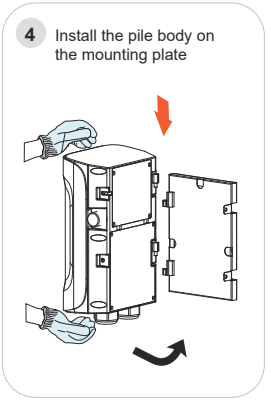


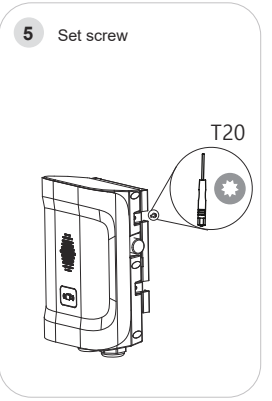
2 Punch holes in the wall

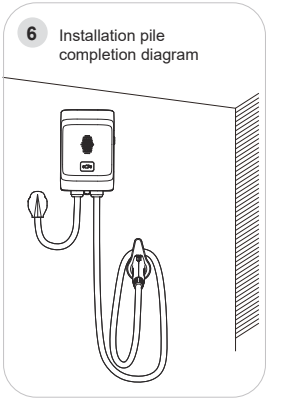


3 Install wall mounts, hanging plates and empty blocks.









4.6 Grounding Instructions

For a grounded, cord connected product:
GROUNDING INSTRUCTIONS
This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.
WARNING – Improper connection of the equipment-grounding conductor is able to result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
b) For a permanently connected product:
GROUNDING INSTRUCTIONS
This product must be connected to a grounded, metal, permanent wiring system, or an equipmentgrounding
conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product.

4.7 Maintenance

To ensure the long-term stable operation of the equipment, please perform regular (usually monthly) maintenance on the device according to the operating environment.

a) Equipment is maintained by professionals.

b) Check whether the equipment is well grounded and safe.

c) Check whether there are safety hazards around the charging pile, such as whether there are high temperatures, corrosion or flammable and explosive items near the charger.

d) Check whether the connection points of the input terminals are in good contact and whether there is any abnormality. Check other wiring points for looseness.

Warranty Agreement

1.The scope of the warranty refers to the product itself.

2.The warranty period is 24 months. During the warranty period, if the product fails or is damaged under normal use (determined by the company's technicians), the company will repair it free of charge.

3.The starting time of the warranty period is the production date of the product.

4.Even within the warranty period, if the following conditions occur, a certain maintenance fee will be charged.

Equipment failure caused by failure to operate according to the user manual.

Equipment damage caused by fire, flood, abnormal voltage, etc.

Equipment damage caused by the entry of foreign objects.

Equipment damage caused by other human-made external factors.

5.Service fees shall be calculated based on actual costs. If there is any other contract, this contract shall prevail.

6.During the warranty period, be sure to keep this card and show it to the maintenance personnel.

7.If you have any questions, please contact the agent or our after-sales service center directly.

For Both FCC & IC application:

This device complies with Part 15 of the FCC Rules / Industry Canada licence-exempt
RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est
susceptible d'en compromettre le fonctionnement.

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 B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference
to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that
to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

MPE Requirements

To satisfy FCC / IC 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.

Les antennes installées doivent être situées de facon à ce que la population ne puisse y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l’ antenne.
La FCC des éltats-unis stipule que cet appareil doit être en tout temps éloigné d’au moins 20 cm des personnes pendant son functionnement.