AC Charger User Manual

---X1-AE-7.0 --

---X1-AE-11.0 --

Contents

Before any operation, please read the user manual carefully to understand the correct use of the device. After reading, please keep the user manual for future review.

Warning

The input and output voltages of this device are dangerous high voltage, which can endanger human life safety. Please strictly observe all warnings and operating instructions on the device and in the manual. Unauthorized and non-professional service personnel should not remove the cover of this device.

Preface

Thank you for your support on our products, Our company focuses on the field of new energy and is committed to providing customers with excellent charging equipment and complete solutions。The EV chargers have the characteristics of advanced function, steady performance, wide application range and strong practicability, winning a good reputation in the industry.

Safety Instruction

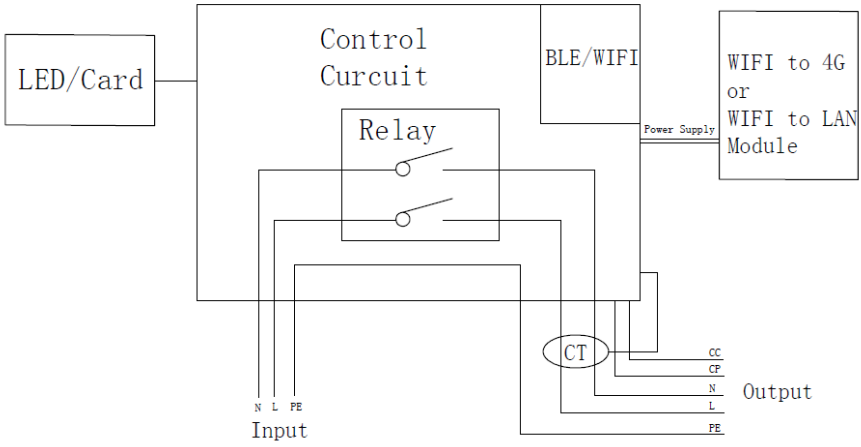
1) Keep the explosive or flammable materials, chemicals, vapors and other hazard objects away from the charger.
2) Keep the charging socket clean and dry. If dirty, please wipe with clean dry cloth. Touch the socket core is strictly forbidden when power on.
3) Do not use the charger in case the device has defects, crack, abrasion, bare leakage and so on. Please contact the working staff in case of above conditions.
4) Do not attempt to dissemble, repair, refit the charger. If necessary, please contact the working staff. Improper operation will result in device damage, electric leakage, etc.
5) In case any abnormal condition happens, please press the emergency stop button immediately, cut off all input and output power supply.
6) Please make charging cautiously in raining or lighting weather.
7) The children should not get close to or use the charger to avoid being hurt.
8) During the charging, the EV is not allowed to drive. Charging only when the EV stops still. For Hybrid car, charging only when switching the engine off.

1 Product Overview

1.1 Product Introduction

The single phase AC charger is used for electric vehicle's AC charging, with the function of charging by scanning the RFID card. The RFID card is a key component to start or stop the charging session. The LED indicator on the front panel helps you understand what is happening with the charger by indicating different colors. The protection grade of the charger is high as IP65, with the excellent capacity of water and rust proof, assuring the safe outdoor operation and maintenance. The floor-stand installation is optional by ordering an additional pillar. Designed according to Electric Vehicle Charging System Standard EN 61851-1: 2011 and EN 61851-22: 2002, the charger is compliant with the industrial standards and safe for usage. With internet connection through WiFi users are able to monitor and manage the charger operation from the mobile APP.

1.2 Schematic Diagram



1.3 Specification Parameter

	Model No.	X1-AE-7.0	X3-AE-11.0
Configuration	User Interface	LED indicator, RFID card reader	
	Housing Material	Plastic	
	Installation Way	Wall-mount (default), Floor-stand (optional)	
	Card Quantity	2pcs	
	Charging Outlet	One charging gun type 2	
	Product Dimension	325*181*87mm (L*W*H)	
	Net Weight	3.01KG	
	Gross Weight	3.83KG	
Electrical Parameter	Input Voltage	AC230V±20%	AC 400V±10%
	Input Frequency	50/60Hz	
	Max Power	7kW	11.0kW
	Output Voltage	AC230V±20%	AC 400V±10%
	Max Output Current	32A	
	RCD	6mA DC	
	Standby Power	<2W	
Environmental Index	Application Place	Indoor / Outdoor	
	Working Temp	-30℃ ~ +55℃	
	Working Humidity	5% ~ 95% without condensation	
	Working Altitude	<2000m	
	Protection Grade	IP65	
	Cooling Method	Natural air cooling	
	Safety Standard	EN 61851-1: 2011, EN 61851-22: 2002	
	MTBF	100,000 hours	
	Special Protection	Anti UV design	
Safety Design	Protections from over voltage, under voltage, over load, current leakage, ground fault, over temperature, under temperature.		

Communicatio n	Charger v.s. Backend communication: WiFi Internet Communication Protocol: OCPP 1.6

1.4 Performance and Characteristics

Performance:

- LED Indicator: Different light color indicate different working status of the charger.
- RFID Card: Built-in card reader to realize the function of charging with RFID card. Scan RFID card first to start charging, and scan RFID card again to end charging.
- Emergency Stop Button: In case of emergent issues happen, press the button to cut off charging output for safety.

Characteristics:

- Dust & Water Proof: IP65 protection grade, workable under severe conditions, no need of extra shelter.
- Low Standby Power Consumption: The standby power is as low as 1W, energy saving and green.
- Compatible Application: The device is equipped with a type 2 charging gun.
- Easy Installation: The installation is easy by hanging the changer on the wall and fix it with just a anti-theft screw.
- All Direction Protection: Protections from over voltage, under voltage, over load, current leakage, ground fault, over temperature, under temperature to ensure the device working safely and avoid accidents effectively.
- Safety Design: The charger is designed with over -current and ground fault protection components that constantly monitor safety status. No voltage is present in the charging gun until your vehicle is properly connected.

1.5 Working Environment

- Altitude: ≤2000 meters
- Temperature: -30℃~55℃
- Humidity: 5%~95%
- Indoor/Outdoor use
- Natural air cooling for ventilation
- Keep the charger away from flammable or explosive materials.

1.6 Product Naming

X1 - AE - 7.0

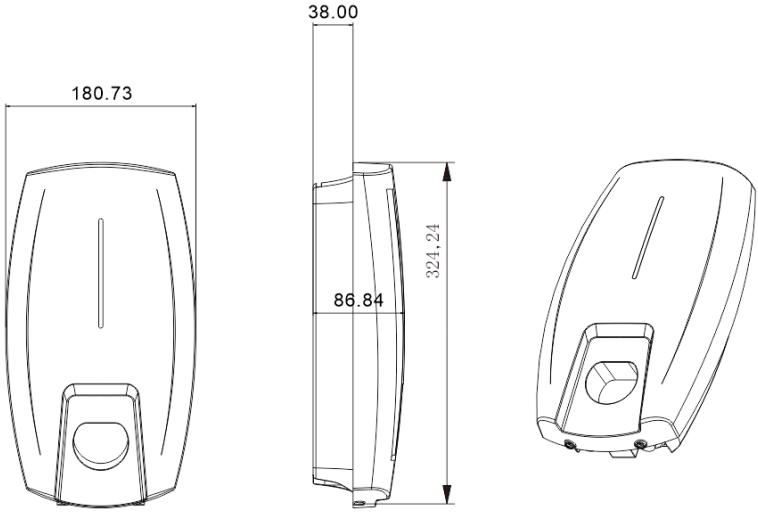
Max Power 7kW

A:Charging gun type 2 E:Electric Vehicle charger

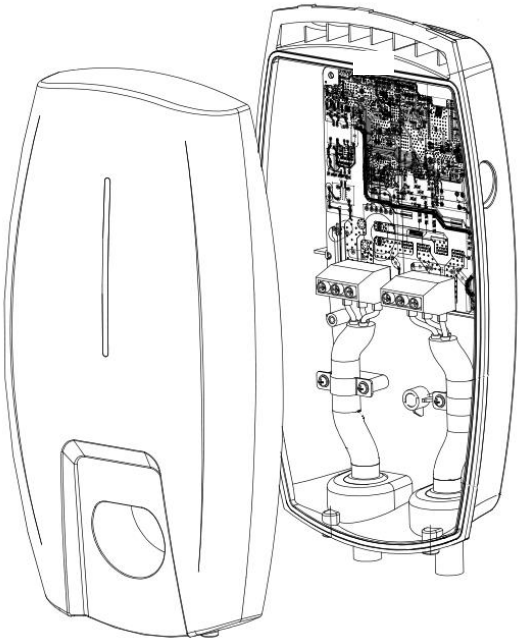
Single phase

1.7 Product Structure

1.7.1 External Structure (unit:mm)



1.7.2 Internal Structure



2 Operation Instruction

2.1 Product Installation

2.1.1 Package Verification

Unpack to check and verify following items after receiving the charger:

- Visual inspection on external appearance. In case there is any broken or damage, notify the seller immediately.
- Check accessory type and quantity. If there is quantity in short or type inconformity, make the record in time and contact the seller at once.

2.1.2 Installation Preparation

1) Tools

Tool Name	Photo	Function
Multimeter		Check electrical connection and electrical parameter
Cross Screwdriver (PH2x150mm, PH3x250mm)		Tight the screws
Insulated Torque Wrench		Tight the bolts
Electric drill		Hole on the wall
Diagonal Pliers		Cut cables

2) Cables & Materials

Name	Specification	Quantity
Power supply cable	3*6mm² single-phase power supply cable	Depend on actual requirement

2.1.3 Installation Process

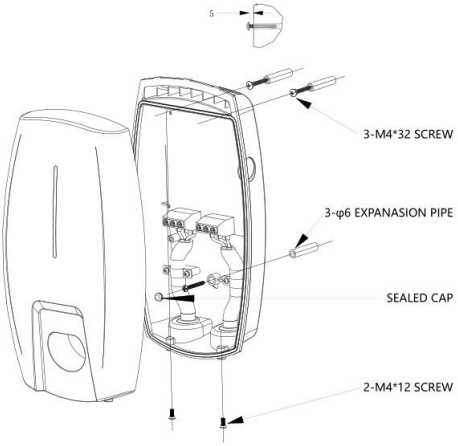
1) Installation Notice

a) Electrical device should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this device. A qualified person is one who has skills and knowledge related to the construction, installation and operation of electrical device and who has received safety training to recognize and avoid the hazards involved.

b) All applicable local, regional, and national regulations must be respected when installing, repairing, and maintaining this device.

2) Installation Procedure

1. According to the cases of the attached installation board, drill 3 - Φ 6 * 35 mm holes on the wall, and insert the expansion pipe;
2. Lock the 2-M4*32mm self-tapping screw into the expansion pipe, and reserve 5mm space;
3. Open the top cover of charger, hang it on the automatic screw, lock it into the bottom automatic screw, and then cover the sealing cover;
4. Connect the input power cord, close the upper cover, and lock it with 2-M4*12mm screw.



2.2 Power-on Checking

1) Check before Power-on

Please check the followings before any operation:

1. The charger's location is easy for operation and repairing.
2. Double confirm the charger is installed properly.
3. AC input's current leakage protection switch is reasonable.
4. No other stuff or component left on the top of the charger.

2) Power-on Charger

1. Make sure all checking is done according to the above items.
2. Turn on the current leakage protection switch of AC input.
3. Power-on the charger and observe the LED indicator, which should be standby status.

State	Description	LED Status
Standby	Power-on, but no gun plug-in	Flashing green, 1S on 3S off
Ready to charge	Gun plug-in, but not start charging yet	Constantly green
In charging	Gun plug-in, and start charging	Breathing green, 1S on 1S off
Fault	Error happens	Flashing red, Constantly red

3）WIFI connection

Connect the charger to the backend through the user APP. Once the charger connected with the wifi successfully, the charger can be used for charging.

2.3 Charging Operation

2.3.1 Connect Charger to EV

Park EV near to the charger, and plug its guns into the EV. After plug-in, please check the gun is correctly and tightly connected. With appropriate connection, the charger LED indicator will change to flashing yellow light, which indicates that the charger is ready for charging.

2.3.2 Start Charging & Stop Charging

After the charger is connected to EV and ready for charging, scan the RFID card for once on the identification area of front panel or use the user APP scan the barcode on the left side of the charger, then the charging starts. When the EV is fully charged, the charging will stop.

3 Troubleshooting

3.1 Indicator State

State	Description	LED Status
In the standby	Normal	Flashing green, 1S on, 3S off
Charging status	Normal	Breathing green, 1S on, 1S off
Plugged gun state	Normal	Green light normally on
Software upgrade	Normal	Green light flash
Ground warning	Normal	Flashing yellow, 2S on, 2S off
Relay adhesion	Fault	Red light normally on
Input polarity reverse	Fault	Flashing red, 500ms on, 500ms off, 1 time, 3S off, Cycle
CP fault	Fault	Flashing red, 500ms on, 500ms off, 2 times, 3S off, Cycle

Leakage current fault	Fault	Flashing red, 500ms on, 500ms off, 3 times, 3S off, Cycle
Input terminal overtemperature	Fault	Flashing red, 500ms on, 500ms off, 4 times, 3S off, Cycle
Relay overtemperature	Fault	Flashing red, 500ms on, 500ms off, 5 times, 3S off, Cycle
Under voltage fault	Fault	Flashing red, 500ms on, 500ms off, 6 times, 3S off, Cycle
Over voltage fault	Fault	Flashing red, 500ms on, 500ms off, 7 times, 3S off, Cycle
Overload fault	Fault	Flashing red, 500ms on, 500ms off, 8 times, 3S off, Cycle
Over frequency fault	Fault	Flashing red, 500ms on, 500ms off, 9 times, 3S off, Cycle
Owe frequency fault	Fault	Flashing red, 500ms on, 500ms off, 10 times, 3S off, Cycle
Leakage current loop abnormal	Fault	Flashing red, 500ms on, 500ms off, 11 times, 3S off, Cycle

3.2 Fault Resolution

Problems	Possible Causes	Solutions
Input over voltage	AC input voltage may be too high.	1. Check the input voltage from the backend.
		2. If the voltage is over 276Vac for a short time，wait till the power grid recovers to normal voltage range.
Input lower voltage	AC input voltage may be too low.	1. Check the input voltage from the backend.
		2. If the voltage is under 184Vac for a short time, wait till the power grid recovers to normal voltage range.
Input over current	AC input current may be too large.	1. Shut off the leakage current protection switch of power distribution cabinet immediately.
		2. Check whether there is low resistance connection between AC output cables of the charger.
Input over frequency	AC input frequency may be too high.	1. Check the input voltage frequency from the backend.

		2. If the frequency exceeds 55Hz for a short time, wait till power grid recover to normal voltage range.
Input lower frequency	AC input frequency may be too low.	1. Check the input voltage frequency from the backend.
		2. If the frequency is lower than 45Hz for short time, wait till power grid recover to normal voltage range.
Over temperature	Temperature may be too low inside the charger.	1. Check the surrounding conditions of chargers installed whether there is heating device nearby. Make sure environmental temperature is under 60℃.
Over leakage current	Leakage current to the earth may be too high.	1. Shut off the leakage current protection switch of power distribution cabinet immediately.
		2. Check whether there is broken of AC output cables or low resistance connection to the earth.
Leakage current sensor abnormal	Detection of leakage current sensor is abnormal.	1. Shut off the leakage current protection switch of power distribution cabinet immediately.
		2. Check whether there is broken of AC output cables or low resistance connection to the earth.
Grounding fault	Inappropriate grounding connection of input/output cables or inverse connection of L/N input cables.	1. Shut off the leakage current protection switch of power distribution cabinet immediately.
		2. Check if AC input/output cables are normal, and if inverse connection of L/N input cables.
Charging cable connection abnormal	Poor connection of charging cable with EV/Charger.	1. Check if charging cable connection is correct and firm.

Note: If the above problems cannot be solved, please contact the seller.

4 Disposal

The packaging materials are environmentally friendly and can be recycled. Put the packaging in applicable containers to recycle it. Do not dispose this device with the household waste. It shall be handed over to the applicable collection point for the recycling of electrical and electronic device. For more detailed information about recycling of this device, please contact your local city office, your household waste disposal service or the shop where you purchased the device.

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V1.1_20200901