

21/28kW DC Fast Charger

User Manual & Installation



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Introduction

The EV Charge Solutions DC Fast Charger is an ideal solution for fast charging battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). It provides a DC fast charging solution for sites with a 240V Level 2 power supply, and is suitable for both public and private locations, such as retail and commercial parking lots, fleet charging stations, highway service areas, workplaces, residences, and more.

The EV Charge Solutions DC Fast Charger offers the advantage of easy installation. Its wall-mounted design and pluggable power modules enable flexible and cost-effective installation for different types of locations. The DC charger also supports network communication, allowing it to connect with remote network systems and provide EV drivers with real-time information, such as charging station location, charging progress, and billing information.

The Wall-Mounted DC Fast Charger features a clear user interface with function buttons, and excellent waterproof and dustproof design, making it a reliable and flexible charging choice for outdoor environments.

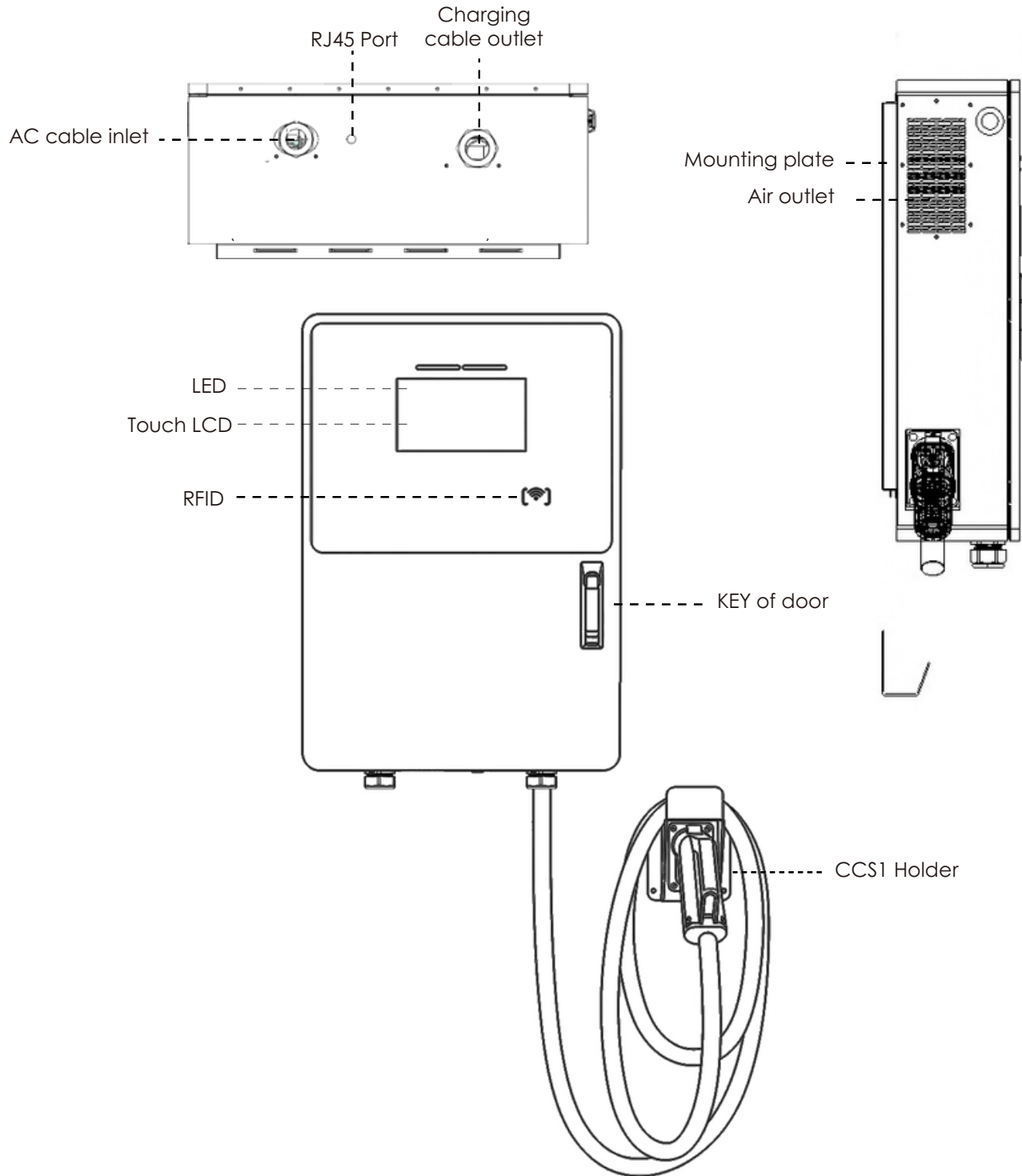
Features

- Wall-mounted design and pluggable power modules make installation easy, flexible, and cost-effective.
- Supports convenient start/stop charging control via authorized RFID smart card or mobile app.
- Built in accordance with the latest industry standards for DC charging.
- Designed with an outdoor-rated enclosure to withstand dust, water, and other environmental intrusions, ensuring stable and reliable operation in outdoor settings.
- Equipped with a high-contrast display interface and multi-function buttons for clear and easy operation.

Applications



1. Basic Appearance



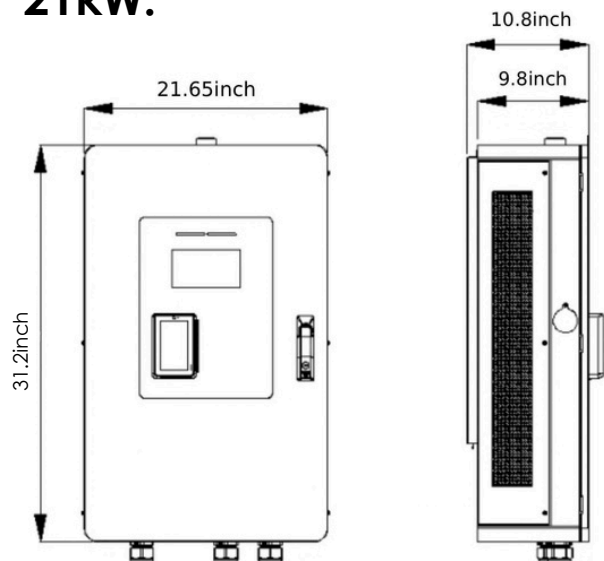
2.Specification

2.1 Product Specification

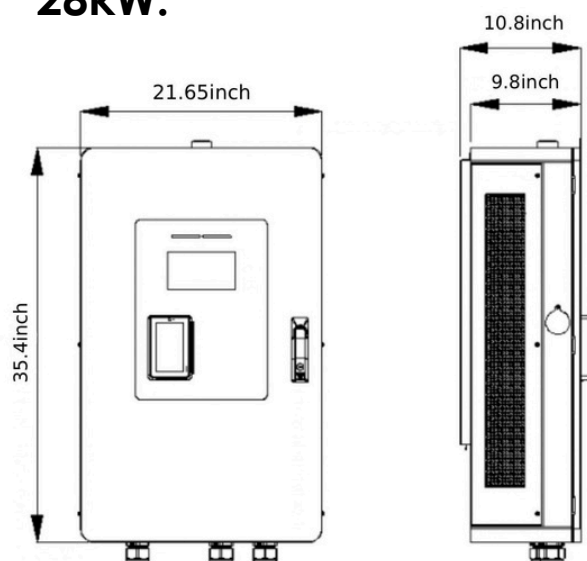
Model	PC-W21S	PC-W28S
	Technical features	
Max Power	Up to 21kW	Up to 28kW
Input/Output power	208-240VAC±10%-50/60Hz	
Power factor	0.98	
Efficiency	>95%	
Overvoltage category	III	
Pollution degree	3	
Ingress Protection	NEMA 3R	
Impact Protection	UL Type 3R	
Measuring accuracy	Level 0.5	
Output voltage range	CCS1: 200~750VDC	
Output current range	60A	80A
Communication	Ethernet/WIFI/4G/OCPP 1.6 J (TLS)	
User interface	RFID card and APP	
Display	LCD Touch Screen	
Versatility	IEC61851/IEC62196/ISO1511/DIN70121/EN61000-6-4:2007	
Energy Meter	CE certified	
RCD	Type A or Type B(optional)	
Security design	Over/under voltage protection, overload protection, current leakage protection, grounding protection,lightening surge protection	
DC Plugs	CCS1*2 Cable 5M	
	Physical properties	
Warranty	2 years	
Application place	Indoor/Outdoor	
Installation method	Wall mount, pedestal mount (optional)	
Operating temperature	-20℃ to +50℃	
Humidity	Max.95%(non-regulating)	
Dimensions	21.65 x 9.8 x 31.2"	35.4 x 9.8 x 28.7"
Package Dimension	35.8 x 27.6 x 24.4 "	36.0 x 27.8 x 24.6 "
Net Weight	68kg	90kg
Gross Weight	95kg	120kg
External Package	Wood case	

2.2 Dimensions (Unit: inch)

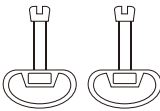
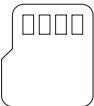
21kW:



28kW:



2.3 Package list

 Wallbox (x1)		 User Manual (x1)	
 M10*100 expansion screw (x4)		 M4*40 Screw (x6)	
 Key (x2)		 RFID CARD (x2)	
 SD card (x1)			

3. Installation Instruction

3.1 Before Installation

- Read all instructions carefully before installing or operating this product.
- Do not use this product if the power cable or charging cable is damaged.
- Do not use this product if the enclosure or charging connector is broken, open, or visibly damaged.
- Do not insert foreign objects, fingers, or any body parts into the charging connector or EV connector.



Warning: This product must be installed only by a licensed contractor, licensed electrician, or qualified technician in accordance with all applicable building codes, electrical codes, and safety standards.



Warning: This product must be inspected by a qualified installer before initial use. Compliance with the information in this manual does not relieve the installer or user from the responsibility to comply with all applicable codes, regulations, and safety standards.

- The charger must be connected only to the power supply configuration specified on the product nameplate, such as split-phase 120/240V with L1/L2/PE, or single-phase 220–240V with L/N/PE, as applicable.
- For TN-S system installation: the neutral conductor (N) and protective earth conductor (PE) must be separated throughout the installation. The charger's PE terminal must be connected to the PE conductor of the power distribution system.
- For IT system installation: the neutral point of the power distribution system is isolated from earth or connected to earth through high impedance. The charger's PE terminal must be connected to the site protective earthing system in accordance with local electrical codes.
- For TT system installation: the neutral conductor (N) of the power distribution system is directly connected to earth. The charger's PE terminal must be connected to an independent local earth electrode or protective earthing system in accordance with local electrical codes.
- The power supply capacity must exceed 26kVA (For 21kW Charger) 35.0 kVA (For 28kW Charger), which is approximately 1.25 times the rated power of the equipment, to ensure proper operation.
- The product shall be installed in a well-ventilated area. Maintain at least 12" clearance around all air vents.
- Sufficient space must be reserved for installation, operation, and maintenance. Maintain at least 24" clearance around the product.

3.2 Grounding and Safety Requirement

- The product must be connected to a grounded, metal, permanent wiring system. All connections shall comply with applicable electrical codes.
- Ensure that the power supply is disconnected before installing, servicing, or maintaining the charger.
- Use appropriate protective devices when connecting the charger to the main power distribution network.
- Use appropriate tools for each installation and maintenance task.



CAUTION: The disconnect switch for each ungrounded conductor of AC input shall be provided by installation contractor or technician.



CAUTION: A cord extension set or second cable assembly shall not be used in addition to the cable assembly for connection of the EV to the EVSE.

3.3 Service Wiring

- Ground Connection
- Always connect the Neutral at the service to Earth Ground. If ground is not provided by the electrical service then a grounding stake must be installed nearby. The grounding stake must be connected to the ground bar in the main breaker panel and Neutral connected to Ground at that point.



CAUTION: This unit is fed from a live wire and neutral wire, or an L1/L2 power grid. The Wall Mount DC Fast Charger can connect to L1, L2 or L1 and Neutral. Earth ground must be connected to neutral at only one point, usually at the breaker panel.



DANGERS: Be Aware of High Voltage!

WARNING: Earth Connection is Essential!

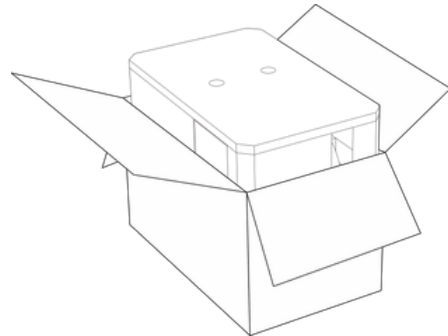
3.4 Unpack the charger

**WARNING!**

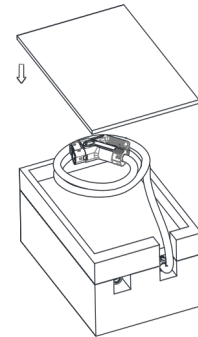
Charger may weigh more than 120 kg! Be careful during unpack process .

Step 1:

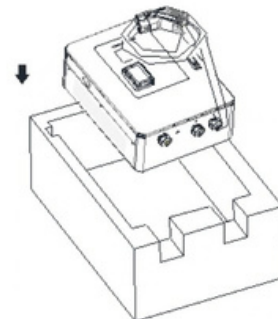
Remove the surrounding boards.

**Step 2:**

Remove the packaging film and the paper cover. Accessories (wall mount) are packed in a carton

**Step 3:**

Remove the surrounding cardboard and film. Take out the Charger and Connector holders.



3.5 Recommended Tools for Installation and Inspection

3.5.1 Recommended Tools for Installation

TYPE	DESCRIPTION
Philips Screwdriver	No. 2 and 3
Shifting Wrench	8" (24mm)
Ball-Head Hex Key	2.5mm and 5mm
Socket Screwdriver	No. 8 ,10 and 17
Electrical Tape	Black / 15mm Width
AC Input Cable of 28kW	35mm ² Cable x 3 (L1 N PE or L1,L2,PE)
Crimping Pliers for Ring Terminal	Suitable for 35mm ² Cable
Machine Drill	
Wire Cutters	
Level Ruler	

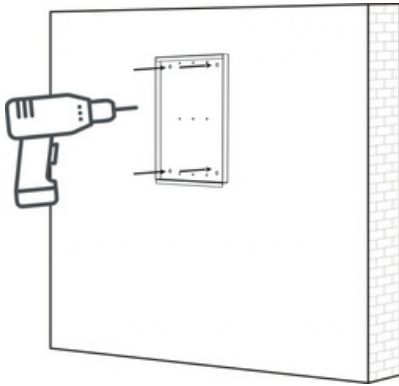
3.5.2 Recommended Tools for Inspection & Commissioning

TYPE	DESCRIPTION
EV or EV Simulator	Meet CCS1 standard
Multiple Meter	750V
Current Probe	80Amp
RFID Authorized Card	
RFID No Valid Card	
Door Key	
Needle-Nose Plier	
Laptop or PC & CAT6 cable	For Charger Configuration

3.6 Installation Procedure

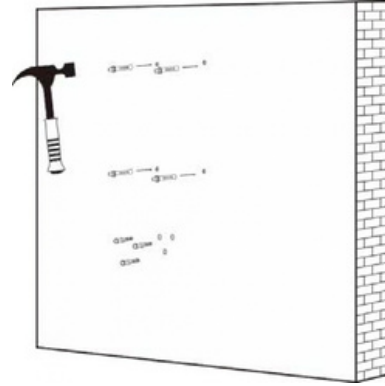
Taking 28kW as an example

STEP 1



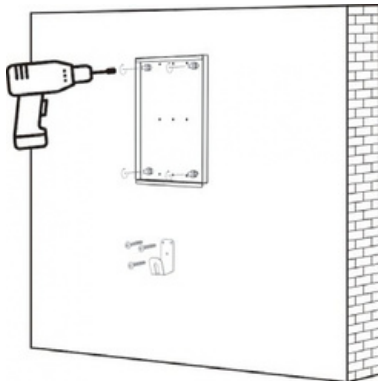
Place the wall-mounted bracket between 600mm (24 inches) and 1.2m (4 feet aprox.) above the floor, and then attach 4 pcs 3/8" expansion screws to the wall-mounted bracket. (Unit: mm)

STEP 2



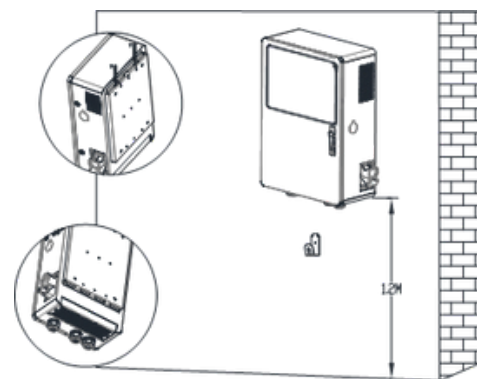
Install the four tenons on the rear side of the charger into the grooves on the wall-mounted bracket.

STEP 3



Screw 2 sets M6 screws to the bottom of the charger to fix the charger on the bracket.

STEP 4

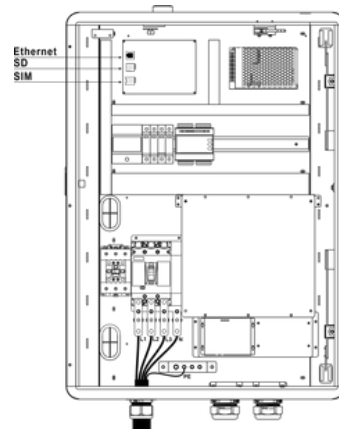


Keep the hook-shape holders as cable holder or disassemble them if not necessary.

STEP 6**Installing the AC Input Connection**

Please use XLPE power cables or equivalent for AC input connection, cross-section should be approximately 35mm².

Each wire shall be crimped with the corresponding terminal before feeding. And then feeding the cable from bottom side and passing through the cable gland. Connect L1, L2, N, and PE to the terminals as shown in the figure below.



4.Operation Process

RGB LED indicators

Charger status	LED performance
Standby	Yellow
plug in	Green
swipe/punch a card	Green blink
Charging	Light green breath
Fault status	Red flashing

LCD indicators

The charger config a LCD screen, which is mainly used to display various status information of the charging station.

Icons or instructions in each display area.

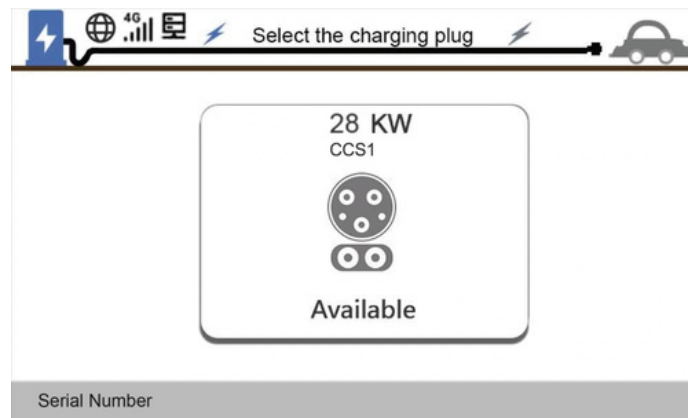


Fig. 1-1 Display of icons and instructions

In Fig. 1-1, there are four areas to display icons or instructions, with the specific meanings as follows:

No.	Icon	Description
Area①		
1		language settings
2		Connected a network through 4G cellular
3		Connected a network through WIFI
4		Connected a network through Ethernet
Area②		
5	Version	Software version
6	SN	Serial number of the DC Fast Charger
Area③		
7	status	The DC Fast Charger status information
Area④		
8		Setting:Set charging station parameters

As shown in Fig. 1-2 Click on the connector icon to select the connector to activate then charging mode selection page is displayed. Use RFID card to start charging.

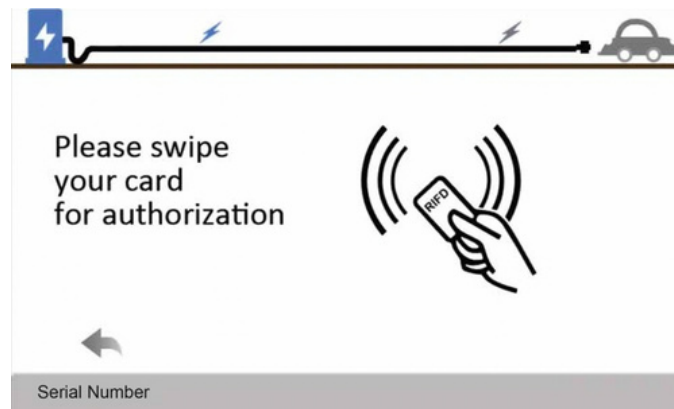


Fig. 1-2 RFID card to start charging

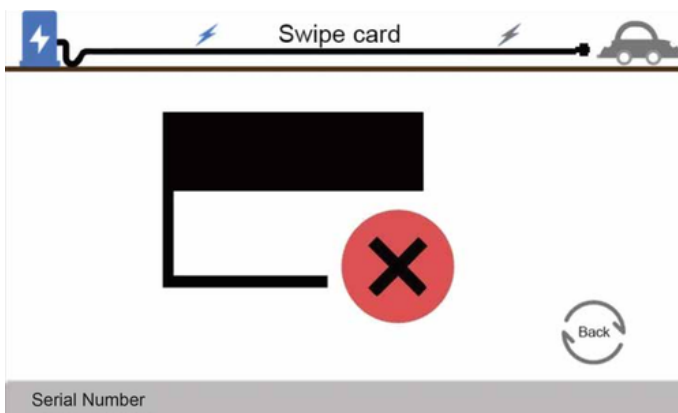


Fig. 1-3 Card authorization fails to swipe card

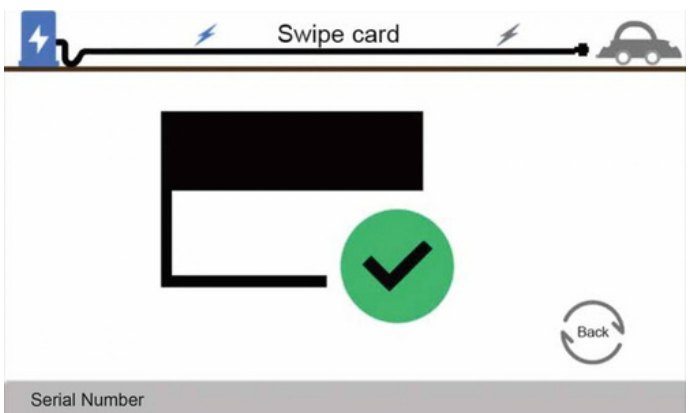


Fig. 1-4 Card authorization succeeded to swipe card

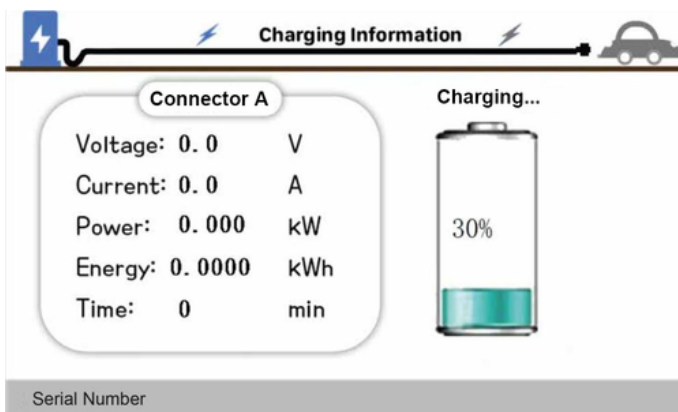


Fig. 1-5 Enter the charging process, if the charging is successful, it enters the charging state

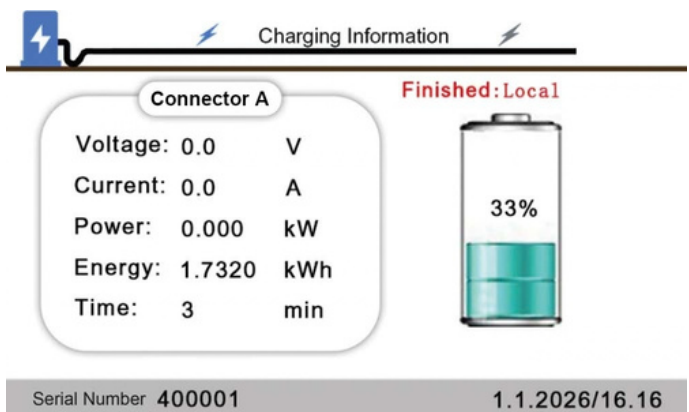


Fig. 1-6 Display of Finished

Tap the settings icon three times to enter the management interface. (see Fig .1-7)

Enter password: 1234

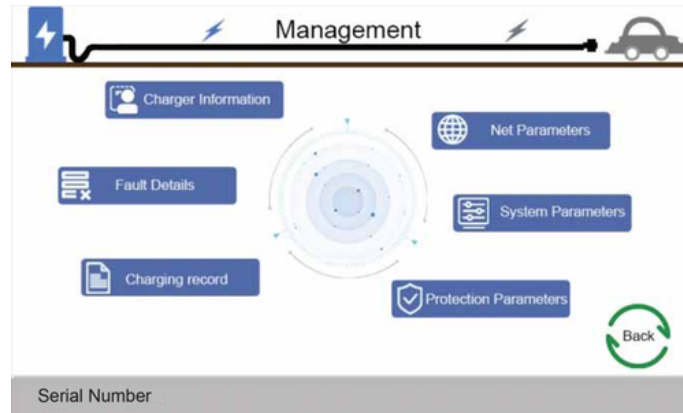


Fig. 1-7 Display of Management

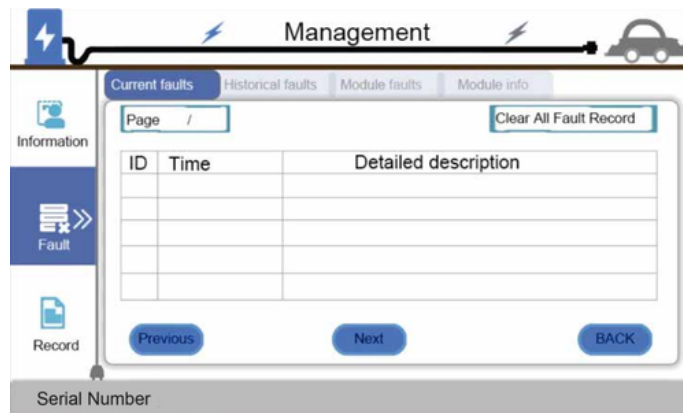


Fig. 1-8 Display of fault state

4.1 Troubleshooting

- Please follow the instruction in the table when errors occur during the charging process.
- Or please contact EV Charge Solutions for further instructions.
- If an emergency occurs push the Emergency Stop Button to stop charging immediately.

4.2 Status Codes

Status Code	Description	Solution
1	Emergency stop	If fault occurs, please rotate the button clockwise to reset the charger
2	CCS output fuse blew	If fault occurs, please check & replace the fuse
3	AC input contactor 1 welding	If fault occurs, please check & replace the contactor
4	CCS output relay welding	If fault occurs, please check & replace the Relay
5	CCS connector temperature sensor broken	If fault occurs, please check & replace the sensor.
6	Relay control module / smart box broken	If fault occurs, please check & replace the Relay control module.
7	CCS Power module fault	If fault occurs, please replace the CCS Power module.
8	Maximum Output Current setup error	If fault occurs, please reset the correct value.
9	Maximum Output Voltage setup error	If fault occurs, please reset the correct value.
10	BLE module broken	If fault occurs, please replace the BLE module.
11	4G module broken	If fault occurs, please replace the 4G module.
12	Ethernet BLE module broken	If fault occurs, please replace the Ethernet BLE.
13	wifi module broken	If fault occurs, please replace the wifi module.
14	CCS connector OTP	If fault occurs, please check & reset the OTP value.
15	SPD trip	If fault occurs, please replace the SPD Module.
16	CCS ground fault detection timeout (GFD)	If fault occurs, please check the Ground line.
17	RFID module communication fail	If fault occurs, please check Communication line with RFID.
18	Power module communication fail	If fault occurs, please check can line with power module.
19	Door open	If fault occurs, please close the door & retry charging .
20	System fan decay	If fault occurs, please replace the fan.
21	AC Ground Fault	If fault occurs, please check the Ground line.
22	CCS EV communication Fail	If fault occurs, please check Connecting to the vehicle.

5. Maintenance

5.1 General Maintenance

- The DC Fast Charger is cooled by forced air. Please keep charger in a ventilated location and do not block the air vents of the DC Fast Charger.
- Please clean or replace the air filters regularly to maintain proper operation.
- Clean the DC Fast Charger at least three times a year and keep the exterior clean.
- Clean the outside of the cabinet with damp cloth or wet cotton towel, only use low-pressure tap water and cleaning agents with a PH level between 6 to 8.
- Do not use high-pressure water jets and abrasive cleaning agents or tools, as they may damage the surface, coating, or painting.
- If there is water intruding into the DC Fast Charger then please cut off the power source immediately and contact the DC Fast Charger provider for repair.
- Please return the charging connector to its holder after use to prevent damage.
- If there is damage to the charging connector, cable, or holder, contact the provider.
- When using the DC Fast Charger please handle properly. Do not strike or scrape the cabinet or touch screen.
- If the enclosure or touch screen is broken, cracked, open or shows any other indication of damage then please contact EV Charge Solutions.



Warning: Danger of electrical shock or injury. Turn OFF power at the panelboard or load center before working on the equipment or removing any component. Do not remove circuit protective devices or any other component until the power is turned OFF.

- Disconnect electrical power to the DC Fast Charger before any maintenance work to ensure it is separated from the supply of AC mains. Failure to do so may cause physical injury or damage to the electrical system and charging unit.

Note:

- Before switching off main breaker to begin maintenance, please record the status code number on the LCD monitor.
- After switching off the key switch, the circuit before the main terminal is still hazardous. Only visual inspection can be operated.
- Maintenance should only be performed by a qualified technician.
- After opening the front door of the DC Fast Charger, turn off the main breaker and auxiliary breaker before any maintenance work.
- Replace the ventilation filter every six to twelve months.