DC40KW

wall-mounted CCS2 DC charging station specification

Model:TS-EDW-040-001

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Preface

EDW series intelligent DC charging station is a kind of electric device that adopts professional power technology to provide efficient, safe and stable DC power for electric vehicles, and provides a friendly man-machine operation interface with corresponding control, billing, communication and safety protection functions. It can be connected to the background server, perfectly compatible with the OCPP standard protocol to achieve convenient functions such as mobile phone APP control, charging time scheduling and online payment, etc. Diversified communication methods are available for your taking option from Ethernet, WIFI or 3/4G.

We sincerely hope that this product can meet the users' requirements, and look forward to the comments on the performance and function of the product. We will continue to improve the quality of our products and our service.

CONTENT

1.Safety Precautions

● Before using this product, be sure to read this specification carefully, and operate in strict accordance with the steps in this specification;
● If the product fault light is on or any fault message is displayed on the screen, please do not charge or stop charging, refer to the solutions in this specification for troubleshooting or contact the device manufacturer for handling;
● Do not put flammable, explosive, combustible objects, chemicals and other dangerous objects near the charging station;
● It is strictly forbidden to insert and pull out the charging gun during the charging process, and it is strictly forbidden to touch the inside of the charging gun to prevent the danger of electric shock;
● It is strictly forbidden to touch the charging plug or the charging socket of the electric vehicle, keep the charging plug in a dry state, and do not touch the charging plug with water on the hands;
● If there is any abnormal situation during use, please press the emergency stop button immediately;
● Do not attempt to disassemble, repair, or refit the charging station. Improper operation may cause damage, water leakage, electricity leakage, etc.;
● Please do not disassemble and repair the product alone when the charging station fails, please contact professional after-sales personnel to deal with it;
● During rainy and thunder day, please charge with caution; if there is water at the bottom of the device or inside the charging gun, please do not charge until the water is drained;
● Do not let children approach, touch or use the charging station to avoid personal injury;
● During the charging process, the vehicle is prohibited from driving.

2.Product Overview

2.1Product Brief Information

The integrated DC charging Station adopts a floor-standing design with simple and elegant appearance, stable frame, and full protection functions. It is applicable to various types of charging places such as bus charging stations, residential quarters, industrial parks, high-speed service areas, and parking lots, etc. The rated voltage can be flexibly configured, and the output power can be automatically adjusted with the load. It is an efficient charging device to provide power for new electric vehicles equipped with DC charging socket in the European standard.

2.2 Packing Lis

No.	Item	Qty	Unit	Note
1	Charging Station	1	SET	
2	Specification	1	PC	
3	Certificate	1	PC	
4	Backplane for the charging station	1	PC	Assembled
5	Cable Holder	1	PC	
6	Anchoring, M8*80/GB5783-86, 304 Stainless Steel	6	PC	

2.3 Product Feature

Main Feature

● Ingenious structure design: with swinging door design, the charging station can be installed against the wall, making reasonable use of space in various installation scenarios, and also bringing convenience for future maintenance;
● High industrial-grade standard: with redundant design of key components, waterproof and dustproof grade up to IP54;
● Modular design: each functional component of the product adopts modular design to bring convenience for maintenance and overhaul;
● High module utilization rate: the charging station strictly controls the output power according to the power curve of different types of modules. While making full use of the output capability of each module, it also avoids overclocking the output of the module and achieves the maximum utilization rate of the whole charging station;
● Industrial-grade display screen: 7” LCD touch screen with high-definition display, it can automatically sleep in the standby state, which not only reduces energy consumption, but also prolongs the life cycle;
● Wide applicability: applicable to various types of charging places such as bus charging stations, parking lots, and residential quarters, etc;
● Low power consumption: The charging station adopts a low power consumption design, and some modules have the sleep function which can reduce power consumption in standby state。

Protection Mechanism

● It has a perfect charging protection function to prevent overcharging the vehicle;
● It has protection mechanisms such as phase loss, lightning protection, abnormal grounding protection, short circuit, over current, over temperature, insulation fault, and reverse battery connection, etc;
● With overvoltage protection, undervoltage protection, abnormal connection detection, emergency shutdown, communication fault prompt and other protection functions;

● With insulation detection function. It's prohibited to charge when the insulation performance decreases to ensure safety.

Diversified Configuration

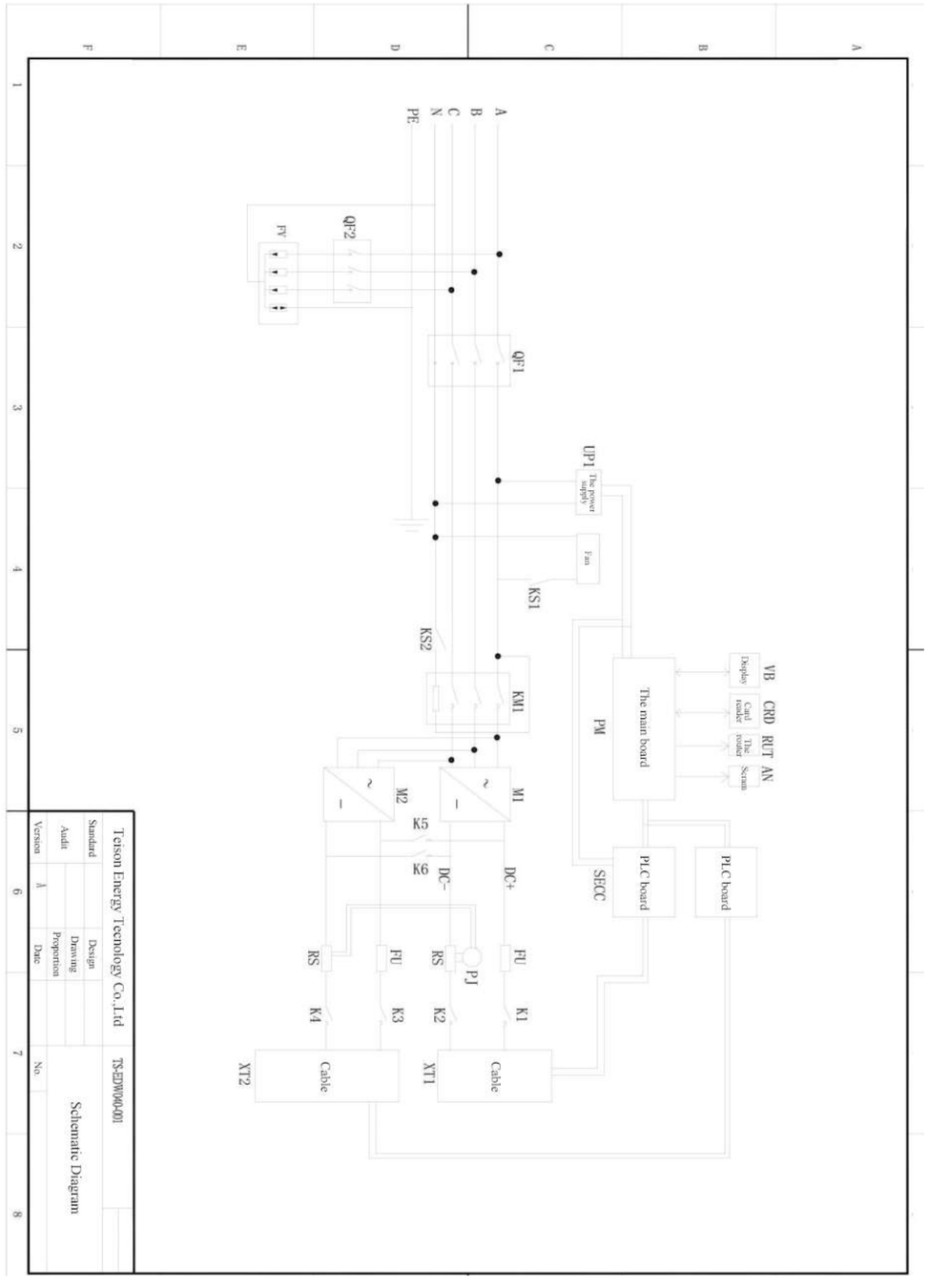
● Modular design: compatible with different charging modules and applicable to different levels of voltage and current, all protection functions can be switched on and off independently
● Flexible charging mode: available in the mode of time, amount, power, automatic charging, reservation, etc.;
● Various methods of starting charging: available in the method of offline card charging, online card charging, scanning code charging and password charging, etc;
● Diversified communication method: available in Ethernet, WIFI or 3/4G.

2.4Technical Parameter

Item No.	TS-EDW-040-001
Dimension	770mm X 580mm X 265mm
Weight	75KG
Screen Material	LCD
Shell Material	Solid Metal
AC Input	
Input Line	3P+N+PE
Voltage	AC 380V
Current	≤63A
Frequency	45～65HZ
DC Output	
Voltage	DC250～750V
Current	0~67A (400V-750V)/0~80A(50V-400V)
IStable Voltage Accuracy	＜±0.5%
Stable Current Accuracy	≤±1%
Power Factor	≥0.99
Effectiveness	≥95.2%
IP Protection Level	IP54

Operating Temperature	－25℃～50℃
Relative Humidity	＜95%
Altitude	≤2000m (Lower the output power when altitude ＞2000m)
Cooling Method	Force-air Cooling
Network Gateway	Ethernet/4G
Charging Mode	RFID/APP
Standby Power Consumption	25W
Standard	IEC-62196-2;EN61851
Installation Method	Wall-mount/Floor-stand
Certificate	CE
Measure Accuracy	0.5
Safety Protection Function	
Input Overvoltage Protection	484-500Vac
Input Undervoltage Protection	260-276Vac
Output Overvoltage Protection	DC260V～850V
Over Temperature Protection	＞50℃: output power will be reduced ＞75℃: charging station will be shutdown
Short Circuit Protection	Yes
Emergency Stop Protection	Yes
Leakage Protection	Type A
Lightning Protection	Level 2

2.5 Electrical Schematic Diagram



3.Charging Module Address Code Setting

Each charging module has the unique address code. The address code must be strictly set based on the specification or the charging station cannot run normally. Under normal circumstance, the address code is set in advance.

3.1 Module Setting

Two modules can be seen by removing the 8 screws at the bottom of the charging station.

Set the left A gun to 80H and right B gun to 88H.

3.2 Module Guidance

Digital Tube Instruction：
a） Red, 3 digits
b） Content: Voltage, Current, Address, Version, Fault Code
c） Button number: 2
d） ▲: Up、▼: Down
e） Operation Method
i.Short click ▲ or ▼ on the display page to switch the page in sequence;
ii.Short click ▲ or ▼ on the setting page to increase or decrease the value of the setting;
iii.Long click about 2.5s ▲ or ▼ on the display page to enter setting page;
iv.Long click about 2.5s ▲ or ▼ on the setting page to save current setting and return to display page.

3.3Module Indicator Instruction

The LED lights in three colors are used to display the working status of the module. Corresponding status of the module shown as below:

Module Status.	LED Status	Description
Normal working.	Green on	Normal charging status
Standing by	Green flash	Ready to charge
Output Overvoltage Warning	No display	Output overvoltage warning of the module
Abnormal Communicatio	Yellow on	Module automatically shuts down and reports a communication fault when the communication between the module and the monitor is interrupted for 5 seconds
Output Under Current		The output voltage is lower than the set undervoltage warning value
Input Abnormal Shutdown		Input overvoltage, undervoltage, phase loss
Over Temperature		When the ambient temperature or heat sink temperature exceeds the set value, the module automatically shuts down. When the temperature drops, the module automatically restores to the standby state. Re-startup is required to get module resume work.
Output Over Current	Red on	Module shuts down for hardware protection

4.Operating Guidance

4.1 Indicator light Status

NO.	Indicator	Color	Description
1	POWER		On：working
2	CHARGE1(CCS-A)	Green	Flash：connected, ready to charge
			On：charging status
			Off：finished or disconnected，standing by
3	CHARGE2(CCS-B)	Green	Flash：connected, ready to charge
			On：charging status
			Off：finished or disconnected，standing by
4	FAULT	Red	On：warning or faulty

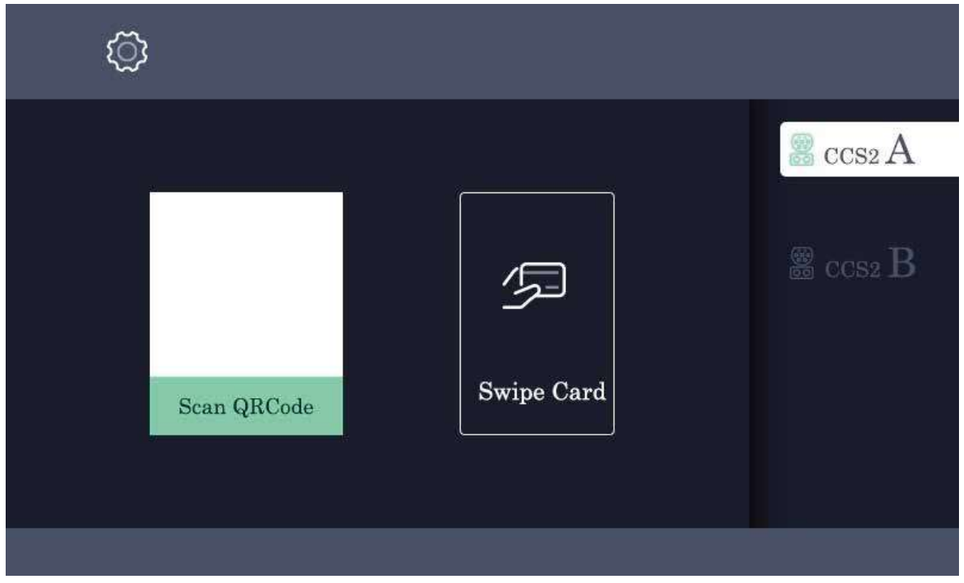
4.2 Operating Procedure

This specification shows parts of operation images for the users' reference to master the operating procedure of the charging station. Due to the upgrading of the products, there might be differences between the images and the physical products, if so, please refer to the physical products on site.

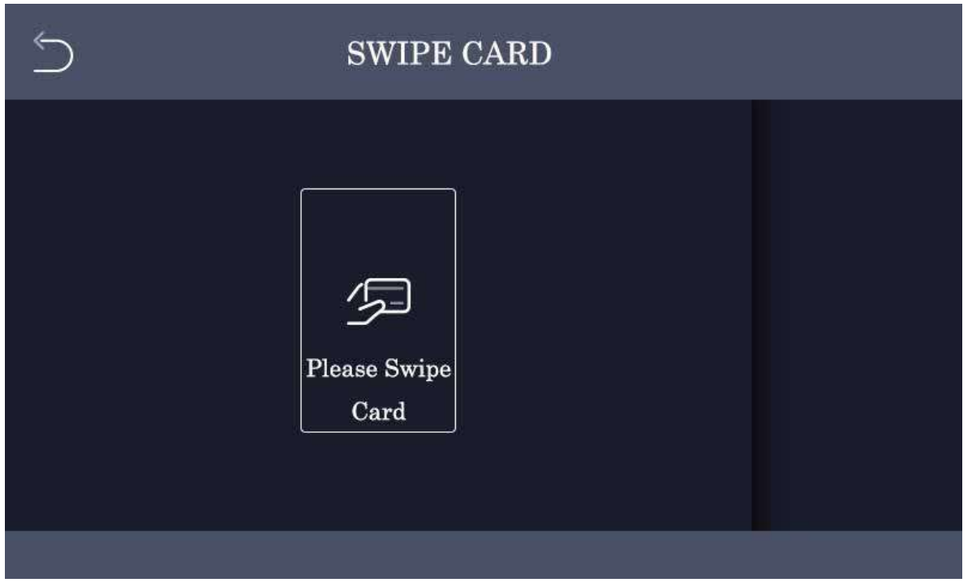
When the charging station is powered on, the stand by interface will be shown as below Image-1. If the fault light is off and no fault message is displayed on the screen, it indicates that the charging station is good and can work normally. When platform service is available, the terminal address of the charging station is not repeatable. Please do not modify the terminal address at will.

4.2.1Charging Operation Process

After connection is confirmed, the status indicator of the corresponding charging gun will flash. Click on swipe Card to enter the interface of selecting gun number, as shown in Image-2:



Choose the corresponding charging gun
Choose the corresponding charging method shown as below Image-3



When selecting the charging mode, the users can start charging by swiping the card. The default waiting time for card swiping is 6S. If the card swiping times is out, the whole swiping process needs to be restarted.

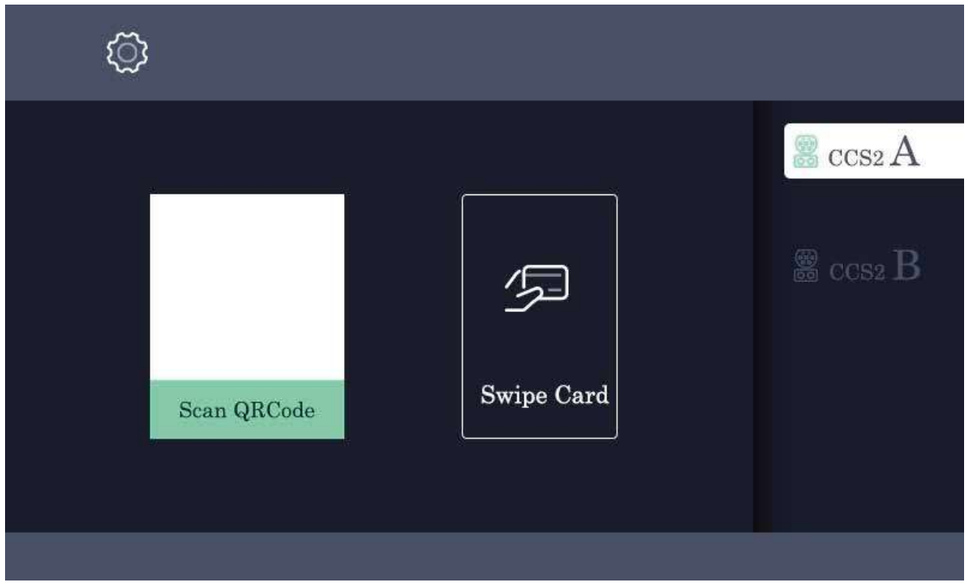
4.3 Information Checking

When charging, the charging information can be viewed by clicking the corresponding gun number, such as the voltage, current, temperature, capacity, required voltage, required current, etc of the vehicle. See below Image-4

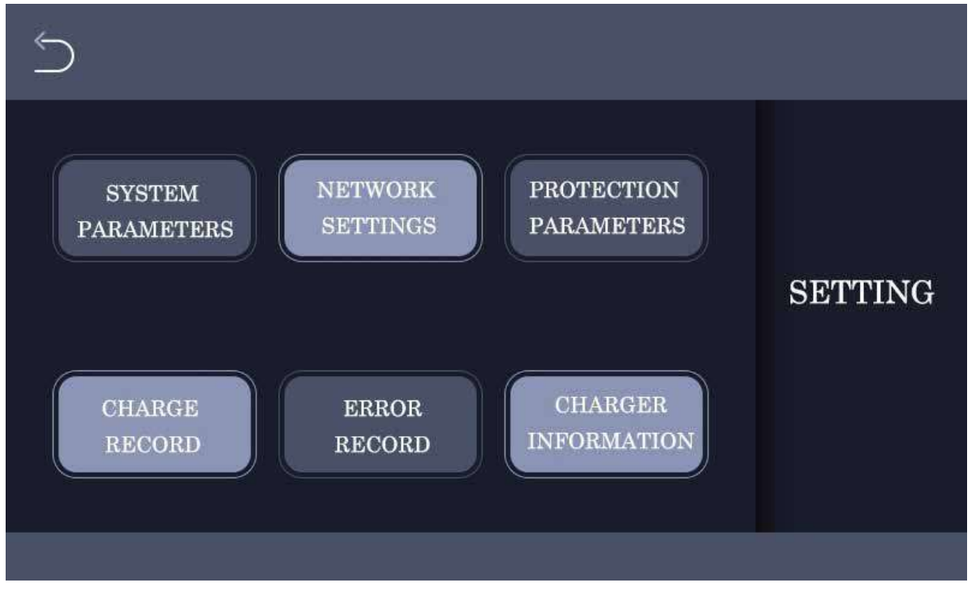
There are four main situations to end the charging process: when reaching the set value of the mode, when the charging station failing, when stopping charging manually, when stopping charging required by the vehicle.

5.Basic Parameter Setting

After the installation and wiring of the charging station is completed, the parameter should be set first according to the users' specific requirement. The parameter can be set through the LCD interface. The charging station can be used normally after the parameter is saved.

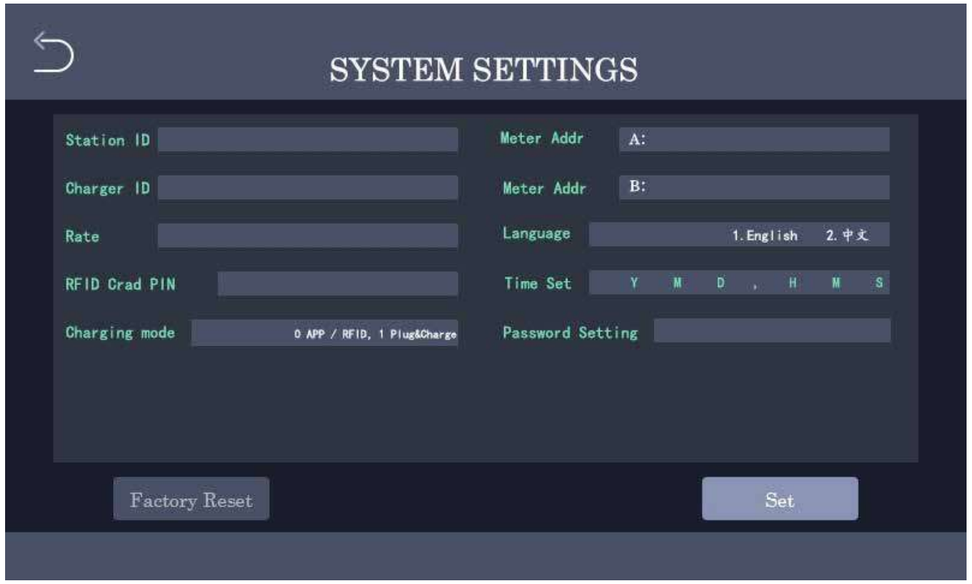


After the system starts and enters standby mode, click the button marked SYSTEM PARAMETER in the upper left corner to enter the system management page, as shown below.



System Menu Settings Interface

5.1System Parameter Setting Instruction



System Parameter Setting Interface

No.	LED Status	Description
1	Charger ID	Series number of the charging station can be set as charger ID number
2	Charging Station ID	Charging Station ID setting
3	Modules Powe	Modules Power setting
4	Plug and Charging	Charging mode setting. Option 1: Plug and Charging, no payment Mode； Option 2: APP/RFID prepaid charging mode
5	Meter Address	Meter address of charging gun DC output setting (Factory setting already done. Do not modify at will in case of any issue)
6	Language Setting	Currently available in English and Chinese
7	Time Setting	System Time Setting. Note: only the last two digits can be set for year. For example, enter 19 for year 2019
8	Password Setting	Password for system management page. The password contains four characters. The default password is 1234.

After the parameter setting is finished, click the Set button below the page to save and return to the exit setting interface. The setting is completed!

5.2Network Setting Instruction

When the charging station needs to connect to the background server through the network for unified operation and management, the network parameters need to be set. Network parameters are divided into two parts: server parameters and charging station network parameters. Currently, only Ethernet connection is available. WIFI/4G connection is targeted to be developed according to customer requirements.

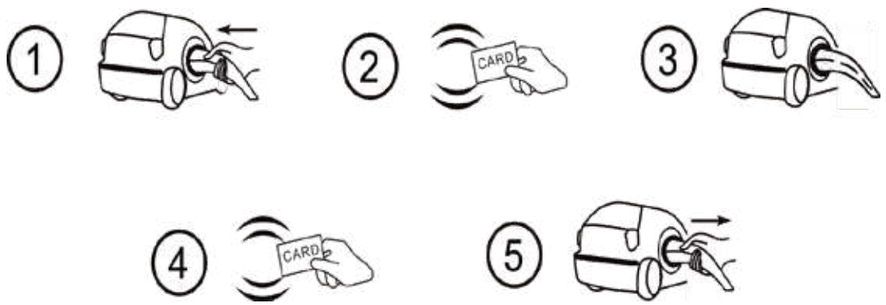
5.3 Protection Parameter Setting Instruction

It includes voltage, current, temperature, power, etc.

6.Charging Operating and LCD Interface Instruction

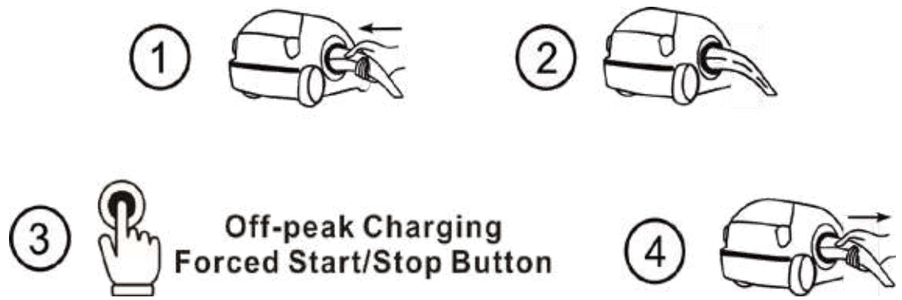
6.1Charging Mode and Method

APP/RFID Mode: support QR code scanning and RFID prepaid charging mode



APP/RFID Mode Operation Diagram

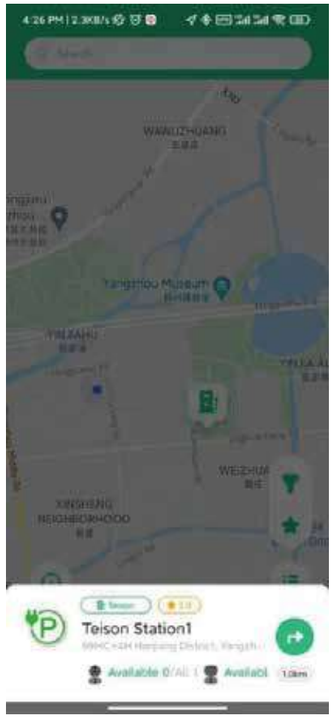
Plug&Charge: no billing mode

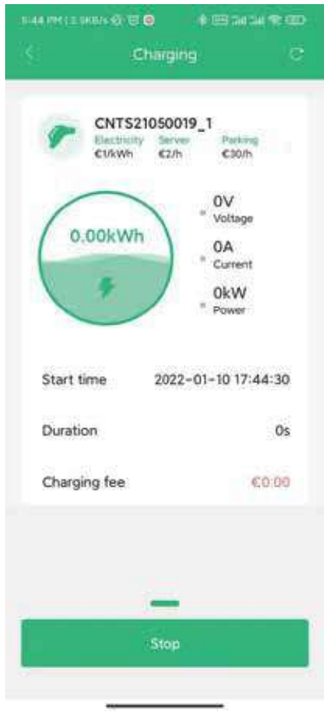


Plug&Charge模式充电操作流程图

Plug&Charge Mode Operation Diagram

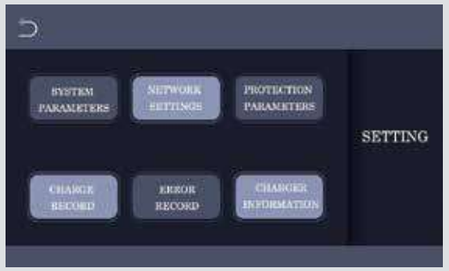
Teison APP operation diagram shown as below:

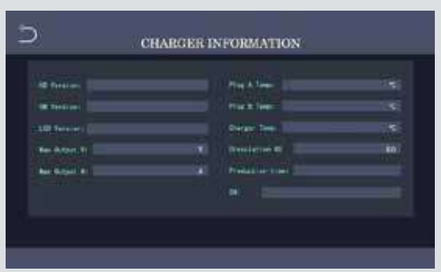




6.2LCD Interface Instruction

The charging station is equipped with 7” high-brightness industrial-grade resistive touch screen.

	The main page shown after the charging station is powered on
	Click the gear icon on the upper left corner of the main page to enter the management page. Need to enter password for viewing or modifying.
	Password input screen. Before entering the password, select the password character display box, and enter the password only after the cursor is displayed in the display box. The password is 4 digits. After entering the password, click Enter to confirm.
	System parameter setting interface

	Charging station and server network parameter setting interface
	Screen for setting HVDC output protection parameters.Voltage, current, power and temperature protection parameter setting
	System fault record list pag
	The charging record list page
	Sub-interface of charging station to view the current input, output and connection status of charging gun

6.3 List of Charging Station Fault Descriptions

No.	Definition Description
1	Emergency stop is pressed!
2	RFID communication fault!
3	Over temperature fault!
4	Lightning protection fault!
5	Power module communication fault!
6	Meter communication fault!
7	DC output overvoltage fault!
8	DC output overcurrent fault!
9	Waiting for BMS communication timeout!
10	Insulation detection timeout!
11	Insulation detection fault!
12	Battery voltage reverse fault!
13	DC+ Contactor sticking fault!
14	DC- Contactor sticking fault!
15	Plug line disconnection fault!
16	Plug head connection over temperature fault!
17	AC Contactor sticking fault!
18	AC Input Overvoltage!
19	AC Input Undervoltage!
20	BMS communication fault!

6.4Operation Precautions

● If fault message is displayed on the screen or the power light is off, please do not charge or stop charging, and contact the staff instead;
● When using the charging station, please operate according to the steps in this specification or the instruction of the charging station;
● When the charging station is working, the charging gun is prohibited to be pulled out in case of personal and property injury;
● Please pay attention to the strength when plugging in and plugging out the charging gun, do not plug in and plug out forcibly;
● In the event of an emergency, please press the emergency stop button, the charging station will stop charging immediately;
● During rainy and thunder day, please charge with caution or do not charge

7. Transportation

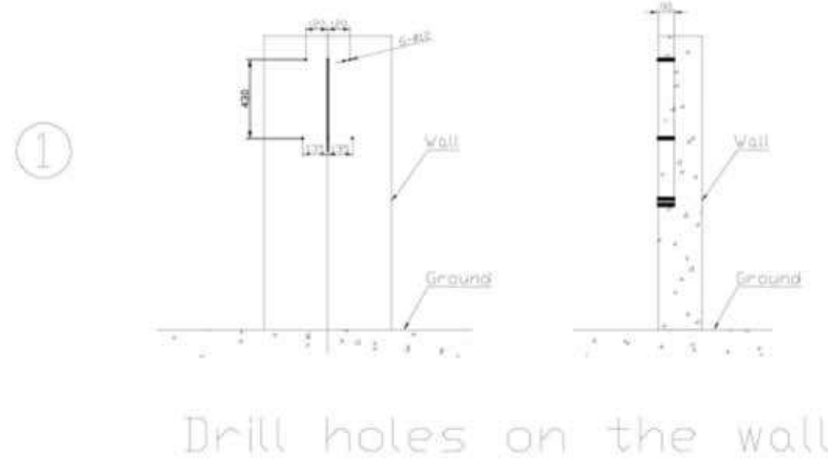
● In any case, please do not disassemble or refit the charging station without authorization, any failure caused by unauthorized disassembly is not covered by the warranty;
● Please do not transport in the case of damaged or unpacked package;
● Please operate according to the transportation precautions printed on the package;
● Please do not lay down the charging station during transportation;
● Please avoid huge bumps during transportation;
● Please take appropriate protective measures when transporting in inclement weather.

8.Installation

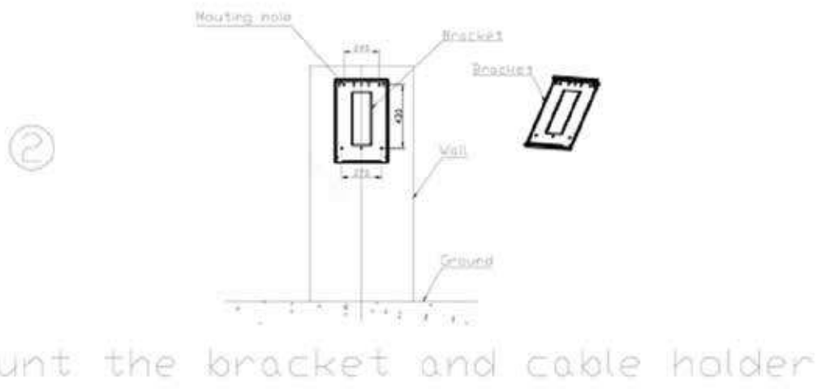
After receiving the charging station, please make a record of unpacking and check whether the materials and accessories are complete according to the installation list. If there is any discrepancy, please contact the supplier in time. After unpacking, check whether the appearance of the charging station is damaged. If there is any problem, make a record and contact the supplier in time.

8.1Installation and Wiring Guidance

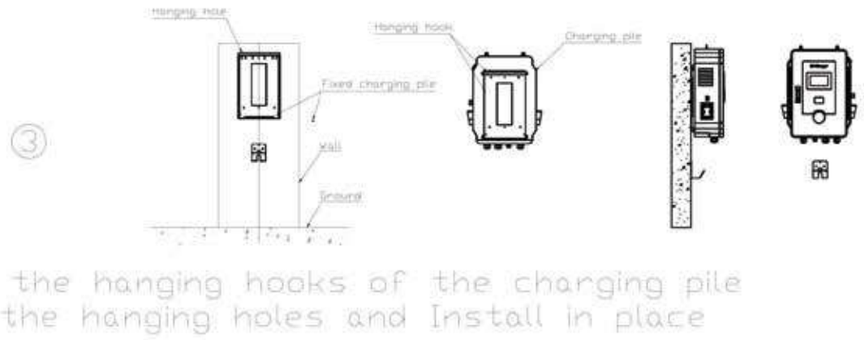
Firstly, please confirm the installation height of the charging station and gun cable holder. Then, according to the dimension shown as below drawing, drill 4 holes in the wall for mounting backplane (refer to the drawing for the hole pitch and hole diameter). Take out the anchoring attached on the packing list, screw the anchoring into the drilling hole with the nut part facing outward, and unscrew the nut washer for later use



Loosen the two screws fixing the backplane at the bottom of the charging station shell, then remove the backplane and put the screws away for later use. Align the screw holes of the backplane to the position where the anchoring holes drilled in the wall, and then screw the nut washer.



After the installation of the backplane is completed, hung the charging station on the backplane. Insert the bending part of the backplane top into the slot on the back of the shell, then tighten the screws on the bottom of the shell.



After the charging station is installed and fixed, prepare 4 power wires which is more than 16mm² in diameter and 1 ground wire. It is recommended to directly use a 5-core cable with PE wire which is more than 6mm² and crimp with OT terminal in diameter of M6 screw hole.

Open the lock on the left side of the charging station to open the door. Penetrate into the charging station from the waterproof connector of the AC power inlet cable on the lower left side, and connect and lock the power wire and ground wire (refer to the wiring sequence of the terminal block).

After the wiring is completed, cover the insulating cover on the AC input terminal. Penetrate the network cable from the communication cable waterproof connector at the bottom, insert it into the network cable socket, tighten the waterproof connector cover, check the wiring and the status of

each switch, and then close the total leakage protection switch upward. Finally, close the door and lock. The installation and wiring of the charging station is completed.

8.2Installation Condition and Guidance

The integrated DC charging station is a high-power electrical product. In order to ensure the normal operation of the equipment, please comply with the following requirements before installation:

- The installation position of should be smooth and hard, to ensure that the ground level will be not shaking, and can fully bear the weight of the machine, such as cement base;
- The installation position should be far away from low-lying terrain, to avoid waterlogging;
- Keep at least 1m space at the front, left and right side of the charging station for ventilation, heat dissipation, and future maintenance;
- The vertical tilt of the charging station must be less than 5%;
- After the product is placed in the installation position, it should be fixed and locked with screws to prevent shaking;
- The installation position should be kept away from long time direct sunlight, to ensure the normal use and display of the indicators and screen;
- Wiring needs to be done by professional staff according to the label;
- The terminal of the charging station shall be well connected to ground!
- When overhauling the charging station, please disconnect the distribution box and the general leakage switch inside the charging station. It's prohibited to overhaul with power on!
- Non-professional staff is prohibited to disassemble the charging station!

9.Electrical Connections

To ensure the safety of personnel and charging station during electrical connection, please confirm:

- Only qualified electrical installers are allowed to make electrical connections;
- If any cable is damaged or exposed, stop using it immediately;
- Make sure that no foreign matter is left in the charging socket of the vehicle;
- Make sure that the charging gun is kept dry. If there is water, power off and clean up immediately;
- Make sure that the AC input line is with no power-on before connection, and there will be no accidental power-on during the connection process;
- Refer to the product specification for required input voltage and current parameters;
- After wiring, block the cable inlet hole with fireproof mud to prevent water vapor and small animals from entering

9.1Installation

- Only professional personnel are allowed to operate;
- Special tools shall be used for crimping terminals, and the wiring screws shall be tightened, and the torque shall meet the requirements.
- The copper cables must comply with relevant national standards, and the cables on the same side must be with the same specifications and models. If the distance is too long or the ambient temperature is too high or too low, consult professional personnel and select cables with caution;
- Please refer to the corresponding marking in the wiring area for cable connection.

9.1.1Input Connection

The connection port of the charging station is marked with A、B、C、N. Please strictly refer to the marking before wiring, pay attention to the torque of tightening and length of the screws to meet the electrical safety distance specifications.

AC Phase A Input Line	A
AC Phase B Input Line	B
AC Phase C Input Line	C
AC Phase N Input Line	N

9.2Grounding connection

Connect the grounding cable according to the label on the grounding copper bar of the charging station. The impedance of the grounding copper bar to the ground shall not exceed 4 ohms. To ensure the safety of person and the charging station, ground cables must be connected properly.

The Grounding Copper Ba	PE

10.Maintenance and After-sales Service

Due to the influence of ambient temperature, humidity, dust and vibration, the components inside the charging station will be aging and wearing out, which will lead to the potential fault of the charging . Therefore, it is necessary to carry out daily and regular maintenance of the charging station to ensure its normal operation and service life.

危险 Danger

- Only professional electricians or qualified personnel are allowed to operate;
- When maintaining or repairing the charging station, cut off the power supply of the incoming line and check components with high voltage and temperature to ensure safety before any operation;
- During equipment maintenance, take necessary protective measures to prevent the equipment from being powered on by mistake. Attach conspicuous maintenance labels and take isolation and protective measures for live parts
- Do not leave screws, washers and other metal parts in the charging station and take a comprehensive inspection after the maintenance.

10.1 Fault Handling

危险 Danger

Note: common faults include user operations and device faults
Only professional electricians or qualified personnel are allowed to operate

	Issue	Reason	Handling Method
User Operations	No responding after plugging in the charging gun	The charging gun didn't fit properly	Re-plug in
		Vehicle ACC on or off (depending on the model of the vehicle)	Turn off or on vehicle ACC
		Device fault	Contact charging station supplier
	Low charging current	Large SOC of the vehicle	Normal
		Battery in self-protection state under low temperature	Warm up for a while to restore the current
	Emergency stop button pressed	Pressed by mistake	Release the button

	No responding after swiping the card	Not aligned to the card swiping area	Aligning to the card swiping area
		Far away from the card swiping area	Get closer
		Device fault	Contact charging station supplier
	Abnormal charging startup	BMS voltage setting error	Re-set according to the vehicle model
		Abnormity of vehicle battery voltage	Contact vehicle supplier
		Device fault	Contact charging station supplier
Device Faults	Background communication failure	Network fault or bad signal	Check network
		Insufficient traffic or network payment overdue	Recharge
	Input over/under voltage Output over current	Grid fault	Check the grid
		Parameter setting erro	Check the parameter setting
	Charging module fault	Loose of charging module or cable	Re-connect the module or cable
		Charging module damage	Replace charging module
	Fan not working	The temperature did not reach the set point	Check if temperature sensor working normally

10.2 Quality Guarantee

Warranty Period

Standard warranty period of this product is one year. If specific warranty period is stipulated on contact otherwise, please refer to contract.
When warranty service is required during the warranty period, please contact Teison Energy Technology Co.,Ltd. with invoice shown. At the same time, the nameplate identification on the product should be clearly visible, otherwise Teison Energy Technology Co.,Ltd. reserves the right not to carry out warranty service.

Warranty Condition

During the warranty period, Teison Energy Technology Co.,Ltd. will repair or replace the faulty products free of charge, and the replaced faulty machines shall be owned by Teison Energy Technology Co.,Ltd. Please reserve certain time for Teison Energy Technology Co.,Ltd. to repair the faulty machines.

Liability Waiver

Under the following circumstances, Teison Energy Technology Co.,Ltd. reserves the right not to carry out warranty service.

✧Products with no logo of Teison Energy Technology Co.,Ltd.
✧The warranty period of products or components expired
✧Fault or damage caused by incorrect installation,incorrect storage,incorrect operation, or failure to comply with the requirements of the specification or the working environment specified by the product (such as excessive temperature, low temperature, excessive humidity or dryness, high altitude, unstable voltage or current, etc.)
✧Fault or damage caused by installation, repair, refit or disassembly by after-sales service personnel not from Teison Energy Technology Co.,Ltd., except for those entrusted by Teison Energy Technology Co.,Ltd.or in advance consulting with Teison Energy Technology Co.,Ltd.
✧Fault or damage caused by use of components not from Teison Energy Technology Co.,Ltd.
✧Fault or damage caused by transportation, accident or human reasons (operation error, scratch, carrying, knock, access to inappropriate voltage, etc.)
✧Fault or damage caused by natural disasters and other force majeure factors (earthquake, lightning strike, fire, etc.)
✧Other fault or damage not caused by quality issues of the charging station itself (including parts)

Responsibility Declaration

For more product information, please visit our official website:https://www.teison.com/, https://www.evs-cn.com/