Energy storage charging system

Products user's manual

Product model: DL-161KWh/120KW

Customer code:

Customer confirmation:

Date: November 15, 2023

Approve	Examine and verify	Quasi-determination

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Foreword

Thank you for using T-power "energy storage and charging system" products! We have been working hard to plan, in order to make you safer and more assured to use the lowest price and the best products! Because of your concern, our efforts should be verified by you!

This manual introduces the relevant information about the use of energy storage charging system, including functions and characteristics, performance indicators, external structure and operation mode. At the same time, it provides installation instructions, use and operation, maintenance management, transportation and storage.

Catalogue

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Chapter I Safety instructions

Safety precautions:

This chapter introduces safety signs and safety precautions. Please read this chapter carefully before any operation on this equipment, so as to avoid endangering personal safety or damaging the equipment due to unsafe operation.

1.1 Symbol description

The safety symbols quoted in this manual are shown in Figure 1.1-1. These symbols are used to remind users of the safety matters that should be observed when installing, operating and maintaining equipment.

Symbol and meanings	
Symbol	Instructions
	Be Safe!
	Danger ! High Voltage
	Alternating Current(AC)
	Direct Current(DC)
	Safty Grounding
	Recyclable
	Keep clean and do not place with debris

Figure 1.1-1 Safety Compliance and Its Meaning

1.2 Precautions

1. In the process of equipment installation, operation and maintenance, you must

abide by the relevant safety specifications and relevant operating procedures, otherwise personal safety and equipment damage may be endangered. The safety precautions mentioned in the manual are only used as a supplement to the local safety regulations.

2. Our company does not assume any responsibility for violating the general safety operation requirements or the safety standards for designing, producing and using equipment.

Precautions for use

1. Please read and keep this manual carefully.

2. Please pay attention to all warning signs on the energy storage charging system, and do not tear or damage the warning labels.
3. It is forbidden to immerse the energy storage charging system in seawater or water. When it is not used, it should be placed in a cool and dry environment.
4. It is forbidden to use and leave the energy storage charging system near hot and high temperature sources, such as fire and heater. Do not expose the energy storage charging system to fire, because the lithium battery may explode.
5. It is forbidden to knock, throw or trample on the energy storage charging system.

Note:

1. It is forbidden to use the energy storage charging system at high temperature

otherwise it may cause overheating, fire or functional failure of the energy storage charging system and shorten its service life.

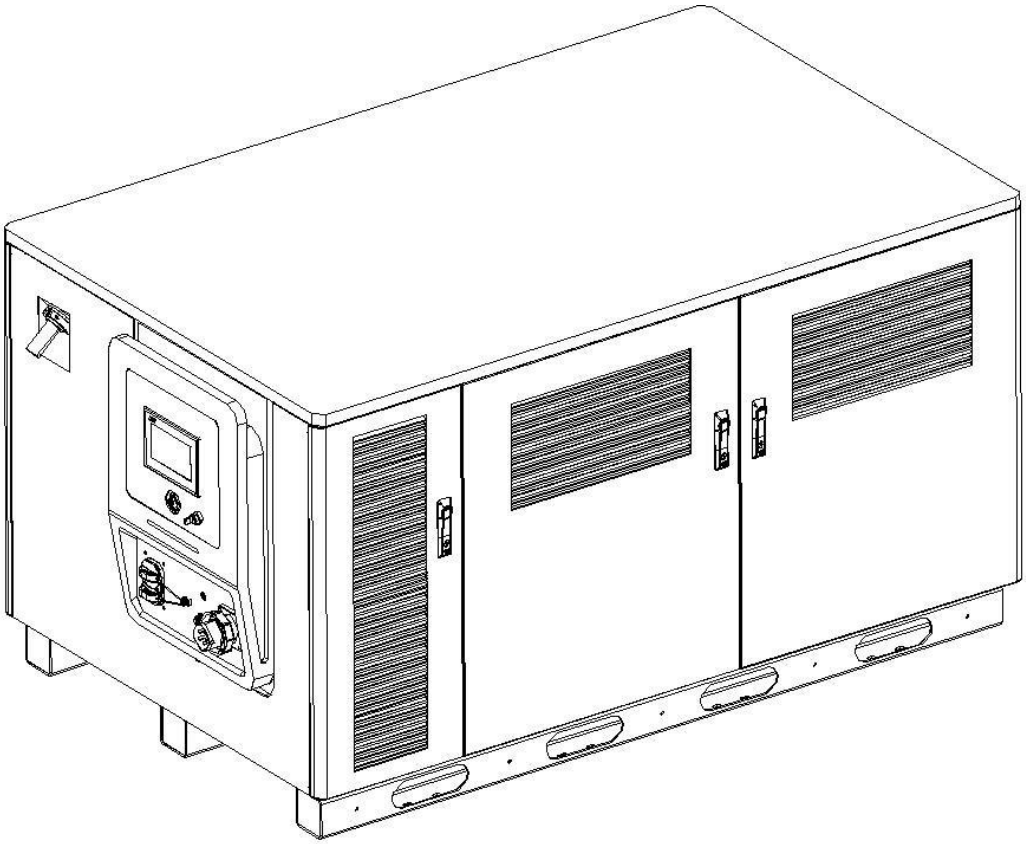
2. It is forbidden to use it in places with strong static electricity and strong magnetic field, otherwise it will easily destroy the safety protection device of the energy storage charging system and bring unsafe hidden dangers.
3. If the energy storage charging system is dirty, wipe it with a dry cloth before use, otherwise it may lead to poor contact and failure of the function.

Chapter II Product Introduction

2.1 Product overview

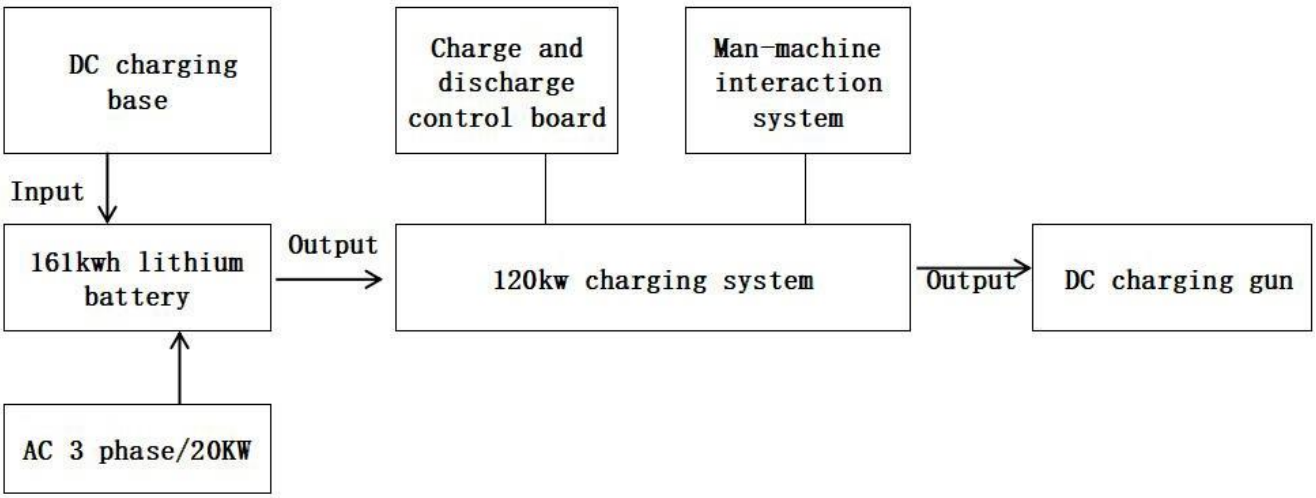
This series of energy storage charging system is an energy storage charging power supply equipment with high charging efficiency and large energy storage capacity, which is mainly used for emergency power supply and road rescue of new energy vehicles. It has a built-in 161KWh lithium iron phosphate battery and a 120KW charging module, with an output voltage of DC200~750V. It has the functions of automatic charging, quantitative charging, timed charging, status display, charging protection and so on.

2.2 Product appearance drawing



Schematic diagram of appearance of energy storage charging system

2.3 System Topology Diagram



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Chapter III Installation and Use

3.1 Package inspection

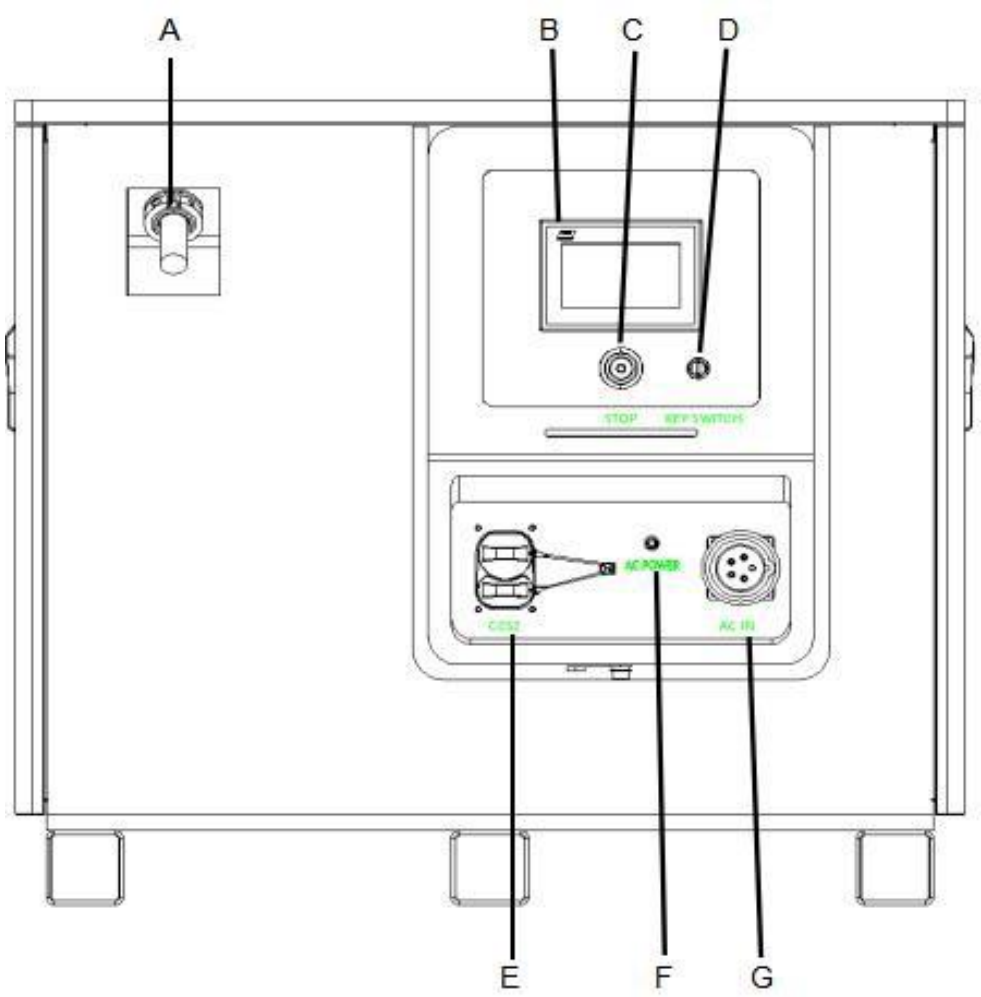
1. After unpacking, visually inspect the appearance of the energy storage charging system and check whether it is damaged by collision during transportation.
2. Check whether the attached accessories are complete against the list of delivery accessories.
3. Please contact the manufacturer immediately if you find transportation damage or missing accessories.

3.2 Installation precautions

1. The area where the energy storage charging system is placed should be well ventilated, away from dangerous goods such as water, combustible gas and corrosive agent, and the installation environment should meet the requirements of product specifications.
2. It is not advisable to put it on the side, squeeze it or trample it.

3. The energy storage charging system can be used in the environment of 0℃ ~55℃, and water droplets may condense or enter the water at low temperature or rainy day, so be sure to pay attention to waterproofing, otherwise there is a danger of battery short circuit.

3.3 Interface and Function Description

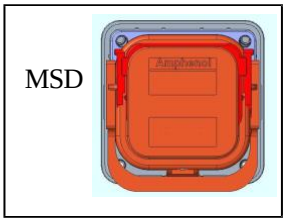


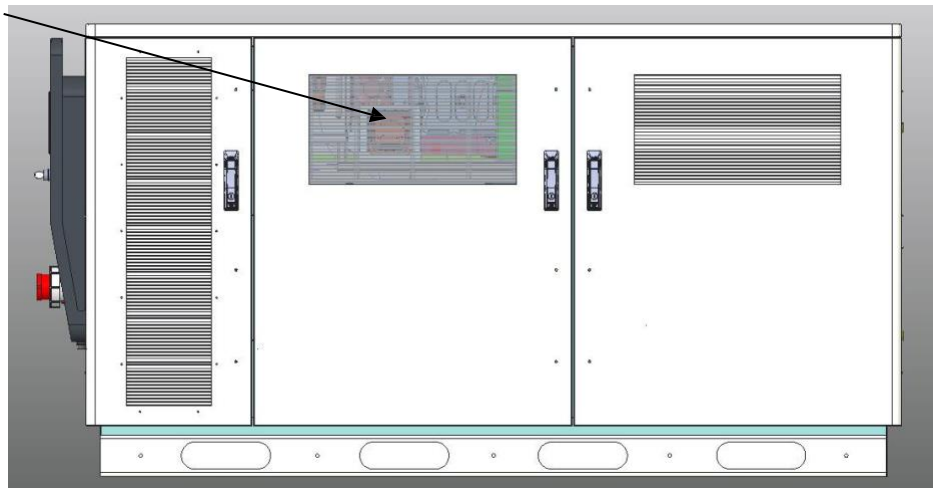
Energy storage battery system-front panel

No.	Silk-screen	Name	Function
A	CHARGING GUN	DC charging gun	DC charging gun, charging EV
B	/	Touch display screen	User touch operation interface
C	STOP	Emergency stop switch	Emergency stop button when the equipment is charging externally; Press it for emergency stop, and rotate it to the right for recovery.
D	KEY SWITCH	key switch	Start-up and key master switch of mobile energy storage charging system

E	CCS2	CCS2 DC charging base	Battery recharged by DC charging gun(CCS2)
F	AC POWER	AC start switch	Start the button, and the equipment will be recharged by AC.
G	AC-IN	AC Industrial plug	Battery recharged by AC 3 phase input

MSD





Energy storage battery system-left panel

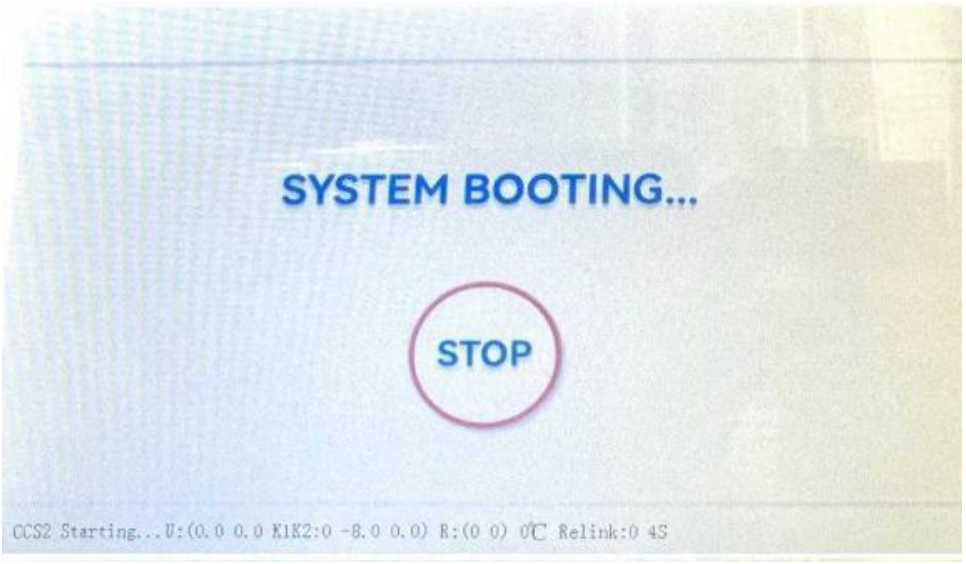
No.	Silk-screen	Name	Function
1	MSD	Manual maintenance switch	Disconnect MSD during maintenance.

3.4 LED screen interface and parameter Settings

3.4.1 In OCPP mode

A. The standby state of the storage and charging system, with the sign in the upper right corner and the bottom of the pile no. appears price and other words ,indicates that OCPP 1.6J is successfully connected to the background, and the display interface is shown in the following figure:

B. After the charging gun is connected to the electric vehicle, the user starts charging through the OCPP background/mobile APP, and waits until the system starts charging, as shown in the following figure:



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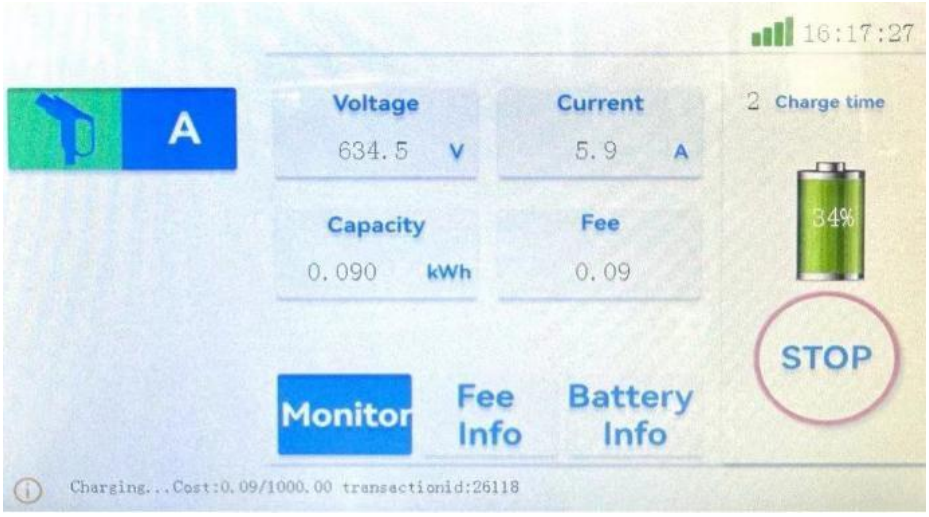
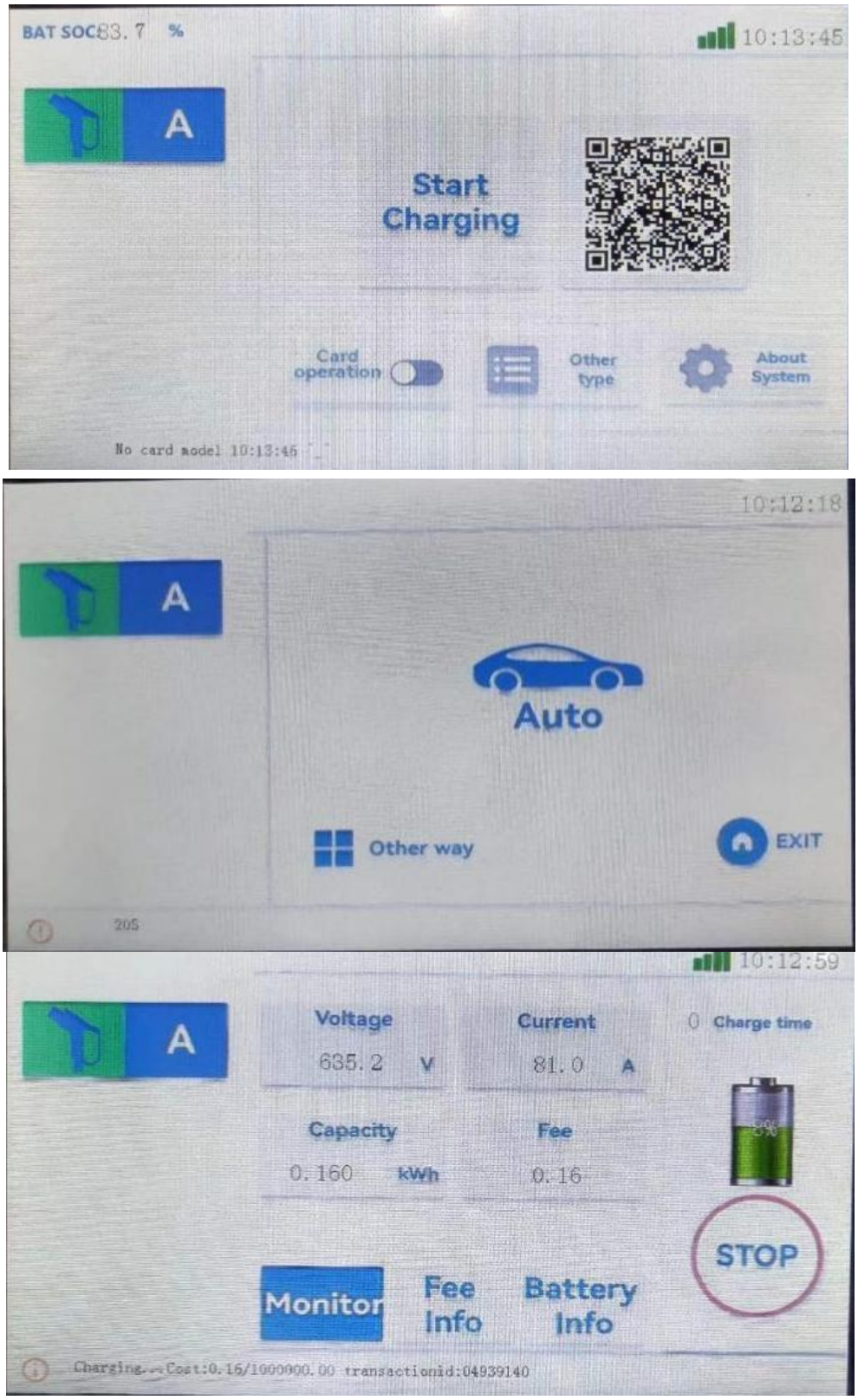
C. After the startup is successful, the display interface jumps to the charging information interface, as shown in the following figure:



D. The user stops charging through the OCPP background/mobile APP, and the charger automatically stops charging when the battery is full. At the end of charging, the interface is shown in the following figure:

Charging stop interface

3.4.2 In single machine mode:;Directly click on 'Start charging', click on 'Auto'



Charging information interface

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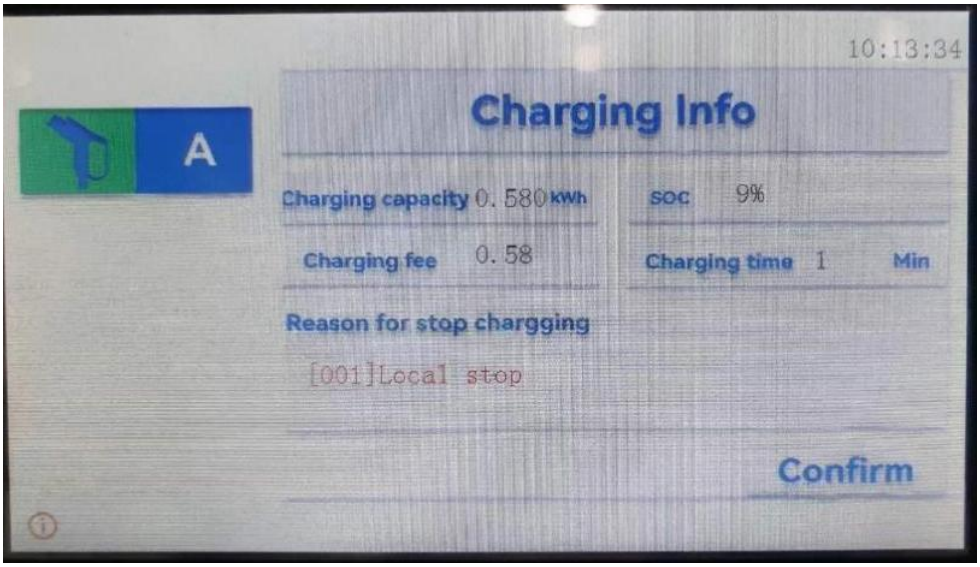
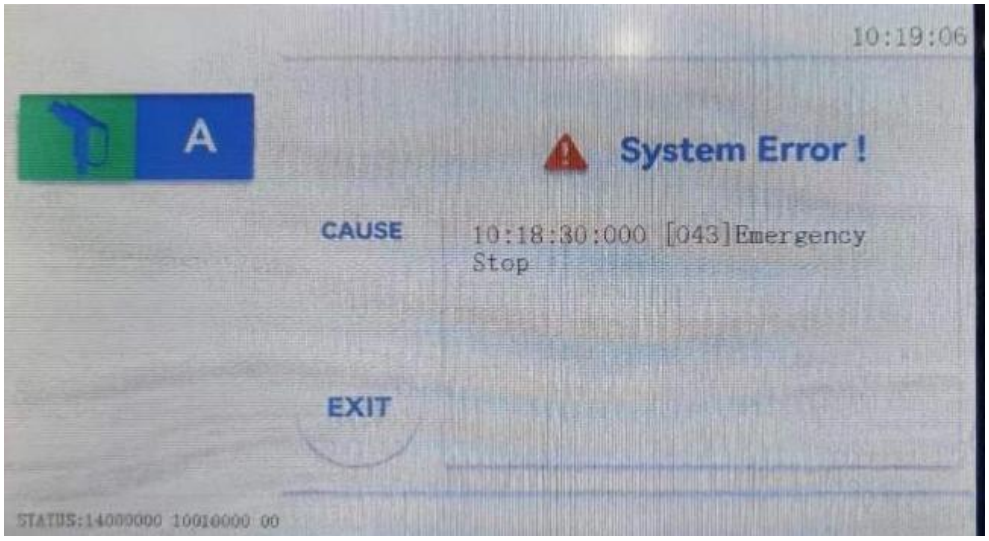


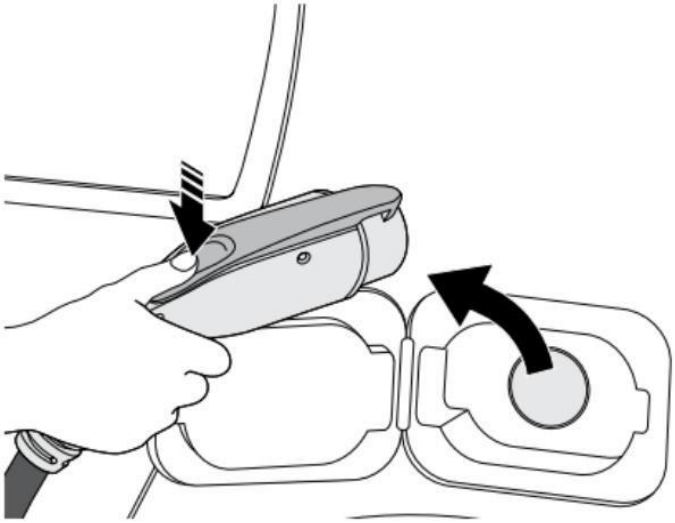
Charging settlement page

3.4.3, Emergency stop, press the emergency stop button, the display screen will prompt "System Error!', as shown in the following figure:



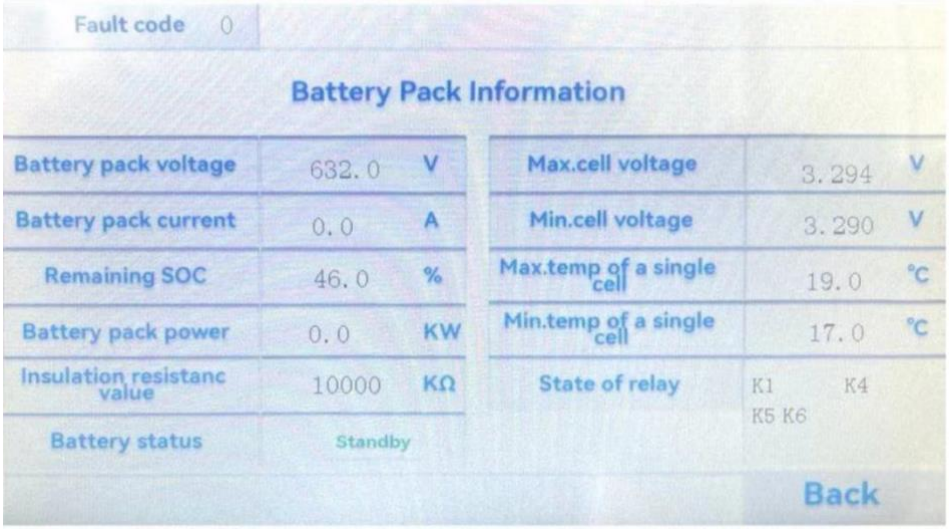
Alarm page

3.4.4, When the charging is finished, just pull out the charging gun. The vehicle side pulls out the gun as shown in the following figure:



Schematic diagram of gun drawing at vehicle end

3.5. **Battery Information** as shown in the following figure:Click SOC in the upper left corner to enter this interface.



3.6 Parameter Settings in OCPP mode

A. Click "About System" in the main interface.

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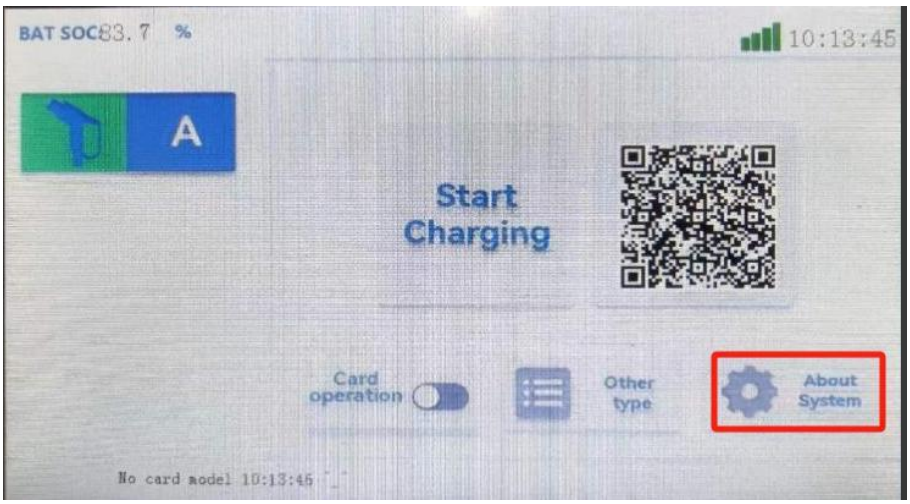
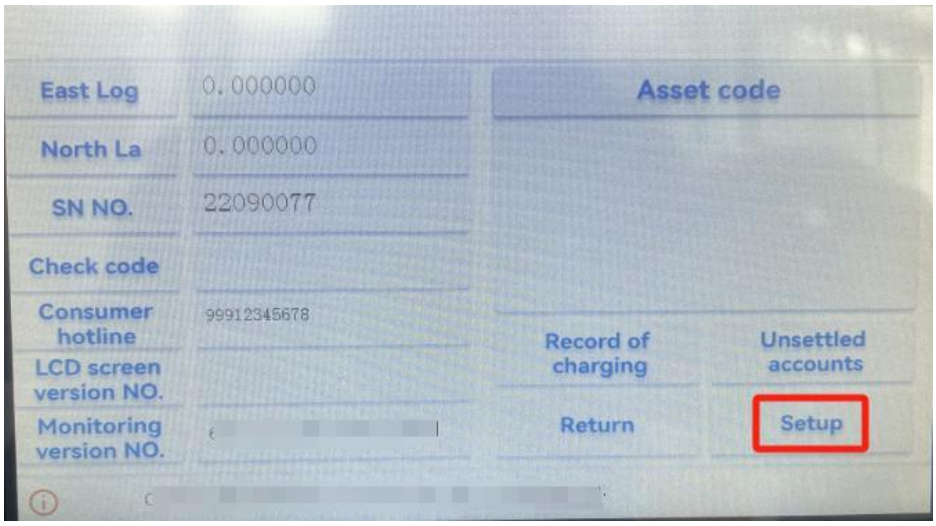
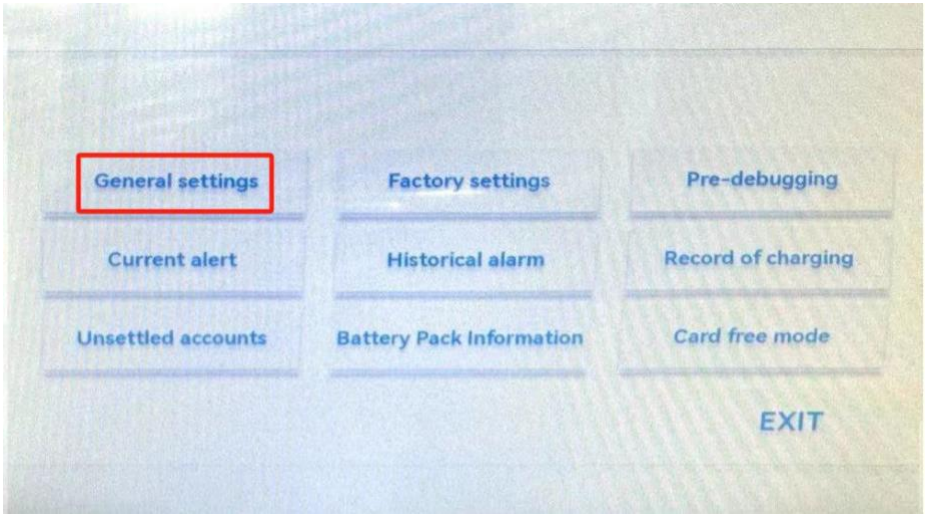


B. Click "Setup" and enter the password "1".and Click 'General settings'





C. Enter the 'URL' and' Pile NO'.

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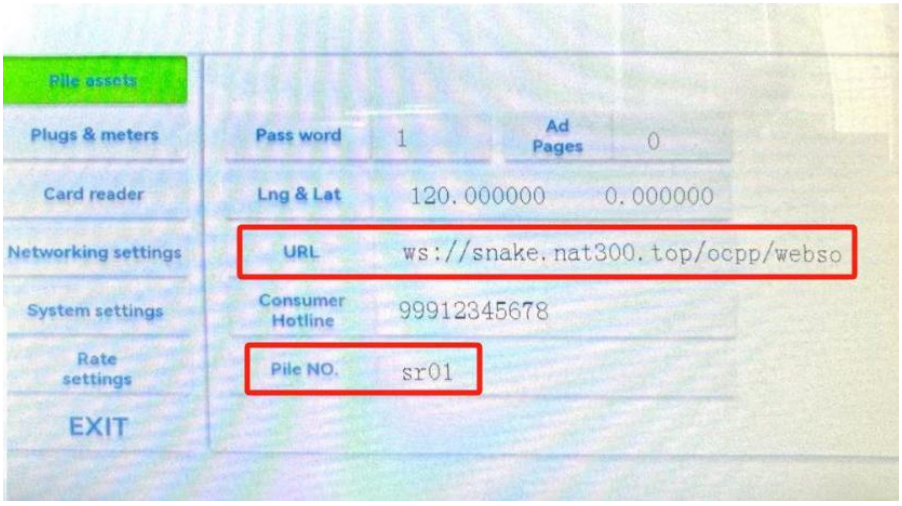
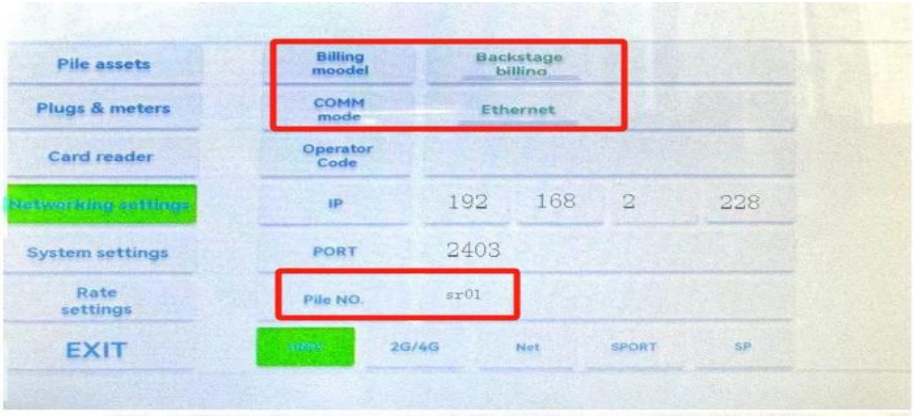
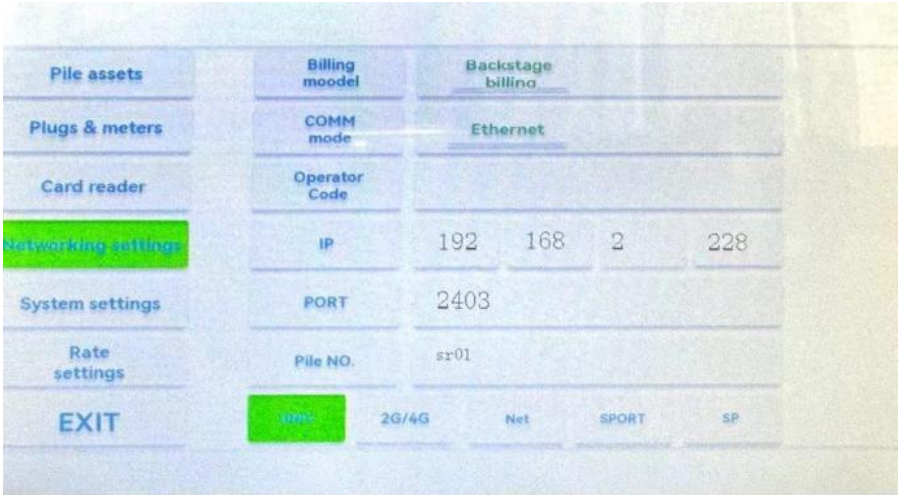
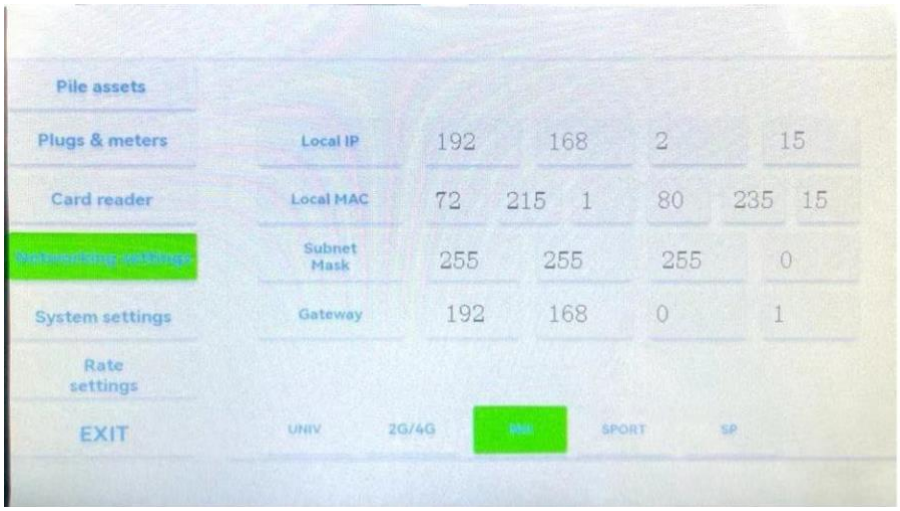


D. Select Billing model: 'Backstage billing', select COMM mode: Ethernet; The Pile NO. must be the same as in the pile assets



E. Then the rest of the parameters are default and remain unchanged





Chapter IV Maintenance

4.1 Routine maintenance

1. Operating environment temperature range: 0℃ ~ 55℃;

2. Avoid damp places that may be flooded;

3. The energy storage charging system stores it. If it has not been used for half a year, it is necessary to recharge the energy storage battery once.
4. Before use, it is necessary to check whether the output and input interfaces of the energy storage charging system are damaged, and it can only be used after everything is normal;

4.2 Maintenance of Energy Storage Charging System

1. Keep the appearance and working environment of the energy storage charging

system clean and dry.

2. It is forbidden to use banana oil, gasoline, alcohol and other organic solvents to scrub the energy storage charging system.
3. The environmental temperature of the energy storage charging system should be kept between 0℃ and 55℃ as far as possible.
4. If the energy storage charging system is not used for a long time, it is recommended to charge and discharge the energy storage battery once every three months.

Chapter V Product Specifications and Parameters

5.1 Electrical parameters

No.	Project	Parameter	Remarks
Single cell parameters			
1.	Battery type	Prismatic Lifepo4 battery	
2.	Rated voltage/capacity	102.4V105Ah	
3.	Voltage range	2.00V-3.65V	
4.	Energy density	≥140Wh/kg	
5.	Measure	1060*630*240mm	
6.	Working temperature	-30℃～60℃	
7.	Cycles	More than 3500 times (0.2C cycle, normal temperature, capacity retention rate: 80%)	

Energy storage battery parameters			
1.	Group model	512V315Ah	
2.	Total power	161.28KW	
3.	Recharging current	DC :0~200A	BMS system intelligently adjusts according to different SOC and different temperature of battery.
		AC: 0~32A	
4.	Discharging current	0~200A	
5.	Measure	2050*1230*1087mm	Length * width * height, excluding gun line and coil line dimensions.
6.	Weight	About 1500KG	

No.	Project	Parameter	Remarks
Basic parameters of charging system			
1.	Charging gun line length	7 meters	
Input characteristics of charging system			
1.	DC input voltage	200V-750VDC	
2.	DC input current	0~50A	Battery Recharged by DC charging gun
3.	Ac input voltage	AC380V	20KW/32A
Output characteristics of charging system			
1.	Output voltage adjustment range	200V-750VDC	Meet the charging requirements of passenger cars, buses and trucks.
2.	Output current adjustment range	0~250A	The system intelligently adjusts the output current according to the state of the energy storage battery.
3.	Efficiency	≥95%	
4.	Total output power	120KW	
Protection characteristics of charging system			
1.	Input undervoltage protection point	200VDC	
2.	Input overvoltage protection point	750VDC	

3.	Input overcurrent protection	Yes	
4.	Output overvoltage protection	Yes	
5.	Output overcurrent protection	Yes	
6.	Short circuit protection	Yes	
7.	Over-temperature alarm	50-60℃	
8.	Overtemperature protection	60℃	
9.	Charging gun overtemperature alarm	90℃	
10.	Over-temperature protection of charging gun	105℃	
11.	Emergency stop protection	Yes	
12.	Soft start time	5-10 seconds	
13.	man-machine interface	Yes	7.0 inches

5.2 Operating instructions

5.2.1 Switch on and off steps

A. DC discharge mode

- Turn on the power switch. At this time, the device starts self-testing, and the touch LED display screen lights up.
- After 20 to 30 seconds, the system starts, and Mobile charging storage system is in standby state.
- Then connect the DC charging gun with the EV.
- Click' Click Charging' and wait to start charging
- After starting the charging successfully, the cooling fan starts to operate and enter the charging state.

B. DC charging mode

- Turn on the power switch. At this time, the equipment starts self-testing, and the touch LED display screen lights up.
- Connect the charging gun of the external DC charging pile with the charging seat of the storage and charging equipment, and click the display screen of the external charging pile to charge;
- The communication between the mobile charging storage system and the external charging pile is OK, and the external charging pile begins to recharge the energy storage battery.

5.2.2 Shutdown steps

- The touch screen shows the end of charging (or manually click to stop charging).
- Pull out the DC charging gun.
- Turn off the power switch.