

CCS 2

Two-gun fast charger 80KW manual V1.0

T-POWER Pty Ltd.

Catalog

FOREWORD	4
SAFETY RESPONSIBILITY ACT	4
CHAPTER 1 PRODUCT INTRODUCTION	5
1.1 DESCRIPTION OF PRODUCTS	5
1.2 OUTWARD APPEARANCE INTRODUCE	6
1.3 DESCRIPTION OF MAIN PARAMETERS.....	6
1.4 PRODUCT FEATURES.....	7
1.5 REGULAR SERVICE CONGDITIONS.....	8
1.6 PRODUCT MIX.....	8
CHAPTER 2 OPERATING INSTRUCTIONS	9
2.1 PRODUCT INSTALLATION.....	9
<i>2.1.1 OUT of box audit</i>	9
<i>2.1.2 Installation ready</i>	9
<i>2.1.3 Cabinet installation</i>	10
2.2 SYSTEM WIRING	10
2.3 MODULE INSTALLATION	12
CHAPTER 3 INSTRUCTIONS FOR THE USE OF CHARGERS	14
3.1 POWER ON THE EQUIPMENT.....	14
3.2 SYSTEM SETUP AND NETWORKING	14
CHAPTER 4 COMMON FAILURES AND TREATMENT	20
CHAPTER 5 CHARGING MACHINE MAINTENANCE GUIDE	21
5.1 SPECIFIC ELECTRICAL PARAMETERS OF THE CHARGER	21

5.2 DAILY MAINTENANCE METHOD OF CHARGER	22
CHAPTER 6 LETTER OF GUARANTEE	23
6.1 LETTER OF COMMITMENT.....	23
6.2 WAY OF COMMITMENT	23
CHAPTER 7 AFTER-SALES SERVICE AND ORDERING GUIDANCE	23
7.1 AFTER SALES SERVICE	23
7.2 ORDERING INSTRUCTIONS	23

Foreword

Thank you for purchasing and using the company's development of chargers products, the company focuses on research and development and provision of new energy electric vehicle charging equipment and solutions, currently has AC chargers, DC chargers, charging operation and management software, such as a complete set of charging system product line, to meet the diverse needs of customers. We focus on the field of charging, adhere to technological innovation and cost control product management concept, the formation of a complete pre-sale, sale, after-sales service team, to ensure that project support, delivery and post-product maintenance at all stages of rapid response, in the industry has a good reputation.

Safety responsibility act

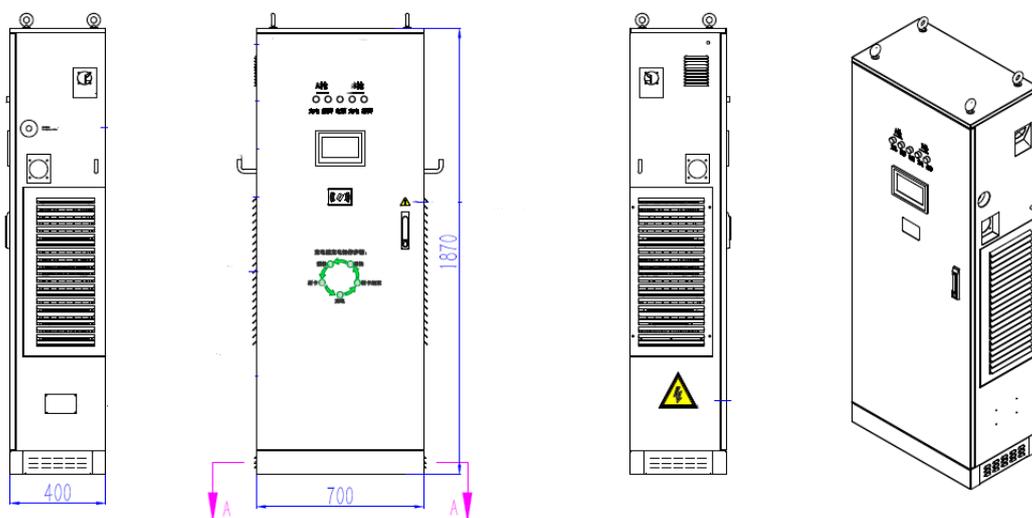
- 1) Do not place flammable, explosive or combustible materials, chemicals, combustible vapors and other dangerous items near the chargers;
 - 2) In case of rain and thunder, please charge carefully
 - 3) It is strictly forbidden to use the chargers in the case of defects, cracks, wear, breaks, exposed charging cables, etc. in the case of charging gun or charging cable, if found, please contact the staff in a timely manner;
 - 4) Please keep the charging gun head clean and dry, if there is dirt, please wipe with a clean dry cloth, do not touch the charging gun core with your hands when you are charged;
 - 5) Do not attempt to remove, repair, modify chargers, if there is repair, modification needs, please contact staff, improper operation may cause equipment damage, leakage, leakage and so on;
 - 6) In the process of use, if there is any abnormal situation, you can immediately press the emergency stop button, cut off all input and output power;
 - 7) During the charging process, the vehicle is prohibited from driving and can only be charged when stationary;
 - 8) Hybrid tram stalling before charging.
-

Chapter 1 Product Introduction

1.1 Description of products

This product is a 80-120kW with two gun chargers, mainly used in the European standard and daily standard electric vehicle charging. Products with charging protection, swipe charging, scanning, mobile payment, network monitoring, remote upgrade and other functions. This product adopts the principles of industrial design, easy to install, quick to deploy, and has the following innovative design:

- 1) The device's standby power consumption is low and the charging module is automatically powered when no car is charged.
- 2) The industry-leading resonant voltage-type dual-loop control of the resonant switching power supply technology and the three-phase three-electric average power factor correction technology.
- 3) The whole machine protection level IP54, with good dust, waterproof performance, can be safely operated and maintained outdoors.
- 4) The device strictly follows the modular design principle, with wired or wireless functions of the 10M/100M Ethernet and 3G/4G wireless router interfaces. The overall size is small, light weight, high efficiency, high reliability and other advantages.



This system is a double-gun structure, with A gun on the left and B gun on the right.

1.2 Outward appearance introduce



Front view of cabinet

1.3 Description of main parameters

detailed description	product standard	CCS combo 2
outward appearance	Product designation	Two-gun fast charger
	Material	Galvanized steel body, Acrylic Panel
	The equipment size	700*400* 1870 (L*W*H)
	installation	Floor type
	Installation of components	M12 expansion bolts *4
	Linear way	Next in line
	Equipment weight	220kg
	The length of the cable	5m
	display	Human-computer interaction with 7-inch LCD

electrical characteristic	The input voltage	380VAC±20% / L1, L2, L3, N, PE
	Input frequency	50Hz±10%
	The power factor	>0.99
	THD	<5%
	CCS2 output power	200-1000VDC±5%, (200A)
Environment target	Applicable scenario	Indoors/outdoors
	Working temperature	-30°C ~ +55°C
	Working humidity	5% ~ 95% no condensation
	Work at an altitude of	<2000m
	Protection grade	IP54
	Cooling way	The fan cooling
	Safety certification	CE certification
	MTBF	100,000hours
	Special protection	UV proof design
Safe devise	Over voltage protection, under voltage protection, over voltage protection, short circuit protection, leakage protection, earth protection, over temperature protection, low temperature protection, lightning protection,	
function devise	Ethernet/GPRS/4G communication, background monitoring, remote upgrade, mobile payment, mobile APP code scanning charging, card charging, LED indicator, LCD display	

1.4 Product features

- With modular design principles, communication modules can be plugged in and optional, and easy to maintain;
- Supports communication with remote management platform for remote monitoring and remote upgrades;
- Supports mobile phone scanning and swipe charging, can read the user IC card related information ;
- All-round protection, operation safety: overvoltage protection, undervoltage protection, overload protection, short circuit protection, leakage protection, ground protection, overtemperature protection,

low temperature protection, lightning protection, dumping protection, to ensure safe and reliable operation of equipment;

- Interface-friendly: 7-inch display with real-time display of device status, operating data (voltage, current, power, charge and time) and fault information

1.5 Regular service condition

- No more than 2000m above sea level
- The ambient air temperature is not higher than 70 degrees Celsius during operation of the equipment, not less than minus 20 degrees Celsius
- Daily average relative humidity is not greater than 95% monthly average relative humidity is not greater than 90%
- Installation site without strong vibration and shock, no strong electromagnetic interference, external magnetic field induction strength should not exceed 0.5mT
- Installation vertical tilt not exceeding 5%
- The use of the site must not have explosive dangerous media, the surrounding medium does not contain corrosive metal harmful gases and conductive media.
- AC input using three-phase five-wire system, voltage asymmetry of no more than 5%
- The AC input voltage should be sine wave and non-sine amount should not exceed 5%
- This equipment needs to pay attention to the operating temperature.

1.6 Product mix



Chapter 2 Operating Instructions

2.1 Product installation

2.1.1 OUT of box audit

After the chargers arrives, open the package and check the following items:

- Exterior inspection: Check whether the chargers is damaged by collision in transit, if there is damage, please notify the carrier immediately.
- Check that the random attachment model is complete and correct against the shipping packing list. If the attachment is found to be missing or the model does not match, you should do a good job of on-site records in a timely manner, and contact us immediately.

2.1.2 Installation ready

1) Installation tool

Tool Name	PIC	Role
Insulation Wrench		Fastening bolt
Dual Wrench		Fastening bolt
Hydraulic Clamp		Pressing OT Terminal
Diagonal Plier		Cutting Wire

2) Cable ready

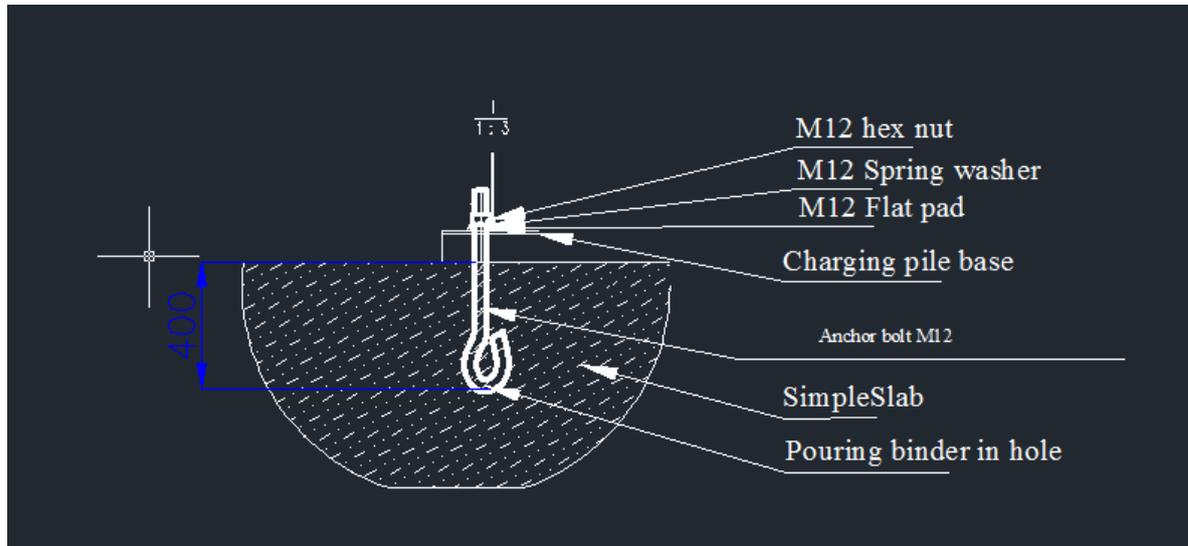
chargers power supply and communication (network version) recommended cable specifications as follows:

Cable name	Cable specification	length	remarks
power cable	YJV22 3*70+2*35	Depending on the length of the constructio	L1, L2, L3, N, PE
communicatio n line	Shielded network lines (super five)	Depending on the length of the constructio	Standard Crystal Head (RJ-45) , (direct connection)



2.1.3 Cabinet installation

The embedded parts are suggested as follows: (See installation drawing)



The customer needs to pre-reserve the mounting hole by the second size on the mounting table, the equipment is supplied at this size to the good hole, and then with 4 M12 expansion bolts fixed.

2.2 system wiring

- The system wiring is three-phase, five-wire system, the input line in accordance with the system wiring diagram to the input terminal and ground row, wiring to ensure that the power terminal circuit breaker and all circuit breakers in the cabinet in the open position.



Cabinet reserved inlet (for Power line and for LAN cable)



PE Copper Row

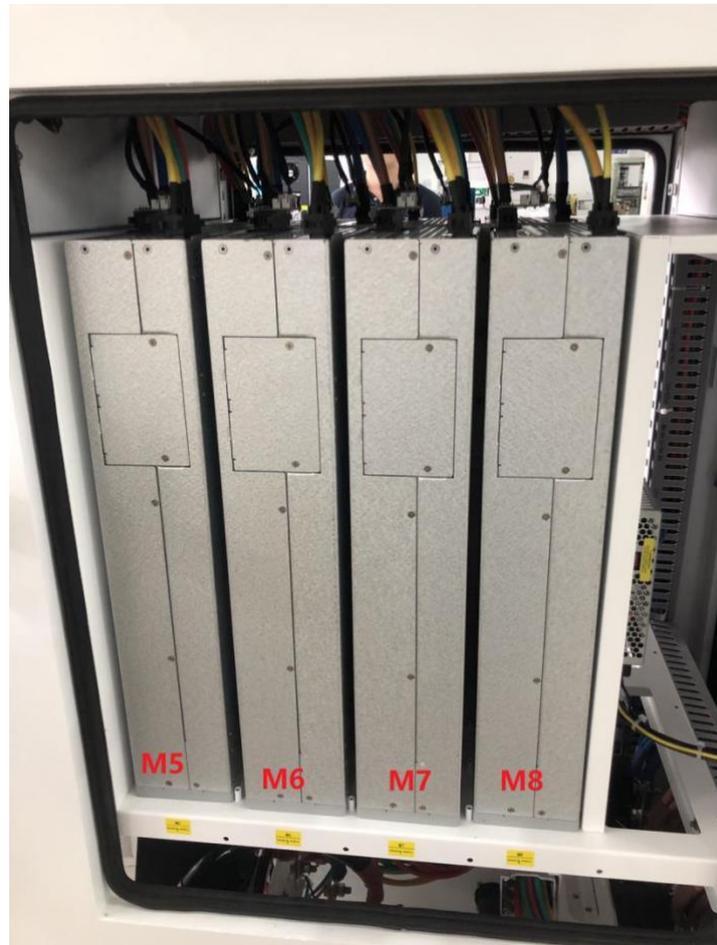
Zero-Wire Copper Row



AC inline switch (L1、L2、L3 In-line to AC plastic shell circuit breaker)

2.3 Module (charging module) installation

- After the input line is connected, open the module package, insert the module into the module box, and set the module address from top to bottom in order.



Module installation box

- Module setup instructions

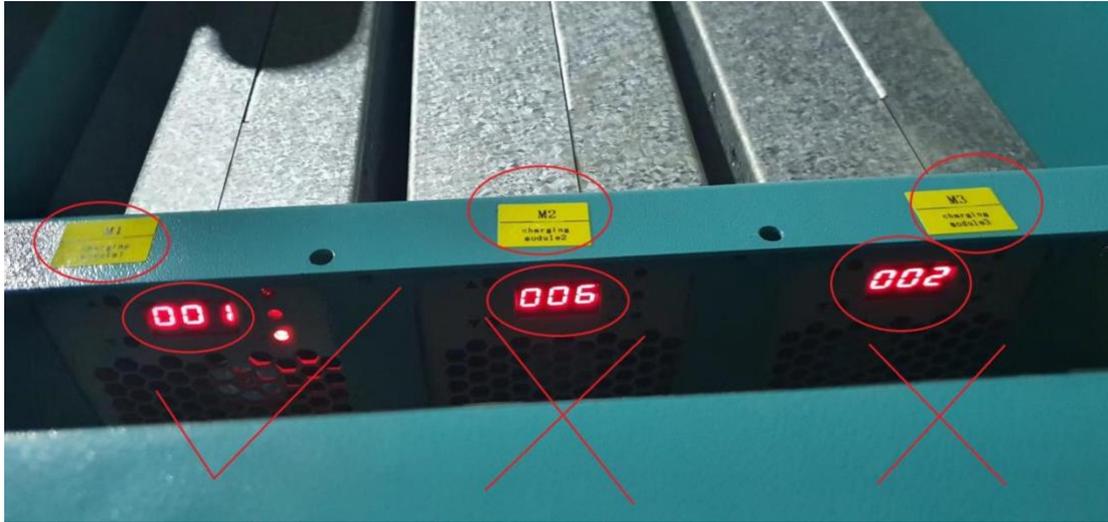
!!!ATTENTION PLEASE:

ID OF THE CHARGING MODULE MUST BE SET AND MUST BE IN THE SAME POSITION AS THE YELLOW LABEL.(M1 FOR № 1 MODULE.....)

FOR TH20F10025C7

- 1: the module is powered on in standby working state, and the module displays "000"**
- 2: Press the button "▽" on the panel, and wait for the digital tube of the module to display "001."**
- 3: When the module displays "001.", press the "▽" button for a long time until the digital tube flashes.**
- 4: Change the address of the module by adjusting the "△" and "▽" buttons.**

5: After adjusting the address, press the "▽" button for a long time and save it. Power off the module, and power on after the digital tube is not displayed.



6: The default charger is 80kW. If 6 modules are inserted, the PMS needs to be modified

➤ Module setup instructions

2. Description of module indicator light

The module uses three LED lights to display its own working status, and the LED lights corresponding to various states of the module are shown in the following table:

二、Module indicator description

Module Status	LED status	Status Description
Normal work	green light is always on	normal charging status
Standby status	Green light flashes	To be charged
Limit power	The yellow light is always on	When the module reaches the power limit condition, the module will automatically limit power
Abnormal communication		The monitoring communication between the module and the upper computer is interrupted for 5S, and then the module automatically shuts down and reports the communication failure
Outputover/under voltage		The output voltage is lower than the set undervoltage alarm value
Input abnormal shutdown		Input overvoltage, undervoltage, phase absence
Fan fault shutdown		Fan rotation resistance and failure



Module Status	LED status	Status Description
Over-temp shutdown		Automatic shutdown protection when the ambient temperature or the internal radiator temperature of the module exceeds the set value, and automatic recovery to the standby state after the temperature is lowered, and it is necessary to issue the power-on command again before starting to work.
Output overvoltage	red light is always on	Triggered hardware protection, locked

Chapter 3 Instructions for the Use of Chargers

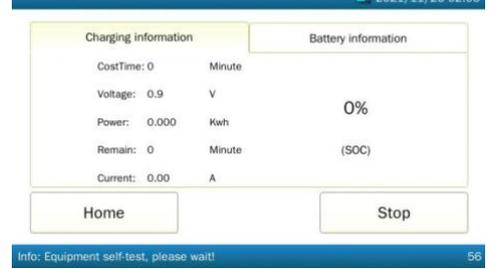
3.1 power on the equipment

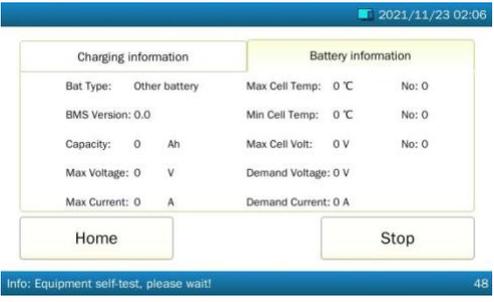
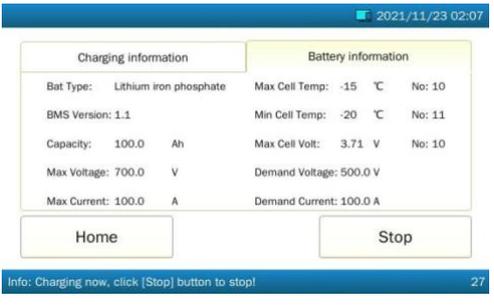
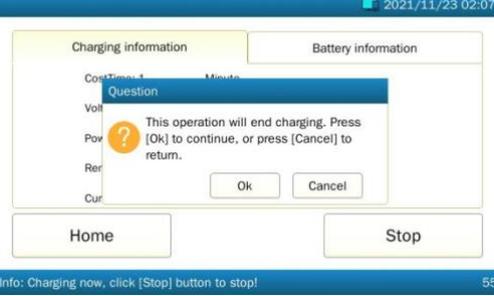
1. Confirm that the above inspection items meet the requirements;
2. After the circuit breaker of the upper distribution box is closed, open the front door of the charging post, close the leakage protection circuit breaker jk1 and the miniature circuit breakers QF1 and QF2;
3. Power on: there is about 1 minute post time, and the screen is on
4. After power on self inspection, observe the LED indicator status.
 - **Normal standby: yellow light is always on**
 - **Normal charging: the green light is on when the gun is connected, and the green light is breathing during charging**
 - **Equipment failure: the red light is always on**

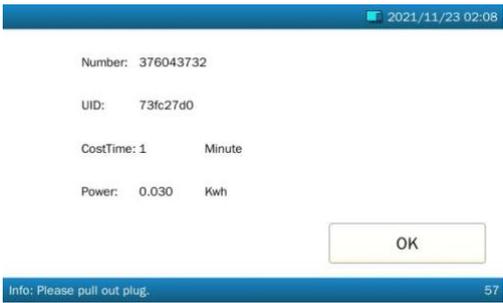
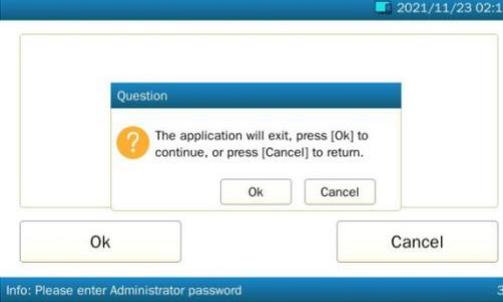
3.2 system setup and networking

Basic process of start-up charging: explain the basic process of start-up charging, and briefly introduce the pages involved in the process and some possible conditions in the operation process, so as to facilitate users to understand and master the charging operation, and simply solve the unexpected conditions. The specific operation process is as follows: after the charging electric vehicle owner stops the electric vehicle, take down the charging gun from the pile and insert it into the charging socket of the electric vehicle. Please ensure that it is inserted in place.

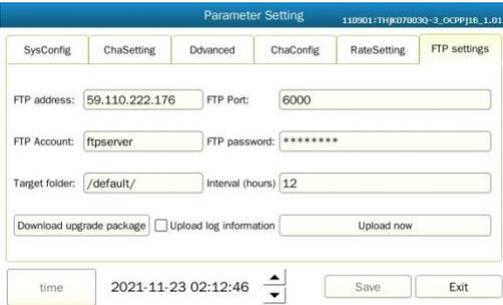
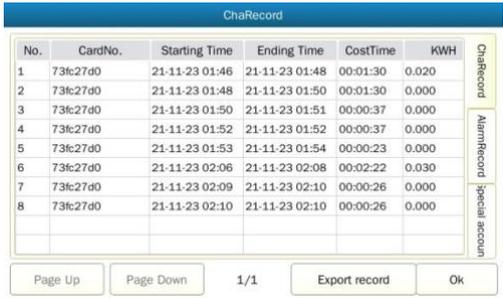
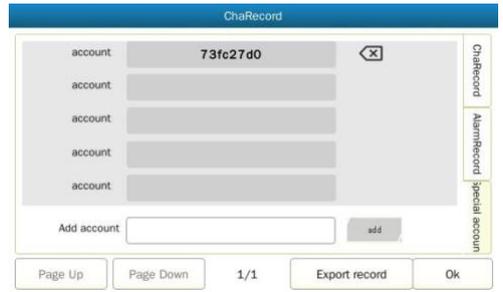
Payment method: 1 Card payment 2 The operation interface of code scanning payment (Note: connect to the background and use APP) is basically introduced as follows:

STEP	Page	instructions
1		<p>The interface is displayed when the charger is idle.</p>
2		<p>Swipe card interface</p>
3		<p>The swiped card interface, where you can see the card number information of the offset card. Click OK to go to the next step</p>
4		<p>Start charging preparation interface</p>

<p>5</p>		<p>Charging information display interface</p>
<p>6</p>		<p>On the charging interface, you can see various information related to the charging process.</p>
<p>7</p>		<p>In the BMS information interface during charging, you can query the relevant information of BMS</p>
<p>8</p>		<p>Home page display interface during charging</p>
<p>9</p>		<p>Manually stop the charging interface.</p>

10		Charging bill display interface
11		Bill home page display interface
12		Continuously click the upper left corner of the display screen to enter the setting page and enter the administrator password interface. The initial password is 84726890
13		Enter the administrator settings interface?
14		# 1 page of administrator setting interface

<p>15</p>		<p># 2 page of administrator setting interface</p>
<p>16</p>		<p># 3 page of administrator setting interface</p>
<p>17</p>		<p># 4 page of administrator setting interface</p> <p>When connecting to the OCPP background, you need to set the network IP address, gateway, stub number, and server IP address on this screen</p>
<p>18</p>		<p>The charging QR code is generated successfully, and the interface is displayed</p>
<p>19</p>		<p># 5 page of administrator setting interface</p>

<p>20</p>	 <p>Parameter Setting 110901:1111070830-3_OCH116_1.01</p> <p>SysConfig ChaSetting Ddvanced ChaConfig RateSetting FTP settings</p> <p>FTP address: 59.110.222.176 FTP Port: 6000</p> <p>FTP Account: ftpserver FTP password: *****</p> <p>Target folder: /default/ Interval (hours) 12</p> <p>Download upgrade package <input type="checkbox"/> Upload log information <input type="checkbox"/> Upload now</p> <p>time 2021-11-23 02:12:46 Save Exit</p>	<p># 5 page of administrator setting interface</p>																																																						
<p>21</p>	 <p>ChaRecord</p> <table border="1"> <thead> <tr> <th>No.</th> <th>CardNo.</th> <th>Starting Time</th> <th>Ending Time</th> <th>CostTime</th> <th>KWH</th> </tr> </thead> <tbody> <tr><td>1</td><td>73fe27d0</td><td>21-11-23 01:46</td><td>21-11-23 01:48</td><td>00:01:30</td><td>0.020</td></tr> <tr><td>2</td><td>73fe27d0</td><td>21-11-23 01:48</td><td>21-11-23 01:50</td><td>00:01:30</td><td>0.000</td></tr> <tr><td>3</td><td>73fe27d0</td><td>21-11-23 01:50</td><td>21-11-23 01:51</td><td>00:00:37</td><td>0.000</td></tr> <tr><td>4</td><td>73fe27d0</td><td>21-11-23 01:52</td><td>21-11-23 01:52</td><td>00:00:37</td><td>0.000</td></tr> <tr><td>5</td><td>73fe27d0</td><td>21-11-23 01:53</td><td>21-11-23 01:54</td><td>00:00:23</td><td>0.000</td></tr> <tr><td>6</td><td>73fe27d0</td><td>21-11-23 02:06</td><td>21-11-23 02:08</td><td>00:02:22</td><td>0.030</td></tr> <tr><td>7</td><td>73fe27d0</td><td>21-11-23 02:09</td><td>21-11-23 02:10</td><td>00:00:26</td><td>0.000</td></tr> <tr><td>8</td><td>73fe27d0</td><td>21-11-23 02:10</td><td>21-11-23 02:10</td><td>00:00:26</td><td>0.000</td></tr> </tbody> </table> <p>Page Up Page Down 1/1 Export record Ok</p>	No.	CardNo.	Starting Time	Ending Time	CostTime	KWH	1	73fe27d0	21-11-23 01:46	21-11-23 01:48	00:01:30	0.020	2	73fe27d0	21-11-23 01:48	21-11-23 01:50	00:01:30	0.000	3	73fe27d0	21-11-23 01:50	21-11-23 01:51	00:00:37	0.000	4	73fe27d0	21-11-23 01:52	21-11-23 01:52	00:00:37	0.000	5	73fe27d0	21-11-23 01:53	21-11-23 01:54	00:00:23	0.000	6	73fe27d0	21-11-23 02:06	21-11-23 02:08	00:02:22	0.030	7	73fe27d0	21-11-23 02:09	21-11-23 02:10	00:00:26	0.000	8	73fe27d0	21-11-23 02:10	21-11-23 02:10	00:00:26	0.000	<p>Charging information query interface</p>
No.	CardNo.	Starting Time	Ending Time	CostTime	KWH																																																			
1	73fe27d0	21-11-23 01:46	21-11-23 01:48	00:01:30	0.020																																																			
2	73fe27d0	21-11-23 01:48	21-11-23 01:50	00:01:30	0.000																																																			
3	73fe27d0	21-11-23 01:50	21-11-23 01:51	00:00:37	0.000																																																			
4	73fe27d0	21-11-23 01:52	21-11-23 01:52	00:00:37	0.000																																																			
5	73fe27d0	21-11-23 01:53	21-11-23 01:54	00:00:23	0.000																																																			
6	73fe27d0	21-11-23 02:06	21-11-23 02:08	00:02:22	0.030																																																			
7	73fe27d0	21-11-23 02:09	21-11-23 02:10	00:00:26	0.000																																																			
8	73fe27d0	21-11-23 02:10	21-11-23 02:10	00:00:26	0.000																																																			
<p>22</p>	 <p>ChaRecord</p> <p>account 73fe27d0</p> <p>account</p> <p>account</p> <p>account</p> <p>account</p> <p>Add account <input type="text"/> add</p> <p>Page Up Page Down 1/1 Export record Ok</p>	<p>Charging card query interface</p>																																																						

Chapter 4 Common Failures and Treatment

For all faults, pull out the gun after determining the shutdown	Alarm information is displayed	fault cause	solution
Charger Charging stop Instructions(system-err)	100machine halt	Charging gun 1 is connected incorrectly	Take gun and start again
	101machine halt	Charging gun 2 is connected incorrectly	Take gun and start again
	102machine halt	Module hardware fault	Check the charging module
	10Amachine halt	arrester is faulty	Check the arrester
	10Dmachine halt	Door switch open	Close the chargers door
	201machine halt	Battery connection error	The positive and negative phases of the gun are connected inversely or the battery voltage of the controller is connected inversely
	203machine halt	BMS communication error	Take gun and start again
	204machine halt	BMS charging preparation timeout error	Take gun and start again
	205machine halt	BMS forbids charging timeout error	Take gun and start again
	206machine halt	BMS charging parameters are not suitable for this charger	This chargers cannot be used because the maximum voltage and current allowed by BMS do not match the voltage and current of the controller
	207machine halt	BMS battery voltage is too high	The battery discharges first and then sees if it can be charged
	212machine halt	temperature of charging	Check whether the gun cable or

		gun is too high	socket connection is loose
	400machine halt	BMS sends the command to stop charging	If full, it is normal
	800machine halt	HMI sends the command to stop charging	normal
module failure	X module fault ErrY, X indicates which module is faulty, and Y indicates the fault number		
	X MK Com Failed	X module Communication failures	Check whether the communication cable of the module is virtual and whether the power supply of the module is normal
	X module Err1	The module input undervoltage	Check incoming cables
	X module Err2	The module input phase is missing	Check incoming cables
	X module Err4	Module input overvoltage	Check incoming cables
	X module Err8	module output overvoltage	The fault persists after the module is powered on again
	X module Err10	Module output overcurrent	The fault persists after the module is powered on again
	X module Err20	module temperature is too high.	Stop the module until the temperature of the module decreases
	X module Err40	Module fan is faulty	If the fault persists after the module is powered on again, replace the module
	X module Err80	Module hardware fault	If the fault persists after the module is powered on again, replace the module

*See the fault code list for details

Chapter 5 Charging Machine Maintenance Guide

5.1 specific electrical parameters of the charger

- AC input voltage: 380vac (+ 10%, - 15%) / L1, L2, L3, N, PE
- Power grid frequency: 50Hz ± 10%
- Output current level: ccs-200a \ GBT-250a (According to the charging gun output)
- Output voltage range: GBT/CCS:200V-1000VDC
- Stable voltage accuracy: ≤± 0.5%

- Current stabilizing accuracy: $\leq \pm 1\%$
- Harmonic current: the total harmonic of input current under load of more than 50% shall not exceed 10%
- Efficiency: (full load) $\geq 94\%$, (more than half load) $\geq 92\%$
- Power factor: ≥ 0.98
- Automatic current limiting feature: when the output current exceeds the set value of the output current limiting, the output current will not increase with constant current output
- Output short circuit protection: in case of output short circuit, the module will protect itself to prevent damage, and can automatically resume work after troubleshooting
- Output overvoltage protection: when the output voltage exceeds $v_{outmax}10\%$, the output will stop automatically to prevent equipment damage
- Start delay: 3s-8s
- Insulation resistance: ≥ 10
- Insulation strength: apply 3.5kVdc from output to ground, input to ground and input to output, without flashover for 1min.
- Relative humidity: $\leq 95\%$
- Protection level: $\geq IP54$

5.2 Daily maintenance method of charger

- The charging gun shall be put back after use and inserted into the gun seat in front of the cabinet to prevent rainwater from entering.
- The charger without background management system needs regular on-site maintenance.
- The dust-proof cotton shall be disassembled and cleaned after the system works for 2 weeks, and shall be installed and used after being dried. If the dust-proof cotton is not cleaned for a long time, it will cause air inlet difficulty, increase module load and easily cause module damage.

➤ Protection object	Job content (Once every 3 months)	Job content (Once a year)
Cleaning of cabinet (External and internal plates)	Check for dust and dirt	/
terminal	Check for dust and dirt	Check dust and dirt; Insulation and fastening
Connection cable	Check for dust and dirt	Check dust and dirt; Insulation and fastening
Air outlet filter	Check dust accumulation and replace the filter screen according to the operating condition of the equipment	/
Fastening components	/	Check for looseness
Equipment Function Check	/	Charging control functions include man-machine interface, electrical control,

Chapter 6 letter of guarantee

6.1 letter of commitment

After receiving the product, the product shall be carefully disassembled to ensure there is no damage and proper visual inspection. If there is any damage due to shipment or other quality problems, report to us in time. The user shall be responsible for the storage, installation and use of the product specified in this manual.

6.2 way of commitment

The manufacturer shall be responsible for replacement and repair free of charge during the warranty period. If the warranty period has expired, the user shall contact the manufacturer or the designated service center for replacement and repair, and the cost shall be appropriate.

Chapter 7 After-sales service and ordering guidance

7.1 after sales service

Thank you for purchasing our products to ensure your rights and enjoy complete after-sales service. During the warranty period, according to the storage, use, installation and operation rules, this product can repair its functional defects free of charge.

7.2 ordering instructions

The company's technical consultation can help users choose the right type according to their application conditions and technical requirements, Users are allowed to specify equipment parameters, such as input and output voltage range, maximum power and number of charging interfaces, etc. if users have special use environment and technical requirements for the equipment when ordering, consult our technical personnel, and any change to this manual is subject to no notice. If the product does not conform to this manual, please refer to the actual product.