



TYPE 2 AC EV CHARGER

USERS MANUAL

Edition : V1.1.0



About the manual

The manual is prepared for users of Floor-type DC Charging Piles.

Please read the manual carefully before installation, operation, maintenance or inspection of the product.

Technical service

If any problems found during the use of the charging pile, kindly please contact our technical service department as below:

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In order to protect and respect intellectual property rights, no companies or individuals shall provide information in this manual to the third party without any authorization.

To ensure the accuracy, the manual has been carefully reviewed. If any errors found while using, any comments will be welcomed.



If any conflicts found between the manual and new products, please refer to the extra specification attached.

Mindra Green energy LLP reserves the right to improve product technologies and interpret this manual. Product technologies and the manual are subject to changes without prior notice and relevant technical agreements shall prevail.

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Safety Instructions

Please pay special attention to all safety information in the manual. Personal injuries or casualties might be caused if precautions mentioned in the manual not be observed. Any personal injury or equipment damages due to customer's failure in following this manual shall not be responsible by the Company.

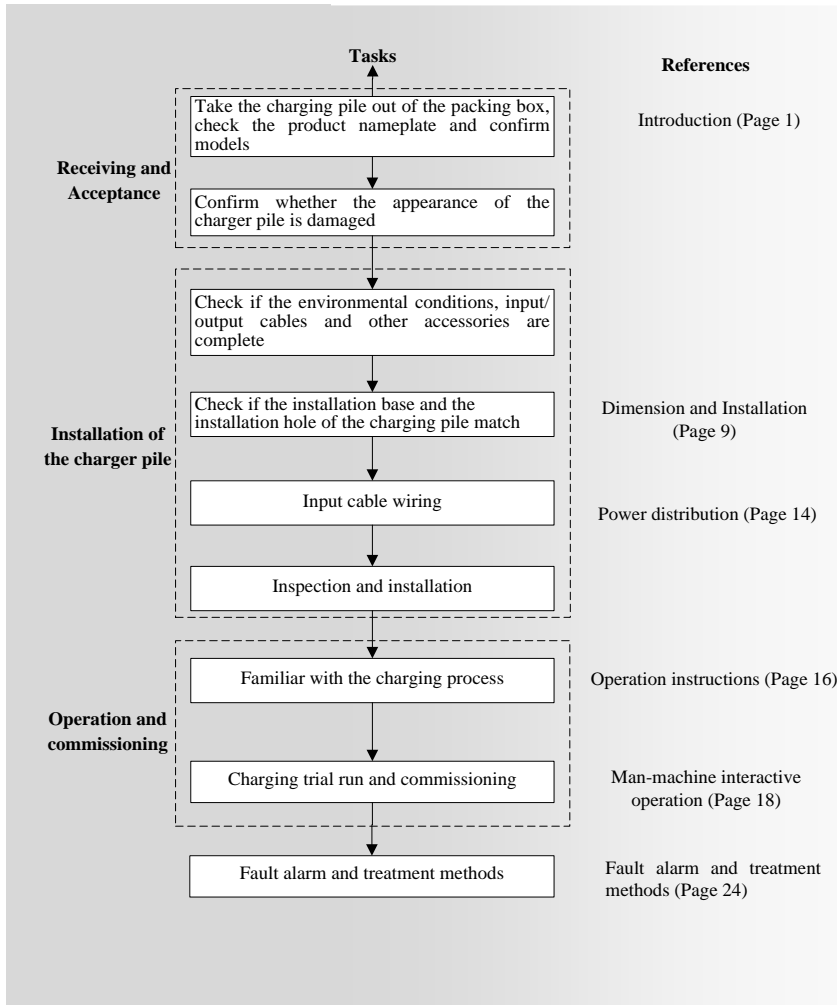
Warning   --- means potential dangers. If not avoid, personal injuries may be caused.

★ Safety Precautions

- Please observe the instructions when using the charger.
- Do not carry out wiring when power on.
- In case of abnormal situations, please stop using and contact the manufacturer.
- Please contact the manufacturer timely in case of abnormal situations during the operation. Maintenance carried out by other personnel except for professional technicians may cause further damage, injuries or accidents.
- Do not open the charger when the equipment is live or with residual voltage.
- Reliable earthing shall be well ensured, otherwise, degrading of insulation performance may cause leakage or electric shock.
- The charger installation and maintenance could only be operated by qualified electric engineers.
- Maintenance and inspection must not be carried out until discharge is confirmed complete after the main circuit is disconnected.
- Do not use the charger that has been found damaged or has faulty parts.
- The vehicle connector must not be placed randomly. The plug shall be inserted back to the protective socket after completion of charging.

Rapid Installation Guidance

Installation and Commission Flowchart





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1. Introduction

1.1 Product Introduction

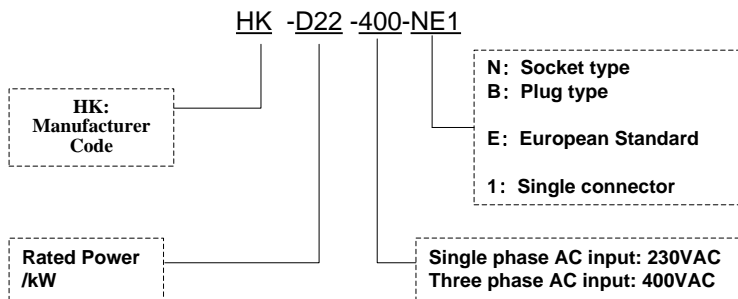
European standard type 2 wall-mounted AC charger is a new type of AC charging product developed by Wuhan Hiconics Intelligent Electric Co., LTD. This design takes expressing the sense of future as the starting point, the advanced technical modeling elements and exquisite material ensure the product a strong sense of The Times.

The design of this charger focuses on product safety performance. With all plastic molding appearance, insulation protection has greatly strengthened. With waterproof, dustproof and corrosion proof function and have environmental protection design with protection grade of IP 54. The product, with modular design concept, has integrate the vehicle connector, human-machine interface (HMI), charger, communication and billing parts together into one cabinet so that it can easily achieve convenient installation and debugging, simple operation and maintenance, etc.

Products could be applied on large-scale parking lots, residential areas, shopping malls, hospitals, transfer stations, airports, docks, parks and scenic spots, etc.



1.2 Product Model



Product model



2. Product Model Specification

Model	Output power	Input Voltage	Rated Output Current	Input Mode
HK-D07-230-NE1 (Socket)	7kW	230V \pm 20%	32A	Single Phase
HK-D07-230-BE1 (Plug)	7kW	230V \pm 20%	32A	L+N+PE
HK-D22-400-NE1 (Three phase 22KW socket)	22kW	400V \pm 20%	32A	Three phase
HK-D22-400-BE1 (Three phase 22KW plug)	22kW	400V \pm 20%	32A	3P+N+PE

3. Normative Reference and Specification

IEC 61851-1-2017	Electric vehicle conductive charging system - Part 1: General requirements
IEC 61851-23-2014	Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station
IEC 61851-24-2014	Electric vehicle conductive charging system - Part 24: Digital communication between a DC EV charging station and an electric vehicle for control of DC charging
IEC 61851-21-2-2018	Electric vehicle conductive charging system-Part 1-2: Requirements for conductive connection of AC/DC power supplies for electric vehicles-Onboard charging system EMC requirements
IEC 62196-1-2011	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 1: General requirements
IEC 62196-3-2014	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 3
IEC 60364-4-41 : 2005	Low-voltage electrical equipment - Part 4-41: Safety protection: protection against electric shocks
IEC 60990 : 1999	Measurement of contact current and protective conductor current\
IEC 61439-1 : 2011	Low-voltage switchgear and control gear assemblies - Part 1: General rules



IEC 60664-1 : 2007	Equipment and control equipment components in low-voltage systems - Part 1: General rules
DIN SPEC70121 : 2014	Electric vehicle-DC charging system and electric vehicle control system combined charging system charging digital communication
DIN SPEC70122 : 2018	Digital communication of the charging system combined by EV DC charging system and EV control system

4. Environmental Conditions

No.	Item	Technical targets			Unit	Remark
		Working	Transportation	Storage		
1	Temperature	-30°C ~ 55°C	-40°C ~ 70°C	-40°C ~ 70°C	°C	
2	Humidity	5 ~ 95	/	5 ~ 95	%	Condensation free
3	Altitude	≤2500	/	≤2500	m	
4	Cooling method	Natural Cooling			-	

5. Electric Characteristics

5.1 Input characteristics

No.	Item	Technical requirements		Unit	Remark
1	Rated input voltage	7kW	230	VAC	L+N+PE
		22kW	400		3P+N+PE
2	Rated input current	7kW	32	A	L+N+PE
		22kW	32		3P+N+PE
3	AC input voltage range	7kW	184~276	VAC	Systematical input voltage
		22kW	320~480	VAC	
4	AC input frequency range	45~65		Hz	Rated frequency 50Hz/60Hz



5.2 Output characteristics

No.	Item	Technical requirements		Unit	Remark
1	Rated output power	7		kW	
		22			
2	Rated output voltage	7kW	230	VAC	L+N+PE
		22kW	400		3P+N+PE
3	Rated output current	7kW	32	A	L+N+PE
		22kW	32		3P+N+PE
4	AC output voltage range	7kW	184~276	VAC	L+N+PE
		22kW	320~480		3P+N+PE
5	AC output frequency range	45~65		Hz	Rated frequency 50Hz/60Hz
6	AC output mode	7kW	Single phase three wire	-	L+N+PE
		22kW	Three phase five wire		3P+N+PE

5.3 Protection characteristics

No.	Item	Technical requirements		Unit	Remark
1	Input under voltage protection point	7kW	184	VAC	Adjustable
		22kW	320		
2	Input overvoltage protection point	7kW	276	VAC	Adjustable
		22kW	480		
3	Output over current protection	yes		-	Exceed 120% of rated output current
4	Short-circuit protection	yes		-	
5	Emergency stop protection	yes		-	



5.4 EMC Characteristics

No.	Item	Technical Requirements	Unit	Remark
1	Electrostatic discharge immunity	Level 3	-	
2	Radiofrequency electromagnetic radiation immunity	Level 3	-	
3	Power frequency magnetic field immunity test	Level 5	-	
4	Electrical fast transient pulse group disturbance immunity	Level 4	-	
5	Surge (impact) immunity	Level 4	-	
6	Test for conduction disturbance immunity of RF field induction	Level 3	-	
7	Voltage sag, short interruption immunity	Level 3	-	
8	Harmonic current emission limit test	Grade A	-	
9	Voltage fluctuation and scintillation test	Grade A	-	
10	Power terminal conduction disturbance test	Grade A	-	
11	Signal port conduct disturbance check	Grade A	-	
12	Protects keyless entry system from radiation harassment inspection	Grade A	-	
13	Shell port radiation harassment inspection	Grade A	-	

5.5 Safety features

No.	Item		Technical requirements	Unit	Remark
1	Insulation resistance	Input-Earth	≥ 10	M Ω	500VDC
		Output-Earth	≥ 10	M Ω	500VDC
2	Dielectric strength	Input-Earth	≤ 10	mA	2.8kVDC
		Output-Earth	≤ 10	mA	2.8kVDC
3	Impulse withstand voltage	Input-Earth	No breakdown and insulation damage	-	lightning impulse ± 6 KV
		Output-Earth			



4	Grounding impedance	The maximum resistance between the charging machine and the site ≤ 100	m Ω	
5	Electric clearance	≥ 8	mm	
6	Creepage distance	≥ 10	mm	
7	Touch current	≤ 3.5	mA	
8	RCD breaker	With		
9	Residual current action time	≤ 0.1	S	
10	AC input lightning protection	Maximum continuous operating voltage is 385 VAC ; Nominal discharge current is 20kA (5common mode and difference module, each with 5 times 8/20us impulse wave) ; Maximum discharge current is 40kA Voltage protection level is under 1.8kV	-	

5.6 Other characteristics

No.	Item	Technical requirements	Unit	Remark
1	AC output charging connector	IEC 62196-1-2011 IEC 62196-3-2014	-	
2	Standby power consumption	≤ 15	W	
3	Current display accuracy	$\leq \pm 1$	%	
4	Voltage display accuracy	$\leq \pm 0.5$	%	
5	Meter accuracy level	1	degree	
6	IP protection degree	IP54	-	
7	Charging cable Length	5	m	Optional
8	Tri-proof protection	moisture proof mould proof salt -spray proof	-	The printed circuit board in the system, connector and other circuits are dealt



				with moisture proof, mould proof and salt-spray proof treatment to ensure that the charger can run normally in the environment of damp and salt fog.
9	Anti-corrosion Protection	Anti oxidation	-	Double layer anti-corrosion measures are taken for the iron shell, iron supports and parts exposed outside. The non-iron metal shell has anti oxidation protection film or anti oxidation treatment.
10	Environmental Protection	Meet requirements of 2011/65/EU; no cadmium, hydride and fluoride	-	

5.7 Indicator light

No.	Indicator light	Standby	Plugged	In charging	Fault
1	Yellow	ON	/	/	/
2	Green	/	ON	Blinking	/
3	Red	/	/	/	Blinking

Note: When the EV charger is in fault, the red indicator light will blink. Different blinking times stands for different fault types. Please refer to item 10.2 for detailed explanation.

When the EV charger in remote upgrading process, yellow indicator light will blinking in circle. Please refer to item 9.3 for detailed explanation.



6. Product Characteristics

No.	Item	Technical requirements	Remark
1	Wireless communication module	2G/4G	Support Unicom , Mobile and Telecom network
2	Wired LAN	Support	Optional
3	Charging card management system	Support	Complete card making and issuing system, with asynchronous settlement function. Optional
4	Back office monitoring	Support	Optional
5	Remote upgrading function	Support	Optional
6	HMI operation	Support	Equipped with high brightness and High Definition LCD screen. Optional
7	Alarm and protection function	Support	
8	Plug and charge	Support	Optional
9	Communication protocol	OCPP 1.6J	

7. Dimension and Installation

7.1 Dimensions

(1) The outlook of the EV charger is as follows :



Figure 7.1.1 Outlook of the EV charger

Note: The above figure shows the appearance of standard models. Some customized models have differences in appearance. The actual charger shall prevail.

(2) Dimension and size of the EV charger is shown as figure 7.1.2 and chart 7.1.1

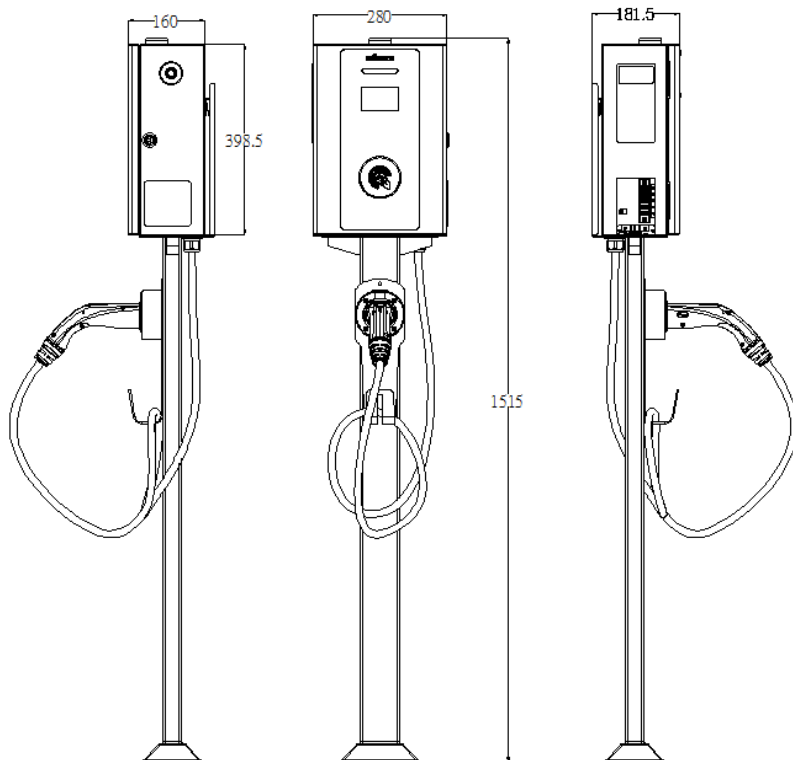


Figure 7.1.2 Dimension of the EV charger

Chart 7.1.1 Dimension parameters (Unit : mm)

	Length (L)	Width (W)	Height (H)
EV charger	160	280	398.5
EV charger +Charge post	181.5	280	1515

7.2 Installation Method

(1) If the EV charger is directly installed on the wall, the mounting dimensions of wall pendent are shown in Figure 7.2.1 and Table 7.2.1:

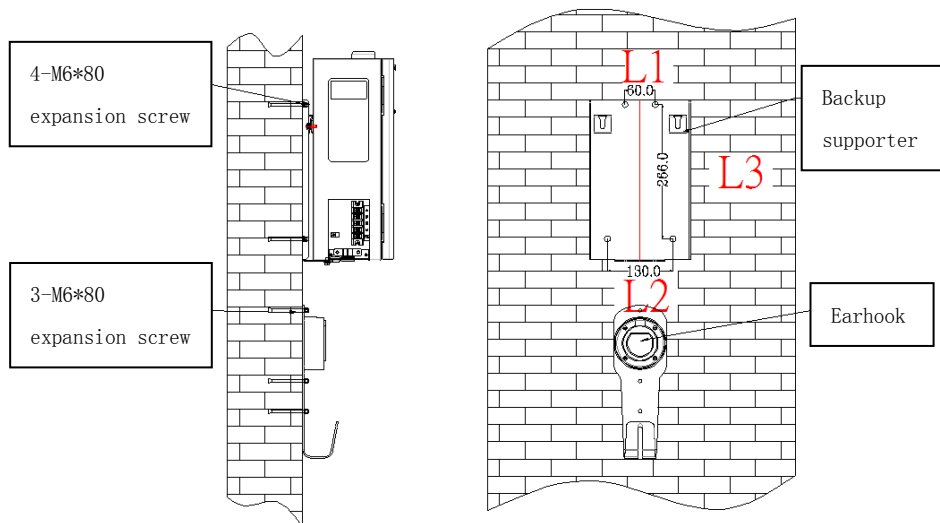


Figure 7.2.1Backup supporter installation drawings

Chart 7.2.1Backup supporter installation holes parameter (Unit : mm)

L1	L2	L3	Installation Hole (mm)
60	130	266	M6

Installation Method:

- The EV charger shall be installed and fixed on the vertical surface. In order to ensure a safe and stable operation of the charger, the vertical surface installed should be smooth and reliable.
- The power line enters from the bottom of the charger side. For safe and beautiful use of the charger, the power line-inletting hole shall be reserved on the vertical surface for installation and fixation. Besides, the power line-inletting hole should be located at an appropriate position on the side of the charger. The wire line is not allowed to be exposed outside, if any, the exposed wire shall be piped up.
- The installation height of the charger should be designed in accordance with ergonomics. We recommend install the charger between 1.3m and 1.5m from the ground to facilitate user operation and

reduce user fatigue.

- Before the installation, the charger shall be fixed on the special installation plate of with screws. Then fix the installation panel on the wall with expansion bolts conforming to specifications. Specific screw and expansion bolt size should be selected according to charger installation size and site requirements.
- When the charger installed, charger after sale service and maintenance shall be fully considered.

Note: This installation method is for reference only. The corresponding installation method shall be selected according to the actual situation on site. Please refer to the detailed construction instructions.

(2) For the wall-mounted AC charger with supporter, the installation size and foundation construction are shown in Figure 7.2.2, 7.2.3 and chart 7.2.2 below:

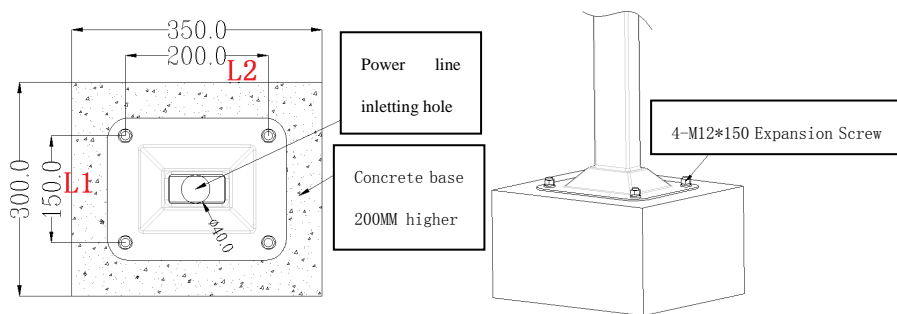


Figure 7.2.2 charging post installation drawing

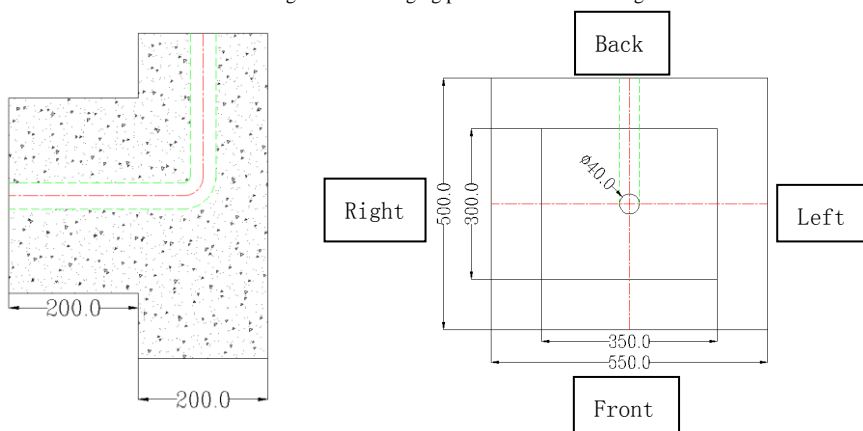


Figure 7.2.3 Construction Drawing

Chart 7.2.2 Charging Post Base Installation Holes Parameter(Unit :mm)

L1	L2	Installation Hole (mm)
150	200	Expansion Screw M12

Installation Method:

- Refer to the above method of installing wall pendant to install the charger on the charging post. The charging post shall be fixed on the ground.
- The excavation size of floor support foundation pit shall not be less than 500*550*300mm (length * width * height).
- The main body of the foundation is cast in Concrete C25. Top dimensions 300*350*200mm (l * w * h).
- Referring to the size of the floor bracket base in figure 7.2.2 above, 4 pieces of M12 expansion bolts need to be embedded in the matrix in advance to ensure that the bolts exposed to 15-20mm of the matrix for easy installation.
- Φ 40 PVC pipes need to be embedded in advance on the substrate, as shown in the picture above 7.2.3.

Note: This installation method is for reference only. The corresponding installation method needs to be selected according to the actual situation on site. Please refer to the detailed construction instructions.

(3) During installation, the recommended specifications of cables used in the user's distribution cabinet are shown in Table 7.2.3 below.

Chart 7.2.3 Recommended Cable Specification

Model	Input Voltage	Max. Input Current	Cable Specification Recommended
7kW	230V \pm 20%	32A	YJV22-2*16mm ² -1*10mm ²
22kW	400V \pm 20%	32A	YJV22-3*16mm ² -2*10mm ²

Note: In order to ensure the safety of electricity on different sites, the cable specifications are recommended to be large. Users can use the cable according to the site conditions.

8. Power Distribution

8.1 Input AC Power Distribution Wiring

1、 22kW Three phase five wire mode input AC power supply: users need to remove the baffle cover of the junction box on the side of the charger and connect the cables of recommended specifications in chart 7.2.3 (A, B, C, N, PE) in turn according to the connection mark of the charger inlet, as shown in Figure 8.1 below.

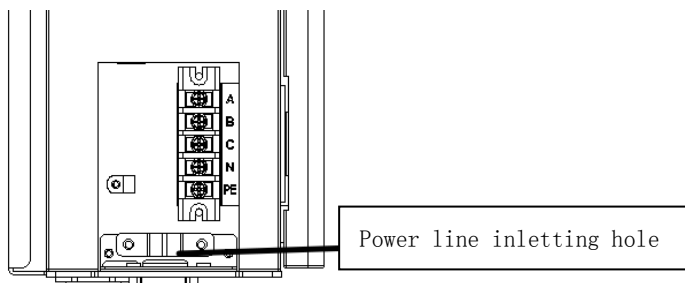


Figure 8.1 The input AC wiring line drawing of the charger

2、 7kW single phase three wire input AC power supply: users need to remove the baffle cover of the junction box on the side of the charger and connect the cables of recommended specifications in chart 7.2.3 (L, N, PE) in turn according to the connection mark of the charger inlet, as shown in Figure 8.2 below.

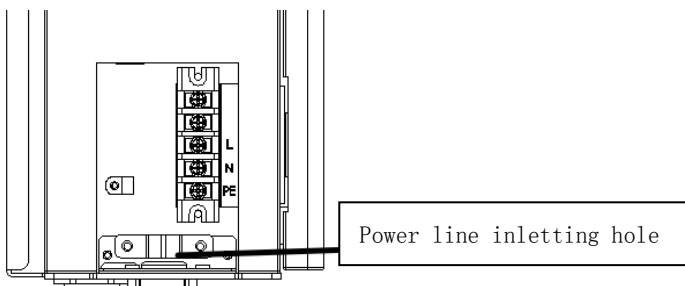


Figure 8.2 The input AC wiring line drawing of the charger

Note: The power of 220V power supply for single-phase household is limited. The user needs to consider whether the input power can meet the requirements of the vehicle and the charger. Please remember to read the attached instructions for detailed installation methods. We will not take any responsibility for any loss caused by improper operation.

8.2 Output AC Vehicle Connector Plug Pin Definition

The output AC vehicle connector plug pin number/identification and function definition are shown in figure 8.2 and chart 8.2.

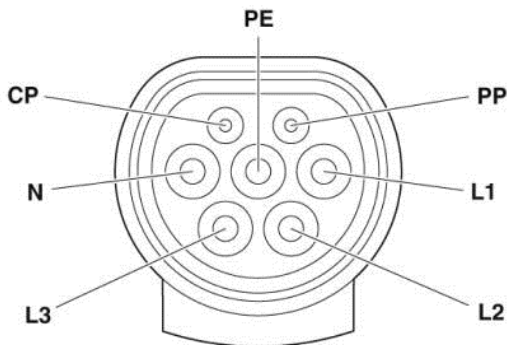


Figure 8.2 Output AC Connector Plug Pin Position Schematic Diagram

Chart 8.2 AC Vehicle Connector Plug Pin Number/identification and Function Definition

Pin No./Identification	Rated Voltage and Rated Current	Function Definition
1—L1	250V 10A/16A/32A	AC power supply(single phase)
2—L2	480V 16A/32A/63A	AC power supply(three phase)
3—L3	480V 16A/32A/63A	AC power supply(three phase)
4—N	250V 10A/16A/32A	Neutral line(single phase)
	480V 16A/32A/63A	Neutral line(three phase)
5—PE	-	Earth (P E) , connected with power supply equipment earthing and vehicle power platform
6—CC	0 ~ 30V 2A	Charging connecting confirmation
7—CP	0 ~ 30V 2A	Control pilot

9. Operation Instruction

9.1 Checks before Charging

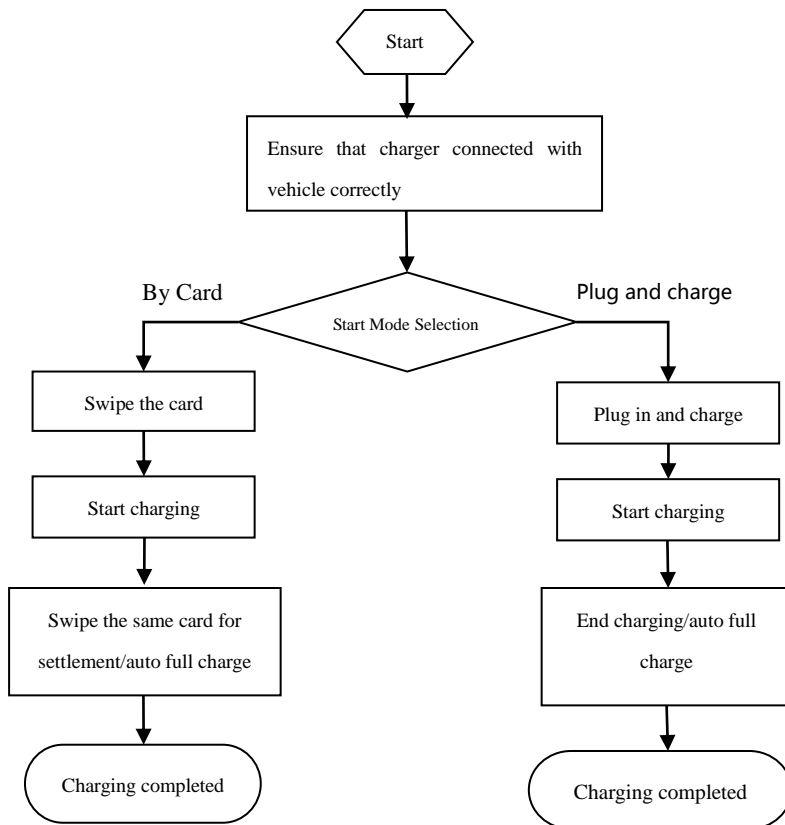
9.1.1 Safe checking before charging

- Ensure that the products has no scratching, rust, deformation and other damages.
- Ensure that the power supply socket is safe enough and no residuals left inside the plug and vehicle inlet.
- Please stop using immediately if charging cables were found exposed or plugs shell damaged
- Keep the plug always in dry state. In case of water accumulation, please clear the water with dry and clean cloth under totally power off state.

9.1.2 Attentions in Operation Process

- If the fault light was on or in fault displayed in the screen, please stop using and check item 10.2 solve simple problem. If problems could not be solved, please contact the manufacturer staff for help.
- Please refer to relevant instruction when operate the charging equipments.
- Pay attention to insertion and extraction force of the vehicle connector to avoid overexertion.
- Ensure that the vehicle connector is completely connected to the vehicle inlet, and the plug is completely perpendicular to the vehicle without any external influence.
- In the process of swiping the card, a prompt beep will be given out if the card swiping process is successful, otherwise the operation may fail.
- In case of emergency, please press down the emergency stop button. Charging is not allowed after that. If charger is in working state, charging process will be stopped immediately also.
- A regular check of the lightning arrester firing pin or indicating window needs to be carried out. If the firing pin is protruded or indicating window turned red, it means the lightning arrester has been damaged and shall be replaced immediately.

9.2 Charging Operation Flow Chart



9.3 Charging Operation Description

9.3.1 Start Mode Instruction

➤ **Start by card :**

1. Make sure the charger is properly connected to the EV. The "green indicator light" of the charger is always on, and the display interface shows that the plug has been plugged in.
2. When swipe the IC card in the card swiping area, the charger starts to charge. The "green indicator" flashes and the display interface displays the current charging data (charging voltage, charging current, charging time, charging capacity, etc.).
3. When users want to stop the charging, swiping the card in the card charging area needs to be carried out for settlement.
4. After the car is fully charged automatically, if the car has S2 switch, the charger will automatically stop charging immediately. If the car has no S2 switch, when the charger output current is less than 1A and last for 20min, the charger will automatically disconnect the output and stop charging. The "green indicator" is always on.
5. For cars with electronic lock, first needs to press the unlock button on the car to unlock the electronic lock. After the retractable rod been withdrawn, the plug could be extracted. Otherwise the plug will not be able to pulled out.
6. After charging finished, disconnect the charger from the vehicle and place the plug back into the designated position.

➤ **Plug and Charge :**

1. Make sure the charger is properly connected to the EV. The "green indicator light" of the charger is always on, and the display interface shows that the plug has been plugged in.
2. After the plug inserted, the charger will start charging automatically. The "green indicator" will flash and the display interface will display the current charging data (charging voltage, charging current, etc.).
3. When the user wants to stop the charging, if the charging plug is equipped with a mechanical switch, the mechanical switch can be pressed, and the charging machine will stop automatically immediately.
4. After the car is fully charged automatically, if the car has S2 switch, the charger will automatically stop

charging immediately. If the car has no S2 switch, when the charger output current is less than 1A and last for 20min, the charger will automatically disconnect the output and stop charging. The "green indicator" is always on.

5. For cars with electronic lock, first needs to press the unlock button on the car to unlock the electronic lock. After the retractable rod been withdrawn, the plug could be extracted. Otherwise the plug will not be able to pulled out.
6. After charging finished, disconnect the charger from the vehicle and place the plug back into the designated position.

9.3.2 Charging Interface Instruction

1. Initialization page

After the charger is powered on, the screen display system will be initialized. After the initialization, enter the default page of the charger, as shown in Figure 9.3.2.1/2/3. Meanwhile, the charger panel "yellow indicator light" is always on.

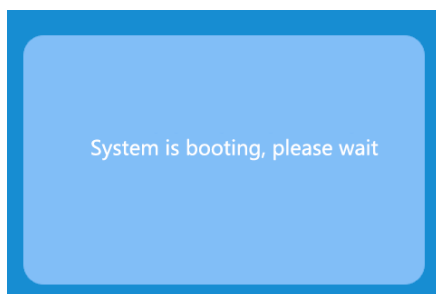


Figure 9.3.2.1 Initialization Interface

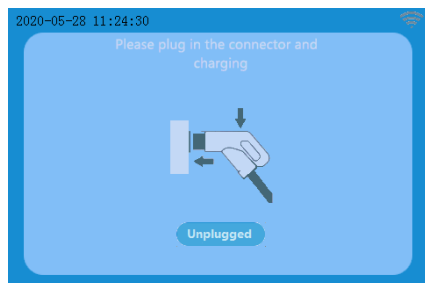


Figure 9.3.2.2 Plug and charge mode display

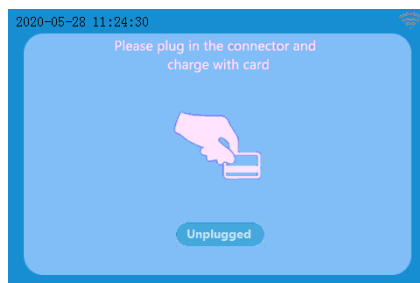


Figure 9.3.2.3 Charge by card mode display

2. Charging Page

If the charger well connected with the vehicle correctly, the "green indicator light" on the charger will in always on state and the display interface will give the information that the plug is ready for charge. The charger automatically starts charging or starts charging by swiping card. The screen will display the current charging order, charging duration, charging quantity, charging voltage and current and other charging information, as shown in Figure 9.3.2.4/5 below. During normal charging process, the charger panel 'green indicator light' flashes.

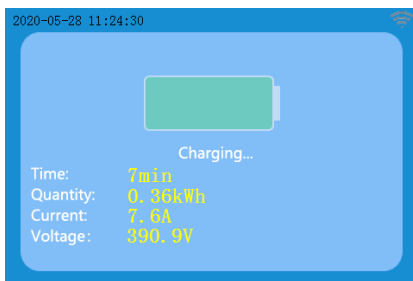


Figure 9.3.2.4 Plug and charge page

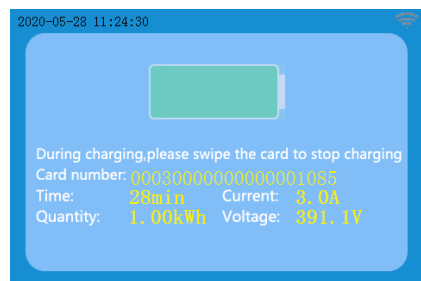


Figure 9.3.2.5 Charging by card page

3. Charging Finished Page

The charging process could be stopped by manual, by card, or stop automatically after vehicle fully charged. The charging page will skip to the settlement page, showing charging time, charging quantity and other charging information, as shown in Figure 9.3.2.6/7 below. Charger 'green indicator light' is always on. After extracted the plug, the page automatically jumps to the home page. Meanwhile the indicator light will return to yellow.

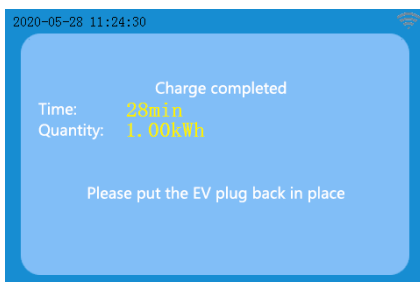


Figure 9.3.2.6 For Plug and charge Type

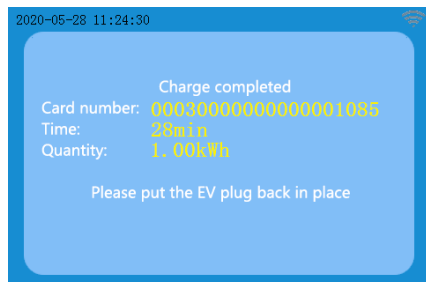


Figure 9.3.2.7 For card swiping function charger

4. Fault Displaying Page

When fault occurred, the relevant fault information will display on the screen. Fault information includes system fault type and plug fault type, and relevant fault code will display on the screen, as shown in FIG. 9.3.2.8. At the same time, the red fault indicator light will flash. In case of charging failure, the user shall remove the fault and re-plug in before recharging.

Note: Different times of the indicator light flashes stands for different fault types please refer to item 10.2 for details.

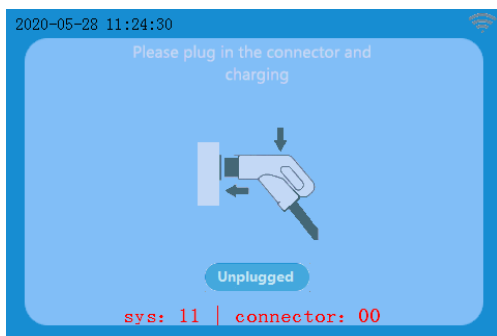


Figure 9.3.2.8 under voltage fault page

5. Charging Information Display Page

Pressing emergency button for three times within 6s, charger will pop up charging information on the display: software version, main board time, server communication mode, IP, charger code, charger parameters and other relevant information. Figure 9.3.2.9/10/11 is shown below.

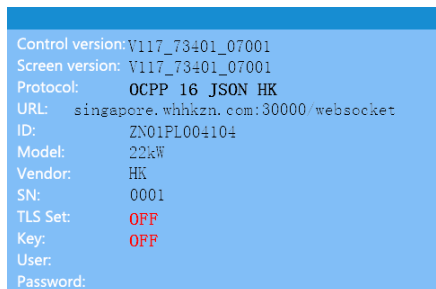


Figure 9.3.2.9 charging information display 1

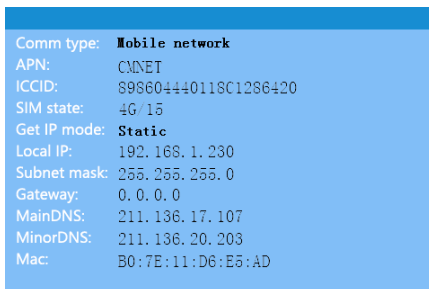


Figure 9.3.2.10 charging information display 2

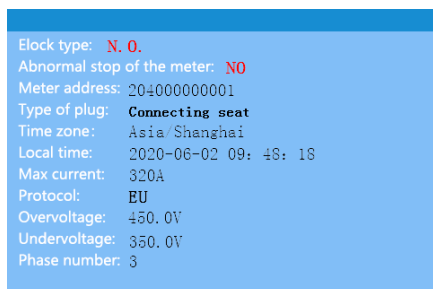


Figure 9.3.2.11 charging information display 3

6. Unauthorized Card Authentication Failed Page

For Chargers with card swiping function, when the user swipes with an unauthorized card, the charger will automatically pop-up card identification failed as shown in Figure 9.3.2.12. When the countdown is over, the screen will jump back to the default interface. The user can swipe the card again after 15s from the last card authentication fails. If the card authorization status is wrong, please consult the operator for details.

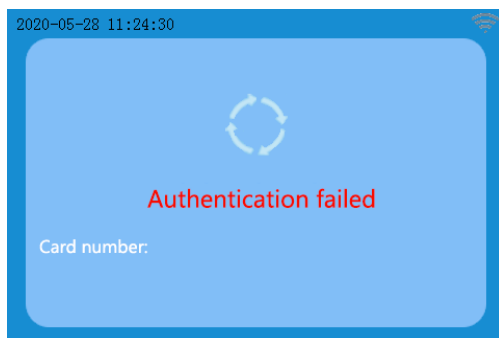


Figure 9.3.2.12 Card authorization failed page

7. Emergency Stop Page

In case of emergency which needs to stop the charger, users can press the emergency stop button and the charger screen will display the emergency stop fault page, as shown in Figure 9.3.2.13 below. Rotate the emergency stop button clockwise to remove the emergency stop alarm state, and the screen will back to the default interface.

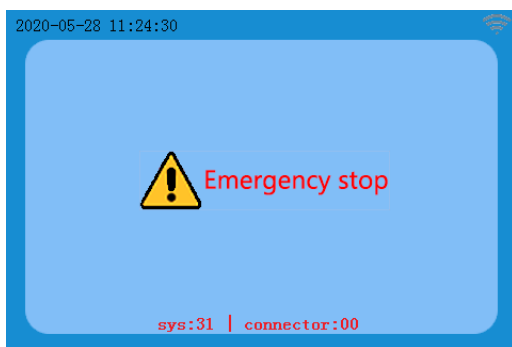


Figure 9.3.2.13 Emergency stop fault page

8. System Remote Upgrading Instruction

In system remote upgrade process, the charger will be suspended in use and the upgrade page in the picture below will be shown in Figure 9.3.3.14. During the upgrading process, the yellow standby indicator light of the charger will flash every 1s in cycle.

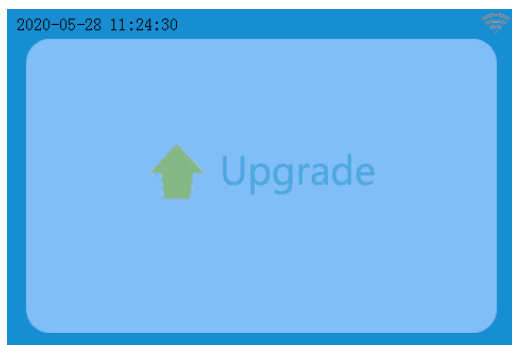


Figure 9.3.3.14

Note: During the upgrading process, please wait patiently for the program finish upgrading before using.



10. Fault Alarm and Treatment

10.1 Fault and Recovery

The charger will automatically enter monitoring state during operation. If fault occurred, the charger will display the corresponding fault code, the fault indicator light will always flash, and charger will stop output.

When fault removed and the plug extracted, the charger will recover from fault.

10.2 Fault Alarm and Treatment

System Fault

In case of such failure, starting charging process is forbidden or forcing stop of charger may be required.

Fault code	Fault name	Flashing times of red indicator light (n)	Treatment
11	Input under voltage	1	Check incoming voltage
12	Input overvoltage	2	Check incoming voltage
13	Default phase	11	Check charger wiring
31	Emergency stop signal abnormal	3	Check if the emergency stop button has been pressed

Vehicle Connector Fault

Fault code	Fault name	Flashing times of red indicator light (n)	Treatment
2	Meter communication fault	4	Check the meter communication
3	Meter displayed value not match the actual situation	9	Check the meter
4	Output over current	5	Check if the actual current is too large
10	Charger plug CP connecting abnormal	6	Check if the plug is properly connected

11	Charger plug and vehicle PE connecting abnormal	7	Check if charger PE wire is properly connected
12	Charger plug CP signal not turn to 6V	8	Check if on board charger is ready
44	Electronic lock feedback abnormal	10	Check if the electronic lock is damaged

11. Package, Transportation and Storage

Package

Product name, model, manufacturer information shall be printed on the packing case and Qualification Certificate, Delivery Inspection Report, Users Manual, accessories and parts list supplied by the manufacturer shall be placed inside the case.

Transportation

Transportation by vehicle, ship and aircraft is applicable. Situations like severe vibration, impact, exposure to the sun and rain, package dumping, etc shall be avoided during the transportation process. The loading and unloading operation shall also be paid enough attention to avoid product damages.

Storage

This product shall be stored in the packing case if not installed. The ambient temperature of the warehouse is -40°C - 70°C and relative humidity is 5%-95%. No harmful gases, flammable and explosive materials and corrosive chemicals shall be put inside the warehouse, as well as no strong mechanical vibration, shock and strong magnetic field. The packing case shall be at least 20cm away from the ground, at least 50cm away from places like the wall, heat source place, and window or air inlet. The storage period under such specified conditions is usually 2 years and a new inspection of the product shall be carried out if exceed 2 years.

12. Maintenance and Repair

Due to influences by changeable environment of the charger such as temperature, humidity, fog, etc and the ageing of charger inner parts, various types of faults of charger might occur. Therefore, a regular examination and maintenance of charger must be carried in product storage and using process.

Customer need to carry out the following inspection for every charger.

Regularly Inspection (Daily Inspection) :

- 1、 Whether there is any extra things, damages or cracks on the surface of the charger and charger inclined or not.
- 2、 Check whether the vehicle connectors are in right place and confirm no water or other liquid left inside the plug before charging process.
- 3、 Check whether the charger in normal power supply and all the lights are good.
- 4、 Check whether the charger is in normal work.
- 5、 Check whether the charging interface can be used normally, whether there is deformation and looseness.

Electrical and Controlling System Inspection (Monthly Routine Inspection)

- 1、 Good connection between the charger and earth need to be ensured and clear marks need to be labeled for earth terminals.
- 2、 The insulation resistance of the independent electrical circuit of charger to the earth and among the circuits shall not be lower than the specified value.
- 3、 Check whether the terminals of the input cable are tightly connected.
- 4、 Check whether the power distribution wire and internal control line of charger ageing or not.
- 5、 Check whether the control board and internal components of charger ageing or not.
- 6、 Check whether the input power voltage of charger and voltage to earth is in normal value range.
- 7、 Check the leakage current of charger in normal value range.
- 8、 Check whether the internal earth line and other terminals, connectors, charger inner power supply, communication wiring terminals are detached or loose.
- 9、 Check whether the main components like breaker, contactor have damages or abnormal conditions.
- 10、 Whether the charger has peculiar smell, burning spoors or black dust.



Maintenance

- 1、 Check whether the connection part of the charger is firm, and whether the charger base is cracked or damaged.
- 2、 Pay enough attention to safety. Charger parts repairing or changing must be operated in power off condition to avoid electric shock or personal injury.
- 3、 Charger maintenance specification need to be strictly implemented and problems found need to be disposed timely in order to avoid further loss.
- 4、 When power is off for maintenance, warning signs of “Maintenance! Any operation forbidden!” must be hung at the equipment to ensure personal safety.
- 5、 Security measures must be well improved and insulation shoes must be worn during maintenance operation to avoid personal injury and electric shock.

NOTICE:

- 1. The company will not be responsible for any vehicle connectors’ damages caused by incorrect placing or man-made rotating and twisting behaviors.**
- 2. Any abnormal operations like cutting off breaker with load or extracting vehicle connector with load, etc must be forbidden during charging process. Long time of improper operation of charger might affect the service life of the components. The company will not be responsible for damages caused by incorrect operation.**
- 3. The input power meets charger demands or not need to be taken into consideration by users. The company will not be responsible for any damages caused by incorrect operation of users.**

Appendix 1 Plug and Charge Operation Instruction for Vehicle with Electronic Lock

- First, confirm that the charger is in normal standby state and the status indicator light is yellow and always on.
- Open the AC charging socket cover on the car and make sure that the electronic lock lever does not pop out.
- Before inserting the plug, make sure that the electronic lock lever on the charging socket did not pop out. In normal condition, the plug can only be plugged in when electronic lock lever not pop out. If the electronic lock lever has been popped out, the plug will not be able to charge the car.

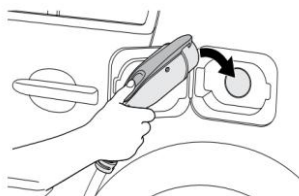
Tips: If it is found that the electronic lock lever has been popped out, the unlock button of the electronic lock on the car side should be used to unlock it. After the electronic lock lever retracted, plug could be inserted for the charging.

- During the operation of the charging plug, users should not press the mechanical button on the charging plug head to avoid the failure of normal charging due to improper insertion of the plug. Check whether the mechanical button on the charging plug will spring up after confirming that the plug is in right place. It can only be charged when the button bounces normally.
- After following the above steps, the charger can normally charge the car. After correctly inserting the plug, the status light of the charger flashes green. After 5 seconds, the charging indicator on the car starts to flash, indicating that the car is charging normally
- After the car is fully charged, the charger status light will stop flashing and turn to green.

Tips: 1. Press the unlock button on the car to unlock the electronic lock. After the electronic lock lever is retracted, the charging plug can be pulled out. Otherwise, the plug will not allow to be pulled out.

2. In case of failure to charge or shutdown after charging, the charging plug shall be re-plugged according to the above method.

Note: The position of the unlock button may be different for different models. The actual vehicle manual shall prevail.





Appendix 2 Charger Inner Air Switch Tripping off Recovery Instruction

- During installation and operation, if the charger indicator light is not on:
 1. Confirm whether there is tripping off in the front-end distribution box of the user, and the tripping needs to be re-closed;
 2. Insert a specialized key into the keyhole on the side of the charger to open the charger, and check whether the air switch inside the charger trips or not. If tripping found, flip the switch to close the "air switch". After closing, the charger indicator light will be lit again.
 3. After opening the charger, if air switch found not tripped off, then it means that the charger indicator light may be damaged. This situation does not affect the normal charging. Please continue to use the charger and contact our staff.
 4. The maintenance and maintenance items in this manual may be different from the actual models, please refer to the actual models



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