

Q20 AC portable EV charger

User Manual



Q20 EVSE

Q21 EVSE

Thank you for choosing our AC charging pile products. To help you use, operate, check, troubleshoot and maintain this AC charging pile product correctly, please read this user manual carefully before use, please follow this user manual when using, and please keep this user manual properly.

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1、 Safety rules

- 1.1、 Be sure to cut off the power supply during the installation and replacement of the charging pile to prevent electric shock.
- 1.2、 The cable of the charging pile must be firmly connected and well insulated, and loose and damaged connections will cause circuit failure, and cause casualties or fire in serious cases.
- 1.3、 The installation of charging piles and the connection to the grid must be operated by professionals.
- 1.4、 Even if the appearance of the dropped charging pile is not damaged, it cannot be installed directly. It must be checked by a professional to determine whether it can be installed.
- 1.5、 Water rinsing is not permitted for this charging post.
- 1.6、 Any failure of the charging pile that may affect safety must be ruled out by professional maintenance personnel.
- 1.7、 The charging pile should be installed by professional technicians, and the company does not assume any responsibility for any safety accidents caused by unauthorized installation changes.

2、 Introduction to charging piles

The company's AC charging pile is a charging equipment developed to meet the charging needs of new energy vehicles, and is used in conjunction with electric vehicle on-board chargers to provide slow charging services for electric vehicles. This product is easy to install, portable, easy to operate, fashionable appearance, suitable for private parking garages, public parking lots, residential parking lots, enterprise parking lots and other types of open-air and indoor parking lots. Because this product is a high-voltage equipment, please do not disassemble the shell or modify the wiring of the equipment by yourself. This charging pile adopts intelligent type, with timing, billing (optional), electricity metering, charging (optional), and has a human-computer interaction interface.

2.1、 Product composition:

The charging pile is mainly composed of shell, main control board, human-computer interaction interface, display module (optional), communication module (optional), fuse, charging interface, charging cable, charger wall mount (optional), etc.

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2.2、 Main features of the product:

2.2.1、 Equipped with technological and dynamic human-computer interaction function, equipped with LCD/LED status indication, the charging process is clear at a glance.

2.2.2、 The device has the function of controlling the current regulation and scheduling the charge

2.2.3、 With WIFI/Bluetooth function (optional), online current adjustment and charging appointment function can be realized through mobile phone APP (optional).

2.2.4、 Perfect system protection functions: overvoltage, undervoltage protection, overcurrent protection, short circuit protection, leakage protection, overtemperature protection, lightning protection, safe and reliable product operation.

2.2.5、 Data storage and fault identification. Accurate power metering increases confidence for users.

2.2.6、 A variety of different specifications of plugs, adapt to the socket standards of any country. Intelligent identification of adapter power, output accurate current, to ensure the safety of equipment power (optional).

2.2.7、 Equipped with discharge function and vehicle-to-vehicle charging (optional)

2.2.8、 The structure of the whole machine adopts waterproof and dustproof design, with IP66 protection level, and the portable design is suitable for indoor and outdoor, and the use environment is wide and flexible.

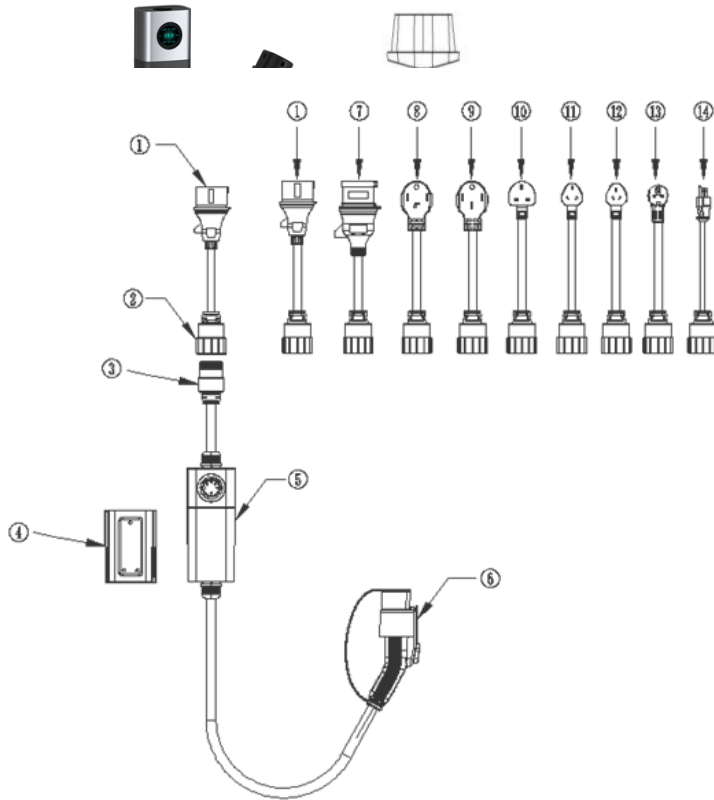
2.2.9、 Easy installation, operation and maintenance.

3、 Description of appearance

3.1、 Product appearance and dimensions:

3.1.1、 Charging pile

3.1.2、 connector mount



3.2、Product introduction:

chart1 Appearance

- ① Plugs of different standards: the standards of each country are different, so the appearance is not the same.
- ② aviation plugs female end
- ③ aviation plugs male end
- ④ Wall bracket for the whole machine

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- ⑤ The whole machine, charging pile
- ⑥ charging connector head
- ⑦ Type 2 Interchangeable power plug
- ⑧ Type 1 Interchangeable power plug
- ⑨ 9-14 Cables of various specifications

4、Main technical parameters

Table 1 Technical parameters of AC charging piles

Product name	1 Phase	1 Phase	3 Phase	3 Phase	1 Phase
Max output power	3.5KW	7KW	11KW	22KW	9.6KW
Input voltage	AC 220/230V	AC 220/230V	AC380/ 400V	AC380/ 400V	AC 240V
Input V frequency	50Hz/60Hz				
Output voltage	AC 220/230V	AC 220/230V	AC380/ 400V	AC380/ 400V	AC 240V
Output current	16A	32A	16A	32A	40A
Adjustable power	The plug comes with temperature detection and maximum output power recognition. The current can be adjusted downwards.				
Efficiency	≥98				
Insulation resistance	≥10MΩ				
Control module power consumption	≤7W				
RCD	GBT: TypeA; Type 2: TypeA+DC6 mA; Type 1: CCID20				
Working temperature	-30°C ~ +50°C				
Storage temperature	-40°C ~ +80°C				
Ambient humidity	5% ~95% No condensation, no condensation				
Altitude	No more than 2000 meters				
Status indicator	LED Indicator / LCD (Optional)				
Display screen	2.8 - inch LCD (Optional)				
Startup mode	Plug and Charge				

Comm. method	WIFI/Bluetooth (Optional)
Charging port	GB/T ; J1772; Type1; Type2
Protection class	IP66、IK10
Safety protections	Overvoltage protection, undervoltage protection, grounding protection, lightning protection, leakage protection, flame retardant protection, overcurrent protection, intelligent temperature control protection, etc.
Energy meter	≥1.0 Level (Networked devices have)
Cable Length	N Meters (Customizable length)
Weight	Depending on the length of the wire, the weight is different

5、 Installation

5.1 Before installation, please check that the box contains the following items

- 5.1.1、 AC charging pile (including cable) * 1.
- 5.1.2、 AC charging pile user manual * 1.
- 5.1.3、 certificate of conformity * 1.
- 5.1.4、 Wall-mounted model: wall bracket * 1, M6*30mm rubber stopper * 3 ;
KA3.5*35mm flat head screw * 3
- 5.1.5、 EV charger connector holder * 1 ;

5.2 Installation environment requirements

- 5.2.1、 The charging pile is a universal indoor and outdoor charging pile, which meets the IP66 protection level and can be installed in open places.
- 5.2.2、 Please ensure that the ambient temperature is within the range of -30°C to +50°C.
- 5.2.3、 The installation site must not be higher than 2000 meters above sea level.
- 5.2.4、 There should not be severe vibration and flammable and explosive materials near the installation site.
- 5.2.5、 The installation site should not be in low-lying areas or areas prone to water accumulation.
- 5.2.6、 The pile installation must be supported by the wall, if there is no wall support, it is recommended to use a special floor bracket for installation and fixation.
- 5.2.7、 When installing the pile body, ensure that the pile body is vertical, and the installation height ranges from the center point of the gun base to the horizontal ground: 1200~1300mm.

5.3 Wiring method

- 5.3.1. Charging stations must have dedicated power circuits and should not share circuits with other equipment.
- 5.3.2. The equipment comes with an input cable interface from the factory and can be configured to meet the standard specifications of different countries and regions.
- 5.3.3. To prevent electric shock, ensure the input ground wire is securely grounded.

5.4 Installation method

For the sake of safety, only professionally trained personnel can install the charging pile, please do not install it yourself.

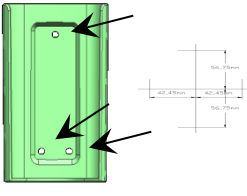
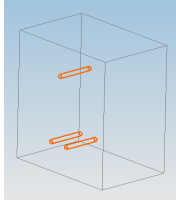
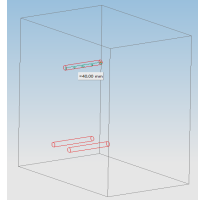
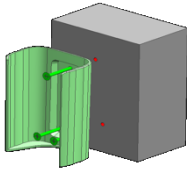
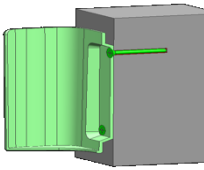
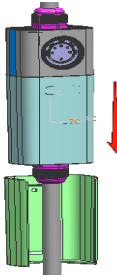
According to the position of the hole installed on the ledge, mark the hole position on the wall


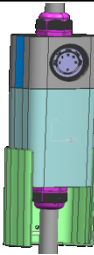
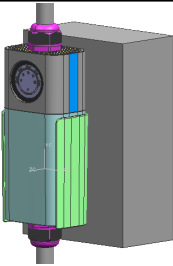
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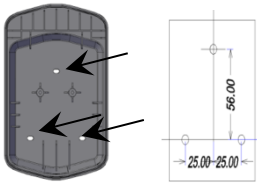
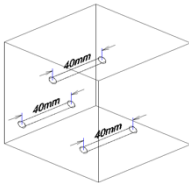
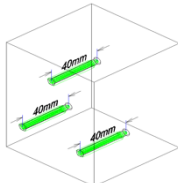
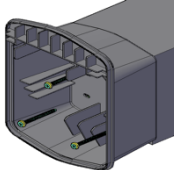
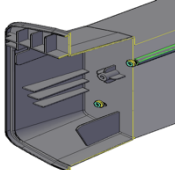

and use impact drilling to punch the hole ($\Phi 6^*40$), and then put in the plastic rubber plug, the pointed head into the hole with a hammer to make the surface level with the wall, the special-shaped hole is fixed with KA3.5*35mm screws downward. Place the machine inside the wall mount.

5.4.1 Charging pile installation:

		
<p>1、The charging pile pendant is flatly attached to the appropriate position on the wall, and the position of the screw hole is marked (or marked in millimeters according to the data in the above figure).</p>	<p>2、Drill a hole at the marked position with a $\Phi 6$mm drill bit, and the depth is >40mm.</p>	<p>3、Insert the rubber stopper vertically so that the surface of the stopper is flush with the wall.</p>
		
<p>4、The special-shaped hole of the charging pile pendant is facing down, the plane is facing outward to the wall rubber plug, and the fixing screw is screwed vertically to the end.</p>	<p>5、The screws are locked to the end (sectional view). The pendant is not loose, deformed, etc.</p>	<p>6、The charging pile is vertically pressed into the pendant to the end.</p>

		
7、 Press horizontally to the end.	8、 Press the charging pile vertically down.	9、 The installation is complete.

5.4.2 Holder installation

		
1、 The bottom shell of the connector holder is flatly attached to the appropriate position on the wall, and the position of the screw hole is marked (or marked in millimeters according to the data in the above figure).	2、 Use a $\Phi 6\text{mm}$ drill bit to punch holes in the marked position to a depth $> 40\text{mm}$.	3、 Insert the rubber stopper vertically so that the surface of the stopper is flush with the wall.
		
4、 The screw is threaded into the gasket, the holder hole is aligned with the wall rubber plug, and the screw is screwed vertically to the end.	5、 The screw locks into the bottom cutaway. There is no looseness or deformation of the bottom shell of the connector holder.	6、 The front shell of the holder is snapped into the end with the bottom shell, and the two screws are locked in the end.

5.5 Description of the light strip control logic

seq.	STAT	Charging pile status	LED light phenomenon	Remark
1	Normal state	Standby	Blue light is always on	
2		ready to charge state	Green light is always on	The connector is not activated.
3		Charging status	Flashing green light (on 500ms, off 500ms)	The connector is activated.
4		Charging completion status	Green light is always on	Stop charging when the car is fully charged or when the charging completion condition is reached.
5	Fault state	Emergency stop failure	Red light blinks 1 time every 5s	In case of failure, the red light blinks in a way that it is on for 200ms and off for 200ms.
6		Ungrounded fault / L and N reversed	Red light blinks 2 times every 5s	
7		CP error fault	Red light blinks 3 times every 5s	
8		overcurrent fault	Red light blinks 4 times every 5s	
9		overvoltage fault	Red light blinks 5 times every 5s	
10		undervoltage fault	Red light blinks 6 times every 5s	
11		Breaker sticking fault	Red light blinks 7 times every 5s	
12		electric leakage fault	Red light blinks 8 times every 5s	
13		overtemperature fault	Red light blinks 9 times every 5s	
14		Faulty meter	Red light blinks 10 times every 5s	
15		Other faults	Red light on for 1000ms, off for 1000ms	

6、 Basic Function Operation Instructions

6.1 LCD model current setting mode

- 6.1.1** How to enter the current setting interface: When the charging connector is not inserted, press and hold the left button for 2 seconds.
- 6.1.2** How to switch the current level: After entering the current setting interface, short press the left button to switch the current level, after selecting the desired level, then long press the left button for 2 seconds to confirm the current setting and return to the interface of "Please insert the charging connector", which indicates that the current setting is completed.
- 6.1.3** How to check the current level: short press the left button to check the current value when the charging connector is not plugged in; short press the left key again to return to "Please plug in the charging connector" interface; or automatically return to "Please plug in the charging connector" interface after 5 seconds without any operation.
- 6.1.4** Return without operation: When entering a certain interface, without any operation after 15 seconds, it will automatically return to the state of not inserting the charging connector, and the settings made will be invalid.

6.2 LCD model appointment time mode

- 6.2.1** The upper left corner of the LCD shows 00:00 as the scheduled charging time; the upper right corner shows 00:00 as the scheduled power-off time.
- 6.2.2** How to enter the setting appointment time: When the charging connector is not inserted, press and hold the right button for 2 seconds until 00:00 in the upper left corner flashes.
- 6.2.3** How to adjust the appointment time: After entering the settings, press the left button to switch the appointment charging time or power off time setting options, and press the right button to adjust the cumulative increase time number.
- 6.2.4** How to confirm the appointment time: After setting the required time, press and hold the right button for 2 seconds until 00:00 no longer flashes, at this time the LCD will display the countdown time; In the case of the completion of the scheduled charging, the charging icon and the power degree disappear, and the other values are 0, indicating that the appointment time setting is completed.
- 6.2.5** Return without operation: When entering a certain interface, if there is no operation after 15 seconds, it will automatically return to the state of not inserting the

charging connector, and the setting content will be invalid.

6.3 LCD model system setup mode

6.3.1 How to enter the system setting interface: When the charging connector is not inserted, press the left and right buttons simultaneously for 10 seconds.

6.3.2 How to switch options: Short press the left button to switch between different options.

- ① Unlink My Phone
- ② Cancel Ground Detection
- ③ Factory Reset (Restore ground detection, WI-FI reset, current reset to 32A).

6.3.3 Confirmation options: Press and hold the left or right button for 5 seconds to confirm. and automatically return to the unplugged interface.

6.3.4 No operation return: when entering a certain interface, after 15 seconds without any operation, it will automatically return to the unplugged state, and the setting content is invalid.

6.4 Description of the LED display

6.4.1 Current Indicator LEDs: The second row of LEDs on the top is for 5 current value levels, from left to right, 6A/8A/10A/13A/16A.

6.4.2 How to enter the current setting interface: When the gun is not plugged in, press and hold the left button for 2 seconds until the LED blinks repeatedly.

6.4.3 How to switch the current level: After entering the current setting mode, the LED will blink at this time, short press the left button to switch the current level, after selecting the desired level, the corresponding LED will stop blinking. Press and hold the left button for 2 seconds to confirm the current setting, and return to the interface of please-insert-the-charging-connector, which means the current setting is completed. (Definition of LED language: the current lit LED corresponds to the corresponding current value; If both adjacent LEDs are on, it means that the current value is between two gear values; if all LEDs are on, it means that the current value is greater than the maximum gear value)

6.4.4 No operation return: when entering a certain interface, after 15 seconds without any operation, it will automatically return to the unplugged state, and the setting

content is invalid.

6.5 LED model appointment time mode

6.5.1 The first row of LED indicators on the top are 5 digital gears for appointment time, starting from 1H/2H/3H/4H/5H in sequence from left to right.

6.5.2 How to enter the setting appointment time: When the charging connector is not plugged in, press and hold the right button for 2 seconds until the leftmost LED blinks repeatedly.

6.5.3 How to adjust the appointment time: After entering the settings, short press the right button to switch to the appointment charging time option, short press the right button to adjust, the corresponding time number LED light will flash.

6.5.4 How to confirm the setting of the appointment time: After setting the required time, press and hold the right button for 2 seconds until the corresponding LED no longer flashes and becomes solid; it means that the appointment setting is successful. (LED light language description: the LED of the corresponding number is on, indicating that the charging will be started after the corresponding hour; if you want to make an appointment to start the charging after 10 hours, keep pressing the right button briefly for 10 times, at this time, the LED lights will light 5H/4H/1H three lights. More than 5 hours of appointment time then the lights are displayed as the addition of gears; the countdown display rule is consistent. (If the power-off time is set, the LED will light the appointment charging time first, and then the power-off time).

6.5.5 Return without operation: When entering a certain interface, if there is no operation after 15 seconds, it will automatically return to the state of not inserting the gun, and the setting content will be invalid.

6.6 LED model system setup mode

6.6.1 How to enter the system setting mode: When the charging connector is not inserted, press the left and right buttons at the same time for 10 seconds to enter. The default entry state is that the 4 lights on the right of the first row are on, and the lights on the second row are all off.

6.6.2 Cancel Ground Detection Setting: After entering the system mode, switch the selection by briefly pressing the left button, when the leftmost of the first row of lights is

on, it means that the ground detection is selected to be cancelled; When the 4 lights on the right side of the first row are on, it means that ground detection is selected; after selecting the desired setting, long press the left button or right button for 5 seconds and the setting is successful. And the interface will be returned to the unplugged status.

6.6.3 Wi-Fi reset setting: after entering the system mode, switch the selection by short pressing the right button, when the second row of lights are all off, it means Wi-Fi reset is not selected; When the second row of lights are all on, it means that Wi-Fi reset has been selected; long press the left button or right button for 5 seconds and the setting is successful. And the interface will be returned to the unplugged status.

6.6.4 Return without operation: When entering a certain interface, if there is no operation after 15 seconds, it will automatically return to the unplugged state, and the setting content will be invalid.

7、Appendix:

7.1 Precautions for use

7.1.1、 The power supply used shall be consistent with that required for this equipment, and the power supply ground wire shall be reliably grounded.

7.1.2、 During use, please strictly follow the design parameters and conditions of use, and do not exceed the thresholds in this user manual, otherwise the equipment may be damaged.

7.1.3、 Do not change the specifications of electrical parts, alter internal wiring or graft other wiring.

7.1.4、 After the charging pile is installed, if the charging pile cannot be started normally after the device is connected to the power, please check whether the power supply wiring is correct.

7.1.5、 The equipment has limited dustproof and waterproof capabilities. During use, pay attention to anti-static, moisture-proof, and waterproof. If the equipment has been flooded, immediately cut off the power and stop using it.

7.1.6、 Please do not plug or unplug the charging cable during the charging process, so as not to cause irreversible damage to the charging pile and the car.

7.2 Other questions and clarifications:

7.2.1、cable problem

The charging pile inlet cable should be a minimum of N*6 square cables (cables are different for different devices), and the length should not exceed 40 meters. If it exceeds 40 meters, please choose N*10 square cables.

Air switch selection: You must select an air switch that is more than 1.5 times the rated current of the equipment.

7.2.2、 Regarding the case where charging can be started but there is no current

It is possible that the vehicle's S2 switch is not closed. The charging pile waits for the vehicle S2 to open and close, if it does not close for a long time, please try to power the vehicle without starting (standby).

7.2.3、 Overvoltage and undervoltage

The equipment shows Overvoltage or Undervoltage, please check the cable, the voltage may be high or low, use a multimeter to measure, what is the voltage value at the equipment inlet, and then measure what is the voltage value at the inlet of the distribution box.

7.2.4、 Electrical leakage warning

If the screen of the device shows leakage, it may be that the vehicle is leaking electricity or the screws of the device inlet are not tightened, check whether the device inlet is tightened first, if not, please try to charge another vehicle.

7.2.5、 If there is an abnormal situation during use, please refer to "General Troubleshooting" first. If a certain fault cannot be eliminated, please cut off the power supply of the charging pile and contact our customer service centre

7.3 General Troubleshooting

Faults	Possible causes	Solutions
LED indicator or LCD does not	Power not connected	Check that the power inlet is energized and that the power switch is closed.



Light up	circuit breaker trips	The charging pile has the function of leakage tripping, and it is necessary to open the side switch cover and close the circuit breaker switch
	The device is damaged	Please contact the customer service center for repair
Unable to start charging	The charging cable is not fully connected	Check whether the charging connector is plugged into the bottom of the socket
	Protection circuit activated	Please refer to the 5.5 RGB lamp language control logic description and contact the customer service center for guidance
	The emergency stop button is pressed	Turn the emergency stop switch in the direction indicated by the emergency stop button to return it to normal.
The charging current is less than the rated value	The vehicle malfunctions or is almost fully charged	It is normal for the charging current to drop when the vehicle's battery is nearly full. If not, please contact the customer service center.
The fault light is on	The fault light flashes	Contact the customer service center
	The fault light is always on	Contact the customer service center

(If there is any change of product size and parameter, the latest information of our company shall prevail without prior notice.)