



DC EV Charging Station User Manual



BADGER POWER ELECTRONICS

Enterprise House, Manchester Science Park, Lloyd St N,
Manchester M15 6SE

WWW.BADGERPOWERELECTRONICS.COM

Table of Contents

Foreword

Caution

1. Overview

1.1 Product Introduction	02
1.2 Overview Diagram	04
1.3 Parameters	04
1.4 Product Function and Features	05
1.5 Operating Environment	06
1.6 Product Design Specifications	07

2. Main Modules

2.1 Technical Specifications	07
2.2 Overall Function	11

3. Operation Instructions and Precautions

3.1 Operation Precautions	13
3.2 Charging Status Description	14
3.3 LED Indicator Description	15
3.4 Emergency Stop Switch	16

4. Installation

4.1 Safety Instructions	16
4.2 Installation Conditions	17
4.3 Transport the Packing Cases	18
4.4 Unpacking	18
4.5 Carrying the Charger	20
4.6 Installation	20
4.7 Cable Access	23
4.8 Network Connection	24
4.9 Connecting an OCPP Platform	25

5. Parameter

5.1 Safety Inspection Before Use	28
5.2 Parameter Configuration (please refer to the appendix for settings and commissioning)	29
5.3 Technical Data	29

6. Packing, Transport, and Storage

7. Ordering Instructions and after-sales service

7.1 Ordering Instructions	35
7.2 After-sales Service	35
7.3 Accessories List	35
7.4 Nameplate	36

Appendix:

Appendix I Troubleshooting List
(please refer to this for solutions according to descriptions)

Appendix II Electrical Schematic Diagram

Before commissioning, please carefully read the operation manual to ensure the equipment is handled safely. Please keep this manual for future reference.



WARNING



This Electric Vehicle Charger operates at dangerous high voltage, which could endanger human life. Please strictly follow all signs and operating instructions on the machine and in the manual. Unauthorized personnel must not carry out any maintenance on the Charger.

Foreword

Badger Power Electronics proudly introduces our range of DC Electric Vehicle Chargers. The PowerDepot series is available in 20kW, 30kW or 40kW configurations and all come standard with a European standard CCS2 tethered cable. This new range is certified by UL, SAA, CB, CE, TUV, UKCA, ISO, and RoHS to ensure that it meets all strict guidelines and standards set out by European regulators. The PowerDepot DC EV Charger also boasts dynamic load balancing, full OCPP 1.6 compatibility and 4G connectivity.

Safety Precautions

- 1) Do not put flammable, explosive, combustible materials, chemicals or other dangerous materials near the charger.
- 2) Keep the connector clean and dry. If there is dirt, please wipe it with a clean, dry cloth. Please do not touch the connector core with your hand when charged.
- 3) It is strictly prohibited to use the charger when the connector or the cable is defective, cracked, worn, or broken. If found, please alert the nearest authority.
- 4) Do not attempt to disassemble, repair, or modify the charger yourself. If there is any need for repair or modification, please contact the staff.
- 5) Improper operation may cause damage to the EV Charger.
- 6) Removing the connector during the charging session is strictly prohibited to ensure the safety and prevent damaging the vehicle.
- 7) If there is any abnormal situation during usage, you can immediately press the emergency stop button to cut off all input and output currents.
- 8) In case of rain and thunder, please charge with caution.
- 9) Children should not approach or use the charger during the charging process to avoid injury.

1. Overview

1.1 Product introduction

The BPE PowerDepot DC 20/30/40kW EV Charger is IP54 rated so it is safe from dust and water, and is designed for indoor or outdoor use. With full OCPP 1.6 integration, you can connect to any OCPP platform to suit your needs for fleet management or public charging. The Charger comes with a CCS2 tethered cable which connects to any European EV on the market. Incorporated with a RFID reader that works with a variety of OCPP platforms, this charger allows anyone to quickly and easily begin charging sessions.

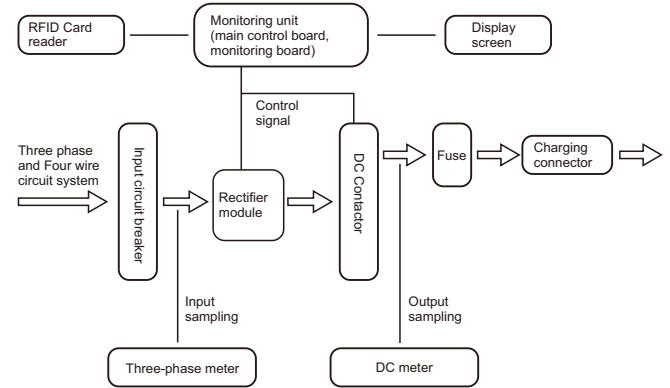


FIG. 1 Front profile of charger

Other main features:

- Interactive LCD touchscreen display
- Emergency stop button
- Ethernet or 4G connectivity
- OCPP 1.6

1.2 Overview Diagram



1.3 Main Parameters

Table 1: Technical Parameters

NO.	Article	Units	Standard
1	AC input voltage	V	Three-phase 380: 380 ~ 415
2	AC power frequency	Hz	50±1
3	Input power factor		=0.98
4	DC voltage regulation range	V	150V~1000V
5	Voltage accuracy	%	=±0.5
6	Accuracy of current		=30A: =±1%, < 30A: =±0.3A
7	Voltage regulation accuracy	%	=±0.5%(150~1000V, 0 ~ 20MHz)
8	Accuracy of a steady flow	%	=±0.5%(output load 20% ~ 100% rated range)
9	Ripple coefficient	%	Effective value: =±0.5 Peak: =±1
10	Standby power consumption	W	=0.1% rated output power

12	Input impulse current	A	≤110% Rated input current
13	Output overshoot voltage	V	≤110% Steady state output voltage
14	Efficiency	%	≥95
15	Noise	dB	≤65
16	Oscillating wave protection		Level 3 (1MHz and 100kHz)
17	Electrostatic discharge protection		Level 3
18	RF electromagnetic field protection		Level 3
19	Electrical fast transient protection		Level 3
20	Surge protection		Level 3
21	Radiated disturbance protection of RF field induction		Level 3
22	Power frequency magnetic field protection		Level 4
23	Damped oscillatory magnetic field protection		Level 4
24	Limit requirements for conduction and radiation emission		The general requirements are listed in Table 5 and Table 6
25	Harmonic Current Limit Requirements (THD)	%	≤5 (Class A equipment)

1.4 Product Performance and Features

Product function

- High-efficiency, low-harmonic, Class A quality. System efficiency = 94%, industry-leading power density, low energy consumption and high energy efficiency. The charging module uses active power factor correction technology with harmonic interference <5% and power factor up to 0.98.
- Modular design and reliable system. The system adopts multi-module parallel output mode, flexible configuration and easy maintenance. Single module failure does not affect the overall system which greatly improve system reliability and stability.

- All-round protection to guarantee safety. Self-check for input, output, and components during operation and connection, input over/under voltage protection, DC output over-voltage/short circuit protection, module overheating/fault protection, insulation protection, and car battery connection inspection and other multiple protection functions. All to ensure the safe and reliable operation of the system, effectively prevent the occurrence of accidents.
- Wide voltage output, easy to use, super wide constant power output voltage range. It has the characteristics of active power factor correction, high efficiency, high power density, high reliability, intelligent control, and beautiful shape. It can be adjusted in a wide range to meet the charging needs of different terminal voltages of battery banks, and can be used to charge electric vehicles of different voltage levels.

Product Features

- 32-bit high performance embedded industrial processor as the central controller. Level 1.0 multi functional DC watt-hour meter for accurate measurement of vehicle charging.
- 7 inch LCD touchscreen display can adapt to the low temperature -20°C.
- The product communicates with any OCPP platform in real-time through 4G, Ethernet, and CAN communication interface.
- The system software supports remote updates.

1.5 Product Operating Environment

- Max altitude = 2000 meters, power must be derated above 2000 meter altitude.
- The device's operating temperature ranges from -40°C to +75°C. power must be derated if the temperature is higher than 55°C.
- Max relative humidity = 95% RH, no condensation.
- An awning above the equipment is recommended for outdoor use.
- Installation incline shall not exceed 5%.
- Keep flammable and explosive materials away from the charger.
- Atmospheric pressure should be 79kPa ~ 106kPa.

1.6 Product Design Specification

The PowerDepot DC EV Charger range is designed according to the latest protocols of IEC61851 and meets the industry standard in function and performance. As well as the technical standards of IEC61851.

2. The Main Modules

2.1 Technical Specifications

Table 2: Technical Parameters

NO.	Article	Technical requirements	Units	Note
1. Input features				
1.1	Rated input voltage	380	Vac	Input format Three phase+PE
	AC input voltage range	260Vac~530Vac		
1.2	Three-phase unbalance	≤10%		
1.3	AC input voltage frequency	45Hz~65Hz	Hz	

1.4	Power factor/total harmonic distortion	= 0.98 @50% ~ 100% full load output power = 0.99@100% full load output power, nominal input voltage, and frequency THD = 5% @50%-100% full load output power	%	Test at rated input and output voltage
1.5	Efficiency	=95%	%	
1.6	Startup impulse current	< 120% of rated input current	A	The μ S impulse current generated by the EMI filter circuit at startup is not considered

2. Output features

2.1	Output voltage regulation range	150-1000	VDC	
2.2	Rated output current	40	A	
2.3	Module current limiting	0 ~ 100% Rated output current	A	
2.4	Soft boot time	3-8	S	The output voltage climbs to a stable output voltage till 750V.
2.5	Steady flow accuracy (20% current limit)	≤ ±1%		Input voltage 260V ~ 530V Output voltage 150V ~ 1000V
2.6	Voltagess regulation accuracy	< ±0.5%		(150~1000V, 0~20MHz)
2.7	Unbalance degree of average flow	≤ ±5%		(Output load 20%~100% rated range)
2.8	Load adjustment rate	≤ ±0.5%	A	(Test range is 320V~530V)
2.9	Grid adjustment rate	≤ ±0.1%		

3. Protect features

3.1	Input undervoltage protection point	255	Vac	Automatic recovery
3.2	Input overvoltage protection point	530	Vac	Automatic recovery
3.3	Output overvoltage protection point	Software overvoltage protection point 1000V, hardware overvoltage protection point 1000V	Vdc	
3.4	Output undervoltage alarm point	(Software can be set, lower limit -5V)	Vdc	Automatic recovery
3.5	Open phase protection/shutdown protection	When the module input phase is missing		The yellow light is on.
3.6	Output overcurrent protection	The overcurrent protection module limits the current output.		When the overcurrent fault disappears, the output can be automatically restored.
3.7	Output short circuit protection	Short circuit on output, current limiter for module		
3.8	Over temperature protection	Over temperature protection point: 55°C		Ambient temperature: 60°C, the allowable output power of the module=30kW; Ambient temperature: 65°C, the allowable output power of the module=20kW; REG1K00135 Charging Module User Manual Ambient temperature: 70°C, the output power of the module drops to 10kW. Ambient temperature: 75°C, the output power of the module drops to 0.
3.9	Cooling Fan failure protection	When the fan breaks down, the module shuts down, the red light is on, and the fault is reported.		

4. Detection accuracy

4.1	Output voltage detection accuracy	$\leq \pm 0.5\%$	Vdc	
4.2	Output current detection accuracy	$= \pm 0.2A$	A	
4.3	Module temperature detection accuracy	$= \pm 0.5^{\circ}C$		

5. Controlling features

5.1	Output control	When the input voltage is within the specified range, the module allows the output power to be 40kW, the output voltage to be $150=V_o=1000$, and the output current to be 40A.
5.2	Control instruction	The module does not receive the command from the charger, and automatically shuts down the machine after 5S

2.2 Overall Function

2.2.1 User Interface

You may select Automatic setting mode or manual setting mode.

- The automatic setting mode allows the charger to dynamically adjust the charging power according to the data provided by the battery management system and executes corresponding operations to complete the charging process.
- The manual setting mode allows you to charge during certain time periods, charging by payment amount, charging by quantity, and charging by power. When the charger enters the manual setting mode, simply follow the on screen instructions from there.

Display function:

- Real-time display of charging voltage, charging current, vehicle SOC, charging time, metering and billing, vehicle battery information, and other information.
- Display manual input information during manual setting.
- When a fault occurs, the corresponding information is displayed.
- It can display the relevant information of charging states.
- Displays other related information output by the monitoring unit.

2.2.2 Parameter settings

The operator enters the setting interface through the password and sets the over/under voltage protection threshold, current protection threshold, master station/charger IP, communication port and other parameters.

2.2.3 Self-inspection

Self-check when power is on, including housing, clock, power supply, storage space, etc. The fault information can be displayed on the status indicator or the display screen, and the fault information can be recorded.

2.2.4 Software upgrade

Chargers with a master monitoring system supports remote and local software upgrade, and those without a master monitoring system support local software upgrade.

2.2.5 Data transfer and storage

A) Transmission

The data transmission interface is reserved for chargers to collect and upload charger usage and charging information and as charger fault data.

B) Storage

Transaction data is stored as a record in a non-volatile memorizer to ensure that the data storage is correct, continuous, complete, and valid.

No less than 10,000 recording spaces are reserved. When transaction records are stored, the charger can timely upload data.

2.2.6 Billing function

There are four modes: local billing, backstage billing, cardless mode and no billing mode. -

- Local billing refers to the need to swipe a card for charging.

- Backstage charging refers to charging with backstage supporter.

- Cardless mode refers to charging without swiping a card.

- No billing mode refers to the need to charge by swiping the card but will not deduct funds from the card.

2.2.7 Control function

Using the touchscreen display, you can control the different functions of the DC Charger.

2.2.8 Alarm function

DC Charger output abnormal alarm/fault, power supply module, DC output over/under voltage, DC output over-current, input side switch trip/fuse fusing charging pile, charging monitoring unit with partition monitoring module communication interrupt, monitoring unit fault charging pile failure, such as monitoring and control unit can send out sound and light alarm, and output through the communication port charging pile on the screen.

2.2.9 Event Recording Function

Events such as charger failure and charging start/end time are recorded. The stored data remains even when the power is off.

2.2.10 Operation Permission Function

The charger comes with password management. An administrator can set charger parameters and view charging data through the password.

2.2.11 Clock function

The charger can receive the timing command from the partition monitoring terminal, meeting the timing requirements of PPS (second pulse) and PPM (sub-pulse).

3. Operation Instructions and Precautions

3.1 Operation Precautions

- If the screen shows that the machine is malfunctioning, please do not charge, and get in touch with the staff.
- Confirm that the balance on the IC card is sufficient when swiping the card. In the charging process, the charging will automatically stop for insufficient balance.
- When two connectors are used at the same time, the user should carefully distinguish whether they are user A or user B before swiping the card according to guidance on the interface to avoid confusion.
- Please follow the instructions for the charging device when operating.
- Pay attention to the cable strength when pulling and inserting the charging connector, do not exert too hard.
- During the card swiping, you can remove the card only after you hear the beep sound. Otherwise, the operation may fail.
- When the charging connector is inserted into the outlet, the indicator light turns green, meaning the power is on. Please do not remove or insert the charging connector at this time to prevent electric shock.

- In case of an emergency, please press the emergency stop switch. Charging cannot be initiated at this time. If charging is in progress, it will stop charging immediately.
- During usage, the lightning arrester's firing pin or indicator screen should be checked frequently (as shown below). If the firing pin is protruding screen turns red, it indicates that the lightning arrester has been damaged and should be replaced immediately.

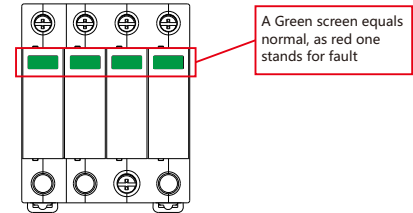
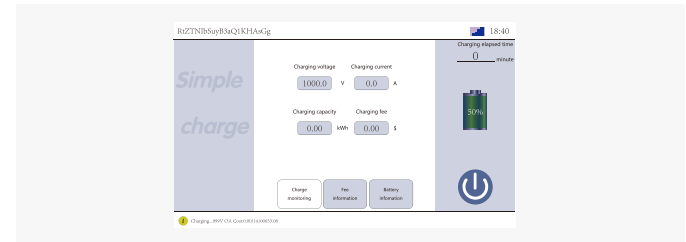


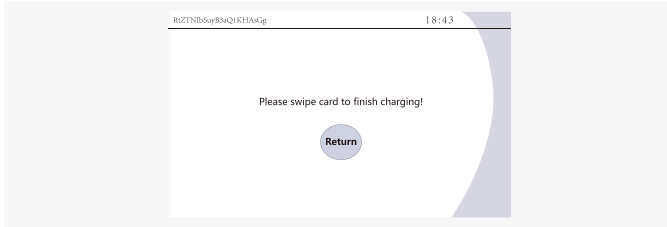
figure3-1 AC lightning arrester

3.2 Charging Status Description

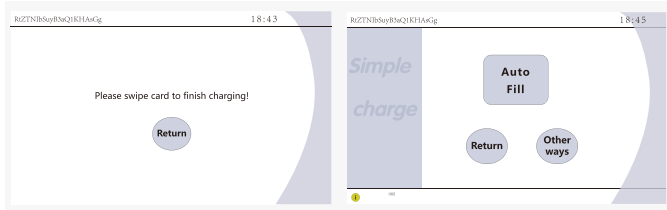
1.The charger is available on standby if the screen looks like what is shown below.



2.Please click "start charging" to proceed after the charging connector is in place, and the screen shows below. You may swipe the card or input password for charging after that.



3. After the user swipes the card, the status bar of the corresponding connector displays "Charging, swipe the card to stop." In this state, the user can swipe the card in the swiping area at any time to end charging.



4. If the interface says, "Charging has stopped, please swipe the card for payment," it means that charging has stopped, and the user who used this connector needs to swipe the card for settlement.

5. If the interface of connectors turn into "Fault, Suspend," it means a fault exists in the charger. Rectify the fault and use the system again.

3.3 Indicator description

- There are four kinds of indicator lights above the screen: green, green blinking, green strobing light, and red light.
- Green: Solid indicator. Remains after the device is powered on.
- Green blinking: Tethered cable removed from the Charger
- Green strobing light: EV Charger is charging the EV.
- Red light: It is on when a fault occurs and off after troubleshooting.

3.4 Instructions for the emergency stop switch

- Please press the emergency stop switch immediately when there is electric leakage.
- Please press the emergency stop switch immediately in case of fire, electric shock, and other abnormal conditions.
- If the charger fails, such as unable to stop charging, internal circuit short circuit, or other abnormal situations please press the emergency stop switch immediately.
- When the emergency stop switch is packed in a non-charging state, the indicator light will be on for alert, and the LCD screen jumps to the fault reminding page.
- When the emergency is resolved, please rotate the emergency stop switch to reset; otherwise, the charging session cannot proceed.

4. Installation

4.1 Safety Description

4.1.1 Instructions

Please read and follow the safety instructions before installing, maintaining, or using a charger. Charging stations must be installed according to specific national/regional standards and regulations.

This manual contains actual usage and installation instructions that must be followed when installing, using, and maintaining the EV Charger.

4.1.2 Warning: electric shock hazard

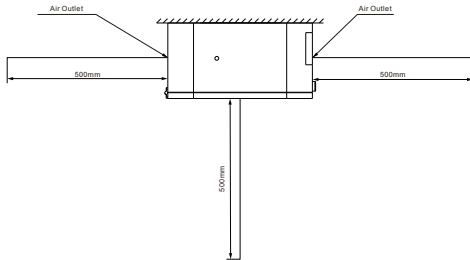
- Please turn off the power to the charging station before installing or maintaining it. Turn off the power until the charging station is fully installed and housing is in place and secured.
- In the event of a hazard and accident, a qualified electrician must immediately disconnect the charging station from the power supply.
- Do not operate a charging station if it is damaged or if the charging cable shows excessive wear or other visible signs of damage. If you suspect damage to the charging station, please contact the after-sales staff or your dealer.
- Do not use jet wash to clean the charging station, do not use wet hands, and do not immerse the charging connector in liquid.
- Do not place your fingers or other objects inside a charging port or connector.
- Before charging an electric vehicle, read the instructions and electric vehicle owner's manual that came with the charging post.

4.1.3 Warning: Gas buildup

Some electric vehicles require external ventilation systems because of the toxic or explosive gases that can be released when charged indoors. Check your vehicle's owner's manual to check if it emits toxic or explosive gases while charging.

4.2 Installation Conditions

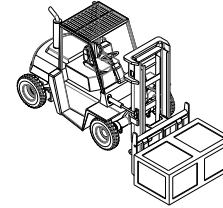
- Calculate the existing electrical load to determine the maximum operating current for the charging station installation.
- Calculate the distance from the local power supply panel to the charging station installation to find the correct voltage drop. Local regulations may apply and can vary depending on the region or country.
- Obtain all necessary permits from the local authority that has jurisdiction.
- PE grounding connectors must not be spliced.
- Refer to local regulations, 1.25 times the maximum current, and voltage drop to select wire size .
- Use the correct tools and ensure sufficient material resources and protection measures.
- Ensure there is good cellular reception where the charging station will be installed.
- Prepare the installation areas with the correct power wiring and data cabling.
- As the ventilation outlet is located at the back of the charging station, the free space must be ventilated accordingly.



- For indoor use, the room must have ventilation exceeding 3000 m³/h.

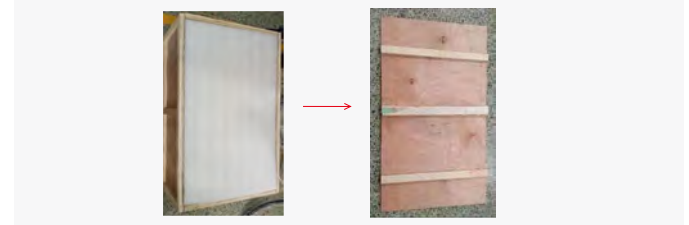
4.3 transport the Packing Cases

- (1) Use a forklift to transport the packaged products.



4.4 Unpacking

- (1) Take off the top wooden packing cover.



- (2) Take out the foam covers on the top of the wooden box.



(3) Remove the cross expansion bolt and M1 card from the fitting card slot.



(4) one person lifted the gun line, the other person took out the foam in the middle of the wooden box.



4.5 Carrying

Two people lift the Charger out of the box and move it to the location where the Charger will be installed.

4.6 Installation

Installation precautions:

- (1) "conduit" as the standard term for the protective pipe that houses the service line. In areas where catheters are not used (such as Europe), a cable consisting of service wiring enclosed in a protective sheath can be substituted with a metal and flame retardant if local regulations permit.
- (2) Use appropriate circuit breakers.
- (3) In order to keep the weatherproof of the shell, please use the cable sealing sleeve.
- (4) EV chargers do not come with safe transportation of batteries. If history recording function is needed, we recommend users to purchase CR1220 batteries or batteries of the same size.
- (5) Use only copper conductors.
- (6) Copper wire shall be used in accordance with local circuit regulations. The selected cable must be able to withstand continuous loads of up to 40A at all times. The selected circuit protection device must include an appropriate wall mounted residual current device (RCD) and corresponding electrical load overcurrent protection.
- (7) The operation space of no less than 1 meter shall be satisfied around the pile installation.
- (8) The charging pile must be installed on the customized backplane. The wall holes must be aligned with the holes on the backplane. See the appendix for installation of the backplane.
- (9) Power supply:
220V single-phase power supply: For the three-phase electric vehicle charger, connect the single-phase line (L1), the neutral line and the ground line are not connected to other phase lines (L2 or L3). The phase voltage between the line and the neutral line should be 220V.
380V three-phase power supply with neutral line: If three-phase is used, all three-phase (L1, L2, L3) and neutral line should be connected to each other, and the voltage from each phase to the neutral line should be 220V.

Installation position and height

Installation location:

make sure the parking position within the scope of the charging cable.

- (1) installed in a well ventilated space. Avoid installing in closed boxes or near high power appliances.
- (2) The installation position has enough clearance to allow the charging cable to wrap around, and the charging handle can be placed on one side of the base.
- (3) If installed in an enclosed garage, select the side of the electric car charger slot.
- (4) For outdoor installation, waterproof protection is recommended.

Installation height:

Maximum height (indoor and outdoor) : 60 inches (1.5m)

Recommended Height: 47 inches (~1.2 m)

The minimum height: outdoor 24 inches (0.6 m)

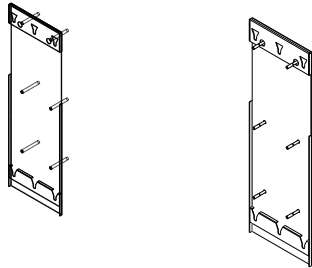
Minimum interior Height: 18 inches (0.45 m)

Installation steps:

Step 1 Locate the positioning plate

The bottom of the positioning plate should be 1.2m away from the ground (recommended).

If the charging pile is installed near the edge of the wall, the positioning plate should be at least 0.5m away from the edge of the wall. Drill holes according to the instructions on the position templates for different installation and connection modes. As shown in the picture.

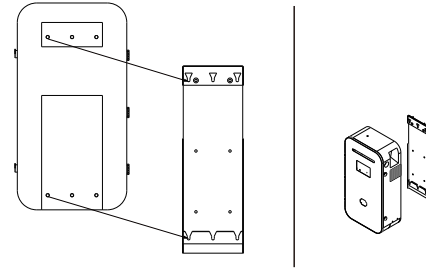


Step 2 Install the brackets.

Drill six holes with a diameter of 10mm and a depth of 80mm into the wall as required by the drilling template. Insert expansion bolts through the backplane into the drilled holes, and secure the mounting support to the wall using a screwdriver.

Step 3 Install charging unit.

The bolt on the back of the charging pile is aligned with the U-shaped slot of the installation backplane, and the charging pile is hung on the installation backplane with the back flat; Install the charging pile to the mounting plate, find the cutting hole on the back of the EV charger, and use four M6*8 screws to secure the EV charger to the mounting plate, as shown (screw torque 1.5NM-2.0NM).



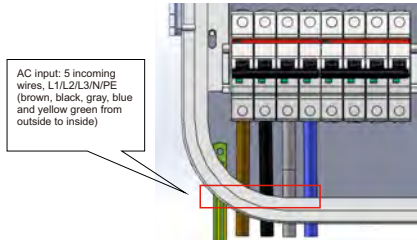
Step 4 Wiring

Use a screwdriver to loosen the screw on the cover of the electric car charger. Connect the cable to the appropriate terminal. (Please consult your local electrician or refer to your local code for the appropriate wire size for electric car charger current)

Note: It is the responsibility of the installer to verify that additional grounding is required while ensuring compliance with local regulations, and that the grounding must be installed at the power source, not at the cable entrance of the EV charger.

4.7 Cable Access

Connect the three-phase cable to the charger's input terminals. Please pay attention to the connection method of the five wires. Cables should wire to the grounding bar in the corresponding color. as shown in the following figure. (Note: please Refer to below for AC input (L1, L2, L3, N, PE) cables positioning)

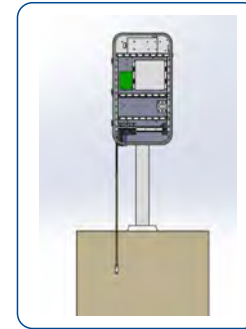


Grounding requirements for Charging station equipment:

1. Grounding resistance requirements: the grounding resistance of charging station equipment shall not exceed $4\ \Omega$ in general, and shall be kept within the required range throughout the service life of charging station
2. Contact voltage requirements: generally, the contact voltage of the equipment grounding of the Charging station should not exceed 5mV to ensure that no harm will be caused to people during the charging process
3. Grounding line requirements: the grounding line of Charging station equipment shall be copper core soft armored wire or copper bar, and the wire diameter shall be thick enough to withstand the overload current
4. Grounding method: Use a metal rod for grounding, and bury the metal rod at least two meters underground to ensure the firmness of the grounding

5. Grounding point selection:

- (1) The grounding point should be close to the Charging station to ensure that the current can flow back to the grounding wire
- (2) The grounding point should be kept away from industrial noise and interference sources to avoid affecting the quality of grounding
- (3) The grounding point should avoid obstacles such as cement road surfaces and avoid high grounding resistance



4.8 Network Connection

illustration	operation
<p>The illustration shows a network switch with several ports. Red circles highlight the WAN/LAN ports, the OCPP Ethernet port, the 12V power supply port, the 4G antenna port, and the WIFI/DIN port.</p>	<ol style="list-style-type: none">1. Ethernet cable Switch in WAN/LAN (external cable);2. LAN1 Switch in the OCPP Ethernet cable (internal cable).3. Router power supply 12V (factory default settings)4. 3G/4G Switch in 4G antenna5. WIFI/DIN Switch in WIFI antenna



1.2g/3g/4g SIM card slot

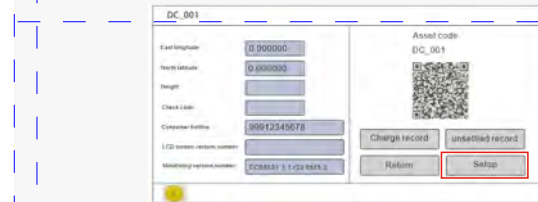
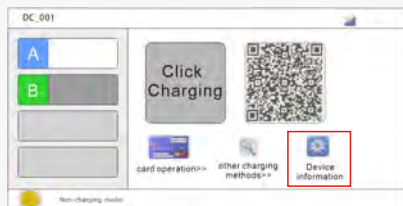
4.9 Connecting the OCPP Platform

4.9.1 Information Required Before an Operation:

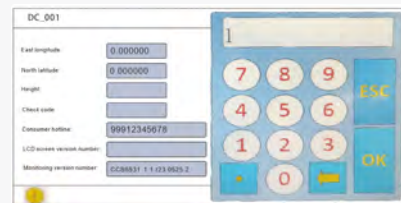
- OCPP server address.
- Remote port.
- Pile number of the charger.

4.9.2 4G/ Ethernet connection

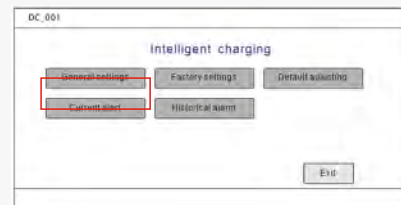
(1) Fill in the OCPP server address



(2) Enter the password, which defaults to 1



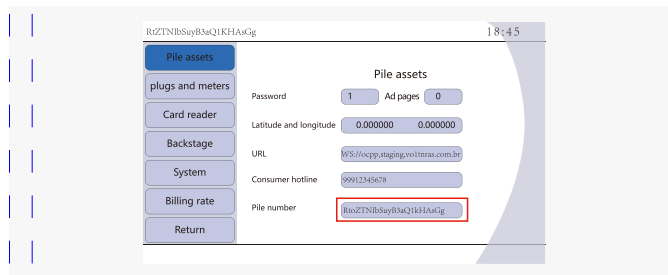
(3) Enter the OCPP settings interface



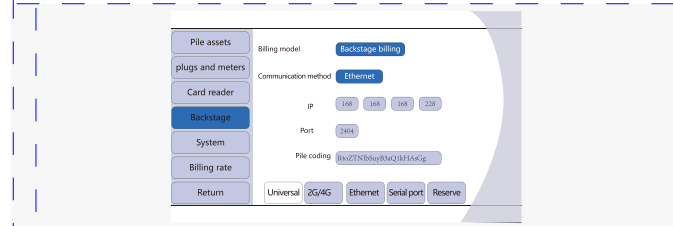
(4) Fill in the OCPP server address



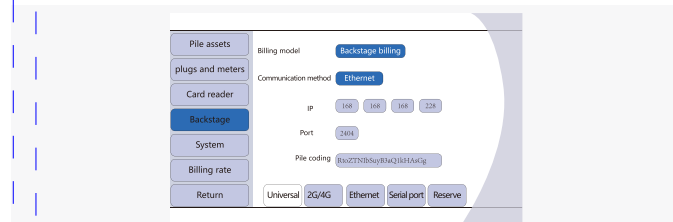
(5) Fill in the pile number of the charger



(6) Fill in the remote port



(7) Change the billing mode into backstage billing mode and the communication mode to Ethernet connection.



(8) Restart the device after charging the parameters.

5. Parameter configuration

5.1 Check the safety before use

- 1) Ensure that the product does not scratch, rust, deformation, etc.
- 2) Ensure that the power supply socket is secure and that no foreign objects are left in the charging plug and the charging socket on the vehicle side.
- 3) Do not use the charging cable or charging connector if the shell is damaged or the cable is exposed.
- 4) Keep the plug of the charging connector dry. If there is water, please wipe the plug dry with a dry and clean cloth when the whole housing is powered off.

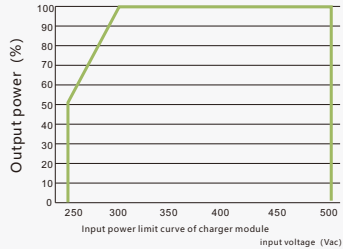
5.2 Parameter configuration

(see attachment parameter setting and whole charger debugging)

5.3 Technical Data

The input features

Parameters	Technical requirements		
Voltage range	380±15%Vac		
wiring	3P+N+PE		
frequency	50/60Hz		
Input current	BPE-PD-DC-20	BPE-PD-DC-20	BPE-PD-DC-20
	≥36A	≥54A	≥72A
The power factor	=0.98		
The efficiency of	=98%		
Boot input impulse current	= 120% of maximum input current		



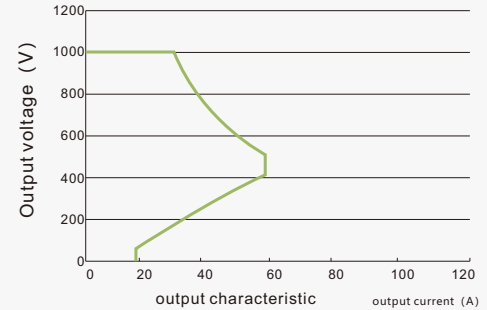
Output characteristic

Parameters	Technical requirements
The output power	40kW Max
Single module output	20kW/30kW/40kW
The output current	CCS2: 0 ~ 250 a
The output voltage	CCS2: 150 ~ 1000 v

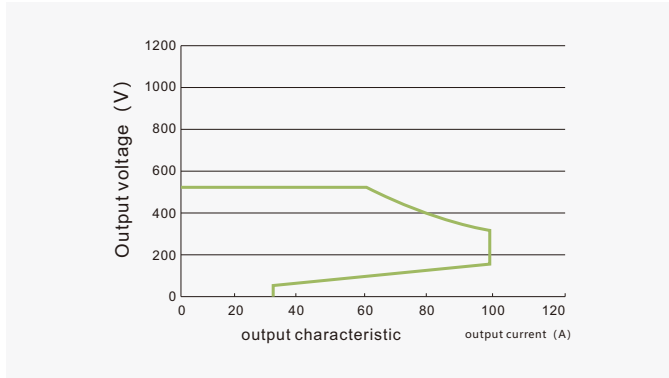
Note: The power provided by the charging station depends on several factors:

- Vehicle battery voltage
- Vehicle battery temperature
- Vehicle load level
- The environment temperature

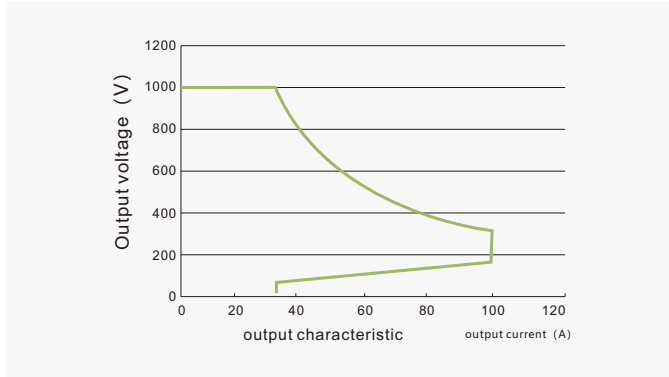
High-pressure mode



Low voltage mode



Maximum output power



The cable spans

Projec	Technical requirements
The cable span	= 5m

Structure and physical properties

Projec	Technical requirements
The housing material	Cold-rolled steel sheet
Protection index	IP55/IK10
Working temperature	- 40 °C~ + 70°C; -40°C (±4°C) when turned on, derating above 55°C. Power off above 70°C.
Storage temperature	- 40 °C ~ 85 °C
Humidity	95%, no condensation
Cooling	Intelligent air cooling
Maximum mounting height	2000m
Units of size: mm (L*W*H)	800 * 800 * 2000
Package size, units: mm (L*W*H)	
Weight of charger	350kg
Total Weight, including packing	400kg
Color	Dark grey

Connectivity

Project	Technical requirements	
Connectivity authorization		RFID, App
HMI	The screen size	9.1-inch color LCD touchscreen
	The rated voltage	12V
	Rated current	1A
	Rated power	12W
Communication standard		4G/Ethernet
Communication protocol		OCPP1.6 J

EMC standard grade

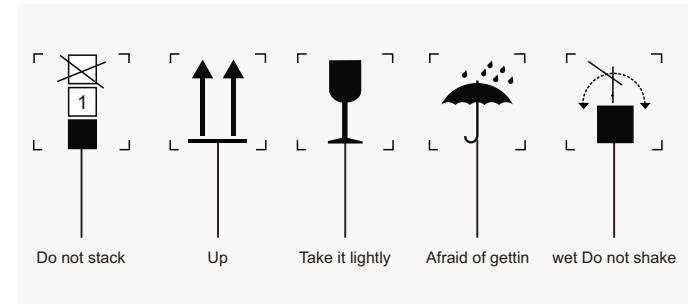
Region	Standard
China	NBT 33008.1-2018
	NBT 33001-2018
	EN61851-1:2019;EN61851-23:2014
The European Union	IEC61851-21-2:2021;EN61000-6-2:2009;EN61000-6-4:2009

6. Packing, Transport, and Storage

1)Packing: The housing is tightly protected by drawing film, surrounded by foam support, and packed in a wooden case. The rectifier module is packaged separately, with foam support around it and external foam carton packaging.

2)Transport: The product should not be violently shaken, hit, and inverted during transport to avoid damage to the product.

3)Storage: If the product needs to be stored after purchase, it must be placed in a dry and well-ventilated indoor place.



7. Ordering Instructions and after-sales service

7.1 Ordering Instruction

- 1) Must understand the application and scenario of the equipment, and fill in the customer demand form.
- 2) Provide product name, model, specifications, parameters, and configuration requirements when ordering;
- 3) If the user has a special operating environment or technical requirements for the equipment, please negotiate with the manufacturer's technical personnel and sign an agreement.

7.2 After-sales service

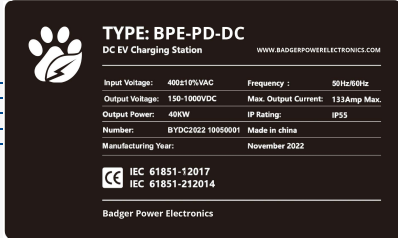
Subject to the user's compliance with the conditions of storage, installation, use and operation, the shelf life of the product shall be 12 months, i.e. 12 months from the date of acceptance, or 12 months from the date of receipt signed by the customer if the Product needs to be stored. If the product is damaged or cannot be used normally due to poor manufacturing quality, the production unit shall be responsible for free maintenance, debugging or replacement of parts for the user.

7.3 Attachment list

- 1) Supporting devices such as backup of common spare components and installation tools can be attached based on customer requirements.
- 2) Technical documents: Instruction Manual, Certificates of qualification, warranty card, factory inspection report.

7.4 Nameplate

Nameplate



TYPE: BPE-PD-DC
DC EV Charging Station

WWW.BADGERPOWERELECTRONICS.COM

Input Voltage: 400±10%VAC	Frequency: 50Hz/60Hz
Output Voltage: 150-1000VDC	Max. Output Current: 133Amp Max.
Output Power: 40KW	IP Rating: IP55
Number: BYDC2022 19050001	Made in china
Manufacturing Year: November 2022	

IEC 61851-1:2017
IEC 61851-21:2014

Badger Power Electronics

Instructions

Input Voltage	Frequency
Output Voltage	Max. Output Current
Output Power	IP Rating
Number:	Made in china
Manufacturing Year	November 2022

The appendix Appendix I troubleshooting list (please search by description and refer to handling)

Fault Code

Last Update Date: August 2021

Fault code	Fault description	Car/Charger	Analysis of Causes	Handling
E000	Normal stop		In this document, the faults highlighted are not supposed to occur because they are either fixed or too rare. If customers encounter those highlighted faults, please contact our technical support.	
E001	Manually stop charging			
E002	APP remote stop			
E003	Outstanding bill after stopping charging and pulling out connector			
E004	The BMS/VIN stops abnormally.			
E005	TCU stops normally			
E006	TCU malfunction shutdown			
E007	TCU believes MCU is faulty			
E008	The pre-charging module fails to start	Charger	During the pre-charging process, the master control assumes that the module did not output to the specified voltage.	<ol style="list-style-type: none"> 1. If the module is broken, manually start the output voltage on the factory settings interface. If it can start, it indicates that the module is normal. 2. the module started, but the board did not detect the battery voltage. It may be a wiring error.

E009	The adhesion failure of the discharging get in touch with	Charger	During insulation detection, there is no battery voltage, but there is a current output greater than 2A.	Replace the discharge. Get in touch with
E010	The BRM error	Car	The BMS version number in the BRM packet is not 1.0 or 1.1	Automatically detects the fault for the 2015 version
E011	Input high voltage gets in touch with mistaking action and rejecting action	Charger	Ac input contactor mistaking action or rejecting action	<ol style="list-style-type: none"> 1. Ac input high voltage contactor, the open and enter signal line is not connected, and it is actually closed, but the open and enter is not detected; 2. The fault is still there after the open and in connection, but the AC input high voltage contactor is really not closed, which may be the wrong wiring of the open coil loop.
E012	Output gets in touch with mistaking action and rejecting action	The charger	K1K2 gets in touch with mistaking action and rejecting action	<ol style="list-style-type: none"> 1. Output contactor (K1K2), the on-off signal line is not connected, actually closed, but the on-off is not detected; 2. The opening is connected, but the K1K2 high voltage contactor is really not closed, which may be due to the wrong wiring of the opening coil loop, or the wrong setting of the opening outlet.
E013	The charger determines other faults of the BMS and stops charging	Car	The charge in the BSM packet stops after 10 minutes	The car end failure

E014	Shunt contactor dynamic/malfunctioning fault	The charger	Shunt contactor mistaking action and rejecting action	1. Busbar contactor, opening and entering signal line is not connected, actually closed, but the opening is not detected; 2. The fault is still there after the opening is connected, but the busbar contactor is really not closed. It may be that the opening coil loop is connected incorrectly, or the opening outlet is set incorrectly.
E015	The charging connector has not been put back	The charger	1. There is a limit switch on the plug seat, the plug is not in place, or the circuit of the limit switch is broken; 2. There is no limit switch on the plug seat, but it is equipped in the setting.	If there's a trip switch, put the connector back in, and if that doesn't work, check that the entry loop is broken; If there is no travel switch, set the connector seat entry number to 255 in the setting.
E016	Suspension of charging service	The charger/ platform	Customer special customization function	
E017	Bill delivery failed	The charger/ platform	The charger was connected to the backstage, and the bill was uploaded after charging, but no reply was received backstage.	Back-end processing
E018	Bill delivery is over time	The charger/ platform	The charger was connected to the backstage, and the bill was uploaded after charging, but no reply was received from the backstage.	Back-end processing
E019	Charger code input does not conform to the rules	The charger/ platform	Customer special customization function	

E020	The output current is greater than the maximum allowable charging current	The charger	The communication between all charging modules is abnormal	1. The module is powered off, or the main control board is powered off. 2. Module dip switch error; 3. The module manufacturer setting is wrong.
E021	System restart	The charger	Charger active restart or platform remote operation	
E022	Reverse battery error	The charger/car	The battery is connected Reverse, or the charging connector is connected Reverse.	The two wires used by the board to measure battery voltage are connected inversely.
E023	Application update	The charger	Program update	
E024	Time-revision failure	The charger/ platform		Get in touch with Technical Support.
E025	The communication between monitors fails	The charger	1. CAN network cables between controllers are faulty. 2. the controller CAN mouth is terrible. 3. When the software and hardware are inconsistent.	1. If the charger runs on-site, please check the CAN network cable between controllers. 2. If debugging is for new chargers, it may be a software problem. 3. If it is new charger debugging, it may be CAN network connection or the end 120 euro resistance is not added; 4. Before multiple controllers, the same ground cable should be connected.
E026	The charging condition reaches the value that the user set	The charger	Charging conditions reach the set value (such as set time, fixed time, etc.)	
E027	The output HV fuse is faulty	The charger	The main control unit has detected the abnormal opening of the HV fuse	Check the fuse entry loop

E028	VIN validation timeout	The charger/ platform	The backstage does not reply to the VIN authentication packet within the specified period.	
E029	Auxiliary power failure			
E030	SOC has reached the preset value		Vehicle battery SOC reaches the set value.	
E031	No valid accounting model exists.			Exclusive for Chinese grid SDK
E032	The LCD communication is faulty	The charger	Failed to communicate with the LCD. Procedure	
E033	This charger does not have the unpaid history of the card	The charger		
E034	Output overcurrent			
E035	IN Insulation check the battery voltage does not reach the preset value	The charger	In Insulation test, The central control sends the starting voltage to make the module output, But the module output does not reach this value.	The module is actually 500V, but the LCD screen is set to 750, the main control let the module start 750, the module can not start, only output 500V.If it is a standard double gun post, you can choose automatic calibration from the factory debugging interface.
E036	Smoke alarm failure	The charger		
E037	BMS stop by Fault(BMS)	Car	There is a fault bit in the BMS	
E038	The demand voltage of the BMS is abnormal	Car	The required voltage of the BMS exceeds its maximum allowable charging voltage.	You can view the information by intercepting packets

E039	Backstage communication anomaly	The charger/ platform	The charger is set to backstage charging mode, but communication with backstage is interrupted. 1. Check the backstage parameter, Settings; 2. Determine whether the site signal is poor.	
E040	Screen timeout	The charger	Start or stop a timeout	The AC is due to S2 on the car not closing for a long time, and the DC is due to broAA timeout
E041	The lightning arrester is faulty	The charger	The lightning arrester is faulty	1. If the lightning arrester is open and connected, it is necessary to judge whether the lightning arrester is really broken or normally open and normally closed; 2. If the lightning arrester is not switched on or connected, the factory settings - input setting - set the lightning arrester on number 255-Restart.
E042	Lightning arrester maintenance	The charger	The lightning arrester maintenance circuit breaker is disconnected	1. If the lightning arrester maintenance switch is opened and connected, it is necessary to judge whether the lightning arrester is broken or normally open and normally closed; 2. If the lightning arrester maintenance switch is not on or connected, then factory setting the - input setting - set the lightning arrester maintenance switch on number as 25the 5 to restart.

E043	The emergency stop switch activated	The charger	he emergency stop switch is on	If the emergency stop is pressed, turn it out. If the emergency stop is not pressed, negative the polarity of the emergency stop in the factory setting - input setting (0,1)
E044	AC power failure	The charger	The Ac circuit breaker disconnected	1. If the circuit breaker is open, confirm that it is normally open and normally closed; 2. If the circuit breaker is not on, change the circuit breaker on number to 255 in the on setting and restart.
E045	The K1K2 abnormal positioning	The charger	DC output gets in contactor adhesion, or mistake action and rejecting action.	
E046	Equipment door open	The charger	The cabinet door opens;1. A door entry control is mistakenly set or wired in a wrong way.2. No door entry control, but the entrance number is set	1. Open the cabinet door, check the wiring, normally open and normally closed, and negative the polarity of the entrance number; 2. Change the entrance number of the cabinet door to 255 and restart the device.
E047	The electronic lock S switch is abnormal	The charger		
E048	The charging module is faulty (all)	The charger	All charging modules are not communicating;1. The charging module is out of power;2. The module has power, but the CAN communication line is not connected correctly, or the module manufacturer has not set.	Check whether the battery is powered on, the CAN communication cable, and the manufacturer setting of the charging module.

E049	The charging module is faulty (part)	The charger		Part of the charging module is not communicated;1. The charging module is out of power; 2. The module has power, but the CAN communication line is not connected properly or has no factory settings.	Check whether the module is faulty.
E050	The charging module has AC overvoltage	The charger		Charging module is sent up. AC overvoltage	Measure the AC input voltage. If the voltage is too high, do not handle it. If the voltage is normal, get in touch with the module manufacturer.
E051	AC undervoltage of the charging module	The charger		Charging module is sent up. AC undervoltage	Measure the AC input voltage. If the voltage is too low, do not handle it. If the voltage is normal, get in touch with the module manufacturer.
E052	The charging module is short-circuited. Procedure	The charger		Charging module connected while short circuit occurs	Get in touch with the Module Manufacturer
E053	The Ac phase of the charging module is missing	The charger			
E054	Orderly charging power regulation failure	The charger			Exclusive for chinese Grid SDK
E055	The communication of the rectifier cabinet failure	The charger		This machine is a split charger, and the communication between it and the rectifier is wrong.	If the machine is really a separate pile, enter the charging machine setting interface, check the address of the machine and the address of the rectifier cabinet, or check the CAN communication line; if the machine is not a split pile, change the control mode and the machine type.

E056	The charger is overheated	The charger	The temperature of the module or connector is too high	
E057	Output get in touch with or adhesion failure	The charger	Adhesion of K1K2 gets in contactor;1. When the charger is in standby mode, K1K2 will adhere;2. The battery voltage is detected before the charger module is output.	Check whether the battery voltage connection on the control board is connected to the connector end; Check that the K1K2 DC contactor is normally open and normally closed.
E058	The card number is inconsistent	The charger	The card number is inconsistent	
E059	The battery voltage is inconsistent with the BCP packet	The charger/car	The battery voltage measured by the charger is inconsistent with the battery voltage in the message sent by BCP.	The voltage detection value of the charger battery needs to be calibrated: factory debugging - manually set a voltage value, start - close K1K2, check the gap between the battery voltage and the meter voltage
E060	The TCU communication is faulty.			
E061	Electric leakage protection		Ac charger leakage protection action	Check the main loop and power it back on.
E062	The account does not exist.		The card number (account) does not exist.	The backstage did not input the card number (account number).
E063	Abnormal account		Overdue or abnormal account	
E064	The card has an unpaid record.		There was a record of unpaid bills before	Return to the original charger to compensate for settlement, or re-issue the card
E065	Incorrect account password		Password mistake	
E066	Server login Failure	platform	The platform does not recognize the charger	

E067	The card reader communication is faulty	The charger	The card reader communication is faulty	
E068	Insulation inspection timeout	The charger		
E069	The battery voltage is greater than the maximum allowable charging voltage	Car		
E070	The PE needle is broken. Procedure	The charger		
E071	Insulation monitoring alarm	The charger/car		Use a gauge to check whether the car or charger insulation is reliable.
E072	The battery voltage is abnormal during the insulation check. Procedure	The charger/car	Before the insulation check started, the battery voltage was detected to be greater than 20V.	1. There is no K5K6 on the car, and the battery terminal voltage comes out directly. 2. The controller is not used for precision calibration before leaving the factory.
	Insulation fault	The charger/car		Use a gauge to check whether the car or charger insulation is reliable.
E074	Failed to start the insulation check module. Procedure	The charger	During the insulation test, the main board considered that the charging module failed to start. Procedure	1, the charging module does not start: the factory debugging interface needs to manually start the module to judge the module; 2. The charging module is started: it is necessary to test again whether the voltage is actually output during the insulation detection process. If there is no actual output, it is necessary to test whether the DC circuit of the charging pile is short circuit or whether the voltage collection line is connected incorrectly.

E075	Discharge timeout	The charger	After stopping charging, the voltage did not fall below 60V within the specified time.	<ol style="list-style-type: none"> 1. If the charger has a discharge loop, it is necessary to judge whether it works normally. The steps are as follows: The discharge loop is closed manually on the factory debugging interface, and a multi-meter is used to measure whether there is the voltage on the loop at this time. If the external discharge is not closed after manual closure, it is necessary to check the external loop. 2. If the charging module has a discharge loop, get in touch with the manufacturer to replace it.
E076	The charging port electronic lock is faulty	The charger	The charger control board thinks that the electronic lock is closed, but the feedback of the electronic lock is not closed.	<ol style="list-style-type: none"> 1. If there is electronic lock feedback, check whether the connector is plugged in tightly, unlock it first, plug it in and try again. 2. If there is no electronic lock feedback, please set the electronic lock opening number to 255 in the factory settings - input setting, and restart.

E077	BMS communication timed out	The charger/car	The charger sends a message to the BMS of the vehicle, but the BMS fails to recover the correct message at the specified time.	<ol style="list-style-type: none"> 1. Vehicle BMS24V, the auxiliary source of the charger is 12V, which cannot be powered to wake up. 2. the auxiliary source is correct, but the additional source loop wiring is abnormal; you can manually close the auxiliary source, measuring the actual output; 3. The CAN communication line between the charger and the BMS is disconnected or in poor get in touch, and the charger sends the message but ,the vehicle does not receive it; 4. The problem of the vehicle itself may be a very old car or a non-standard car, which is not produced according to GB27930.You can check the situation by cutting packets
E078	The pre-charging battery voltage is too low.	Car	The battery voltage is less than the minimum output voltage of the charger.	
E079	The position of pre-charging K1K2 is abnormal	The charger/car	The battery voltage cannot be collected during the pre-charging process	<ol style="list-style-type: none"> 1. Check whether the voltage collection of the charger battery is normal; 2. Replace the car for test charging.

E080	Vehicle control guidance failure during charging	The charger/car	The connector is pulled during charging; Or the vehicle voluntarily stops charging.	
E081	Lack of balance	The charger		
E082	Complete charging duration	The charger		
E083	Charging capacity completed	The charger		
E084	Charging amount completed	The charger		
E085	Fixed error	The charger		Reset the charger parameters and debug
E086	The meter communication error	The charger	The charger control board does not establish communication with the electricity meter	1. The electricity meter is out of power; 2. the control board is out of power; 3. The meter 485 communication line is connected incorrectly; 4. The meter communication protocol is not DLT645-07; 5. If it is a double connector, the address of the electricity meter may not be set correctly; 6. The baud rate of the meter is wrong, or the calibration is wrong;
E087	The meter is faulty	The charger	After charging the charger for some time, there is voltage, current and no, electricity.	1. Check whether the address of the A connector meter is reversed from that of the B connector meter; 2. Factory debugging interface to check whether the electricity quantity of the meter is consistent with the actual amount of the meter; 3. Try charging an electricity meter.

E088	The pre-charging K5K6 is abnormal	The charger/car	During the pre-charging process, the external battery voltage cannot be collected within the 30S before K1K2 is closed.	1. Lower circuit of DC contactor is disconnected, such as fuse, diverter, charging gun and cable; Judgment method: factory debugging interface, close K1K2, manually output voltage, measure with Mult-i-meter at gun head; 2. The vehicle is not closed K5K6.
E089	Connector over temperature fault	The charger	The connector is overheated or incorrectly wired	Check the connector or temperature sampling line
E090	The system reset	The charger		The action value after checking the historical alarm records corresponds to the fault code in this table.
E091	Ac input overvoltage	The charger		
E092	Ac input undervoltage	The charger		
E093	The communication lacks	The charger		
E094	The charger over temperature alarm is generated	The charger		
E095	The connector over temperature alarm is generated	The charger		
E096	Output overvoltage	The charger		
E097	The output voltage	The charger		
E098	Output flow	The charger		
E099	The battery voltage is too low or inconsistent with the uplink value	The charger/car	During the pre-charging process, the battery voltage measured by the charger is 5% different from the battery voltage sent by the BMS.	Manual output high voltage check charger battery voltage calibration: 1, if it is accurate, it is true that the vehicle is not delivered with the actual;2, if not, calibrate the battery voltage.

E100	Active vehicle stop	Car	The maximum permissible total charging voltage of the BMS is less than the minimum output of the charger	Intercept the packet and check the cause of stopping the BST packet sent by the vehicle.
E101	The maximum allowable charging voltage is too low	Car	The maximum allowable total charging voltage of the BMS is less than the minimum output of the charger	Check whether the lowest output voltage of the charging module is the actual lowest output voltage of the charging module. If not, change it to actual; If it is, then only the lower voltage level module.
E102	The maximum output capacity of the charger is insufficient	The charger	The BMS demand voltage exceeds the maximum output voltage of the charger	Check whether the maximum output voltage of the charging module is the actual maximum output voltage of the charging module. If not, change it to true; If it is, then only the higher voltage level module.
E103	The BCP data is abnormal.	Car	The length of BCP is incorrect. Or the maximum allowable voltage of the car is less than the minimum output voltage of the charger.	
E104	The unknown fault	The charger	custom	
E105	The BST insulation is faulty	Car	The vehicle was deemed to have faulty insulation	Check the self-insulation of the charger
E106	The BST output connector is overheated	Car	The vehicle thought the charging connector was overheated	Find the cause of over temperature

E107	The BST-BMS component is faulty	Car		Contact Technical Support
E108	The BST connector is faulty	Car		Contact Technical Support
E109	The temperature of the BST battery string is too high	Car	The vehicle thinks the battery pack temperature is too high	Wait for the car battery to cool
E110	The BST high voltage relay is faulty	Car	The vehicle believes that the DC output get in touch with of the charger is faulty	The charging pin manually closes and disconnects the DC contactor to check the feedback status. If it is, find out the cause, such as setting the entrance number, and damage to the contactor itself. If not, it is the vehicle itself.
E111	BST detection point 2 is faulty	Car		
E112	BST Other faults	Car	The vehicle believes that the charger has other faults	Further inspection need to be taken.
E113	The BST current is too large	Car	The vehicle thinks the charger current is too high.	On the charging screen, click the battery information to view the required current of the BMS and the actual output current of the charger. If the actual output current is less than the BMS demand current, the vehicle itself has a problem ;if the actual output current is greater than the BMS demand current, compare the meter current to see if it is consistent.

E114	The BST voltage is abnormal.	Car	The vehicle thinks that the charging voltage of the charger is abnormal.	On the charging interface, click battery information to view the required voltage of the BMS and the actual output voltage of the charger. If the actual output voltage is less than the required BMS voltage, the vehicle itself has a problem ;If the actual output voltage is greater than the required BMS voltage, then compare the meter voltage to see if it is consistent.
E115	The pre-charging battery voltage is too high	The charger	The car battery voltage is too high during the pre-charging process.	Contact the car manufacturer
E116	Standby			
E117	Standby			
E118	Fan fault	The charger	The main control module detects that the fan is on abnormally	Check the Settings and wiring, or the actual fan is broken
E119	Water failure	The charger	The main control module detects that the water sensor is abnormal	Inspect the charger cable and contact the site admin if water is found

E120	The BRM timeout	The charger/car	During the communication between the charger and BMS, the vehicle did not reply to the BRM (identification message) message within the standard time.	<ol style="list-style-type: none"> 1. The car is full of improper chargers; 2. some cars just charged within a few minutes to charge no reaction; 3. S+S- communication line loop problems; 4. A+A- auxiliary power loop has a problem; 5. Due to vehicle interference or other reasons, the response time of the message has exceeded the standard time. It is suggested to change the BMS timeout factor to 2 on the LCD screen of the charger to be compatible with this vehicle; 6. The car is broken, or the charger is broken.
E121	BCP timeout	The charger/car	During the communication between the charger and the BMS, the vehicle did not reply to the BCP (power battery charging parameters) message within the standard time.	If the vehicle is interfered with or, for other reasons, the time to reply the message has exceeded the standard time limit, it is recommended to change the BMS timeout factor to 2 on the LCD screen of the charger to be compatible with this vehicle.

E122	BRO timeout	The charger/car	During the communication between the charger and BMS, the vehicle did not reply to the BRO (battery charging ready state) message within the standard time.	If the vehicle is interfered with or, for other reasons, the time to reply to the message has exceeded the standard time; it, it is recommended to change the BMS timeout factor to 2 on the LCD screen of the charger to be compatible with this vehicle.
E123	BCS timeout	The charger/car	During the communication between the charger and BMS, the vehicle did not reply to the BCS (Total state of Battery charge) message within the standard time.	If the vehicle is interfered with or, for other reasons, the time to reply to the message has exceeded the standard time; it, it is recommended to change the BMS timeout factor to 2 on the LCD screen of the charger to be compatible with this vehicle.
E124	The BCL timeout	The charger/car	During the communication between the charger and the BMS, the vehicle did not reply BCL (battery charging demand) message within the standard time.	If the vehicle is interfered with or, for other reasons, the time to reply to the message has exceeded the standard time; it, it is recommended to change the BMS timeout factor to 2 on the LCD screen of the charger to be compatible with this vehicle.

E125	BRO_AA timeout for a small orange	The charger/car		Exclusive for Orange Energy chargers
E126	The standby	The charger/car		Exclusive for Orange Energy chargers
E127	The standby	The charger/car		Exclusive for Orange Energy chargers
E128	The standby	The charger/car		Exclusive for Orange Energy chargers
E129	No effective current	The charger/car	Regular charging, more than 180 second,s no current output	Exclusive for Orange Energy chargers
E130	The BSM battery has an overvoltage.	Car	The battery voltage of the vehicle is too high	The vehicle itself problems, recommended repairing the car.
E131	The BSM battery voltage is too low.	Car	The battery voltage of the vehicle is considered to be too low	The vehicle itself problems, recommended repairing the car
E132	The BSM packet SOC is too high.	Car	The vehicle considers the vehicle battery SOC to be too high	The vehicle itself problems, recommended repairing the car
E133	The BSM packet SOC is too low.	Car	The vehicle considers the SOC of the vehicle battery to be too low	The vehicle itself problems, recommended repairing the car

E134	BSM charging overcurrent	Car	The vehicle thinks the charging current is too high.	Recharge, check the LCD screen interface, BMS demand current, compared to the charger output current. If the output current of the charger is not more than the required current, it indicates that there is a problem with the vehicle and the vehicle should be repaired. If the output current of charging stake is more than 3A of BMS demand current, further inspection is required.
E135	The BSM battery temperature is too high.	Car	The vehicle believes that the temperature of the vehicle battery is too high during charging.	Wait for the battery to cool down and contact the vehicle manufacturer.
E136	The BSM battery insulation is abnormal.	Car	The vehicle believes there is a problem with battery insulation during charging.	The vehicle is damaged, contact the manufacturer immediately.
E137	The BSM connector is not connected correctly.	Car	The vehicle believes there is a problem with the connector status while charging.	Check whether the charging connector is tightly inserted, loose, or falling off, reinsert and continue charging.

E138	The BCL charging mode is abnormal	Car	In the BCL (Battery charging requirement) packet sent by the vehicle, the charging mode is neither 1 (constant voltage) nor 2 (constant current), which is an invalid value.	The car has an illegal value. If you must charge the car, turn off the BCS judgment function on the LCD screen, and you can set it.
E139	Temperature and humidity fault	The charger		
E140	Charging SOC completed	The charger		
E141	After shutdown, the gun head voltage is greater than 60V	The charger/car	The car end J switch is not closed or the charging station output contactor is not disconnected	Check if the output contactor of the charging station is correctly disconnected. If it is a vehicle fault, it may need to be repaired (some vehicles do not have a J switch at the end of the vehicle, so there is no need to handle it)
E142	BCS single battery voltage too high	car	Vehicle upload message single battery voltage too high	
E143	BCS current deviation too large	car	Vehicle upload message BCS current deviation too large	
E144	Abnormal temperature of BSM battery	car	Vehicle upload message battery temperature abnormal	
E145	No idle modules available	The charger	Module occupied or not communicating	Will the program cause the module to be occupied by another gun and unable to be released; AC input air switch or contactor not connected; Module communication failure, check the above related issues

