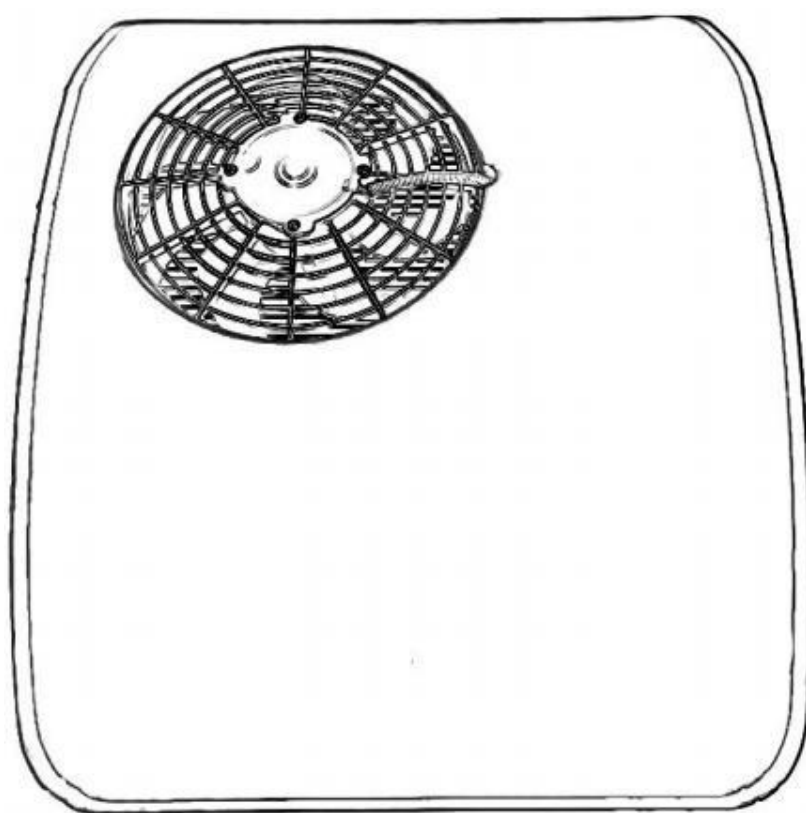




**INSTALLATION AND USE MANUAL
OF ROOFTOP AIR CONDITIONER**



Before installation and use of this air conditioner,
please read this manual carefully.

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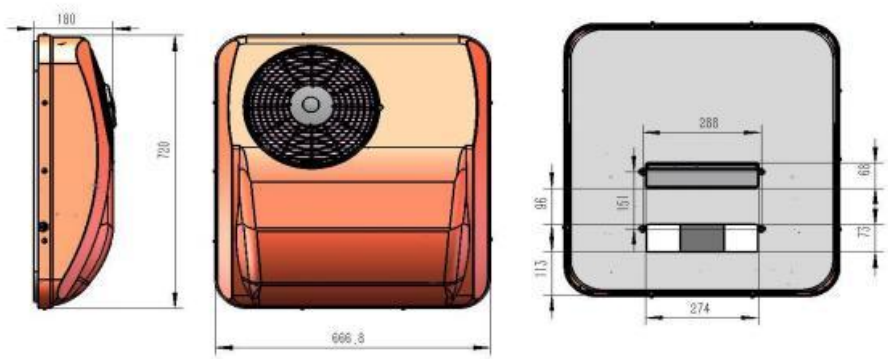


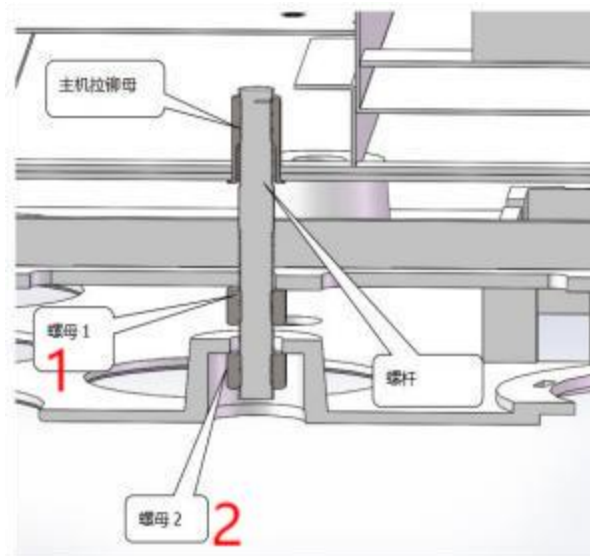
Note: Due to product improvements or upgrades, there may be inconsistencies between content, pictures and products, please understand.

1.Technical Data

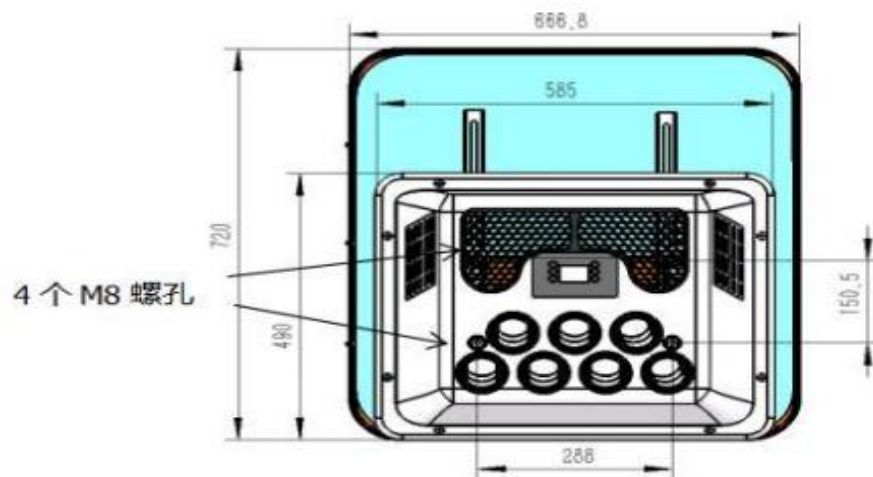
Model 型号	EAC002.18
Rated Voltage (V)额定电压	12V/24V/48-72V/90V/110V-220V
Current (A)额定电流	30-60A
Rated Power (W)额定功率	330-1000W
Rated Cooling Capacity (W)制冷量	2300W
Refrigerant 制冷剂	R134A
Refrigerant Oil 冷冻油	POE68
ChargingQuantityof Refrigerant(g)冷媒加注量	500g
Air volume 风量	250-450m³ /h
Installation Size 安装尺寸	310*240mm
Internal machine size 内机尺寸	585*490mm
External dimensions 外机尺寸	720*666*180mm

2.Main Components of the Air Conditioner



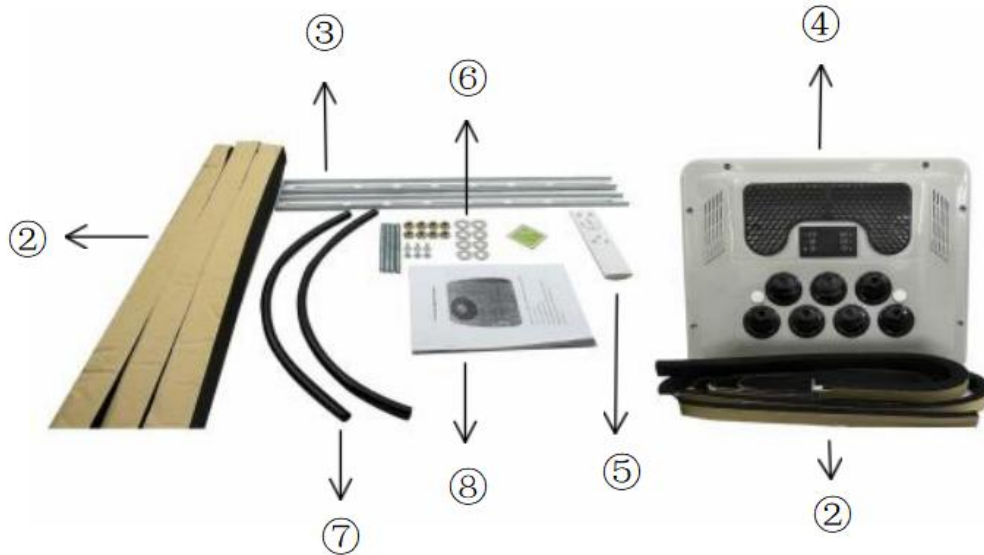


During installation , as shown in the picture **on the left**: first fix the tie rod with a screw (threaded at both ends) and tighten the main unit (use nut 1), then install the interior panel, tighten it with nut 2, and decorate the outer hole with a rubber plug to complete the installation.



Skylight size requirements: $>310\text{mm} \times 240\text{mm}$ $<490\text{mm} \times 585\text{mm}$
 (Those without skylights can be installed according to the **above dimensions**)

3.Packing list



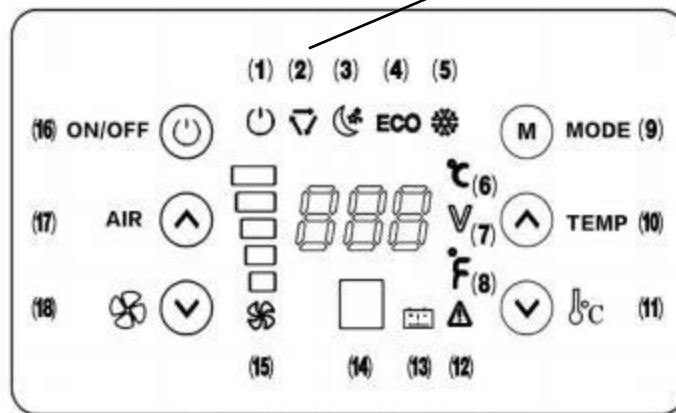
①	Outdoor Unit *1Set
②	Waterproof Sponge Strip *1Set
③	Fixed tie rod * 2pcs
④	Interior panel *1Set
⑤	Remote control *1pcs
⑥	Mounting screws *1bag
⑦	Drain pipe *2pcs
⑧	Installation instructions *1pcs

4. Installation Step

1  ► Received the air conditioner, please check for any damage and then open the box.	2  ► After unboxing, please check if all accessories are complete.
3  ► Stick multiple sealing strips on the roof according to the tilt and height of the roof.	4  ► Repair the corners of the sealant strip to make it smooth.
5  ► Place the air conditioner on the roof and adjust the position so that the bottom of the air conditioner is tightly attached to the sealing strip.	6  ► Install 4 screw pillars and fix the fixing rod horizontally or vertically to the roof according to the size of the sunroof.
7  ► The wiring harness is concealed inside the car.	8  ► Connect the air conditioning power interface and connect it to the car power supply.
9  ► Connect the air conditioning harness to the control panel.	10  ► Fix the interior panel.
11  ► Turn on the air conditioner and use it normally.	

5. Control display panel

a. Control Panel Description



1. Power button icon
2. Heating mode icon
3. Sleep mode icon
4. Energy saving mode icon
5. Strong cooling mode icon
6. Celsius icon
7. Voltage icon
8. Degrees Fahrenheit
9. Mode switch button
- (Short press: Switch modes, which are heating, sleep, energy saving, and cooling, and the corresponding lights are on)
- (Long press: Enter the setting state, see the display setting instructions for details)
10. Temperature plus key (3-30 degrees corresponds to display 03P to 30P)
11. Temperature reduction key
12. Fault icon
13. Under voltage icon
14. Remote receiving icon
15. Wind speed gear display
16. Switch button
17. Air volume increase key (1-5 gears correspond to F1 to F5)
18. Air volume gear reduction key

b. Fault code description

Fault code	State	Description
b2	Under voltage	It is detected that the power supply voltage is lower than the set under voltage point and enters under voltage protection. The digital tube displays b2 (enters standby state)
b3	Over pressure	It is detected that the power supply voltage is higher than the set overvoltage point, and the overvoltage protection is entered. The digital tube displays b3 (enters standby state)
EC	Temperature sensor failure	The panel cannot detect the temperature, the digital tube displays Er6, check the sensor.

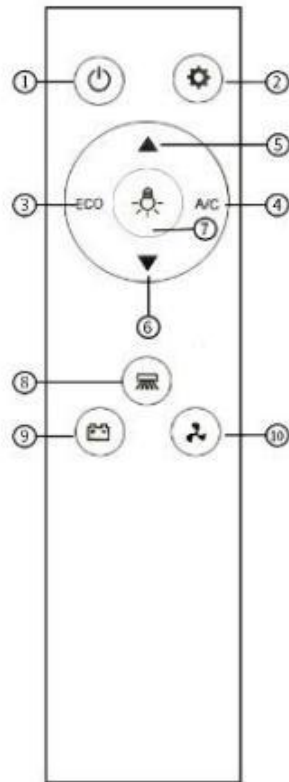
c.Compressor controller fault description

Controller Fault light	Display fault code	Controller status	Fault description
Flash 2 times	E2	Compressor over current protection	1. Too much refrigerant is charged, and the heat dissipation of the outdoor unit is not good (the condenser needs to be cleaned or the electronic fan does not work) 2. Reverse the compressor and swap any two motor wires.
Flash 3 times	E3	Compressor stall protection	1. Compressor cylinder stuck 2. The system pressure is too high. Check whether the heat dissipation of the outdoor unit is good.
Flash 4 times	E4	Controller under voltage protection	1. The controller power supply voltage is too low (battery power is low) 2. The power cord is poorly connected (check whether the positive and negative terminals are connected)
Flash 5 times	E5	Controller short circuit protection	1. Compressor motor wire short circuit 2. The controller is damaged
Flash 6 times	E6	Controller over voltage protection	Controller power supply voltage is too high, high setting voltage
Flash 7 times	E7	Compressor fails to start continuously	The system pressure is too high and the heat dissipation of the outdoor unit is not good.
Flash 12 times	H2	Compressor phase loss protection	Check whether the compressor motor cable connection is intact
Flash 13 times	H3	Controller high temperature protection	1. The controller installation location is not well ventilated. 2. After long-term high-load operation, check the heat dissipation of the outdoor unit.

d.Press and hold the mode button to enter the setting mode. 2F will be displayed for the first time, and so on.

Show code	Set name	Voltage range	Setup instructions
2F	Undervoltage value	8-11V (12V)	Long press the M key until 2F appears , short press the M key to display the voltage value , and then continuously press the temperature minus key until the voltage value changes. You can press the temperature key to adjust the under voltage protection value up or down.
3F	Overpressure value	14-18V (12V)	Long press the M key to display 2F, short press the M key to display the voltage value , short press the M key again to display 3F, short press the M key to display the voltage value , then continuously press the temperature minus key until the voltage value changes, and then press the temperature key to adjust up and down . Under voltage protection value
4F	Voltage value	\	The current voltage detected is not adjustable
5F	Ambient temperature	\	Detected ambient temperature cannot be adjusted
6F	Anti-icing temperature	\	The detected anti-icing temperature is not adjustable

6.Remote control instructions



- ① Power button, short press to turn on and off the power.
- ② Set button, short press to enter the setting interface.
- ③ Energy-saving button, short press to enter energy-saving mode.
- ④ Mode button, short press to enter cycle switching mode, switching between heating, sleep, energy saving, cooling and other modes.
- ⑤ Press the temperature plus button to increase the set temperature.
- ⑥ Temperature reduction key can lower the set temperature.
- ⑨ Power voltage view key, short press to display the current voltage value.
- ⑩ Air volume gear increase and decrease keys, short press once to increase one gear, and cycle between gears 1-5.
- ⑦⑧ This function is temporarily unavailable.

7. Fault

a: Solutions to common faults

1. When the internal fan does not rotate, check whether there is voltage in the fan powercord;
2. The condenser fan does not rotate . When the indoor fan is running , set the mode to the cooling mode (the snowflake light is on). Check whether the relay is closed , whether the relay pin is retracted, and whether the fan plug-in has any retraction phenomenon;
3. The compressor does not rotate
 - ① Be sure to check the compressor when the condenser is running;
 - ② Check whether the controller fault light is flashing (judge according to the fault code description);
 - ③ If the light does not flash, check whether there is voltage in the wiring harness (or two plugs) connecting the controller to the main power supply;

b: Other uncommon fault solutions

1. Low voltage fault

- ① Check whether the positive and negative poles are loose, and whether there is insulation on the contact surface of the negative pole; ;
- ② Check whether the power plug is loose and whether the wiring harness wires are too thin or too long, causing the wires to heat up and cause voltage drop; Whether the battery is short of power , whether the power of the generator is too small , or whether the live wire of the generator is too thin. The aging causes the generator to charge the battery too little or the battery cannot be charged , or whether the battery cannot store electricity;

2. High voltage display

- ① The positive wire is incorrectly connected or not connected to the positive terminal of the battery;

3. Pressure switch protection

- ① Check whether the system is leaking, causing insufficient refrigerant pressure;
- ② Check whether the electronic fan is working, resulting in insufficient heat; dissipation in the condenser and excessive refrigerant pressure;
- ③ Check whether the condenser is blocked, causing insufficient heat dissipation in the condenser and excessive pressure. Please clean the condenser;
- ④ Check whether the refrigerant pressure is too high. The pressure is too high because the refrigerant expands . If the refrigerant amount is too large , a small amount may be discharged.

Refrigerant or adjust the opening of the expansion valve to reduce the pressure of the low-pressure pipe of the air conditioner;

4. Compressor temperature is too high

- ① The compressor surface temperature is too high for protection . After overheating protection occurs , stop using it and check the cause of the fault. Repeated protection will damage the compressor;

Notice

1. When the air conditioner is at room temperature of 35°C, the low pressure is controlled at 2.5bar and the high pressure is controlled at 13bar;
2. The amount of refrigerant injected should not exceed 500-600g;
3. Controller voltage protection $21.5V \pm 1V$ (for 24V air conditioners);
4. The restart voltage after undervoltage is $25.5V \pm 0.5V$ (for 24V air conditioners);
5. After shutdown, the power needs to be turned off and on again before it can be started again;
6. Adjust the high pressure to 12-14bar as much as possible. When the high pressure exceeds 22bar, the air conditioner will automatically stop. You need to drain part of the refrigerant and wait for 5 minutes;
7. The low pressure protection of the compressor is 1.19bar. The compressor will not start if the pressure is lower than this;
8. Please pay attention to voltage changes when using the air conditioner while driving. When the voltage is less than 21.5V (for 24V air conditioners) or the voltage fluctuation is large, stop the air conditioner, otherwise it will easily cause battery loss (if you need to use the air conditioner while driving, you need to turn off the air conditioner. Replace the generator to one that is more than 30A larger than the original vehicle);
9. Frequently check the pipeline system for leaks and wear, and check whether fasteners are loose or falling off. Abnormalities should be eliminated in time. If there is a fault that cannot be eliminated, please go to a professional maintenance point;

8.Explanation of factors affecting refrigeration effect

- ① After installation, be sure to measure the high and low pressures. The high pressure should be controlled at around 14Kg (when the ambient temperature is around 32°C). It is best to control it below 14Kg when testing indoors or at night, otherwise the pressure will rise very high at high temperatures and the pressure will be too high. The temperature of the refrigerant will be too high, affecting the cooling effect;
- ② Genuine R134a refrigerant must be used;
- ③ For 12V and 24V air conditioners, the wiring should be thick. The wire from battery to compressor can use 10mm² wire if it is less than 2 meters, and 16mm² wire should be used if it is 2-5 meters. Use 25mm² wire above 5 meters. 16mm² wire should be used between multiple batteries. A 10mm² wire is used between the additional generator and the battery. (Note: Because the current of the electric compressor is very large, thin wires will cause large wire losses);
- ④ Try to fully charge the battery before use. Running at low power will reduce the speed of the compressor and affect the effect;
- ⑤ Vacuuming must be thorough during later maintenance, because the electric compressor is very sensitive to moisture and air, and requires high and low pressure to be evacuated at the same time. It must be evacuated to above -0.098 for more than 20 minutes. Keep the pressure for 10 minutes to make sure there is no leakage in the system and then add refrigerant;

⑥ The condenser must be cleaned regularly according to the usage environment and frequency to ensure smooth ventilation of the condenser. Engineering vehicles must be cleaned every day during shift, otherwise the cooling effect will be seriously affected;

⑦ When using an electric air conditioner while driving, the battery should be fully charged first, and the generator must be above 75A. When driving a vehicle with less than 75A, you must pay attention to the power storage status on the dashboard. Once a low battery indication appears, stop using the electric air conditioner immediately. Be careful especially when driving at night! When driving, the generator is running and the voltage is high. The compressor controller will mistakenly think that the battery is fully charged, but in fact the battery has no power. When parking, the compressor controller will automatically control the vehicle and will not cause battery loss. In addition, when the generator is less than 55A, there will be undervoltage, and the air conditioner will stop and turn on. (This is because the battery has been used up, and when the engine speed is low, the charging cannot keep up, resulting in undervoltage);

⑧ In order to maximize the efficiency of the electric air conditioner, it is recommended to install a set of 200A or above lithium batteries and a 70A or above generator. It can be used for about 5 hours when it is parked during the day when it is very hot, and it can be used for more than 8-10 hours at night. There is no impact on using an electric air conditioner while driving, and batteries of the same type as the original car cannot be installed;

⑨ The positive electrode of the electric air conditioner must be connected to the positive electrode of the battery, and the negative electrode must be connected to the negative electrode of the battery;

⑩ It is forbidden to test the gray line of the controller directly by testing the lamp. You can use a multi meter or add a relay to detect it;