



EC2400 ELECTRIC AIR CONDITIONING MANUAL

Evaporator



Condenser





Description of the stationary motor air conditioner

Dear users: Hello! Thank you for using COFOR electric air conditioner

Electric air conditioning for you to have a better experience, here is a summary:

Within 45 seconds of each start, the system will automatically enter cooling mode for self-inspection. Do not interfere with it during self-inspection.

-Inspection period. If the cooling is abnormal, the system will automatically shut down and give an alarm. If the cooling condition is normal, the system will automatically release the self-test and reset manual control.

1. The color of the air conditioner is white for the evaporator and stainless steel for the condenser.

2. Features of split air conditioner products: It is suitable for all vehicles such as heavy trucks, light trucks, construction vehicles, forklifts, cranes, armored recreational vehicles, etc.

A. The design of the outer machine has a great degree of freedom and can be reasonably installed according to the different structures of each vehicle.

B. The outer shell is beautifully designed and made of high-quality steel. Plate, resistant and durable.

C. The condenser of the external air conditioning unit dissipates heat. It has high-flow fans to be able to dissipate quickly and make an efficient and fast thermal effect

D. The inner machine is small and can be installed as required.

E. The compressor adopts a split displacement type, which is anti-vibration, high-efficiency, and low-noise.

F. The air conditioner has 5 operating modes: natural wind, strong cooling, manual control, energy saving, and sleep mode.

3.Air Conditioner Performance Parameters:

	Unity	Specification		Unity	Specification
Power	W	600-850	Voltage	V	12-24
Cooling Capacity	W	2000-2600	High Voltage	V	18-30
Current rating at 12 V	A	33-40	Soft Drink		R-134 to
Maximum current at 12 V	A	45-55	Refrigerant Charging	G	600±30
Circulating air	M3/h	2000	Cooling		POE68



volume of external machine			Oil Model		
Indoor machine Circulating air Volume	V	150-450	Pressure of Protection	V	10-19
Driver Default Undervoltage Recovery Complex	M	12-25	Standard Pipe Length	M	3.5
Dimensions	M	550*200*660	External Dimensions	MM	450*150*310

4. Standard Packing Details:

- 1 * Outdoor Air Conditioner Set
- 1 * Air Conditioner Remote Control
- 1 * Feeding Harness
- 1 * 3.5m Cables
- 1 * External fixing bracket of the machine
- 1 * Internal Air Conditioner Set
- 1 * Internal Machine Expansion Valve
- 1 * Drain Tube
- 1 * Fixed Plank
- 1 * 3.5m ducts
- 1 * Installation Kit

5. Air Conditioning Panel Instructions

Change:

1. Press short to turn on
2. Pulses during seconds to erase.
3. Press and hold for 6 seconds to restore factory settings to the off state.

LED Display-----Mode (A/C): It has the power saving mode and strong mode, in addition to the sleep mode to program the time when the equipment will turn off.



The climate has LED light for cabin lighting and automatic fan turning function. Both functions are available on the remote control

A. Press briefly to switch: (1) Air Supply (2) Manual (3) Power

B. Press and hold until the LED shows--: Enter the voltage setting

(1) Press the temperature up and down-adjust keys for recovery voltage

(2) Press the wind speed up and down keys: adjust the undervoltage voltage (Pressing the mode button on the remote control does not work when adjusting the overvoltage protection value and undervoltage protection value)

Wind Speed: Up Key: Short Press Wind Speed Plus 1 Wind Speed 1. A 5

Bottom Speed Key: Short Press Wind Speed Minus1

Temperature: Up key: Short press temperature plus1

Down-press short temperature key1

6.Description of compressor controller fault indicator definition

Internal machine decoding	External machine flash code	Cause	Troubleshooting
none	Blinks for 1 second and stops for 1 second, flashes evenly and slowly	The controller is in normal standby mode and the green line of the indoor unit's start signal (normal voltage of 9-19V) is not connected to the controller.	1. Turn on the indoor unit, set the strong cooling mode, and set the temperature to minimum. 2. Starting the indoor unit is normal. Use a multimeter to check if the green boot signal line from the indoor unit to the controller is connected. The normal voltage of the green line at the end of the controller (XH) is 9-19 V, and the compressor starts normally. 3. If the indoor temperature is lower than the set temperature, turn on the heater to raise the indoor temperature or hold the indoor air inlet temperature probe by hand until it starts normally. 4. The actual indoor temperature is higher than what is shown on the panel. The temperature control probe is damaged. Replace it. 5. The machine cannot be turned on, the voltage is normal, and the circuit board is damaged/replaced. 6. The machine won't turn on. The voltage is abnormal and is less than 21.5 V. Replace the fuse or check the circuit.
CE	Blinks for 1 second, stops for 1 second, flashes	The temperature control probe is damaged or the plug is loose.	Check the inlet and outlet temperature control probes after replacing the circuit board of the switch.

	evenly and slowly		
E0	6	The electronic fan is faulty, the outdoor cooling fan is damaged, or the cable is loose.	Take pictures to confirm the model and replace the electronic fan and controller.
E1/E4	4	Voltage is too low, undervoltage protection	1. Turn on the appliance: Press the voltage button on the remote control to check if the voltage is higher than 21.5V. If the voltage is high, turn it off and restart it. Check the air conditioning circuit if it is loose, corroded, or has poor contact. 2. Start the vehicle: Press the voltage button on the remote control. If the voltage is less than 21.5V, start the vehicle to charge the battery, check the circuit, or replace the battery. 3. Start the compressor normally. Use a multimeter to measure the voltage of the red and black lines behind the switch panel of the indoor unit, the battery controller. The voltage of the red and black lines of the air conditioner power supply should not be less than 21.5 V if the air conditioner is working properly. 4. Reset the protection voltage. Turn on the appliance and press and hold the M key for 8 seconds. Two "--" will appear. Press the wind speed symbol, set it to 20V, and then press the M key. The setup is complete. 5. The controller is water damaged/replace the controller
E2	2	The controller automatically protects against excessive starting current. Tri-color cable and compressor wear	1. The line is loose/disconnect the main power for 30 seconds, check if the air conditioning gaskets are loose, check if the terminals on both ends of the compressor and controller are loose, sand the gaskets to make sure they are firmly in contact and reset. 2. The radiator is too dirty or there is too much coolant, causing excessive current. Clean the radiator and reduce the amount of coolant. 3. The cooling fan motor is faulty and the speed is abnormal, resulting in poor heat dissipation and increased pressure current/replace the electronic fan. 4. The controller is water damaged/replace the controller 5. The compressor tri-color cable is worn and the power is connected. Check and repair.
E3	3	Stall protection	1. The radiator is too dirty or there is too much coolant, causing excessive current. Clean the radiator or reduce the amount of coolant. 2. Disconnect the power supply from the host. If it doesn't boot after turning it on, the controller's fault light flashes three times. The driver is damaged and needs to be replaced. 3. After a power outage, the controller is in normal standby mode. After turning it on, the compressor emits a few clicks. The tri-color

			cable is burned. The compressor motor is stuck. Replace the compressor. 4. The cooling fan motor is faulty, the speed is abnormal, resulting in poor heat dissipation, and the pressure current increases/replaces the electronic fan.
E5	5	The controller is damaged or the tri-color wire is shorted.	Check the plug on the compressor's yellow, green, and blue tricolor cord to see if it is burned, loose, or worn.
E6	6	Controller surge protection	1. Update the program 2. Replace the controller
E7	7	Compressor Phase Loss	1. Check if the three-color plug on the compressor's yellow, green, and blue wire is burnt or loose and replace or tighten it. 2. The driver is corrupted/replace the driver 3. The compressor tri-color cable connector is burned/replace the compressor
E8	8	Compressor temperature overheating/outdoor fan failure protection	1. The electronic fan is damaged and does not rotate or the speed is abnormal/check and replace the electronic fan 2. The radiator is too dirty or there is too much refrigerant, which causes too high a temperature in the compressor. Clean the radiator or reduce the amount of coolant.
E9	9	Pressure protection	1. There is too much refrigerant or no refrigerant. Reduce refrigerant charge or add refrigerant. 2. The pressure switch connector is loose or damaged. Repair or replace it.
EA/H0	10	Electronic fan and controller failure	The electronic fan is damaged and does not rotate or the speed is abnormal/check and replace the electronic fan and controller. Controller failure, disconnect the power supply for 30 seconds, and then turn on the power supply.
EE	Normal standby mode	The signal line is loose	The green signal line from the indoor unit to the controller (XH) is incorrectly connected or loose.
EF	Blinks for 1 second, stops for 1 second, flashes evenly and slowly	Interior fan failure	1. The indoor unit motor is damaged/replaced 2. Undervoltage voltage is too low or the original vehicle voltage does not match the hook / check or replace the hook
FF		High starting voltage	Turn off and restart, voltage is too high when vehicle starts/turn off air conditioning before starting
E12/H2	12	Compressor Phase Loss Protection	Check the yellow, green, and blue wires from the controller to the compressor.
E13/H3	13	High temperature protection of the controller	Power off and restart to check for pressure and heat dissipation issues.

Air conditioning does not cool well or does not cool at all	High and low pressure are high	1. The refrigerant is overloaded. Plug in the fluoride meter. The normal working pressure of the compressor is 8-12 kg at high pressure and 1.5-2.5 kg at low pressure (the external ambient temperature is 28°-35°).
	Both high and low pressure are low	2. No refrigerant or lack of refrigerant/re-vacuum and add refrigerant 134A, filling quantity 500-550g
	Vacuum is not good/there is moisture in the system	3. The needle is unstable and the cooling is poor. Perform vacuum at high and low pressures for more than 20 minutes. Fill the coolant.
	The difference between high and low pressure is not big and the compressor is noisy.	4. The tri-color wire is connected to the reverse compressor; and the yellow, green, and blue tri-color wires are connected to the shutdown controller. Change any two positions
	High Low Pressure, Low High Pressure	5. Compressor Damage/Replacement
Fan stops intermittently	Controller temperature probe failure/controller detects low temperature	Replace the temperature control probe
The outdoor unit's fan compressor runs automatically without the need to turn on the machine.	The negative contact of the circuit board is loose or the circuit board is burnt out.	Replace the circuit board and check the circuit.
Note: Scroll compressors should not be installed with the pipe opening facing down, and vertical rotor compressors should be installed vertically and should not be placed upside down or horizontally. Otherwise, the compressor will not return oil, the cylinder will jam and the cooling capacity will be affected.		

7. Use of issues that require attention:

A. The red positive wire (the end with the 80 A fuse box) is connected to the positive electrode of the battery, and the negative black wire is connected to the negative electrode of the battery. If the power cord is not long enough, please contact us, as shown in the figure below:



B. To better reflect the energy-saving effect of parking air, use the original car air conditioner to lower the interior to temperature to 28°, and then turn on the parking air conditioner. The vehicle should avoid direct sunlight as much as possible.

C. According to different working environments, the condenser should be cleaned in time. If the condenser is dirty, it will cause poor heat dissipation, the condensing



pressure will increase, the power of the air conditioner will increase, and the cooling effect will decrease.

8. Precautions for the installation and commissioning of split air conditioners:

1. Use genuine rubber hoses for the inside connecting pipes and external machines. It is recommended to use brands such as Goodyear, Kodali, etc.
2. When installing, be sure to put oil on the apron and be careful not to squeeze the apron! When tightening the screw cap, be sure to align it, find the thread, and use a wrench to lock the screw without excessive force. 19N—22N is enough.
3. Once the inner machine, outer machine, pipe and other fittings are open, they should be connected to the system within 10 minutes. Do not install the machine when the weather is too humid to prevent moisture from entering the system.
4. After the system pipes are connected to the internal and external machines, a vacuum pump should be used to evacuate the system and maintain pressure. If pressure cannot be maintained, check the connection part of the pipe crimping part and the pipe head.
5. After evacuating and maintaining the pressure without any problems, charge the refrigerant, pay attention to deflation, and charge when filling the refrigerant. Please refer to the technical parameters table for quantity.
6. When installing and debugging, be sure to use a pressure gauge to measure whether high and low pressures are normal.
7. After installing the product, check if the battery is in good condition. If the battery loses voltage shortly after turning on the running air conditioner, it is recommended to replace a set of 150A batteries.
8. Check the generator. If the generator voltage is less than 25V, it is recommended to replace the generator; otherwise, the air conditioning system may not work normally.
9. This product is a parking air conditioner. It is recommended to use the original car air to lower the interior temperature before using this product when the car is turned off. When using it, try to park the car in a cool place.
- 10. It is recommended to disconnect the power cord in spring and autumn season or when it is not used for a long time.**



Temperature and pressure correspondence table (for reference)		
Ambient temperature °C	High Pressure Side Pressure (MPa)	Low Pressure Side Pressure (MPa)
20	0.9-1.05	0.1-0.2
26	1.05--1.2	0.12-0.2
32	1.1-1.3	0.12-0.22
35	1.2-1.4	0.12-0.25
38	1.35-1.5	0.12-0.28
40	1.5-1.6	0.12-0.3

9. Disclaimer:

1. Our company provides installation instructions and installation videos, and the user installs them according to this. If the user does not install according to the videos and installation instructions provided, human faults or damage other things occur, the responsibility is borne by the user, and maintenance, material costs, all costs, such as freight, will be paid by the user.

Separately, and we will not assume any liability.

2. The user should pay attention to safety issues during the installation and use of the product, such as property damage. The loss of personal safety is the responsibility of the user.

3. If the user disassembles, assembles or modifies our equipment or changes accessories without permission, damage to the equipment and personal safety problems caused by the user will be borne by the user, and our company will not assume any responsibility.

4. After purchasing the product from the user, you are deemed to accept this disclaimer.

10. COFOR brand air conditioning installation tool list

- 1/4" and 1/2" drill bits
- Drill
- 7/8" and 2" punches
- Cutter
- 10mm socket
- Rattle
- Spanish key 10mm
- Cross Screwdriver

11. Air Conditioner Panel Instructions

- Function and operation:
- 1. Press the switch button to start the air conditioner.
- 2. Power off: Press the switch button to turn off the air conditioner when the air conditioner is on.
- 3. Wind Speed Adjustment: Press the wind speed button after turning on the air conditioner to set the wind speed on gears 1 to 5 in a cycle.
- 4. Temperature Setting Press the temperature plus button after turning on the air conditioner to increase the set temperature and press the minus temperature button to reduce the set temperature.
- 5. Mode switching: After turning on the air conditioner, press the setting button to switch between automatic (standard), strong, and sleep cycles (in automatic mode, press the standard button on the remote control to switch between automatic and manual frequency conversion).
- 6. Timed Shutdown: When the air conditioner is running, press the remote control to set the run time and the less timed button to reduce the run time.
- 7. Remote Control Lighting Button:
- Oscillating Wind Evaporator Press Turn on the backlight of the screen to turn it on and off.
- Remote Control Sweep Button:
- Oscillating Wind Evaporator: Press to set the wind direction angle. Click once to start the movement and click again to stop it.

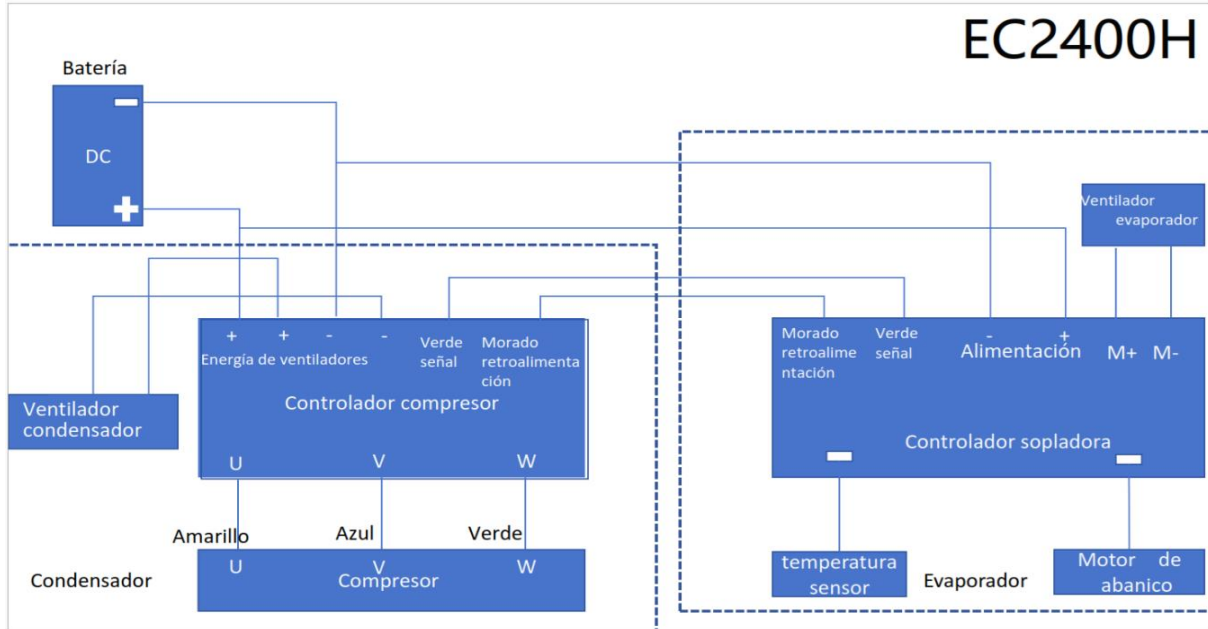


NOTICE:

1. AUTO/STD Button: Press once the air conditioner return/enter the automatic mode. In the automatic mode, the air conditioner is an inverter air conditioner, when the ambient temperature approaches the set temperature, the compressor and fan motor will gradually reduce the working speed. Every time you turn on the air conditioner it is in automatic mode.

2. In TURBO air conditioning systems they operate at a fixed frequency. It will not reduce the working speed of the compressor and fan motor when the ambient temperature is close to the set temperature. This can improve the cooling effect, but with higher energy consumption.

12.- Electrical diagram





WARRANTY POLICY

COFOR warrants the equipment sold with the following warranty against manufacturing defects or hidden defects except for damage caused by improper use by the customer, provided that it is installed, used and operated in accordance with the specifications indicated in the operation and use manuals.

KM9000RMS- 2 years.

S9- 1 year.

EC2400- 2 years.

HC-1- 2 years.

LC-2- 1 year

This warranty complies with the provisions of the Federal Consumer Protection Law and applicable provisions.

WARRANTY COVERAGE

The start of the warranty will be from the delivery of the product to the customer.

COFOR will provide the following guarantees:

- Replacement of parts due to manufacturing defects
- Technical Service and Remote

NOT INCLUDED: Installation, travel expenses, labor, supplies, shipments.

CAUSE FOR EXCLUSION OF WARRANTY

- In the event that the product is used for a different purpose than the original.
- That the equipment or spare part is installed by unqualified persons.
- That the equipment or spare part is opened, repaired or modified by the customer or by unqualified third parties and without the written authorization of our company.
- Other electrical or mechanical appliances are used or installed poorly around the installation.
- That the product suffers any damage as a result of loading, unloading, transfer and delivery maneuvers, when these are not on behalf of our company.
- Power supply outside the operating range of the equipment.
- When the malfunction is the reason for not having carried out the maintenance recommended by COFOR, those indicated in the manufacturer's manuals or if the causes are within the exceptions of the product policy.
- Damage caused by unforeseeable circumstances and force majeure.



MECHANISM FOR ENFORCING THE GUARANTEE

The customer must send an email to the following address: hello@cofor.us, attaching a copy of the invoice to request the warranty form. Within a period of no more than 5 business days, one of our executives will contact the client in order to inform them of the actions to be taken, which may be:

- a) Send a technician to the address where the equipment is located, with Charge to the customer.
- b) Instruct the customer to send the equipment or spare part by any means to COFOR's offices, attaching all its components, i.e., manuals, components, box and accessories.

In the event that the inspection shows that the equipment is working correctly, the customer will be informed and the equipment will be made available to them, with COFOR reserving the charge for the inspection of the equipment. Likewise, if the customer is unable to pick up the equipment at COFOR's home, it will be sent by parcel after payment of these costs by the customer.

In case of applying the Warranty of the product or spare part, the company will carry out the repair or replacement of the product or spare part with the same or recent model with the same technical specifications of the damaged product. Shipping, labor and refrigerant charging costs if required will be covered at the customer's expense.

In no case may the company's liability exceed the price of the product established in the sales invoice.

Sincerely,

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