P/N: 207188372E8

交流机柜空调

AC Cabinet Air Conditioner

使用说明

User Manual

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在产品安装使用前请仔细阅读本手册！

Read this manual carefully before installation and using!

前　言 Foreword

概述　Summary

该手册介绍交流机柜空调的使用须知、产品组成、工作原理、产品接线、操作指导、日常维护、故障处理和技术指标。

The manual describes the BQE150-24E211AC Cabinet Air Conditioner instructions, product composition, working principle, wiring, operating instructions, routine maintenance, troubleshooting, and technical indicators.

读者对象　Audience

本手册主要适用于以下工程师：

This manual applies to the following engineers:

- 技术支持工程师　Technical support Engineer
- 维护工程师　Maintenance Engineer
- 市场工程师　Marketing Engineer
- 服务工程师　Service Engineer

变更记录 Change History

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1 使用须知 Instructions

- 本手册适用如下型号：BQE150-24E211
- This manual is especially for: BQE150-24E211

- 使用本机前请务必阅读本使用说明书。

  Be sure to read this manual before using the unit。

- 用户必须按照本手册规定的内容执行才可享受到产品正常质保服务.

  Only when the user operate the unit in accordance with the user manual in warranty period QUTU, can offer maintenance with free of charge.

2 声明 Declaration

RoHS Compliance Declaration of AC Cabinet Air Conditioner-188372

European Guidelines 2011/65/EU (RoHS)

Legal regulation for Substances

Dear Sir/Madam,

Referring to the European guideline of 2011/65/EU, we confirmed that according to the current status of our knowledge and in accordance with the regulations, we could produce products complying with above mentioned guidelines especially for below type:

☒ BQE150-24E211

Yours sincerely,

Engineering Department

Declaration of Conformity

We herewith declare the following products:

Product Name: BQE150-24E211products series products is in conformity with the following directives:

2006/ 42 / EC	Machine Directive	EN ISO 12100, Machine Safety
2006 / 95 / EC	Low Voltage Directive	EN 60 335-1:2012, Voltage
2004 / 108 / EC	EMC-Directive	EN 60 335-2-40：2012 Safety
2009/ 105 / EC	Simple Pressure Vessels	EN 61000-6-1:2007, Immunity
97/23/EEC	The Pressure Equipment Directive, article 3, section 3.	EN 61000-6-4, Emission
	The Pressure Equipment Directive, category 1	
	The Pressure Equipment Directive, category 2	

and was manufactured in conformity with the following harmonised standard:
furthermore manufactured in conformity with the following disharmonised standard:

2011/65/EU	RoHS Directive
2002/96/EC	Waste of Electrical and Electronic Equipment (WEEE)

and furthermore declares that it is not allowed to put the machinery into service until the machinery into which it is to be incorporated or of which it is to be a component has been found and declared to be in conformity with the provisions of above-mentioned Directives and with national implementing legislation i.e. as a whole, including the machinery referred to this declaration.

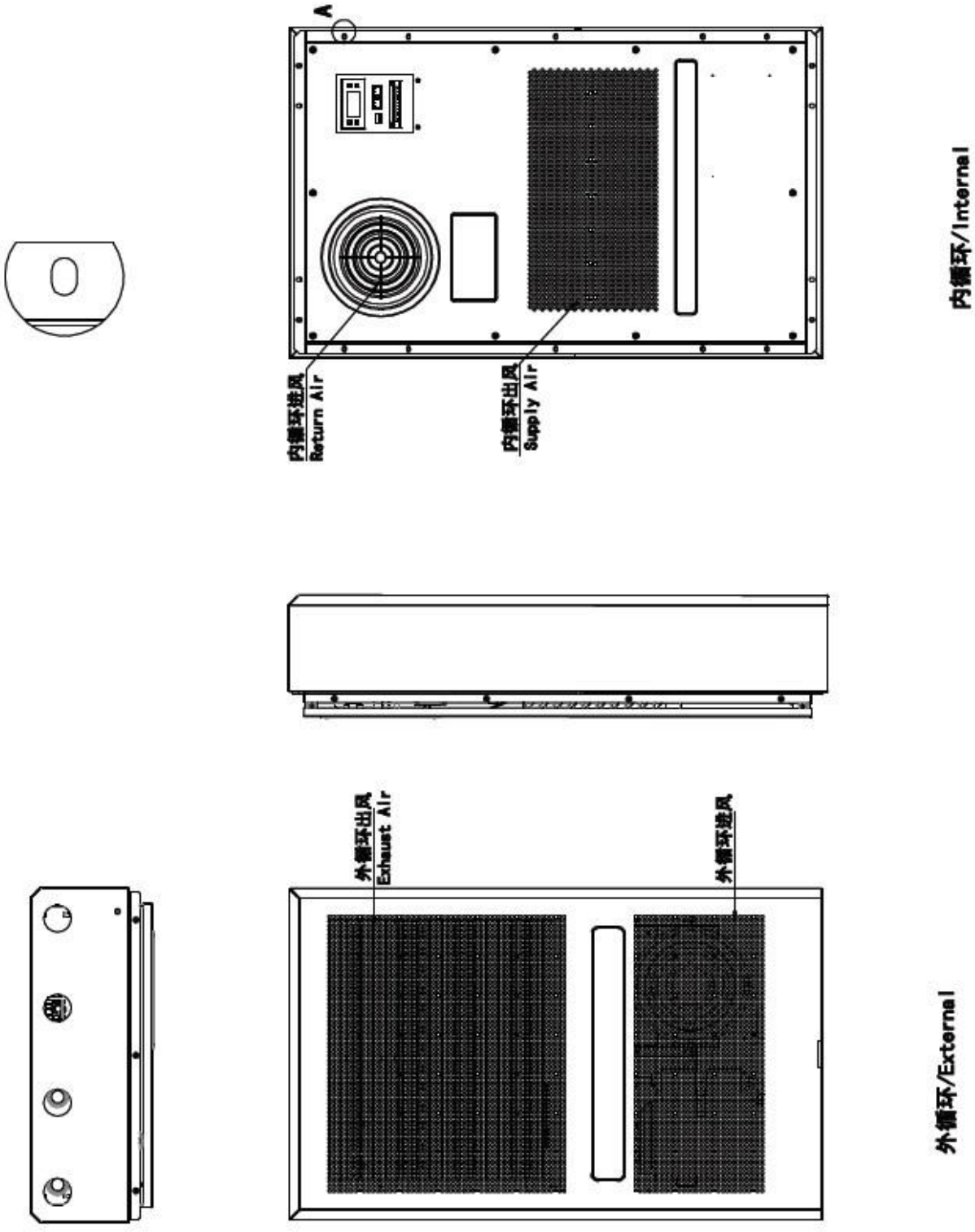
3 产品概述 Product Overview

关于本章 About this chapter

本章介绍了 BQE150-24E211 交流机柜空调的外形、应用场景、产品铭牌、产品特点、技术参数、工作原理、风道设计、控制逻辑、通讯协议及用户参数、告警及故障处理信息。请严格按照本手册的相关规定执行！

This chapter describes the shape of the BQE150-24E211AC Cabinet Air Conditioner, application scenarios, product nameplates, product features, technical parameters, the working principle, duct design, control logic, communication protocols and user parameters, alarm and fault processing of information. It is required to strictly operate the unit according to this user manual.

3.1 产品尺寸 Product dimensions



3.2 应用 Application

Important

- 该产品是专为通讯或相关工业设备应用场合而设计的高性能交流空调器，使用交流电源和直流电源同时供电（请参考产品铭牌）。其安装的意义在于对控制柜（正常工作时为密闭状态）内部实行温度控制，将柜内温度控制在 20～45℃之间，以保证柜内的所有热敏元件可以正常工作，发挥其最佳工作性能。

  The product is designed for communication or related industrial equipment applications and design of high performance AC Cabinet Air Conditioner , Please use the AC and DC power（Please refer to the nameplate）, The installation is the significance of the control cabinet (normal work to a closed state) of internal temperature control, The cabinet temperature control between 20 to 45 degrees Celsius, To ensure that the cabinet all thermal element can work normally, Play the best performance.
- 除以上说明的应用场合以外的其他任何场合使用所造成的任何损害，我方不承担责任。

  Any damage caused by any other applications outside of the application object described above, Responsibility is not assumed.

Warning

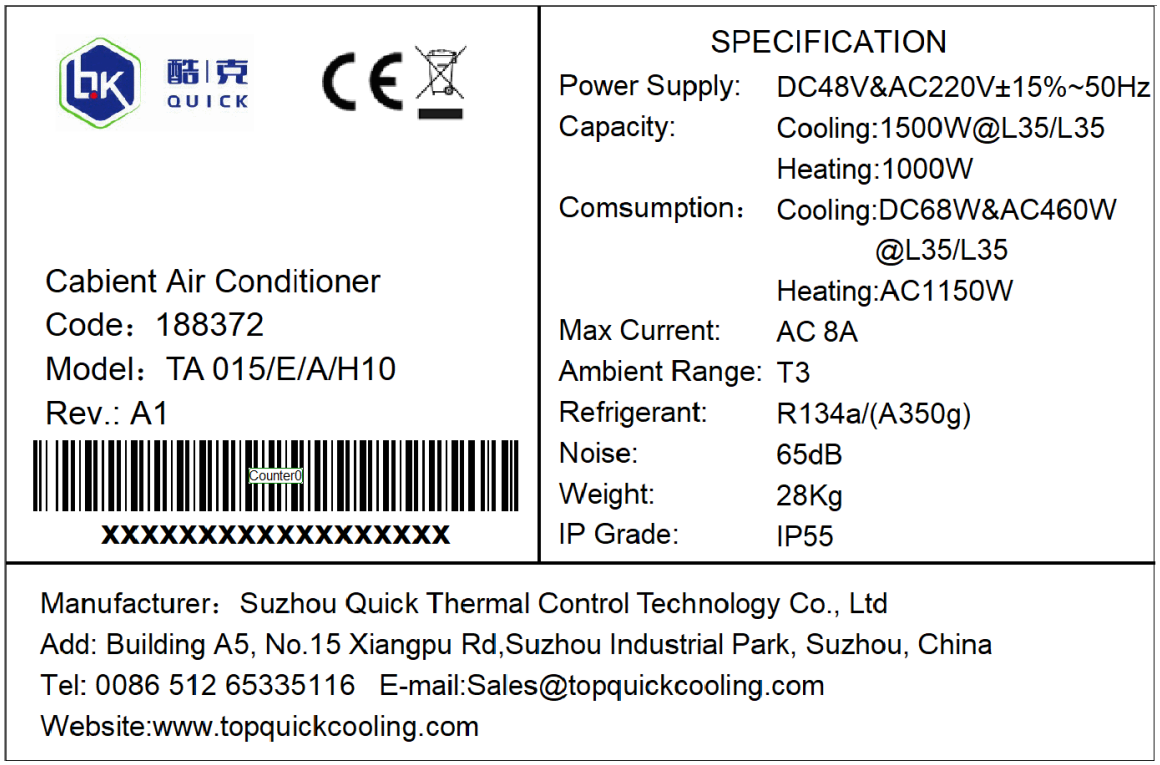
- 严禁未成年人、身体或心理存在严重缺陷及不具有相关该产品知识的人员操作该产品。

  This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- 为了避免风险，电源线请一定使用同一公司或使用同规格的有质量认证的产品

  If the power supply cord is damaged, it must be replaced by the manufacturer, or service agency or similarly qualified person in order to avoid a hazard.
- 为了更好的使用本产品，请勿在高油污、高腐蚀性环境、含爆炸易燃气体环境使用，否则，将会造成对该产品严重的损害，我们将不会提供正常的售后服务。

  Don’t use the product under the condition of high oil, burning gas, explosive gas, strong corrosively condition area. Otherwise the product warrantee service is not been offered by manufacture.

3.3 产品铭牌 Product nameplate



3.4 产品特点 Product features

- 双电源供电，特别适合户外机柜；

  Double power supply, especially suitable for telecom outdoor cabinet;
- 实现遥测、遥信、遥控，可实现多重自动保护和全面的故障自诊断功能；

  Remote measuring, remote communication, remote control, which can realize multiple automatic protection and comprehensive self-testing function;
- 精湛工艺及高质量国际名牌配件确保产品更加稳定可靠；

  Strict process control and famous brand components to ensure high quality and reliability of this product;
- 适合 T3 高温工况、R134a 环保制冷剂；

  Fit for T3 high temperature working condition by using of R134a refrigerant gas;
- 多重保护功能、可视化人机界面、RS485 接口（MODBUS-RTU 协议）；

  Multiple self-protection design & visible monitoring interface, RS485 communication port (MODBUS-RTU protocol);
- 系统采用可调速直流风机，实现调速以降低噪音；

  DC Fan speed PWM control, low acoustic noise during low speed running;

3.5 技术参数 Technical parameters

产品名称	Name	户外机柜空调器/Outdoor Cabinet Air Conditioner	
型号	Model	TA 015 /E/A	
固定方式	Mounting Method	半嵌入/Semi-embedded Mounting	
交流输入电源	AC Power Supply	220VAC±15% 50Hz	
直流输入电源	DC Power Supply	48V	
制冷量	Cooling Capacity	1500W@L35/L35	
制冷功耗	Cooling Consumption	AC 460W@L35/L35	DC 68W@L35/L35
制冷量	Cooling Capacity	970W@L35/L55	
制冷功耗	Power Consumption	AC 580W@L35/L55	DC 68W@L35/L55
内循环风量	Internal Airflow	450 m^3/h	
工作温度范围	Working Temperature Range	-40℃~+55℃	
最大噪音	Max Noise Level	65dB (A)	
IP等级	IP Grade	IP55	
净重	Net Weight	28kg	
制冷剂	Refrigerant	R134a/(Option:R1234yf)	
外形尺寸	Dimensions	797x497x180 (mm, HxWxD)	
CE和环保	CE&RoHS Compliant	符合/YES	
表面处理	Surface Treatment	Outdoor type powder coating,standard color: RAL7035	
加热器	Heater	1000W	

3.6 工作原理 Working Principle

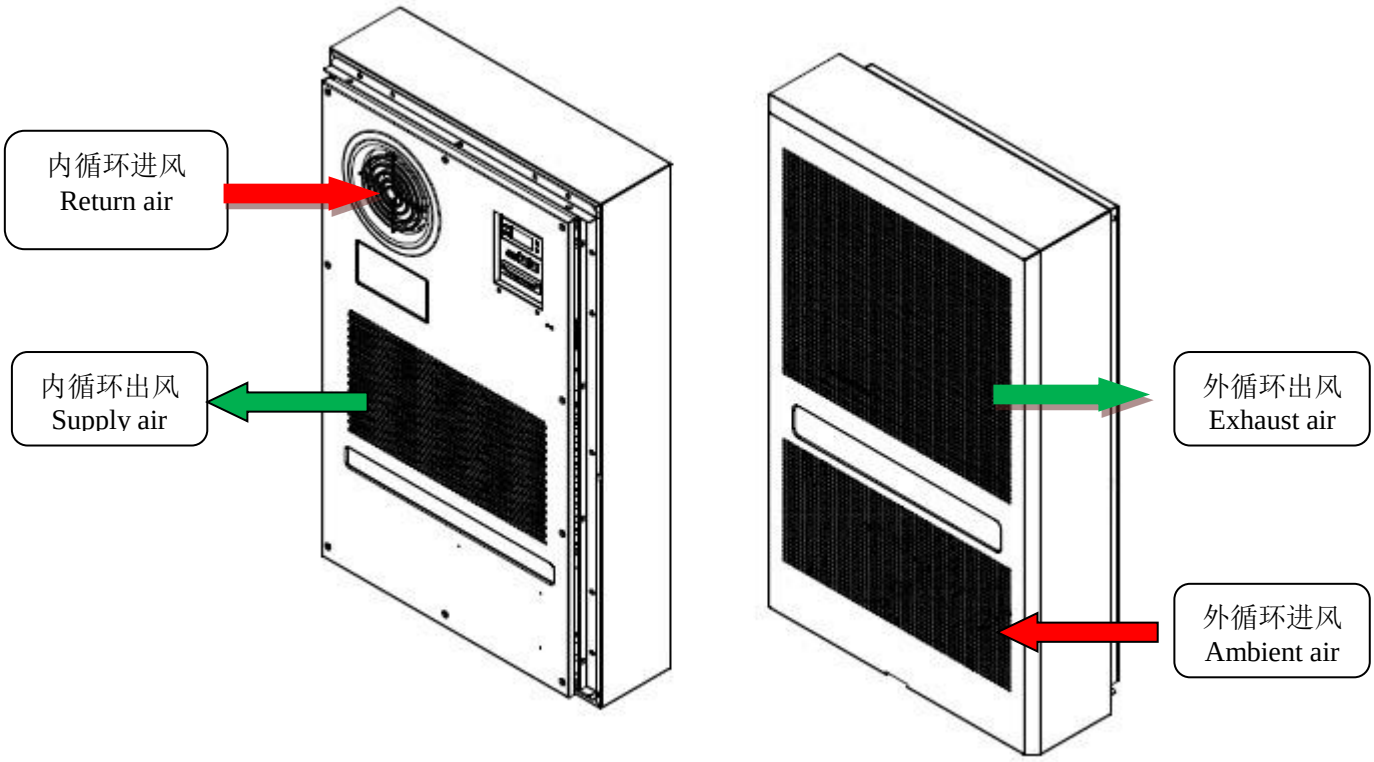
- 交流机柜空调利用压缩机进行制冷。

  The AC Cabinet Air Conditioner using the compressor refrigeration.
- 参与制冷的部件主要有：压缩机、冷凝器、节流阀、蒸发器、内风机、外风机。

  Main parts of the refrigeration: compressor, condenser, capillary, an evaporator, internal fan, external fan.
- 制冷原理：压缩机抽取从蒸发器过来的低温低压的气态制冷剂并压缩成高温高压的气态制冷剂，流入到冷凝器中，和外界空气进行热交换后由气态的制冷剂冷凝成液态的制冷剂，流经毛细管减压进入蒸发器内蒸发，内循环空气流经蒸发器时被蒸发器中的制冷剂吸取了热量变成冷空气。

  Principle of refrigeration: Compressor suck refrigerant gas from evaporator, and compressed, the compressed refrigerant gas pushed into condenser to cooled into refrigerant liquid, then pass the capillary, the refrigerant into evaporator and evaporate to cool air.

3.7 风道设计 Air flow design



3.8 工作控制逻辑 Control logic

空调上电后，首先执行自检程序，自检过程中若发现故障，则产生告警，显示器显示告警故障代码，系统按照对应的告警进入故障处理方式运转。自检的过程中若无故障，则自检结束后按照正常模式运行。

After the air conditioner is powered on, the self-test program shall be executed first. If any fault is found during the self-test, an alarm will be generated. The monitor will display the alarm fault code, and the system will operate according to the corresponding alarm into the fault handling mode.If there is no failure in the process of self-test, it will run in normal mode after self-test.

自检：Self-test

自检过程如下：The self-test procedure is as follows

第一步：检测回风温度传感器、冷凝盘管温度传感器

First: Detection of return air temperature sensor, condenser temperature sensor

第二步：检测内风机

Second : Detection of Internal fan

第三步：检测加热器

The Third: Detection of heater

第四步：检测外风机

The Fourth: Detection of external fan

第五步：检测压缩机

The Fifth: Detection of compressor

系统的正常工作状态包括待机、制冷和制热三种状态

The normal work state of the system includes the state of standby, cooling and heating.

- 待机运行 Standby mode

若回风温度满足待机运行条件，则交流机柜空调进入待机运行状态，此时只低速运行内风机。

If the return air temperature meets the condition of the Standby mode, the air conditioner runs into the standby operating state, At this point only the low speed fan inside.

- 制冷运行 Cooling mode

若回风温度满足制冷运行条件，则交流机柜空调进入制冷运行状态，此时内风机全速运行，外风机转速根据冷凝盘管温度调节，压缩机开启。

If the return air temperature meets the cooling condition, the product will run into cooling, with internal fan full speed, the speed of external fan according to the condenser temperature, compressor operated.

- 制热运行 Heating mode

若回风温度满足制热运行温度，则交流机柜空调进入制热运行状态，此时内风机全速运行，加热器开启。

If the return air temperature meets the heating condition, the product will run into heating state, with internal fan full speed, heater operated.

3.9 显示器操作 Monitor operation

显示器界面如下：The interface of the monitor is as follows:

面板上的指示灯从左到右排列的功能含义如下表：

The definitions of the symbols from left to right are as follows:

指示灯 Indicator	指示灯含义 Definition	亮 Light	闪烁 Flicker
	温度 Temperature	参数设置状态 Setting mode	自检 Self test
	制冷 Cooling	制冷状态 Cooling mode	压缩机告警 Compressor Alarm
	制热 Hearting	制热状态 Heating mode	加热器告警 Heater Alarm
	外风机 External fan	外风机运转 External fan running mode	外风机告警 External fan Alarm
	告警 Alarm	告警 Alarm	NA

- **冷凝温度查询 Show condenser temperature**

在显示回风温度状态（主界面），按一次“▲”键，将显示冷凝温度传感器检测到的温度(°C 闪烁)，再按一次“▲”或者 M 键，返回到显示回风温度的主界面。

Under the return air temperature interface, press“▲” will show condenser temperature ，press “▲” again or press “M ”,will show return air temperature back to main interface.

- **压缩机和加热器的电流查询 Show the current of compressor and heater**

在显示回风温度状态（主界面），按一次“▼”键，将显示当前压缩机或者加热器的运行电流，单位 A。按一次“M”键，返回到显示回风温度的主界面。

Under the return air temperature interface, press“▼” will show the current of the compressor or the heater(A),press “M “,will show return air temperature back to main interface.

- **内风机速度查询 Show RPM of internal fan**

在显示回风温度状态（主界面），同时按下“▲”和 Set 键，将显示内风机转速，再按 M 键将返回到显示回风温度的主界面。

Under the return air temperature interface, press“▲” and “set” will show the RPM of internal fan ，press “M ”,will show return air temperature back to main interface.

- **外机速度查询 Show RPM of external fan**

在显示回风温度状态（主界面），同时按下“▼”和 Set 键，将显示内风机转速，再按 M 键将返回到显示回风温度的主界面。

Under the return air temperature interface, press“▼” and “set” will show the RPM of external fan ，press “M ”,will show return air temperature back to main interface.

- **控制参数设定 Controls parameter settings**

在主显示界面，长按“M”键 5 秒，进入参数设置状态，显示参数代码。参数代码分为用“▲▼”键选择参数代码，选择一个代码后按“Set”键则显示该代码对应的参数值；这时通过“▲▼”键即可对参数值进行设置（按住“▲”或“▼”键不放可连发）；设置完成后再按“Set”键，系统保存新设置的参数并显示 End，然后回到显示参数代码状态；在设置参数时，按“M”键表示放弃，退回显示参数代码但不改变参数值。在显示参数代码时长按“M”键 3 秒可退出参数设置状态。

Long press "M" key for 5 seconds, enter the parameter setting mode, then display the code of parameters, with "▲▼" key to select the code of parameters, select a code and press "Set" button will display corresponding parameter values of the code, then re-use "▲▼" button can set the parameters, after finished the setting, press "Set "button, back to display states. During the setting mode, Press "M" key to exit the parameter setting mode, in the process of the parameter values setting by pressing "M" button that give up, quit, but does not change the parameter value.

- **参数设置代码：**
-

代码 Code	含义 Meaning	范围 Range	默认值 Default	单位 Unit
F1	制冷开启温度点 Cooling start temp.	20~60	35	℃
F2	制冷停止温度回差 Cooling stop delta temp.	3~10	5	℃
F3	加热器启动温度 Heater start temp.	-10~15	10	℃
F4	加热器停止温度回差 Heater stop delta temp.	0~35	5	℃
F5	高温告警温度 High alarm temp.	30~60	55	℃

F6	高温告警回差温度 High temperature alarm return difference	3~10	5	℃
F7	低温告警温度 Low alarm temp.	-40~20	-40	℃
F8	低温告警回差温度 Low temperature alarm return difference	3~10	5	℃
F9	湿度过高告警值 Set value Humidity alarm	55~99%	85%	
F10	湿度过高告警解除回差 Humidity alarm hysteresis	1~20%	5%	
F111	输入密码 Password input		1111	

3.10 告警与故障管理 Alarm and fault management

显示器正常时显示回风温度值，告警时交替显示回风温度和告警代码，告警代码定义如下表：

The monitor displays return air temperature at normally. If alarms, temperature and alarm codes are displayed alternately, the alarm code as follows:

代码 Code	含义 Meaning
E01	内风机告警 Internal fan alarm
E02	外风机告警 External fan alarm
E03	压缩机欠流告警 compressor under current alarm
E04	压缩机过流告警 compressor over current alarm
E05	加热器欠流告警 Heater under current alarm
E06	加热器过流告警 Heater over current alarm
E07	回风温度传感器告警 Return air temperature sensor alarm

E08	冷凝盘管温度传感器告警 Condenser temperature sensor alarm
E09	高温告警 High temperature alarm
E10	低温告警 Low temperature alarm
E11	直流电压过电压告警 DC Power over voltage alarm
E12	直流电压欠电压告警 DC Power under voltage alarm
E13	外部控制输入告警 Control input fault
E14	湿度过高告警 High humidity alarm
E22	湿度传感器告警 Humidity sensor alarm

4 包装与运输 Packing and shipping

- 交流机柜空调采用木箱包装，分 1 台/箱和 10 台/箱包装。内部配有 EPE 保护垫。附件等资料也放置于包装箱内。

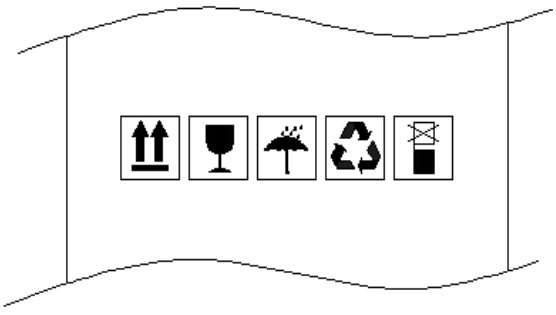
  AC Cabinet Air Conditioner packed in wooden cases (1pcs/box or 10pcs/box) with EPE protection pad. The package includes Annex.

Warning

- 交流机柜空调在运输时请注意以下事项：

  AC Cabinet Air Conditioner during the transportation, please pay attention to the following matters

图 4-1 包装箱标识 Figure4-1 Packing mark



- 搬运或者运输过程中交流机柜空调必须按 朝上放置。严禁倒置、平放、过度倾斜及碰撞。

  During Handling or transport, AC Cabinet Air Conditioner must be upward placed as No inverted, flat, excessive tilt and collision.

- 交流机柜空调为精密仪器，在搬运或者运输过程中，应小心轻放，包装箱上禁止踩踏，禁止站立或放置其他重物。

  AC Cabinet Air Conditioner is precision instrument, in handling or transport process, should be handled with care, package boxes do not step, prohibit standing or placing other heavy objects.

- 搬运或运输过程中，注意防潮、防水、防雨。

  During Handling or transport, pay attention to moisture, water, rain.

- 打开包装后，请按照装箱清单核对产品

  After opening the package, please check the products according to the packing list.

5 安装 Installation

5.1 结构安装 Structure installation

请按照下图示意进行安装

Please follow the below diagram of installation

图 5-1 安装示意图 Figure5-1 Installation diagram

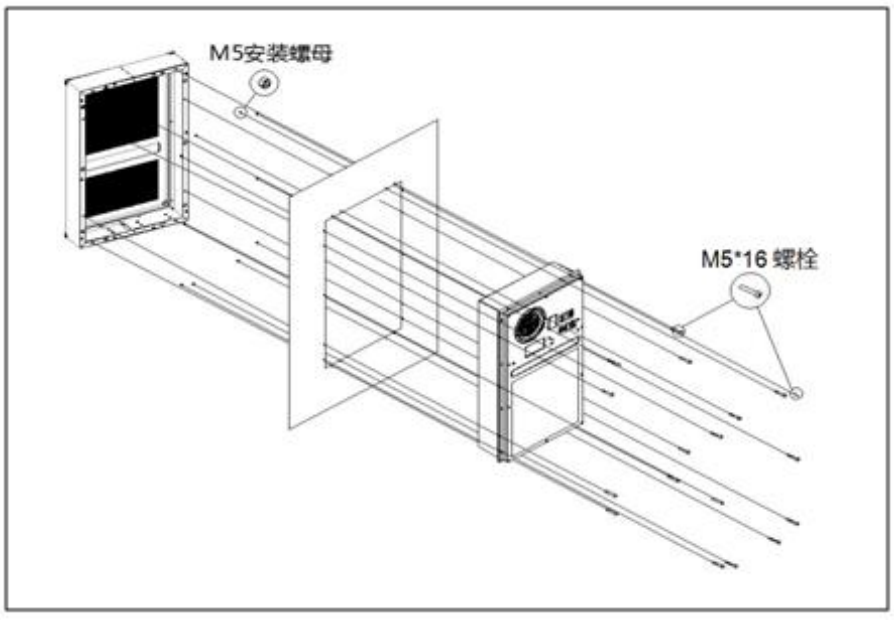
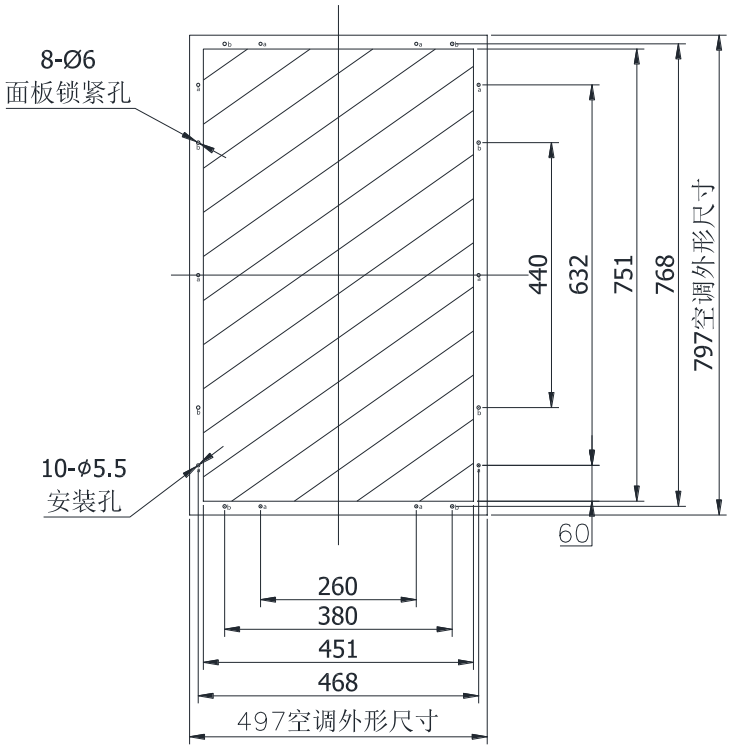


图 5-2 切割示意图 Figure5-2 Cutting diagram



- 安装步骤：Installation steps:

1) 在机柜上画出安装开孔图；

Draw on the cabinet mounting cut-out map according to Figure 5-2;

2) 将阴影部分切割掉；

Cut off the shadow part;

3) 拆除交流机柜空调外包装；

Removal of packaging box

4) 使用 M5 螺栓，依次穿上 M5 弹垫和 M5 平垫，将交流机柜空调按图 5-2 安装在机柜上；

Installed the AC Cabinet Air Conditioner on the cabinet use M5 screw, flat pad, spring pad, as Figure5-2

5) 连接产品底部的排水管，以排出该产品运行时产生的冷凝水(排水软管作为附件提供)。

Connect drain pipe in the bottom of the unit to drainage system (to outside of shelter) ， the drainage pipe and pipe clip provided as accessories

6) 安装外罩以保护产品或机柜免受雨水进入。

Mount the out cover to the shelter---only side and half embedded needed.

Important

!! Note: the out cover is not a standard part of product, normally it is provided by an engineering company who install the product.

7) 以上安装步骤完成后，请再次确认检查。

The mechanical part of installation is finished till now. Please double check.

- 安装确认检验项 Double check lists

1) 请勿在高油污、易燃气体、高腐蚀性及环境温度超过 55℃、湿度超过 95%的环境下使用该产品。

Don’t apply this unit in high oil, burning gas, explosive gas, strong corrosively condition, the ambient air must be under 55℃, and the humidity not higher than 95%.

2) 确保产品安装后倾斜度不大于 3°。

Make sure that the lean of the product not more than 3°.

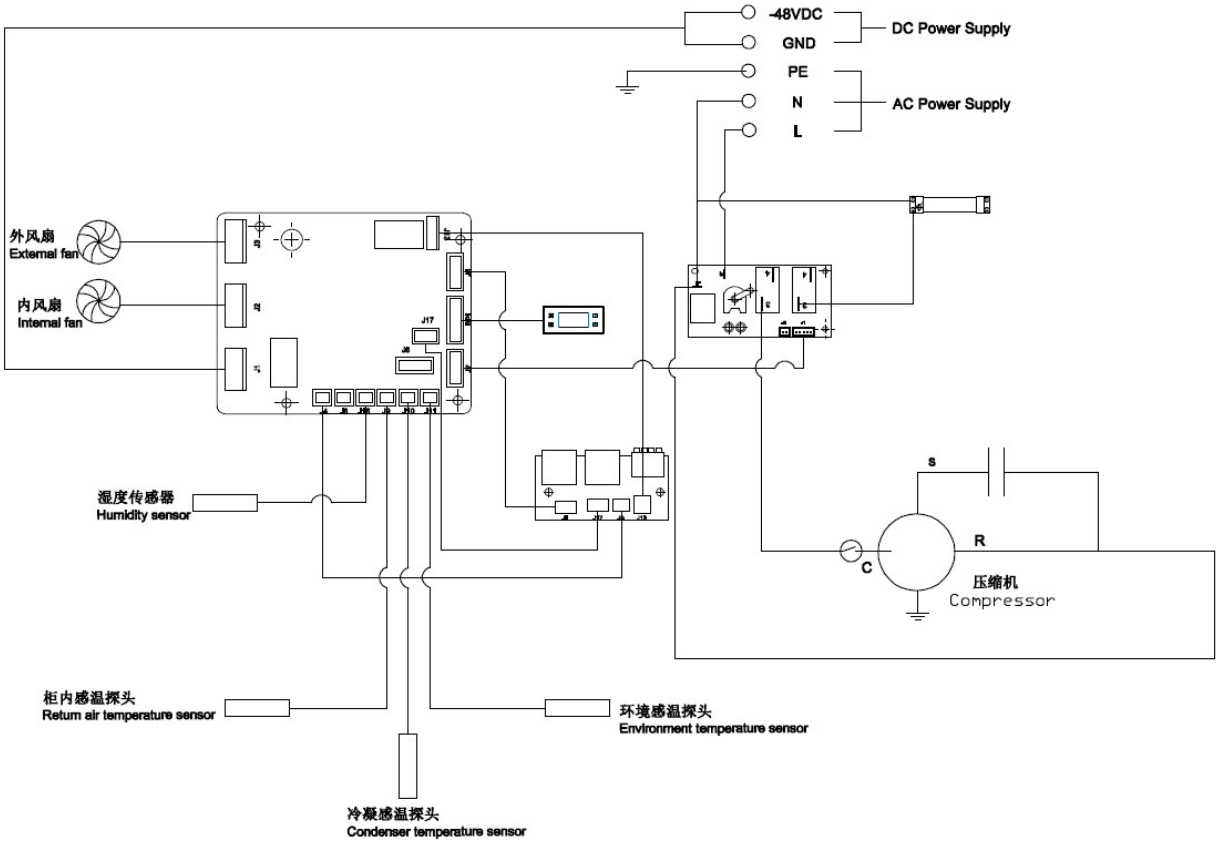
3) 确保机柜密封良好以免漏入空气产生不必要的冷量损失和产生过多的冷凝水。

Make sure that the cabinet should be sealed well to avoid the cooling losing and avoid ambient moisture penetrate into cabinet, this will avoid produce more condensate water.

4) 产品安装固定结束后，确保产品直立 30 分钟后再加电运行。

Don’t power on the unit immediately after finish the installation until the unit keep up stand for more than 30 min.

5.2 电气接线安装 Electrical wiring diagram



6 上电前检验 Pre-operational checks

交流机柜空调的安装和电气连接完成后，请核对下列检查表：

After AC Cabinet Air Conditioner installation and the electrical connection is completed, please check the following checklist:

表 6-1 交流机柜空调上电前检查表 Table6-1 Pre-operational checks

序号 Serial number	检查项目 Check items
1	装配螺钉已经紧固。 Ensure the screw is fastening
2	内外循环的进出风口附近无明显的阻挡物。 Ensure that there is enough space near the internal and external of the air condition
3	电源线极性连接正确，告警信号线缆连接正确。 Power line to connect the right polarity Alarm signal cables are connected correctly
4	用万用表检查供电电压，供电电压正常，符合铭牌上的要求。 Using a multimeter to check the supply voltage, power supply voltage is normal, consistent with the requirements on the nameplate.

7 产品维护和质保 Maintenance and Warranty

7.1 产品维护 Product maintenance

7.1.1 准备工具：Prepare tools

表 7-1 维护工具 Table7-1 Maintenance Tools

序号 Number	工具 Tools
1	万用表 Multimeter
2	十字螺丝刀 Phillips screwdriver
3	一字螺丝刀 Slotted screwdriver

7.1.2 日常维护 Routine maintenance

表 7-2 日常维护 Table7-2 Routine maintenance

序号 NUM.	检测项目 Check items	检验方法 Check methods	故障解决方法 Solution
1	电源线牢固性 Power line firm	1、关闭交流机柜空调输入电源。 Turn off the supply power 2、用手拉动电源线，观察是否有松脱现象。 Pulled the power line，watch whether the line is loosening 3、用螺丝刀拧动电源线端子上的螺丝，观察是否有松动现象。 Screw the screws on the power cable terminals with a screwdriver, watch whether the screw is loosening	若发现有电源线有松脱或者松动现象，应重新用扎带绑紧电源线；用螺丝刀将松动的螺丝拧紧 If there is a power line looses, You should tie tightly power cable; with a screwdriver to the loose screw

序号 NUM.	检测项目 Check items	检验方法 Check methods	故障解决方法 Solution
2	供电电压稳定性 Voltage Stability	用万用表测量交流机柜空调输入电压，观察用电压是否在正常范围内 Use the multimeter to measure AC Cabinet Air Conditioner input voltage to watch whether the voltage is within normal range.	若电压不在正常供电范围，请立刻关闭输入电源。直到输入电源稳定后才可再次运行交流机柜空调。 If the voltage is not within the normal range, Please turn off the power supply immediately. Power on the AC Cabinet Air Conditioner until the supply voltage within normal range.
3	安装螺丝牢固性 Screw firmly	用螺丝刀拧动交流机柜空调的安装螺丝，观察是否有松动现象。 Use screwdriver to screw the screws and watch whether the screw is loosening	若有松动现象，则拧紧螺丝 If the screw is loosening, please tighten it.
4	系统制冷 Cooling	系统断电后重新上电，观察交流机柜空调自检程序是否正常，若制冷正常，则按照自检程序在显示板上显示压缩机电流。 Power on the switch and watch whether the self-test is correct. If it is correct ,the monitor will display compressor current as self-test program	1、若发现自检过程中，有异常震动或声音，请立即关闭电源，并联系专业人士进行维护。 While self-testing , if there is abnormal noise, vibration, please cut off power immediately and notify the professionals to inspect. 2、自检过程中若发生告警，请根据告警代码按表 7-3 进行处理。 If it is alarm while self-test, please process As table7-3

7.1.3 告警代码及处理方法 Alarm code and handling method

表 7-3 故障信息 Table 7-3 Alarm information

故障名称 Code Name	故障机制 Principle	故障处理方法 Process Method
回风温度传感器故障 Return air temperature sensor alarm	回风温度传感器短路或断路 Return air temperature sensor is short circuit or open circuit	检查回风温度传感器是否有断路或者短路现象。 Check whether the return air temperature sensor is short circuit or open circuit.
压缩机欠流故障 Compressor current is too low	压缩机电流值不在正常范围内 Compressor current is not within normal range	1、检查压缩机线和压缩机的连接是否松动。 Check whether the compressor line is loosening 2、压缩机本身故障，请联系专业人士维护. Compressor fault, please contact professional maintenance.
压缩机过载故障 Compressor over-current	压缩机电流值不在正常范围 Compressor current is not within normal range	1、检查冷凝器是否堵塞 Check whether the condenser is dirty block. 2、压缩机本身故障，请联系专业人士维护。 Compressor fault, please contact professional maintenance.
内风机告警 Internal fan alarm	内风机转速不在正常范围内 Internal fan current is not within normal range.	检查内风机线和内风机的连接是否脱落或松动 Check Whether the internal fan line is loosening.
外风机告警 External fan alarm	外风机转速不在正常范围内 External fan current is not within normal range.	检查外风机线和外风机的连接是否脱落或松动 Check Whether the external fan line is loosening.

高温告警 High temperature alarm	机柜内温度高于设定值 The cabinet temperature is higher than the set point.	打开机柜门散热，直到告警消除. Open the cabinet door until the alarm stop.
电源电压超限告警 Supply voltage overload	电源电压不在正常范围内 Compressor current is not within normal range.	立即断掉交流机柜空调输入电源，用万用表测量供电电压，直到供电电压在合理范围内，才能再次运行交流机柜空调。 Turn off the power supply immediately. Use multimeter measure the voltage, power on the switch until the power supply within the normal range

7.1.4 其他故障分析与处理 Other fault analysis and treatment

表 7-4 其他故障分析与处理 Table7-4 other fault analysis and processing

故障状态 Fault state	原因分析 Analysis of the reasons	故障排除方法 Solutions
电源接通后，柜内温度过高，但交流机柜空调不运转 Power on the switch ,the cabinet temperature is too high but the AC Cabinet Air Conditioner is not working	1、停电或无电源。 Power failure or no power 2、设定温度高于柜内温度。 The cooling set temperature is higher than the cabinet temperature 3、系统故障。 System fault	1、检查电源、电路。 Check the power supply and the electric circuit 2、根据需要设定压缩机启动温度。 Setting cooling temperature according to the needs 3、请与专业维修人员联系 Please contact professional maintenance.

设备正常运转，但制冷效果不理想 The AC Cabinet Air Conditioner is running but the cooling effect is not good	1、该机型制冷能力与负荷不匹配。 The cooling capacity of the AC Cabinet Air Conditioner is not match with the load. 2、环境温度过高。 The ambience temperature is too high 3、其他系统故障。 Other system fault	1、 根据负荷大小重新选配或增配制冷设备。 To add or choose another AC Cabinet Air Conditioner according to the load. 2、 请确保机器工作环境温度在正常使用范围内。 Ensure the machine is used in the correct range. 3、 请与专业维修人员联系 Please contact professional maintenance.
正常运转中。突然停止制冷，且电器系统无故障。 The machine is stopping suddenly ,and the electric system is normal	1、 柜内温度已达到设定温度。 The cabinet temperature greater than or equal to the cooling set temperature. 2、 其他系统故障 Other system fault	1、 根据需要设定压缩机启动温度。 Setting cooling temperature according to the needs 2、 请与专业维修人员联系 Please contact professional maintenance.

7.1.5 交流机柜空调备件列表 Spare parts list

序号 Serial NUM.	名称 Name	型号 Mode	数量 Num.
1	内风机 internal fan	175 直流风机/175 DC FAN	1
2	外风机 external fan	175 直流风机/175 DC FAN	1
3	主控板 main control board	DCMB V10	1
4	驱动板 Drive board	HCVV10	1

序号 Serial NUM.	名称 Name	型号 Mode	数量 Num.
5	加热器 heater	PTC-800W	1

7.2 售后服务和维修 Service and repair

- 质保范围 Warranty coverage

  本产品在保修期内，凡属于产品本身质量问题而导致故障的，本公司将为您免费维修，客户报修时需提供产品标号。但是由以下任何原因造成的故障不属于我司的保修范围。

  1） 已超过保修期的；

  2） 不能提供产品出厂编号的（见机身贴示的铭牌）；

  3） 由于在异常条件或环境中运行，或者用非本使用说明书中指定的不恰当安装方式安装、维护或操作导致的故障；

  4） 非本设备造成的故障，比如由用户的设备、用户的软件等造成的故障；

  5） 用户自行更换或拆装产品零部件造成损坏的，或由非授权维修服务者拆修而造成损坏的；

  6） 诸如火灾、地震、洪水等不可抗拒力而造成损坏的故障。

During the warranty period, all belong to the product itself quality problems caused by fault, the company will be free for you to repair; Household repair is required to provide the product label. But by any of the following causes the failure does not belong to our warranty.

1) Out of the Warranty period
2) Can not provide the product label(the product label is on the nameplate);
3) Because of the abnormal condition or environment ,or the instructions specified in the inappropriate installation, maintenance or operation causes the fault;
4) Not caused by equipment failure, caused by user's other equipment or software.
5) User changed or disassembles by theirself, or maintained by the person without authorization.
6) Caused by force major such as fires, earthquakes, floods and other damage to the fault.

- 免责声明 Disclaim

  我司的保修仅限于已发送的产品。我司对可能由设备故障衍生的任何损失不负责任。

  The warranty is for the delivered products.

  Irresponsible is for any loss that may be caused by equipment failure.

手册中的规格若有更改恕不事先通知，以便我们能将最新的技术改进带给客户。

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