

# 交流空调器

## AC Air Conditioner

# 使用说明书

## 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

该手册介绍交流空调器的使用须知、声明、产品概述、安装指导以及产品维护和质保。  
The manual describes the AC air conditioner instructions, declaration, product overview, installation guide, maintenance and warranty.

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# 1 使用须知 Instructions

- 本手册适用于：185028 TA020/C/A  
This manual is for: the series of 185028 TA020/C/A air conditioner
- 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  
Can offer maintenance with free of charge.

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## 2 声明 Declaration

### **RoHS Compliance Declaration of Air conditioner**

#### **European Guidelines 2011/65/EC (RoHS)**

Legal regulation for Substances

Dear Sir/Madam,

Referring to the European guideline of 2011/65/EC, 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:

☒ **185028 TA020/C/A**

Yours sincerely,

Engineering Department



## Declaration of Conformity

We herewith declare the following products:

Product Name: 185028 TA020/C/A

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/EC | 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.

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## 3 产品概述 Product Overview

### 关于本章 About this chapter

本章介绍了 **185028** 空调的应用、产品特点、工作原理、风道设计、运行逻辑、显示屏操作指导以及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 **185028 TA020/C/A** applications, product features, the working principle, duct design, operation logic, monitor operation guide and alarm and fault processing of information. It is required to strictly operate the unit according to this user manual.



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## 3.1 应用 Application



### Important

- 该产品是专为空压机设备应用场合而设计的高性能空调热交换一体机，使用交流电源供电（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 15~35℃ 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 air compressor equipment applications and design of high performance air conditioner , Please use the AC 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 15 to 35 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

- 运输：搬运或运输该产品过程中，请勿翻倒或过度倾斜该产品。

Transport: In the process of handling or transport of the product, do not overturn or excessive tilt of the product.

- 存放：不要露天存放，或者长时间存放在高温、高湿的环境下(70℃,95%)。

Store: Don't open storage, or stored for a long time at high temperature, high humidity environment (70,95%).

- 关机：若长时间不使用该产品，请关掉主电源。

Shutdown: If not using this product for a long time, please turn off the main power



### 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，电源线请务必使用同一公司或使用同规格的有质量认证的产品

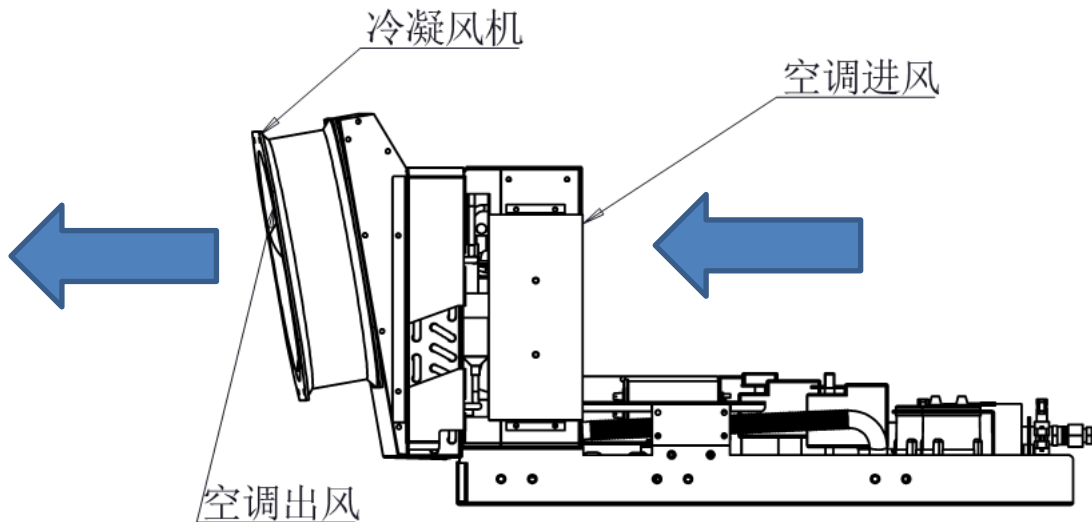
If the power supply cord is damaged, it must be replaced by the manufacturer, or service agency or similarly qualified person in order to avoid a hazard.

- 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.

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## 3.2 风道设计 Air flow design



## 3.3 运行逻辑 Operation logic

空调上电，首先进行自检程序，若自检过程中发现故障。则产生告警。若自检过程中无故障，则自检结束后按照正常模式运行。

Power on the switch, the product will perform a self-test running program firstly. If there is any trouble during self-test, the alarm will be generated, the system according to the alarm faults code to enter fault handling operation. If there is no trouble during the self-test, system will be normal running automatically.

- 自检: Self-test

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

第一步: 检测直流电压值和交流电压值;

First: Detection of DC voltage and AC voltage;

第一步: 检测内风机;

First: Detection of Internal fan;

第二步: 检测回风温度传感器、冷凝盘管温度传感器;

Second: Detection of return air temperature sensor, sensor and condenser temperature sensor;

第三步: 检测外风机;

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The Third: Detection of external fan;

第四步：检测压缩机。

The Fourth: Detection of compressor.

**注：如果超出电压范围导致发出的电压告警，此告警可自动恢复**

**Note: if the alarm is sent out for power out of voltage, the alarm can recover by itself.**

系统的正常工作状态包括待机和制冷两种状态

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

- 待机运行 Standby mode

若回风温度满足待机运行条件，则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（柜内高于制冷启动温度），则空调制冷运行状态，此时内风机全速运行，外风机调速运行，压缩机开启。

If the return air temperature meets the cooling condition (the cabinet inner temperature is higher than cooling start temperature), the product will run into cooling, with internal fan full speed, external fan speed governing, compressor operated.

## 3.4 监控 Monitoring

机器可通过软件监控，只需连接 RS485 接口。请联系厂商以获取更多的信息。

The machine can be monitored by software through RS485 port. Please consult to the manufacture for more information.

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## 4 安装指导 Installation guide

### 4.1 设备安装 Machine installation

- 安装步骤:

1. 将空调安装到机柜内部;
2. 根据接线指引接线;
3. 如果需要安装水管, 请将水管安装在底部接水管处。

Installation steps:

1. Install the air conditioner cabinet to the customer's cabinet.
2. Please connect the wires according to the wiring guidance ,
3. Please to install drain pipe on drain hole if you need.
4. Remove the compressor fixing sheet metal.

- 安装完成后的确认检验项:

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;
2. 确保产品安装后倾斜度不大于 3°;
3. 确保控制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;
4. 产品安装结束后, 确保产品直立 30 分钟后再加电运行。

- Double check lists after Installation

1. 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. Make sure that the lean of the product no more than 3°
3. 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. Ensure that the product is up and running in upright 30 minutes

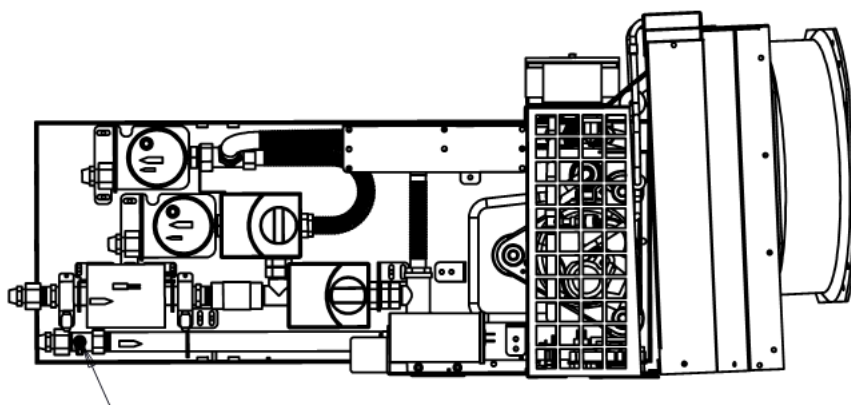
## 4.2 电气安装 Electrical installation

空调器在使用前需根据本手册的说明进行电气连接，建议客户优先使用附件中的线缆。客户可以自备线缆，如果客户不能确定所选电缆规格是否合适，可联系酷克售后服务部门。

Does Electrical Wiring according to the manual before use the air conditioner; we suggested preferring to use cables in the attachments. You should call the After-sale Service Department of Quick, if you cannot sure the cable specification be made by your-self.

图 3-1 电源端子示意图

Figure 3-1 Schematic of power terminal



- 用户自配电源、电源线缆及断路器应该满足以下表格要求：

The power supply, power cable and circuit breaker chosen by customers self should be recommended as below:

| 项目 // Item             | 要求 // Demand   |
|------------------------|--|
| 电源 // Power supply     | 交流电源 // AC Power :230 VAC  |
| 电压范围 // Voltage range  | AC:230V $\pm$ 15%  |
| 断路器 // Circuit breaker | 交流断路器规格不小于 10A<br>Circuit breaker for AC power must more than 10A            |
| 电缆规格// Cable size      | 建议使用不小于 14AWG 或者 1.5mm <sup>2</sup><br>more than 14AWG or 1.5mm <sup>2</sup> |

注：建议选用的漏电保护器（RCD）动作电流不要超过 30mA。

Note: The installation of a residual current device (RCD) having a rated residual operating current not exceeding 30mA is advisable.

## ● 上电前检查 Pre-operational checks

空调的安装和电气连接完成后，请核对下列检查表：

After Air conditioner installation and the electrical connection is completed, please check the following checklist:

| 序号<br>Serial number | 检查项目<br>Check items   |
|---------------------|---|
| 1                   | 装配螺钉已经紧固。<br>Ensure the screw is fastening  |
| 2                   | 内外循环的进出风口附近无明显的阻挡物。<br>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。<br>Power line to connect the right polarity<br>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。<br>Using a multimeter to check the supply voltage, power supply voltage is normal, consistent with the requirements on the nameplate. |

### Warning

空调上电运行过程中，若发生异常噪音、震动，请立即切断电源，并通知专业人士进行检查。

When the air conditioner is running, if there is abnormal noise, vibration, please cut off power immediately and notify the professionals to inspect.

## 5 产品维护和质保 Maintenance and Warranty

### 5.1 产品维护 Product maintenance

#### 5.1.1 准备工具：Prepare tools

表 5-1 维护工具 Table5-1 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  |

## 5.1.2 日常维护 Routine maintenance

表 5-2 日常维护 Table5-2 Routine maintenance

| 序号<br>NUM | 检测项目<br>Check items          | 检验方法<br>Check methods  | 故障解决方法<br>Solution  |
|-----------|------------------------------|--|---|
| 1         | 电源线牢固性<br>Power line firm    | 1、关闭空调输入电源。<br>Turn off the supply power<br>2、用手拉动电源线，观察是否有松脱现象。<br>Pulled the power line, watch whether the line is loosening<br>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。<br>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<br>If there is a power line loosens, You should tie tightly power cable; with a screwdriver to the loose screw  |
| 2         | 供电电压稳定性<br>Voltage Stability | 用万用表测量空调输入电压，观察用电压是否在正常范围内<br>Use the multimeter to measure the 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空调。<br>If the voltage is not within the normal range, Please turn off the power supply immediately. Power on the air conditioner until the supply voltage within normal range.   |
| 3         | 系统制冷<br>Cooling              | 系统断电后重新上电，观察空调自检程序是否正常，<br>Power on the switch and watch whether the self-test is correct. I   | 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。<br>While self-testing, if there is abnormal noise, vibration, please cut off power immediately and notify the professionals to inspect.<br>2、自检过程中若发生告警，请根据告警代码进行处理。<br>If it is alarm while self-test, please process |

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

表 5-3 故障信息 Table5-3 Alarm information

| 故障名称<br>Code Name                                | 故障机制<br>Principle  | 故障处理方法<br>Process Method  |
|--|--|---|
| 回风温度传感器故障<br>Return air temperature sensor alarm | 回风温度传感器短路或断路<br>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。<br>Check whether the return air temperature sensor is short circuit or open circuit.  |
| 压缩机欠流故障<br>Compressor current is too low         | 压缩机电流值不在正常范围内<br>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。<br>Check whether the compressor line is loosening<br>2、压缩机本身故障，请联系专业人士维护。<br>Compressor fault, please contact professional maintenance.                                  |
| 压缩机过载故障<br>Compressor over-current               | 压缩机电流值不在正常范围<br>Compressor current is not within normal range                  | 1、检查冷凝器是否堵塞<br>Check whether the condenser is dirty block.<br>2、压缩机本身故障，请联系专业人士维护。<br>Compressor fault, please contact professional maintenance.  |
| 内风机告警<br>Internal fan alarm                      | 内风机转速不在正常范围内<br>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<br>Check Whether the internal fan line is loosening.   |
| 外风机告警<br>External fan alarm                      | 外风机转速不在正常范围内<br>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<br>Check Whether the external fan line is loosening.   |
| 电源电压超限告警<br>Supply voltage overload              | 电源电压不在正常范围内<br>The power supply voltage is not within normal range.            | 立即断掉空调输入电源，用万用表测量供电电压，直到供电电压在合理范围内，才能再次运行空调。<br>Turn off the power supply immediately. Use multimeter measure the voltage, power on the switch until the power supply within the normal range |



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

表 5-4 其他故障分析与处理 Table5-4 other fault analysis and processing

| 故障状态<br>Fault state  | 原因分析<br>Analysis of the reasons   | 故障排除方法<br>Solutions  |
|--|---|--|
| 电源接通后, 柜内温度过高, 但空调不运转<br>Power on the switch ,the cabinet temperature is too high but the air conditioner is not working | 1、停电或无电源。<br>Power failure or no power<br>2、设定温度高于柜内温度。<br>The cooling set temperature is higher than the cabinet temperature<br>3、系统故障。<br>System fault                            | 1、检查电源、电路。<br>Check the power supply and the electric circuit<br>2、根据需要设定压缩机启动温度。<br>Setting cooling temperature according to the needs<br>3、请与专业维修人员联系<br>Please contact professional maintenance.                                  |
| 设备正常运转, 但制冷效果不理想<br>The 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。<br>The cooling capacity of the air conditioner is not match with the load.<br>2、环境温度过高。<br>The ambience temperature is too high<br>3、其他系统故障。<br>Other system fault | 1、 根据负荷大小重新选配或增配制冷设备。<br>To add or choose another air conditioner according to the load.<br>2、 请确保机器工作环境温度在正常使用范围内。<br>Ensure the machine is used in the correct range.<br>3、 请与专业维修人员联系<br>Please contact professional maintenance. |
| 正常运转中。突然停止制冷, 且电器系统无故障。<br>The machine is stopping suddenly ,and the electric system is normal                           | 1、柜内温度已达到设定温度。<br>The cabinet temperature greater than or equal to the cooling set temperature.<br>2、其他系统故障<br>Other system fault   | 1、 根据需要设定压缩机启动温度。<br>Setting cooling temperature according to the needs<br>2、 请与专业维修人员联系<br>Please contact professional maintenance.   |

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## 5.2 售后服务和维修 Service and repair

- 保修期 Warranty period

产品质保 12 个月（从产品开始运行时起），或最大 18 个月（从产品发货日时起）。

The product guarantee period is 12 months from product up-running time or Max. 18 month from product delivery date.

- 质保范围 Warranty coverage

本产品在本保修期内，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 herself, 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.

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## 5.3 回收处理 Reclaim



At the end of the unit working life, the produce must not be disposed of as urban waste; it must be taken to a special local authority differentiated waste collection centre or to a dealer providing this service.

到本产品使用期限或不再使用该产品时，请勿将本产品直接作为垃圾处理，请交给当地政府认可的废物收集中心进行处理。



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