



JMF-1U 系列 • 一体式风量智能温控散热机

JMF-1U series • temperature control heat dissipation machine

用户手册 v4.0

User Manual v4.0



成都兢志成电子科技有限公司

Chengdu Jingzhicheng Electronic Technology Co., LTD



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版本信息/Version information:

版本号 Version number	主要变更内容 Main change content	日期 date
V1.00	初始版本 The initial version	2017-09
V2.01	细节描述优化 Details description optimization	2021-05
V3.00	增加风扇转速检测、PWM 频率调节相关描述 Add the fan speed detection and PWM frequency adjustment related description	2023-02
V4.00	温控范围扩展至-20-120℃、风机启动/全速温度独立成两个寄存器、风机故障代码支持 03 功能码查询、说明书增加英文注释、其他优化 The temperature control range has been expanded to -20-120 °C, the fan start/full speed temperature has been independently divided into two registers, the fan fault code supports 03 function code Read, English annotations have been added to the manual, and other optimizations have been made	2023-06



1. 功能概述 Function overview

JMF-1U 系列风量智能温控散热机（风机温控单元），工业级标准，主要用于 19 英寸标准机箱机柜的通风散热，内置 2/4 个大风量的直流风机，带 RS485 通信接口，具备风机故障检测、风扇转速读取等功能，专利产品，PWM 智能温控技术，带数字显示屏，可实时显示现场温度，风机转速随温度的变化智能调节，风量大小和温度值成正比，使机柜节能减排、静音降噪。JMF-1U series air volume intelligent temperature control heat sink (fan temperature control unit), industrial standard, mainly used for ventilation and heat dissipation of 19 inch standard chassis and cabinets. It is equipped with 2/4 large air volume DC fans, RS485 communication interface, and functions such as fan fault detection and fan rotation reading. It is a patented product with PWM intelligent temperature control technology and digital display screen, which can display on-site temperature in real time. The fan speed can be intelligently adjusted according to temperature changes, The size of the air volume is directly proportional to the temperature value, making the cabinet energy-saving, emission reduction, and silent noise reduction.

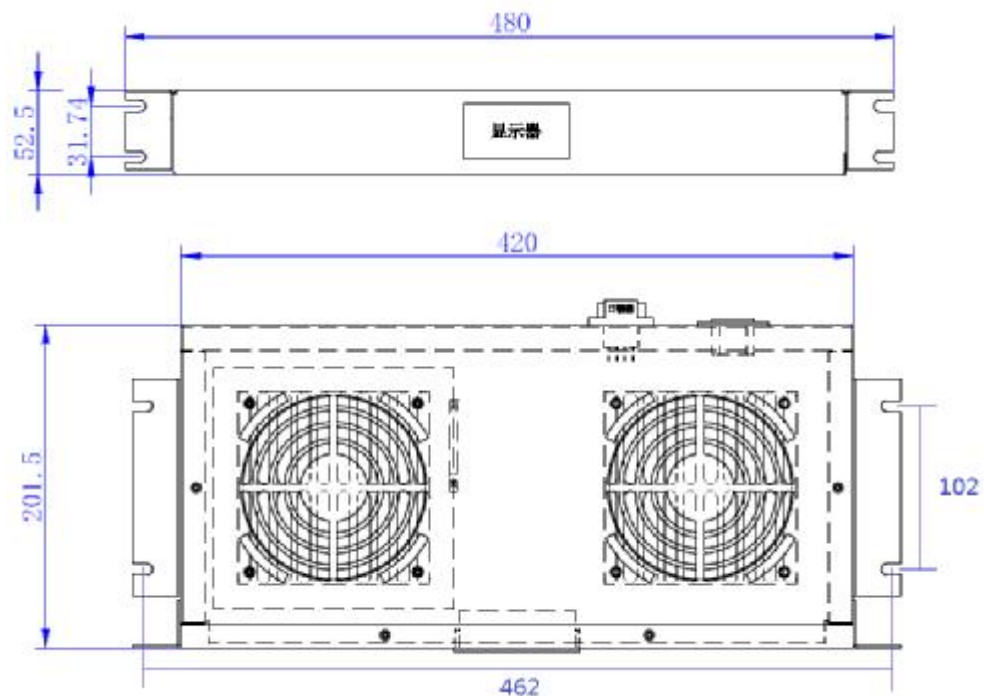
2. 技术参数 Technical parameters

1. 供电范围，交流供电版本：AC100V~260V，直流供电版本：DC12V~55V
Power supply range, AC power version: AC100V~260V, DC version: DC12V~55V
2. 整机功率：≤20W (2 风机版本) / 40W (4 风机版本)
Overall power: ≤ 20W (2 fan versions)/40W (4 fan versions)
3. 散热风量：≈200cfm (2 风机版本) / 400cfm (4 风机版本)
Heat dissipation air volume: ≈ 200cfm (2 fan versions)/400cfm (4 fan versions)
4. 内置风机类型：直流调速风机，双滚珠轴承
Internal fan type: DC speed regulating fan, double ball bearing
5. 通信接口及协议：RS485, MODBUS RTU 协议
Communication interface and protocol: RS485, MODBUS RTU protocol
6. 测温范围：-20~120℃
Temperature measurement range: -20~120 °C
7. 温度误差：±1℃
Temperature error: ± 1 °C
8. 净重：≈2.3Kg (2 风机版本)，≈3.5Kg (4 风机版本)
Net weight: ≈ 2.3Kg (2 fan version), ≈ 3.5Kg (4 fan version)
9. 安装方式：横向安装或竖向安装
Installation method: horizontal or vertical installation
10. 外观颜色：常规为磨砂黑，批量订单可以定制颜色
Appearance color: matte black, and the color can be customized for bulk orders

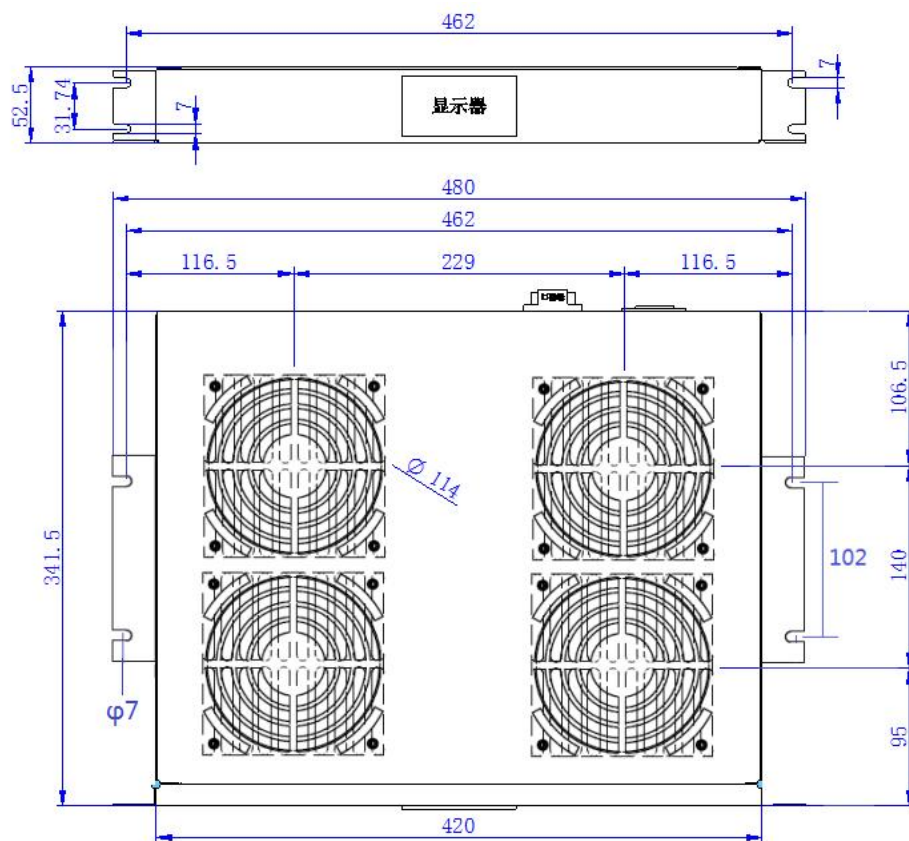


3. 产品尺寸 (单位 mm) size

2 风机版本 (2 fan version):



4 风机版本 (4 fan version):





4. 接口说明 interface specification

以 2 风机版本为例，接口释义如下图：



1: 交流供电插口,

插口下端有一个小抽屉(上图数字 1 处)，里面装有 2 个保险管，其中一个为备用，当出现疑似保险管损坏时（整机不工作）可以打开此抽屉检查并取出备用的替换 AC power port,

There is a small drawer at the bottom of the socket, which contains two safety tubes, one of which is for backup,

When it is suspected that the safety tube is damaged (the entire machine is not working), you can open this drawer to check and take out a spare replacement

2: 直流供电接口及 RS485 通信接口

DC power supply interface and RS485 communication interface



*直流供电接口(+ -)仅适用于订货版本为直流供电的机型，且需要注意额定的供电电压

*The DC power supply interface (+-) is only applicable to models ordered with DC power supply, and it is necessary to pay attention to the rated power supply voltage

3: 温度探头(金属部分测温)

Temperature probe (metal part temperature measurement)

5. 基础功能使用说明 Come into use

5.1 连接好接线

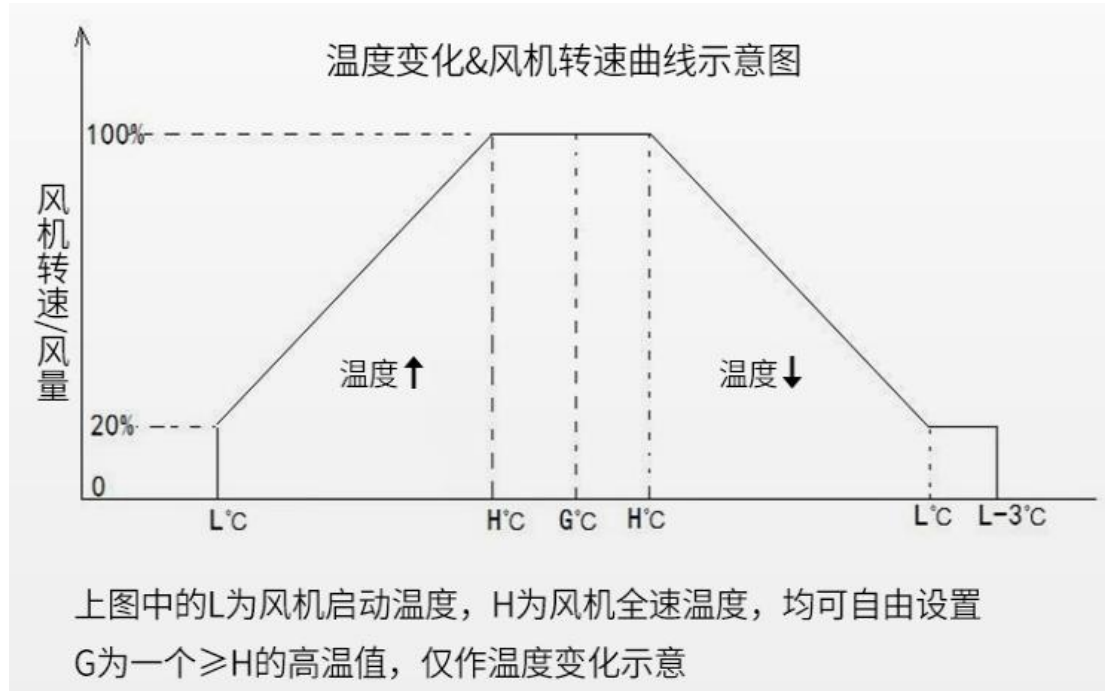
Connect the wiring according to the interface Commands

5.2 供电正常后，数码显示屏会显示当前温度，并根据当前设置的温度区间来调节风机的转速，以调速器出厂默认的温度区间为例，调速器出厂默认的温度区间为 $L=30^{\circ}\text{C}$ 、 $H=50^{\circ}\text{C}$ ，当检测到当前温度大于等于 30°C 时，调速器按线性比例调节风扇的转速，温度升高，风扇转速也会加快，当温度 $\geq 50^{\circ}\text{C}$ 时，风机变为全速。当温度降低到 $\leq 27^{\circ}\text{C}$ ($L-3$) 时，调速器使风扇处于最小转速/或关停风机。

After the power supply is normal, the LED lights up, the governor starts to detect the current temperature, and adjust the speed of the fan according to the current temperature interval. Take the default temperature interval of the governor as an example, the default temperature interval of the governor is $L=30^{\circ}\text{C}$, $H=50^{\circ}\text{C}$. When the current temperature is greater than or equal to 30°C , the governor adjusts the fan speed in linear proportion, and the fan speed will accelerate. When the temperature is 50°C , the fan changes to full speed.

风机转速&温度关系示意图:

Schematic diagram of the fan rotation speed & temperature relationship:



In the figure above, L is the starting temperature of the fan, and H is the temperature of the fan at full speed, which can be set freely.

G is for reference only



6. 数码面板操作说明 Panel operation Commands

数码面板实时显示当前温度，带 4 个按键，通过按键可以设置调速器的所有参数
待机状态下，按 MODE 键可进入配置/切换参数项，配置时按↓键可以调整数值，OK 键确认
*设置参数时，每设置一项参数（改变了参数值），都必须按一次 OK 键确认，再设下一项。
The digital panel displays the current temperature in real time, with four keys, through which all the parameters of the governor can be set In standby state, press MODE key to enter the configuration / switch parameter items, and press ↓ key to adjust the value, and OK key to confirm

* When setting the parameters, for each parameter set (the parameter value is changed), you must press the OK key once to confirm, and then set the next item.

参数项 Parameter item

数显代号 Number of code	参数释义 Parameter definition	参数说明 parameter declaration
Lxx	风机启动温度 Start temperature of fan	设置风机的启动（下限）温度值 设置范围：-20~120℃ Set the start temperature value of the fan Setting range: -20~120℃
Hxx	风机全速温度 Full speed temperature of fan	设置风机的全速（上限）温度值 设置范围：-20~120℃，H 的值必须大于 L 的值 Set the full speed temperature value of the fan Set the range: -20~120℃, the value of H must be greater than the value of L
Axx	MODBUS 地址 MODBUS address	设置调速器的 485 串口 MODBUS 协议的地址 设置范围：1~254 Set the address of the 485 serial port MODBUS protocol for the governor Setting range: 1~254
Pxx	工作模式 work pattern	设置调速器的工作模式 当温度小于设置的启动温度-3℃时，用此参数设置调速器是控制风机关闭还是维持风机处于最小（20%）的转速） 设置范围： 01 表示维持最小转速，00 表示关闭风机 Set up the working mode of the governor When the temperature is less than the set start temperature-3℃, use this parameter to set the governor to control the fan off or maintain the fan at the minimum (20%) speed) Setting range: 01 means maintaining the minimum rotation speed, and 00 means turning off the fan



Fxx	风机数量 fan number	设置接入调速器的风机数量 风机故障检测功能需要用到此参数，此项参数的值必须和实际接入的风机数量一致， 设置范围：0、2、4 *设置为0时表示不启用风机故障检测功能 Set the number of fans connected to the governor The fan fault detection function requires this parameter, and the value of this parameter must be consistent with the actual number of connected fans, Setting range: 0, 2, 4 *When set to 0, it means that the fan fault detection function is not enabled
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*以设置风机的启动、全速温度为例

* Take setting the start and full speed temperature of the fan as an example

待机状态下，面板显示当前的温度值，按1下MODE键，数码管显示Lxx，L代表启动温度，xx表示当前设置的温度值，

按上下键可以调整参数值，调整完成后，按ok键确认，回到待机界面

In the standby state, the panel shows the current temperature value, press 1 MODE key, the digital tube displays Lxx, L represents the start temperature, xx represents the currently set temperature value, Press the upper and lower keys to adjust the parameter value. After the adjustment is completed, press the ok key to confirm and return to the standby interface

待机状态下，按2下MODE键，数码管显示Hxx，H代表全速温度，xx表示当前设置的温度值，按上下键可以调整参数值，调整完成后，按ok键确认

In standby state, press MODE key for 2, the digital tube shows Hxx, H represents the full speed temperature, xx represents the current set temperature value, press the upper and lower key to adjust the parameter value, after the adjustment is completed, press OK key to confirm

设置完成，调速器将根据新设置的温度参数来自动控制风机的转速。

其他参数的设置与上面步骤类似。

When the setting is complete, the governor will automatically control the speed of the fan according to the newly set temperature parameters. The other parameters were set similarly to the above steps.



***使用提示 prompt**

建议将散热机横向安装在机柜的顶部位置或竖向安装在机柜背面的中上位置，这样有利于形成冷热空气对流，使散热机能够更好的将柜体内的热空气朝外排出；

实际使用时，可以根据现场的环境要求来设置风机的启动温度和全速温度，风机全速时会有比较大的噪音，如果想要避免此噪音，可以将全速温度稍微设置高一点；

最小转速模式下，当温度小于启动温度值，风机最小转速运行，如果觉得此时的风量太小，可以把启动温度设置得更低一点，这样风机就会转得快一些；

如果在温度低时需要关闭风机，可以将散热机的工作模式设为关停模式。

It is recommended to install the heat sink horizontally at the top of the cabinet or vertically at the middle and upper positions on the back of the cabinet, which is conducive to the formation of cold and hot air convection, so that the heat sink can better exhaust the hot air inside the cabinet outward;

In actual use, the starting temperature and full speed temperature of the fan can be set according to the on-site environmental requirements. When the fan is at full speed, there will be relatively large noise. If you want to avoid this noise, you can set the full speed temperature slightly higher;

In the minimum speed mode, when the temperature is lower than the starting temperature value, the fan runs at the minimum speed. If you feel that the air volume is too low at this time, you can set the starting temperature lower, so that the fan will rotate faster;

If the fan needs to be turned off when the temperature is low, the working mode of the heat sink can be set to shutdown mode.

7. 安装方式

横向安装的散热机一般装于机柜上顶部，这样有利于将机柜内部的热空气更好的向上排除，根据空气对流特性，热空气排除势必会使环境中的冷空气流入机柜，从而实现机柜散热降温的目的

The heat sink installed horizontally is generally installed on the top of the cabinet, which is conducive to better expelling the hot air inside the cabinet upwards. According to the air convection characteristics, the removal of hot air will inevitably cause cold air in the environment to flow into the cabinet, thus achieving the purpose of cooling and cooling the cabinet

安装实物图 1:





竖向安装的散热机一般装于机柜中上侧，这样有利于将机柜内部的热空气更好的向外排除，根据空气对流特性，热空气排除势必会使环境中的冷空气流入机柜，从而实现机柜散热降温的目的

Vertically installed heat sinks are generally installed on the upper side of the cabinet, which is conducive to better expelling the hot air inside the cabinet. According to the convection characteristics of the air, the removal of hot air will inevitably cause cold air in the environment to flow into the cabinet, thus achieving the purpose of cooling and cooling the cabinet

安装实物图 2:





8. RS485 串口通信协议说明 Communication protocol

8.1 本协议遵守 MODBUS-RTU 通信协议, 参照 MODBUS 协议中的子集 RTU 方式.

调速器作为从机, 只能被动接收主机的命令, 不主动上报数据.

This protocol complies with the MODBUS-RTU communication protocol, referring to the subset RTU mode in the MODBUS protocol. As a slave, the governor can only passively receive commands from the host and does not actively report data.

协议格式如下 (hex):

***主机读取**

MODBUS 地址	功能码	寄存器地址	寄存器数量	CRC16 校验
1byte	0x03	2byte	2byte	2byte

控制器应答读取

MODBUS 地址	功能码	数据值的字节数	数据值	CRC16 校验
1byte	0x03	1byte	<u>nbyte</u>	2byte

***主机写 (配置参数), 一次只可以写单个寄存器的数据**

MODBUS 地址	功能码	寄存器地址	数据值	CRC16 校验
1byte	0x06	2byte	2byte	2byte

控制器应答写

MODBUS 地址	功能码	寄存器地址	数据值	CRC16 校验
1byte	0x06	2byte	2byte	2byte

8.2. 串口参数/Serial port parameters

波特率 9600, 无校验, 8 位数据, 1 位停止位

Porter rate 9600, no check, 8 bit data, 1 bit stop bit

***寄存器地址如下表 / Register address is listed below:**

寄存器地址 Register address	说明 explain	允许操作 Allow operation	功能码 Function code
0x0000	当前温度值, 正偏移 40, 实际温度值=解析值-40. Current temperature, positive offset of 40, value = analytical value of - 40.	只读 read only	0x03
0x0001	风机状态, 数据内容换算成 2 进制后, 最低位代表 fan1, 次低位代表 fan2……; 详见后页说明, Fan status, Convert data content to binary, the lowest level represents fan1, and the second low level represents fan2...; See the following page for details.	只读 read only	0x03/0x02



0x0002	<p>MODBUS-485 地址, 取值范围: 0x0001-0x00FE, *支持 FFFF 广播地址, MODBUS-485 Address, Value range: 0x0001-0x00FE, *Support for FFFF broadcast addresses.</p>	<p>读/写 Read/ write</p>	0x03/0x06
0x0003	<p>串口强制控制风机转速, 风机转速值(百分比)完全受控于串口,此状态下温控功能会临时失效,断电重启或写数据值为 0xFFFF 时调速器会恢复到温控, 取值范围: 0x0000-0x0064、0xFFFF, Serial port forced control of the fan speed, The fan speed value (percentage) is completely controlled by the serial port. In this state, the temperature control function will temporarily fail. When the power is off to restart or the governor will resume the data value to 0xFFFF, Value range: 0x0000- 0x0064、0xFFFF.</p>	<p>读/写 Read/ write</p>	0x03/0x06
0x0004	<p>风机启动、全速温度, 高位字节为启动温度,低位字节为全速温度, 取值范围: 0x1415-0xA09F, *正偏移 40, 设置值=数据值-40, Fan start-up、full-speed temperature, High byte is starting temperature, Low byte is full speed temperature, Value range: 0x1415-0xA09F, * Positive offset 40, set value = data value-40.</p>	<p>读/写 Read/ write</p>	0x03/0x06
0x0005	<p>调速器的工作模式, 0x0001=最小转速模式, 0x0000=关停模式, Operating mode of the governor, 0x0001= fan minimum speed mode, 0x0000= fan off mode.</p>	<p>读/写 Read/ write</p>	0x03/0x06
0x0006	<p>风机数量, 取值范围: 0x0001-0x0004 Number of fans, the value range: 0x0001-0x0004.</p>	<p>读/写 Read/ write</p>	0x03/0x06



0x0007~000A	<p>4 个风机的实时转速 (RPM), Fan1 的转速对应 0x0007 的值... , *读取到的转速值 (RPM) 是由公式 $60*N/2$ 计算而来: N 是风扇每秒钟产生的脉冲数量, /2 表示风扇转 1 圈会产生 2 个脉冲, 此公式适合市面上绝大多数的风扇, 极少部分特殊风扇的转速需要根据风扇资料/特性自行二次计算 speed of 4 fans (RPM), The speed of Fan1 corresponds to the value of 0x0007. . . * The speed value (RPM) is calculated from formula $60 * N / 2$: N is the number of pulses generated by the fan per second, and /2 means that the fan turning 1 will produce 2 pulses. This formula is suitable for the vast majority of fans on the market, and the speed of a few special fans needs to be calculated twice according to the data / characteristics of the fan</p>	只读 read only	0x03
0x000B	<p>PWM 输出频率选择, 取值范围: 0x0000~0x0005, 默认为 0005, 如非必要, 此参数应保持默认, 不要修改, 0=500Hz, 1=1KHz, 2=2K, 3=5K, 4=10K, 5=25K. The PWM frequency selection, Value range: 0x0000~0x0005, 0=500Hz, 1=1KHz, 2=2K, 3=5K, 4=10K, 5=25K, *Default to 0005 If not necessary, not be modified.</p>	读/写 Read/ write	0x03/0x06
0x000C	<p>风机启动温度, 取值范围: 0x0014~0x00A0, *正偏移 40, 设置值=数据值-40, Fan starting temperature, Value range: 0x0014~0x00A0, *Positive offset of 40, set value=data value - 40.</p>	读/写 Read/ write	0x03/0x06
0x000D	<p>风机全速温度, 取值范围: 0x0014~0x00A0 *正偏移 40, 设置值=数据值-40 Fan full speed temperature, Value range: 0x0014~0x00A0, *Positive offset of 40, set value=data value -40.</p>	读/写 Read/ write	0x03/0x06



0x000E	风机故障代码, 数据内容换算成 2 进制后, 最低位代表 fan1, 次低位代表 fan2……, 详见后页说明. Fan fault codes, After converting the data content to binary, the lowest bit represents fan1, and the second lowest bit represents fan2, Please refer to the Commands on the following page for details.	只读 read only	0x03
0x0020	复位重启控制, 取值范围: 0x00AA, *向 0020 寄存器写 00AA 可使调速器复位重启, Restart control, Value range: 0x00AA, Writing 00AA to the 0x0020 register can reset the governor.	只写 write only	0x06

9. RS485 串口协议使用实例 Use example (Hex)

9.1 查询当前温度 (03 功能码, 寄存器地址 0000)

Read the current temperature (03 function code, register address 0000)

指令格式: 调速器地址 03 00 00 00 01 CRC16

Command format: governor address 03 00 00 00 01 CRC16

调速器返回: 调速器地址 03 02 00 xx CRC16

Governor return: governor address 03 02 00 xx CRC16

xx 为温度数据内容, HEX 格式, 需要换算成十进制,

实际的温度 (°C) = 换算出的十进制值 - 40

xx is temperature data content, HEX format, needs to be converted to decimal,

Actual temperature (°C) = the converted decimal value of -40

以 modbus 地址 01、当前温度为 31°C 为例

Take the modbus address 01, the current temperature is 31°C

主机发送: 01 03 00 00 00 01 84 0A

Host sent: 01 03 00 00 00 01 84 0A

调速器应答: 01 03 02 00 47 F8 76 (0x0047 换成 10 进制=71, 71-40=31°C)

Governor response: 01 03 02 00 47 F8 76 (0x0047 to 10 r =71, 71-40=31°C)



9.2 查询当前风机状态 (03 功能码, 寄存器地址 0001)

Read the current fan status (03 function code, register address 0001)

指令格式: 调速器地址 03 00 01 00 01 CRC16

Command format: governor address 03 00 01 00 01 CRC16

调速器返回: 调速器地址 03 02 00 0x CRC16

Governor return: governor address 03 02 00 0x CRC16

000x 为数据内容, HEX 格式, 需要换算成二进制, 低 4 位就对应 4 个风扇, 从右往左, 最右位对应 1 号风扇, 第 4 位对应 4 号风扇; 0 表示风扇停止, 1 表示风扇运转

000x is the data content, HEX format, which needs to be converted to binary, low 4 bits correspond to 4 fans, from right to left, the most right bit corresponds to fan 1 fan, position 4 corresponds to fan 4; 0 means the fan stops and 1 means the fan runs

以 modbus 地址 01、1 号风机运转, 234 号风机停转

Run with modbus address 01, no. 1 fan, no. 234 fan stop turn

主机发送: 01 03 00 01 00 01 D5 CA

调速器应答: 01 03 02 00 01 79 84 (00 换成 2 进制=0000 0001),

Host Send: 01 03 00 01 00 01 D5 CA

Governor response: 01 03 02 00 01 79 84 (00 changed to 2 rrr =0000 0001)

9.3 设置风机的启动、全速温度 (06 功能码, 寄存器地址 0004)

Set the start and full speed temperature of the fan (06 function code, register address 0004)

指令格式: 调速器地址 06 00 04 LL HH CRC16

Command format: governor address 06 00 04 LL HH CRC16

调速器返回: 调速器地址 06 00 04 LL HH CRC16

Governor return: governor address 06 00 04 LL HH CRC16

LL 换成十进制-40, 就表示风机的启动温度值

LL is replaced by Decimal -40, which indicates the starting temperature value of the fan,

HH 换成十进制-40, 就表示风机的全速温度值

*LL to decimal -40 represents the temperature value of the set start temperature L
HH is replaced by Decimal -40, which indicates the full speed temperature value of the fan,

*风机的启动、全速温度还可以通过 0x000C、0x000D 分别设置

The starting and full speed temperature of the fan can also be set separately through 0x000C and 0x000D

*特别注意, 风机的全速温度值必须大于启动温度值

Special attention should be paid that the full speed temperature value of the fan must be greater than the starting temperature value



9.4 设置风机数量 (06 功能码, 寄存器地址 0006)

Set the number of fans (06 function code, register address 0006)

指令格式: 调速器地址 06 00 06 00 xx CRC16

Command format: governor address 06 00 06 00 xx CRC16

调速器返回: 调速器地址 06 00 06 00 xx CRC16

Governor return: governor address 06 00 06 00 xx CRC16

*XX 换成十进制就是接入风机的个数, 取值范围 00-04

* XX to decimal is the number of access fans, take the value range of 00-04

9.5 查询风机故障信息 (03 功能码, 寄存器地址 000E)

Read the fan fault information (03 function code, register address 000E)

指令格式: 调速器地址 03 00 0E 00 01 CRC16

Command format: Governor address 03 00 0E 00 01 CRC16

调速器返回: 调速器地址 03 02 00 XX CRC16

Governor return: governor address 02 00 XX CRC16

XX 换算成二进制码, 低 4 位就对应 4 个风扇,

XX is converted into binary code, and the lower 4 bits correspond to 4 fans,

从右往左, 最右位对应 1 号风扇, 第 4 位对应 4 号风扇,

From right to left, the rightmost position corresponds to fan 1, and the fourth position corresponds to fan 4;

0 表示风扇故障, 1 表示风扇正常,

0 indicates the fan fault, and 1 means that the fan is normal

以 modbus 地址 01, 风机数量为 4; 3 号风机故障、124 号风机正常运转 为例,

With modbus address 01, the number of fans is 4, Taking the mal function of fan No. 3 and the normal operation of fan 1 2 4 as an example,

主机发送: 01 03 00 0E 00 01 E5 C9

Host Send: 01 03 00 0E 00 01 E5 C9

调速器应答: 01 03 02 00 FB F9 C7 (0B=11111011, 也就对应出 3 号风机处于故障状态)

Governor return: 01 03 02 00 FB F9 C7 (0B=11111011, means that fan No. 3 is fault)

*此功能码查询出的信息为调速器根据相关配置实际判断出的风机故障状态,

* The information of this function code is the fan fault state determined by the governor according to the relevant configuration,

*此功能必须要配合“风机数量”参数及按要求接入风机才能正常使用

* This function must be combined with the "fan number" parameter and the required

**9.6.1 串口强制控制调速器输出占空比（温控失效）（06 功能码，寄存器地址 0003）**

Serial port force control governor output duty cycle (temperature control failure)
(06 function code, register address 0003)

指令格式: 调速器地址 06 00 03 00 xx CRC16

Command format: governor address 06 00 03 00 xx CRC16

调速器返回: 调速器地址 06 00 03 00 xx CRC16

Governor return: governor address 06 00 03 00 xx CRC16

*XX 换成十进制就是风机转速百分比，取值范围 0x00-0x64

* XX to decimal system is the fan speed percentage, the value range is 0x00-0x64

9.6.2 退出串口控制模式（温控起效）

Exit the serial control mode (temperature control)

指令格式: 调速器地址 06 00 03 FF FF CRC16

Command format: governor address 06 00 03 FF FF CRC16

调速器返回: 调速器地址 06 00 03 FF FF CRC16

Governor return: governor address 06 00 03 FF FF CRC16

9.7 查询 2 号风机转速（03 功能码，寄存器地址 0008）

Read NO.2 fan speed (03 function code, register address 0008)

指令格式: 调速器地址 03 00 08 00 01 CRC16

Command format: governor address 03 00 08 00 01 CRC16

调速器返回: 调速器地址 03 02 xx xx CRC16

Governor return: governor address 03 02 xx xx CRC16

*xxxx 换算成十进制就是 2 号风机的实际转速，单位 RPM(转/分钟)

* xxxx Conversion to decimal is the actual speed of no. 2 fan, unit RPM (rpm / min)

9.8 读取全部参数（03 功能码，寄存器地址 0000-000E）

Read all parameters (03 function code, register address 0000-000E)

指令格式: 01 03 00 00 00 0F 05 CE

Command format: 01 03 00 00 00 0F 05 CE

(0000: 寄存器起始地址, 000F: 读取 15 个寄存器)

(0000: Register starting address, 000F: Read 15 registers)

调速器返回: 01 03 1E 00 32 00 01 00 01 00 14 46 5A 00 01 00 04 02 76 00 00 00 00 00 00 05 00 46 00 5A 00 FF ED 1E

Governor return: 01 03 1E 00 32 00 01 00 01 00 14 46 5A 00 01 00 04 02 76 00 00 00 00 00 00 05 00 46 00 5A 00 FF ED 1E

1E: 返回数据长度，共 30 个字节(15 个寄存器，每个寄存器的数据占 2 个字节)

1E: Return data length, 30 bytes (15 registers, each for 2 bytes)

0032 对应寄存器 0000 的值, 0001 对应寄存器 0001 的值, 依次对应, 以此类推...

0032 corresponds to value of register 0000, 0001 corresponds to value of register 0001, and so on...



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*The DC power supply version needs to be ordered by contacting customer service, and generally there is no stock available



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