图 1: T5000液晶数字式风机盘管温控器
Figure 1: T5000 LCD Digital Fan Coil Thermostat

■ 应用

T5000系列风机盘管温控器，适用于中央空调风机盘管系统的室内温度控制，通过室内温度和设定温度相比较，对空调系统末端的风机盘管及电动阀进行开启和关闭控制，达到调节室内温度、舒适及节能的目的。

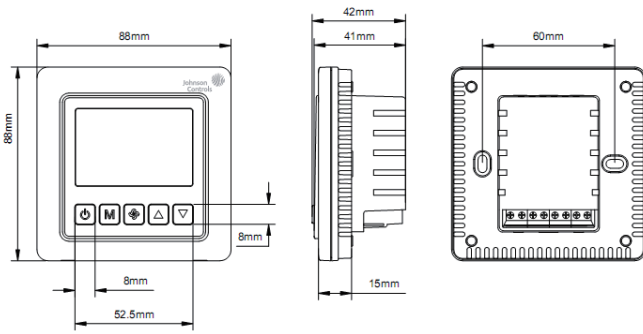T5000采用微电脑控制技术，大屏幕液晶显示，液晶显示状态有：工作状态（制冷、制热、通风）、风机风速、室内温度、设置温度等。按键有：电源开关 (✪)、模式转换键（**M**）、风速选择键 (❄) 及温度设置键（▲▼）。

■ Application

T5000 series thermostats are designed to on/off control the fans and valves in air conditioner applications via comparison of the room temperature and setting temperature as reaching the aim of comfort and saving energy.

T5000 are microprocessor based thermostat with LCD display. It shows the following items: working states (cool/heat/ventilation), fan speed, room temperature, setting temperature. T5000 features with one on/off button (✪)、one mode button (**M**)、one fan speed selection button (❄), two adjustment buttons (▲▼).

图 2: T5200-TC/TB/TF-9JS0、T5200-TB-9JR0系列温控器尺寸 (mm)
Figure 2: T5200-TC/TB/TF-9JS0、T5200-TB-9JR0 Series Thermostat Dimensions in (mm)
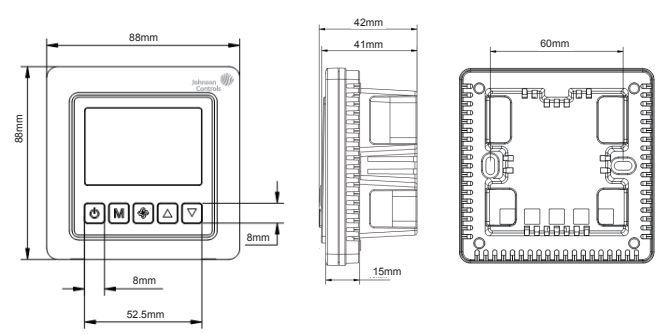
图 3: T5200-TF-9JR0系列温控器尺寸 (mm)
Figure 3: T5200-TF-9JR0 Series Thermostat Dimensions in (mm)

■ 安装

T5000温控器安装在用户容易观看屏幕和调节温度设定点的地方。并使温控器位于能代表房间总体环境温度的地方。避免将温控器安装于冷热源附近，如通风口、加热器、室外或阳光照射到的地方。

安装

T5000系列温控器设计为标准75x75x35mm墙装接线盒安装。（见**图4**）按照指示打开后盖底座，把它安装在墙上并接线。

注意: 所有T5000系列温控器型号，需要两枚M4x25安装螺钉 (不包含)。

■ Installation

Install the T5000 where the occupant can read the display and adjust the setpoint easily. Situate the thermostat where the temperature is representative of the general room conditions. Avoid installing the T5000 near cold or warm air drafts, radiant heat, on an outside wall, or in direct sunlight.

Mounting

Mount the T5000 Series thermostat to a 75x75x35mm standard electrical wallbox. (See **Figure 4**)

Follow the instruction in Removing the Base and then proceed to the Wall Mounting and the Wiring sections.

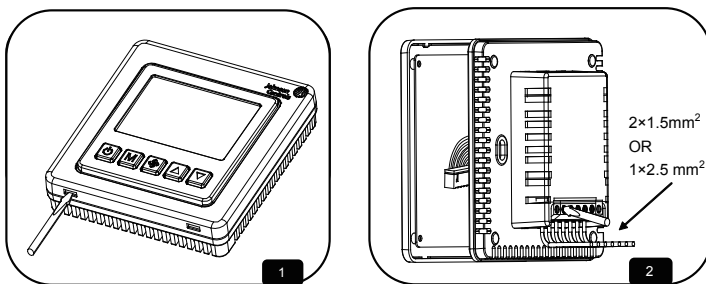**Note:** All T5000 Series models require two M4x25 mounting screw (not included).

图 4: 上图为T5200-TC/TB/TF-9JS0及T5200-TB-9JR0安装图 (T5200-TF-9JR0安装方法一致)
Figure 4: Installation diagram of T5200-TC/TB/TF-9JS0 and T5200-TB-9JR0 (Same procedure for T5200-TF-9JR0)

墙装盒安装

安装T5000系列温控器:
把外部接线从墙里拉出并通过打开的方形底座。
通过两个安装孔，把底座固定在安装盒上，如**图2和图3**两枚M4x25螺钉。
根据应用产品的要求进行正确的接线。
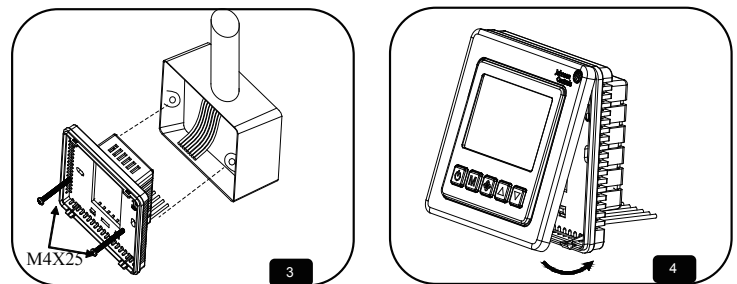
Wallbox Mounting

To mount the T5000 Series Thermostat:
Pull the external field wiring from the wall through the rectangular opening in the base. Fasten the base to the wallbox using the appropriate two holes, as shown in **Figure 2 and Figure 3**, and two M4 x 25 screws.
Proceed to the Wiring section for the correct configuration for the application and units.

■ 接线

根据指导，给适当型号的温控器接线。

注意： 给T5000系列数字式风机盘管温控器接线时，使用接线螺帽完成和绝缘每个接线端。

当接线完成后：
- 通过底座方形孔，把连接线推入墙装盒里。
- 在底座咬合处把温控器钩住并轻轻推动温控器至安装底座上面。
- 固定松紧螺丝。
- 按设定调节键设定想要的参数。

根据**图5**的典型应用，给指定接线端接线。

■ Wiring

Wire the unit according to the instructions for the appropriate model.

Note: When wiring the T5000 Series Digital Fan Coil Thermostat, use wire nuts to finish and isolate each connection.

When the wiring is completed:
- Push the connected wiring through the rectangular hole in the base into the wallbox space.
- Hook the thermostat to the hinge at the bottom of the base and gently slide the thermostat down into position on the mounting base.
- Tighten the retention screw.
- Proceed to the Setup and Adjustment section to establish the desired settings.

Wiring terminal designations and connections for typical applications appear in **Figure 5**.
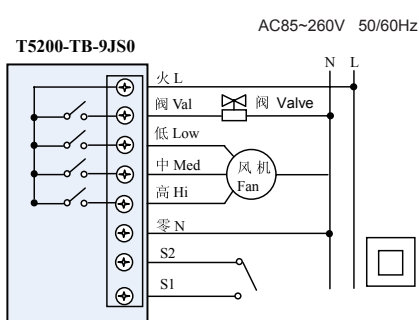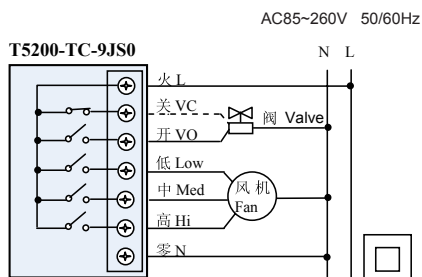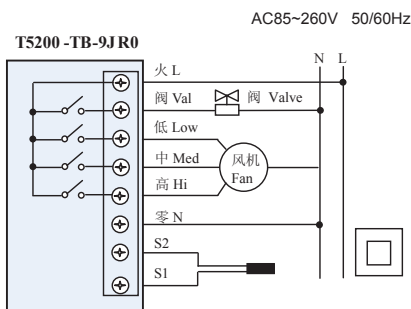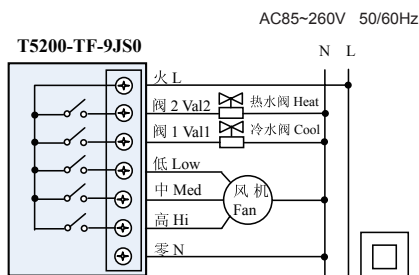
图 5: T5200-TC-9JS0接线图
Figure 5: Wiring Diagram for T5200-TC-9JS0

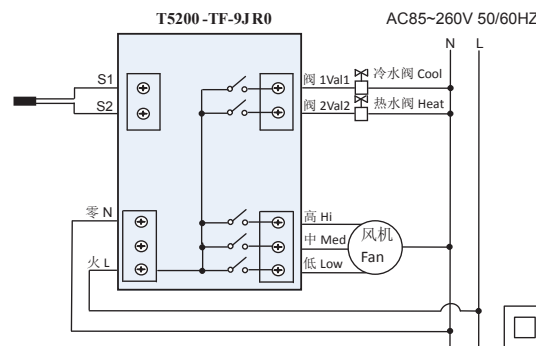T5200-TB-9JS0接线图
Wiring Diagram for T5200-TB-9JS0

T5200-TF-9JS0接线图
Wiring Diagram for T5200-TF-9JS0

T5200-TB-9JR0接线图
Wiring Diagram for T5200-TB-9JR0

T5200-TF-9JR0接线图
Wiring Diagram for T5200-TF-9JR0

■ 检查步骤

温控器安装完毕，在离开之前要检查制冷和加热完整的操作循环。这样可以确保所有控制设备功能正常。如果接线正确，而设备又不能正常工作，请就近联系JohnsonControls®办事处来替换温控器。

■ 使用说明

- **开/关机：** 按"⏻"键一次开机；再按一次关机，同时关闭风机盘管和电动阀。

- **设定温度：** 开机状态下，按"▼"键降低设置温度，按"▲"键升高设置温度，每按键一次设置温度变化0.5℃。

- **模式选择：** 开机状态下，按"M"键进行工作模式切换。液晶显示"❄"表示制冷，显示"☀"表示制热，显示"⌂"表示通风（T5200-TC-9JS0无制热模式）。

- **风速选择：** 开机状态下，按"♣"键选择风机风速 ▮▮▮▮（高）、▮▮▮（中）、▮▮（低）、**AUTO**（自动）档。

  在"自动"模式下，风速自动换档。即当室温与设置温度相差1℃时，自动选择低风速；当室温与设置温度相差2℃时，自动选择中风速；当室温与设置温度相差3℃时，自动选择高风速。

- **电动阀的控制：** 在制冷（制热）模式下，当室温高于（低于）设置温度1℃时，打开电动阀；当室温达到设置温度时，关闭电动阀，风机继续运行。

■ Check-Out Procedure

After the installation, observe the complete operation cycles for cooling and heating control. This is to make sure that all control devices are functioning correctly. If the device is not working properly and the wiring is correct, the thermostat should be replaced by contacting your nearest Johnson Controls® Representative.

■ Instructions

- **On/off:** press "⏻" to turn on, press again to turn off, close the fan and valve.

- **Setting temperature:** Press either "▼" or "▲" buttons to increase or decrease by 0.5℃.

- **Mode selection:** press "M" to change the working mode, "❄" cooling, "☀" heating, "⌂" ventilating. （no heat mode for T5200-TC-9JS0）

- **Fan speed selection:** press "♣" to choose the speed ▮▮▮▮ (hi)、▮▮▮ (med)、▮▮ (low)、**AUTO** (auto).

  Under "AUTO" mode, the fan-speed will be changed automatically. Auto LOW-speed when the difference between room temperature and set-point exceed 1℃, Auto MED-speed when exceed 2℃, Auto HI-speed when exceed 3℃.

- **Valve Control:** under cool (heat) mode, the valve will be open while the difference between room temperature and setpoint exceed 1℃; while the room temperature reaches setpoint, the valve is closed with the fan still running.

定时开关机设置

- 定时开关机设置：开机状态下，按住"**M**"键并保持3秒，直至"🕐"、"**ON**"和"**hh mm**"的"**hh**"符号同时闪烁，此时按"**▲**"或"**▼**"键调整延时多少小时定时开机。再按"**M**"键，"🕐"、"**OFF**"和"**hh mm**"的"**mm**"符号同时闪烁，此时按"**▲**"或"**▼**"键调整延时多少小时定时关机。取消定时开关机设置：只要把定时开关机的时间调整为"**--**"即可；或者当定时开关机功能运行过一次后，会自动取消定时开关机。

锁按键功能

- 锁按键功能：如果温控器开启了锁按键功能，在没有人使用的情况下30秒后会自动把按键锁上。按风速按键5秒即可解锁。

门卡节能模式（T5200-TB-9JS0）

- 可通过门卡进入节能模式。当门卡拔出后，如果温控器处于制冷模式时，温度自动设置为26℃，风机低速运行；如果温控器处于制热模式时，温度自动设置为18℃，风机低速运行；

低温保护功能的设置

- 温控器处于关机状态，当室内温度低于5℃时，温控器自动开启制热并显示"☼"符号，风机自动高速运行并开启电动阀（T5200-TF-9JS0，T5200-TF-9JR0开启热水阀）；当室内温度升高到7℃时，温控器自动关闭输出。

- 关机状态下，按住"**M**"键并保持5秒，显示"**OF**"或"**On**"，按"**▲**"、"**▼**"键调整此项参数。"**OF**"表示取消低温保护功能，"**On**"表示开启低温保护功能。出厂默认值为"**OF**"。

外接温度传感器（T5200-TB-9JR0，T5200-TF-9JR0）

当温控器接上外置传感器时，内置NTC传感器自动失效。

Time-On and Time-Off Operation

- Hold down the "**M**" button for 3 seconds will enter the Timer On-Off setting. When the "🕐", "**ON**" and "**hh**" of "**hh mm**" appear, press "**▲**" and "**▼**" keys to set the time duration . To confirm setting, press M/ button once, press other keys to cancel the setting.

  Press "**M**" button again, "🕐", "**OFF**" and "**mm**" of "**hh mm**" appear, press "**▲**" and "**▼**" keys to set the time duration. Set time duration to "**--**", to cancel the setting. After one cycle for Time-on and Time-off the setting will be automatically canceled.

Lock function

- Lock function: The thermostat will be locked automatically after 30 seconds under the lock function. Hold down the fan key 5 seconds to unlock.

Unoccupied energy-saving mode（T5200-TB-9JS0）

- Unoccupied energy-saving mode (by entrance card): While entrance card is pulled out, the temperature automatically set to 26℃, fan is on LO-speed if the thermostat is in cool mode; the temperature set to 18℃, fan is on LO-speed if in heat mode.

Low Temperature protection setting

- On power Off status and when room temperature is lower than 5℃, heat function will be automatically switched on, "☼" appears, the fan is set to HI-speed and the valve (heat valve for T5200-TF-9JS0, T5200-TF-9JR0) is opened. When the room temperature reaches 7℃, the setting will be automatically canceled.

- On power Off status, press "**M**" and keep 5 seconds, display "**OF**" or "**On**", press "**▲**", "**▼**" to adjust the parameter. "**OF**" means cancelling low temperature protection, "**On**" means the protection function is on. Factory setting is "**OF**".

Remote Temperature sensor（T5200-TB-9JR0, T5200-TF-9JR0）

When remote sensor is connected, the built-in sensor will be disable.

Functional Code Setting Table
功能编码表

进入参数表：关机状态下同时按住"❀"和"▲"键5秒，显示"01"及参数值，之后按"M"键选择要查看的参数，用"▲"和"▼"修改。

Enable the setting table: hold down the "❀" and "▲" for 5 seconds, "01" and code appear, after which press 'M' button to select code, use "▲" and "▼" buttons to adjust the value.

编码 Code	T5200-TC-9JS0	T5200-TB-9JS0	T5200-TB-9JR0	T5200-TF-9JS0	T5200-TF-9JR0	参数名 Parameter Name	默认值 Default	功能 Function
01	✓	✓	✓	✓	✓	失电重启 Restart after Power Failure	00	00：关闭；01：开启；02：恢复掉电前状态 00: off; 01: on; 02: keep last status
02	✓	✓	✓	✓	✓	摄氏华氏转换 °F/℃	C	F：华氏度（°F）；C：摄氏度（℃） F: Fahrenheit Degree（°F）；C: Celsius Degree（℃）
03	✓	✓	✓	✓	✓	设定温度上限 Upper limit of set temp	35.0℃	设定范围2~49.5℃ Setting Range 2~49.5℃
04	✓	✓	✓	✓	✓	设定温度下限 Lower limit of set temp	5.0℃	设定范围0~47.5℃ Setting Range 0~47.5℃
05	✓	✓	✓	✓	✓	键盘锁 Keypad lockout	00	00：无锁；01：锁定所有键；02：锁定开关键；03：锁定除了开关键之外其他键 00: No lock；01: Lock all keys；02: Lock ON/OFF Key 03: Lock the keys except ON/OFF key
06	✓	✓	✓	✓	✓	屏幕显示 Screen Display	00	00：显示室内温度；01：显示设定温度 00: Display room temp；01: Display set temp
07				✓	✓	自动或手动模式转换 Auto or Manual Mode Switch	01	00：手动模式转换；01：自动模式转换 00: Manual Mode；01: Auto Mode
08		✓				门卡状态 Key Card Status	01	00：S1、S2短接时代表插卡状态；断开时代表拔卡状态。 01：S1、S2断开时代表插卡状态；短接时代表拔卡状态。 00: S1、S2 Short Connection indicates key card is inserted; Disconnection indicates key card is pulled out. 01: S1、S2 Disconnection indicates key card is inserted; Short Connection indicates key card is pulled out.
09		✓				门卡拔出后制冷温度 Cooling Temp when key card is pulled out	26.0℃	设定范围22~32℃。 Setting Range 22~32℃。
10		✓				门卡拔出后制热温度 Heating Temp when key card is pulled out	18.0℃	设定范围10~21℃。 Setting Range 10~21℃。

* 失电后温控器重启动，用户可选择重启动，不启动或恢复上次状态
* Power failure memory supports "restart" or "recover to previous status" after power resume

温度调整

如果用户希望温控器显示的温度高于或低于实际温度（±5℃），可进行以下操作：

- 在关机状态下,同时按下"▲"及"▼"键并保持5秒钟，显示"**XX℃**"（不显示温控器工作模式），按"▲"或"▼"键调整温度值，6秒钟后自动确认。

报警

- 传感器出现故障，温控器关闭风机和电动阀，并显示"✕"以及"**E1**"或"**E2**"。

  E1：传感器短路报警。

  E2：传感器断路报警。

当温度高于55℃显示"**HI**",当温度低于0℃显示"**LO**"。

■ **故障检修**

电源中断，温控器模式和所有设置回到最近使用和设置过的状态。

■ **维修和替换**

不要试图现场维修T5000系列温控器。如果温控器不能正常工作，请与附近Johnson Controls® 办事处联系。当联系办事处更换产品的时候，请说明外部标签或参数表上印有的类型/型号。

■ **技术参数**

请参考产品说明书。

重要:

- T5000系列温控器仅用作在线电压风机盘管控制使用。当T5000系列温控器调节装置失灵或故障时可能会导致人员伤害，财产损失及其它配备损坏。增加预防措施，如常使用监控及报警系统、电压保护开关等，在安装系统中。来加强此温度调节装置的机能失常和失效时的保护。

- 不要把温控器装在结露、潮湿或有湿气处。湿气会损坏温控器。

- 不要把封入前盖的PCB板移出，从前盖中把封入的PCB板拆卸移出将不再享有质保服务。

- 使所有接线符合国家、地区和当地的规定。不要超过T5000系列温控器电流容量。

⚠ **警告:**

- 在进行电器接线时确保电源断开。在带电时连接各部件可能引起电击，从而导致人员受伤甚至死亡。

- 电击危险

  按照国家、地区和当地的规定给温控器接地。接地失效可能导致电击和人员伤亡 甚至死亡。

- 电击危险和财物损坏

  在温控器通电前把未使用的线头保护好，使之绝缘。任何一个未使用的线头未被 绝缘和保护可能导致财产损坏，电击和人员伤亡甚至死亡。

⚠ **注意:**

在所有的接线未检查好之前，不要给系统通电。短路或不正确的接线可能导致设备永久性的损坏。

Temperature setting

If customers hope the displayed temperature higher or lower than the real temperature, operate as follows:

- On power off status, press both "▲" and "▼", keep 5 seconds, display "**XX ℃**" (no working mode display), press "▲" or "▼" adjust the temperature, auto-confirmed after 6 seconds.

Alarm

- When the sensor is in fault, thermostat will close the fan and valve, display "✕", "**E1**" and "**E2**".

  E1: Sensor short cut alarm

  E2: Sensor circuit breaker alarm

Display "**HI**", temperature > 55℃; display "**LO**", temperature < 0℃

■ **Troubleshooting**

After a power outage, the thermostat mode and all settings return as most recently used or set.

■ **Repair and Replacement**

Do not attempt to repair the T5000 Series thermostat. In case of an improperly functioning control, contact the nearest Johnson Controls® representative, and specify the desired product code number. When contacting the supplier for a replacement please state the type/model number of the control located on the data plate or cover label.

■ **Specifications**

Refer to Product Catalog for Details.

IMPORTANT：

- Use this T5000 Series Line Voltage Fan Coil Thermostat only as an operating control. Where failure of malfunction of the T5000 Series Thermostat could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the system. Incorporate and maintain other devices such as supervisory or alarm systems or safety or limit controls intended to warn of, or protect against, failure or malfunction of the T5000 Series Thermostat.

- Do not install this thermostat in condensing, wet, or damp environments. Moisture may cause damage to the thermostat.

- Do not remove PCB from the enclosure cover. Removing the PCB from the enclosure cover voids the product warranty.

- Make all wiring connections in accordance with local, nation, and regional regulations. Do not exceed the T5000 Series thermostat's electrical ratings.

⚠ **WARNING:**

- Disconnect power supply before making electrical connections. Contact with components carrying hazardous voltages can cause electrical shock and may result in severe personal injury or death.

- Risk of Electrical Shock

  Ground the thermostat according to local, national, and regional regulations.

  Failure to ground the thermostat may result in electrical shock and severe personal injury and death.

- Risk of Electrical Shock and Property Damage

  Insulate and secure each unused wire lead before applying power to the thermostat. Failure to insulate and secure each unused wire lead may result property damage, electrical shock, and severe personal injury or death.

⚠ **CAUTION:**

Do not apply power to the system before checking all wiring connections. Short circuited or improperly connected wires may result in permanent damage to the equipment.