# WTS8/9 Series

## TOUCH BUTTON THERMOSTAT

**The WTS8/9 Series touch button thermostat is a temperature control device with an LCD display providing real time display of room temperature or set temperature. With temperature set, it will provide on/off control signal to the fan coil valve for temperature regulation to the occupant's desired comfort.**




The WTS8/9 Series designed on the basis of the standard 86 x 86mm, 75x75x50mm or 70x70x50mm installation box. The units feature Modbus communications, monitor the actual room temperature and the set temperature in real time to control the opening / closing of the valves in the fan coil units to regulate the room temperature. The WTS8/9 Series thermostat provide anti-freeze protection, as well as manual and automatic fan speed control.

The WTS9 Series wall modules work with fan coil units and regulate the room temperature by controlling the fan speed and the opening/closing of the valves. The modules usually work with the fan coil unit control valves.

## TECHNICAL PARAMETERS

| | |
|---|---|
| COMMUNICATION | RS485 MODBUS (WTS8 Series does not support RS485 communication) |
| PROTOCOL & BAUD RATE | 4800/9600 (DEFAULT)/19200/38400 bps |
| OPERATING VOLTAGES | 100-240VAC 50/60Hz，24VAC±10%，50/60Hz |
| CONTROL ACCURACY | 25°C±1°C |
| CONTROL SIGNAL | ON/OFF OUTPUT |
| LOAD CAPACITY FAN | RESISTIVE LOAD 5A， INDUCTIVE LOAD 2A |
| VALVE | RESISTIVE LOAD 5A，INDUCTIVE LOAD 2A |
| PROTECTION RATING | IP20 |
| TEMPERATURE SETTING RANGE | 10–32°C |
| TEMPERATURE DISPALY RANGE | 0–50°C |
| OPERATING TEMPERATURE | -10to 60°C |
| SHIPPING TEMPERATURE | -10to 60°C |
| RELATIVE HUMIDITY | 10-95% RH NON-CON DENSATING |
| HUMIDITY MEASURE-MENT ACCURACY | 0%~99%RH,±10% (ONLY FOR " /H") |
| REMOTE SENSOR TYPE | NTC20K |

## PERFORMANCE HIGHLIGHTS

- Extra large LCD and Color icon display
- Temperature display selection (room temperature or set temperature)
- Manual or automatic fan speed selection
- Anti-freeze protection
- Operating buttons lock/unlock
- Color negative display screen
- Ultra thin panel design
- Support timed shutdown
- Compatible with standard 86x86 installation box, or smaller standard installation box
- Detect and display humidity is available



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# ORDERING PART NUMBERS

| PART NUMBER | OPERATING VOLTAGES | APPLICATIONS | SHELL COLOR | VENTILATION MODE | HUMIDITY DISPLAY |
|---|---|---|---|---|---|
| WTS9B4WMB/H | 100-240Vac | 2/4 pipe | White | Yes | Yes |
| WTS9B4WMB/N | 100-240Vac | 2/4 pipe | White | Yes | No |
| WTS9E4WMB/H | 24Vac±10% | 2/4 pipe | White | Yes | Yes |
| WTS9E4WMB/N | 24Vac±10% | 2/4 pipe | White | Yes | No |
| WTS8B4WMB/H | 100-240Vac | 2/4 pipe | White | Yes | Yes |
| WTS8B4WMB/N | 100-240Vac | 2/4 pipe | White | Yes | No |
| WTS8E4WMB/H | 24Vac±10% | 2/4 pipe | White | Yes | Yes |
| WTS8E4WMB/N | 24Vac±10% | 2/4 pipe | White | Yes | No |

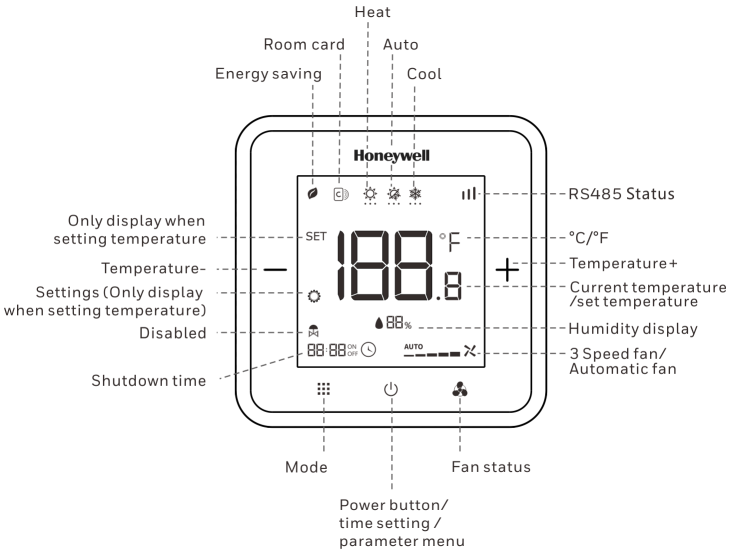
Note: The default Baud rate is 9,600 bit/s. If you require units with a Baud rate of 19200bit/s, or 38,400 bit/s are available.

# PRODUCT DETAILS

## OUTLOOK DESIGN




## DISPLAY




# FUNCTION

## VALVE AND FAN CONTROL

The WTS8/ WTS9 series thermostat reads the room temperature from the built-in sensor and maintains the set temperature by sending on/off commands to the valve. There are three fan speeds which can be set manually or automatically. In manual mode, the fan speed is adjusted by FH, FM and FL outputs. In automatic mode, the fan speed will be decided by the difference between the room temperature and the set value. The fan will shut down when the valve is not operating.

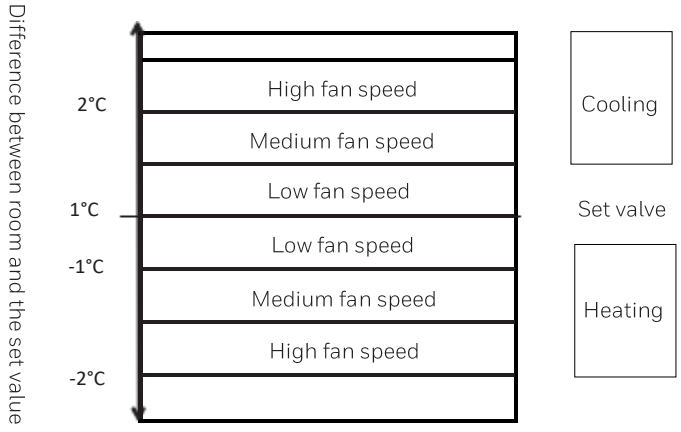



Figure 1. Automatic Fan Speed Control Algorithm

## TEMPERATURE DISPLAY

Either the room temperature or the set temperature can be displayed. This can be done when installing and setting up the Thermostat



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## TIMED SHUTDOWN

In the shutdown state, enter the timed shutdown setting through the combination of keys. You can set the timed shutdown time from 0.5 to 12 hours, with every 0.5 hours as a step.

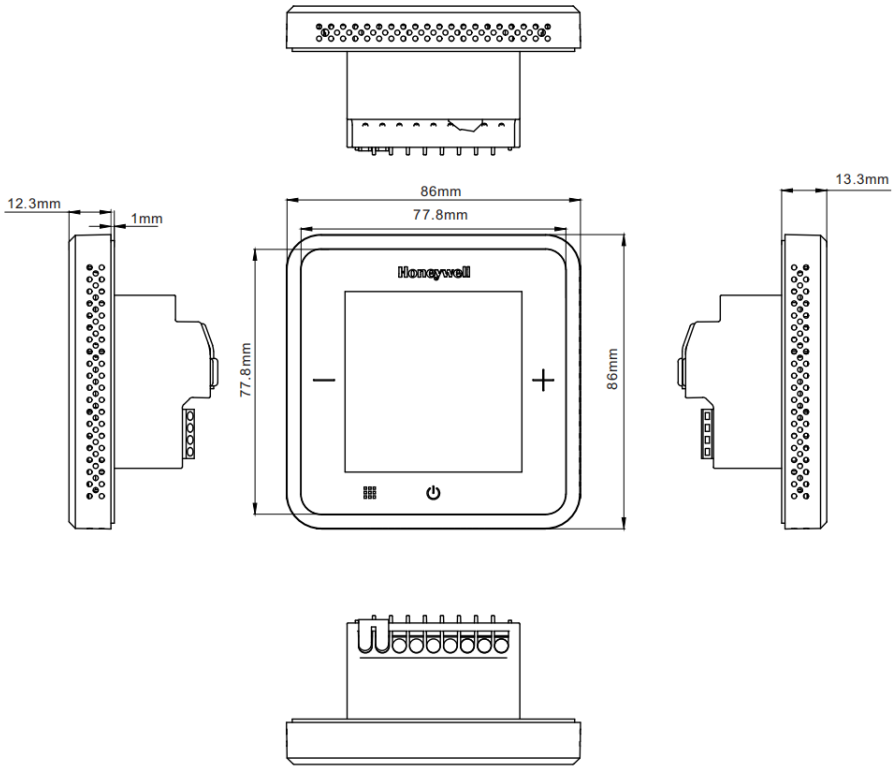
## KEYPAD LOCKOUT

It is possible to lock or unlock the keypad while the device is not in setting mode. When locked out, the keypad will be not respond when any of the buttons are pressed.

## DISPLAY HUMIDITY

If chose a model with humidity sensor,  can got an display the humidity of the current environment or hide this parameter by setting.

# PRODUCT SIZE (mm)






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# OPERATION MODES

## COMFORT MODE

In Comfort Mode, Tap the Up or Down button to set the temperature. Comfort Mode includes cooling, heating and automatic functions.










## VENTILATION MODE

Tap the mode key to enter Ventilation Mode. In Ventilation Mode, the fan will run at the manually set speed, with the valves shut down.




## ANTI-FREEZE MODE

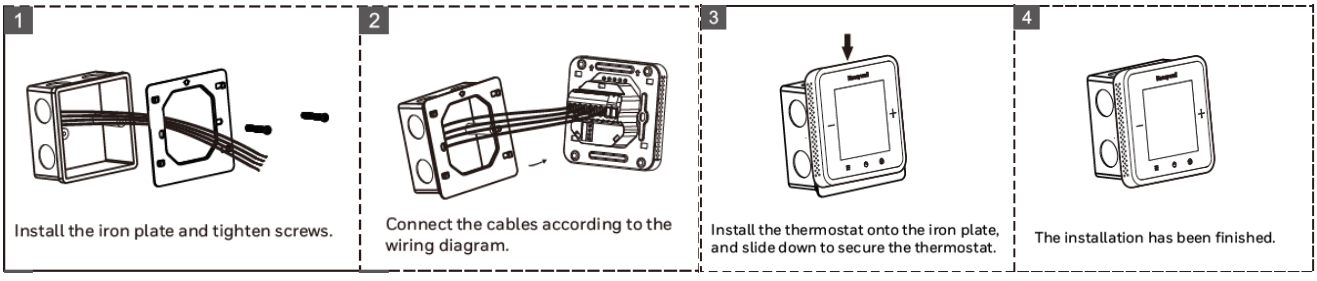
Anti-Freeze Mode is an option when heating. In Anti- Freeze Mode, when the room temperature falls below 6°C, the thermostat (in OFF status) will begin heating automatically until the room temperature reaches 8°C.




# Installation

Please follow below drawings to do wiring and ensure the connection is reliable.

Ensure to tighten the terminal screws to prevent the wire from falling off.



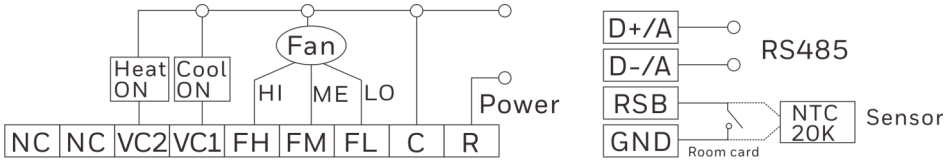



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# PRODUCT WIRING DIAGRAM

## Part number: WTS9E4XXXX  WTS8E4XXXX

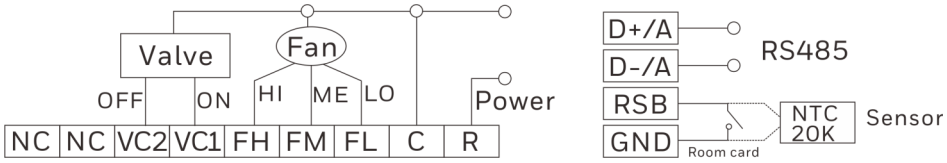
4-Pipe, 2-Wire valve, 3-Speed fan, 24VAC power supply




18~30VAC 50/60Hz 10A




2-Pipe, 3-Wire valve/2-Wire valve, 3-Speed fan, 24VAC power supply

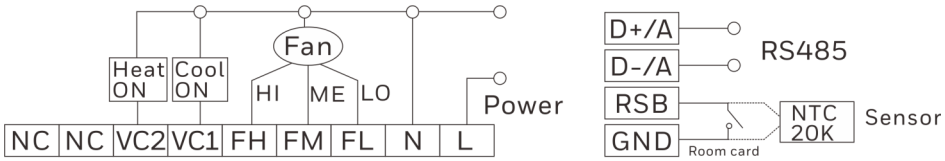



18~30VAC 50/60Hz 10A




## Part number: WTS9B4XXXX  WTS8B4XXXX

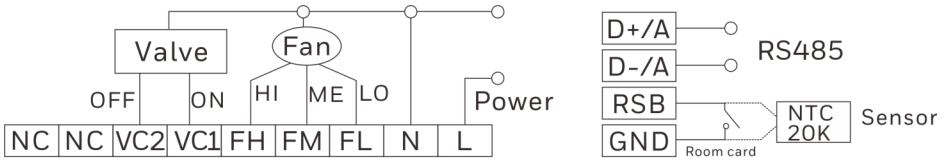
4-Pipe, 2-Wire valve, 3-Speed fan, 220VAC power supply




100~240VAC 50/60Hz 10A




2-Pipe, 3-Wire valve/2-Wire valve, 3-Speed fan, 220VAC power supply




100~240VAC 50/60Hz 10A




Note: WTS8 series does not support RS485 communication



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# TERMINAL DEFINITION

| SYMBOL | DESCRIPTION |
|---|---|
| L or R | Live wire(220/24V) |
| N or C | Neutral wire |
| FL | Low fan speed |
| FM | Medium fan speed |
| FH | High fan speed |
| VC1 | Cooling valve on/valve on |
| VC2 | Heating valve on/valve off |
| NC | Standby |
| NC | Standby |
| (D+/A)/NC | RS485 A+ / Standby |
| (D-/B)/NC | RS485 B- / Standby |
| RSB | Room card signal / external sensor (NTC20K) |
| GND | Room card / sensor com-mon grounding |

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THE FUTURE IS WHAT WE MAKE IT

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