

# WTS3/6 Series

## TOUCH BUTTON THERMOSTAT

The WTS3/6 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 WTS3/6 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 WTS3/6 Series thermostat provide anti-freeze protection, as well as manual and automatic fan speed control.

The WTS3/6 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
PROTOCOL & BAUDRATE	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 OR MODULATING 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 DISPLAY RANGE	0-50°C
OPERATING TEMPERATURE	-10to60°C
SHIPPING TEMPERATURE	-10to 60°C
RELATIVE HUMIDITY	10-95% RH NON-CONDENSATING
HUMIDITY MEASUREMENT ACCURACY	0%-99%RH,±10%(ONLY FOR "/>tbody>

## 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

# ORDERING PART NUMBERS

PART NUMBER	OPERATING VOLTAGES	APPLICATIONS	SHELL COLOR	VENTILATION MODE	HUMIDITY DISPLAY	MODBUS	BLDC
WTS3B4WMB/H	100-240Vac	2/4 pipe	White	Yes	Yes	No	No
WTS3B4WMB/N	100-240Vac	2/4 pipe	White	Yes	No	No	No
WTS3B4WME/H	100-240Vac	2/4 pipe	White	Yes	Yes	Yes	No
WTS3B4WME/N	100-240Vac	2/4 pipe	White	Yes	No	Yes	No
WTS6B4WMB/H	100-240Vac	2/4 pipe	White	Yes	Yes	Yes	Yes
WTS6B4WMB/N	100-240Vac	2/4 pipe	White	Yes	No	Yes	Yes

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.

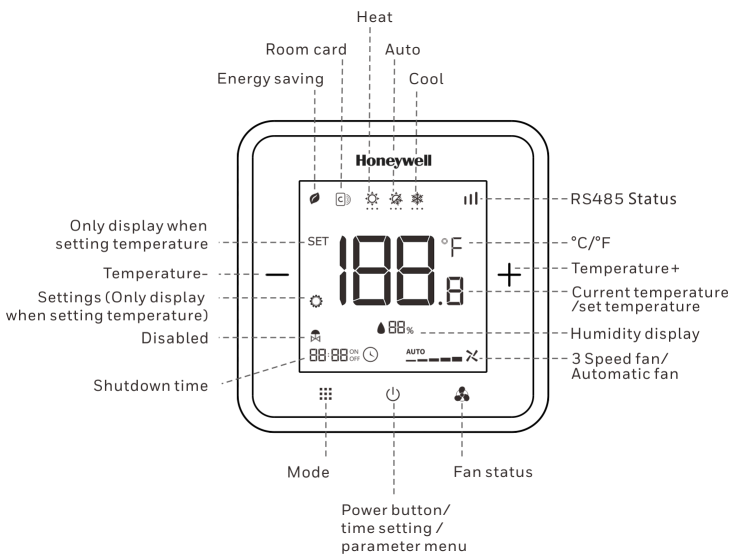
For models requiring 24VAC, please consult the product department for details.

## PRODUCT DETAILS

### OUTLOOK DESIGN



### DISPLAY



## FUNCTION

### VALVE AND FAN CONTROL

The WTS3/ WTS6series 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.

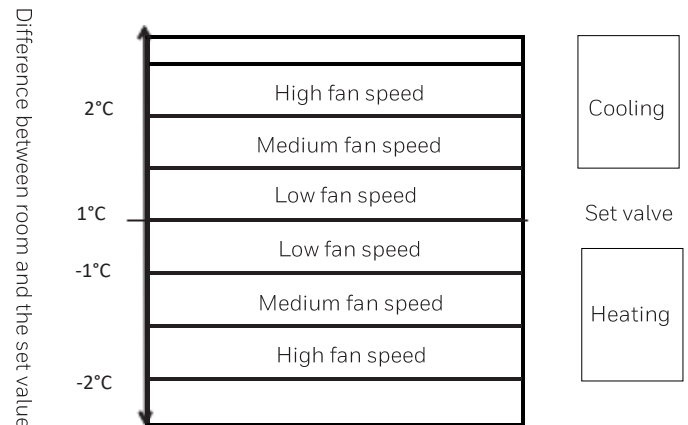


Figure 1. Automatic Fan Speed Control Algorithm

### TEMPERATURE DISPLAY

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

## 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.

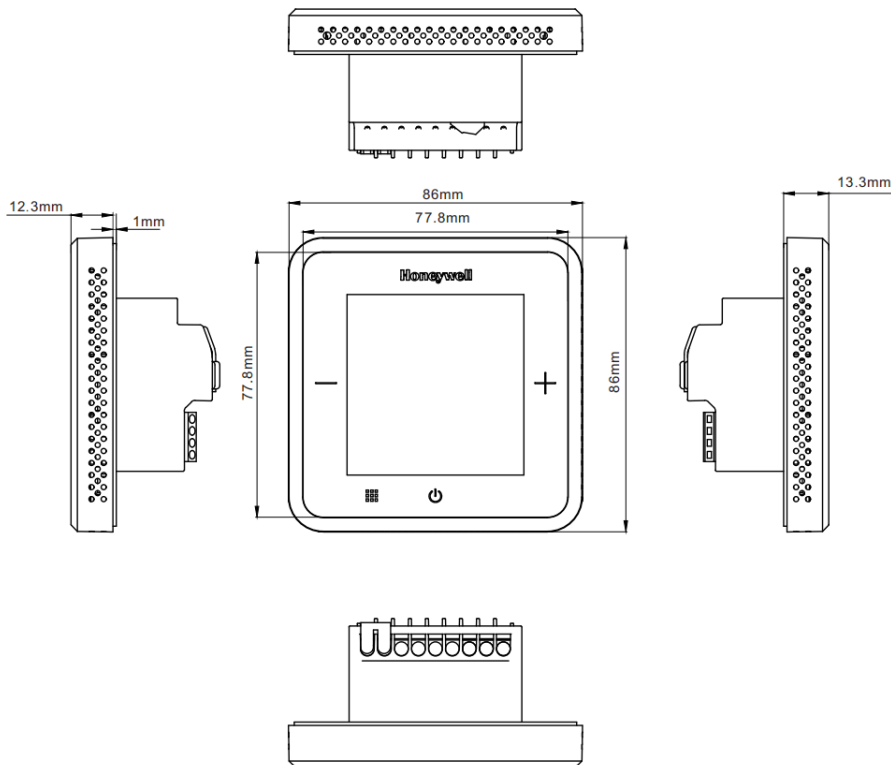
## DISPLAY HUMIDITY

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

## 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.

## PRODUCT SIZE (mm)



# 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.

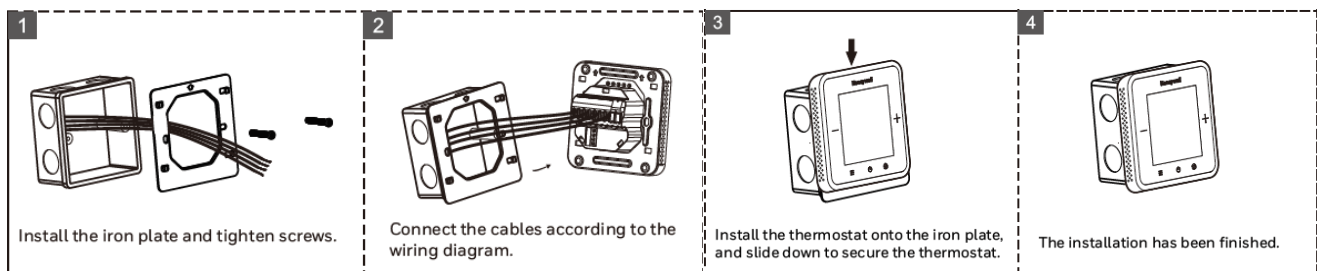


## Installation



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

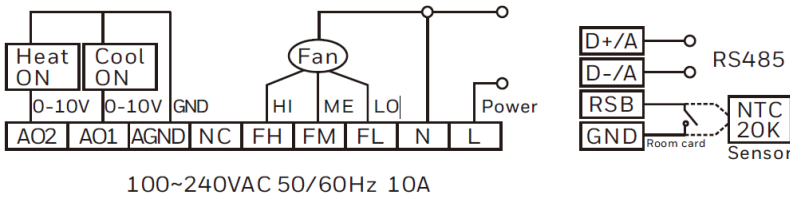
Ensure to tighten the terminal screws to prevent the wire from falling off.



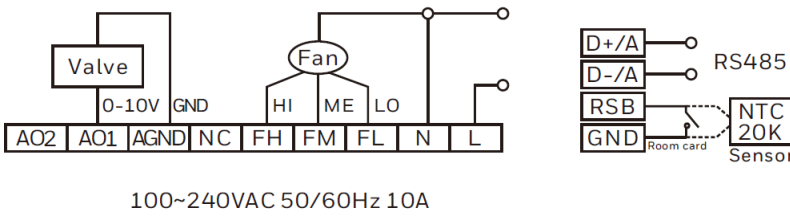
# PRODUCT WIRING DIAGRAM

## Part number: WTS3B4XXXX

4-Pipe, PI(0-10V) Valve, 3-Speed fan, 220VAC power supply



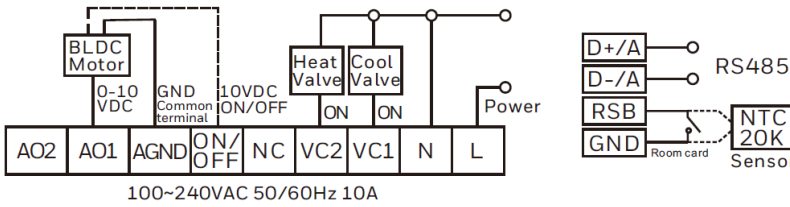
2-Pipe, PI(0-10V) Valve, 3-Speed fan, 220VAC power supply



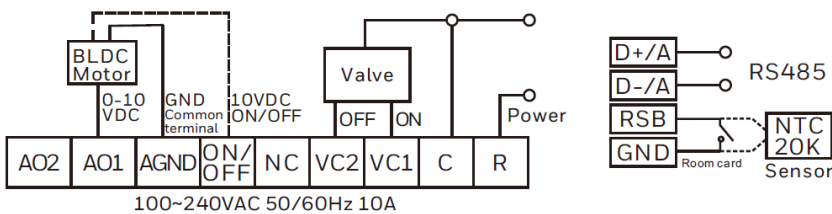
Note: WTS3B4XMB/N, WTS3B4XMB/N does not support RS485 communication

## Part number: WTS6B4XXXX

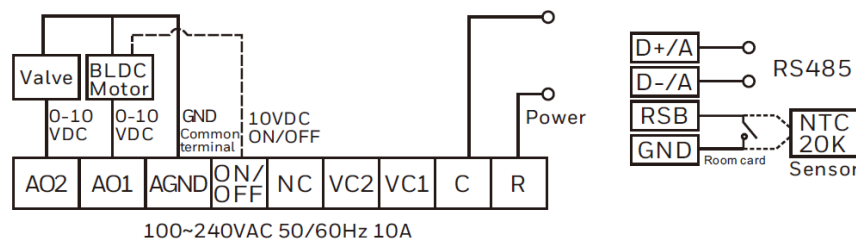
4-Pipe, 2-Wire valve, BLDC Motor, 220VAC power supply



2-Pipe, 3-Wire valve/2-Wire valve, BLDC Motor, 220VAC power supply



2-Pipe, PI(0-10V) valve, BLDC Motor, 220VAC power supply



# TERMINAL DEFINITION

SYMBOL DESCRIPTION	
<b>L or R</b>	<b>Live wire(220/24V)</b>
<b>N or C</b>	<b>Neutral wire</b>
<b>FL</b>	<b>Low fan speed</b>
<b>FM</b>	<b>Medium fan speed</b>
<b>FH</b>	<b>High fan speed</b>
<b>AO1</b>	<b>Cooling valve (Analog PI0-10V Output1)</b>
<b>AO2</b>	<b>Heating valve (Analog PI0-10V Output1)</b>
<b>NC</b>	<b>Standby</b>
<b>AGND</b>	<b>Analog signal ground wire</b>
<b>(D+/A)/NC</b>	<b>RS485 A+ / Standby</b>
<b>(D-/B)/NC</b>	<b>RS485 B- / Standby</b>
<b>RSB</b>	<b>Room card signal / external sensor (NTC20K)</b>
<b>GND</b>	<b>Room card / sensor common grounding</b>

# 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
OPERATINGVOLTAGES	100-240VAC 50/60Hz , 24VAC±10%/50/60Hz
CONTROLACCURACY	25°C ±1°C
CONTROLSIGNAL	ON/OFF OUTPUT
LOAD CAPACITY FAN	RESISTIVE LOAD 5A , INDUCTIVELOAD 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
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

# 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

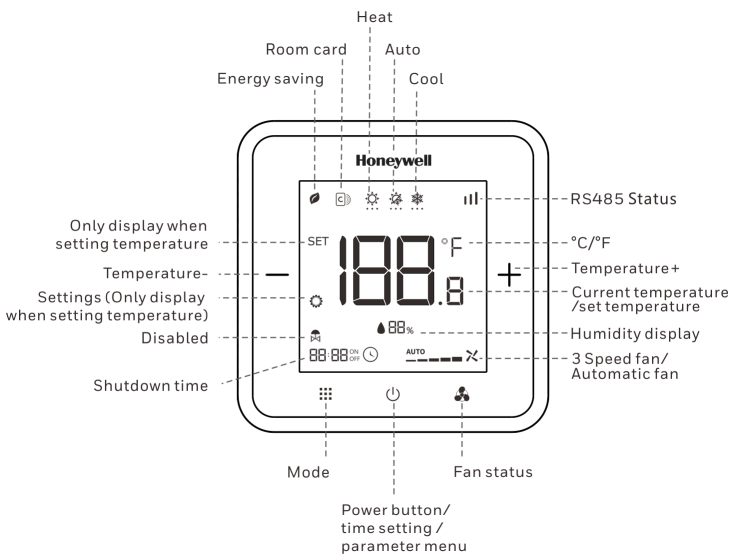
Note: The default Baud rate is 9,600 bit/s. If you require units with a Baud rate of 19200bit/s, or 38,400 bit/s are available.

## 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.

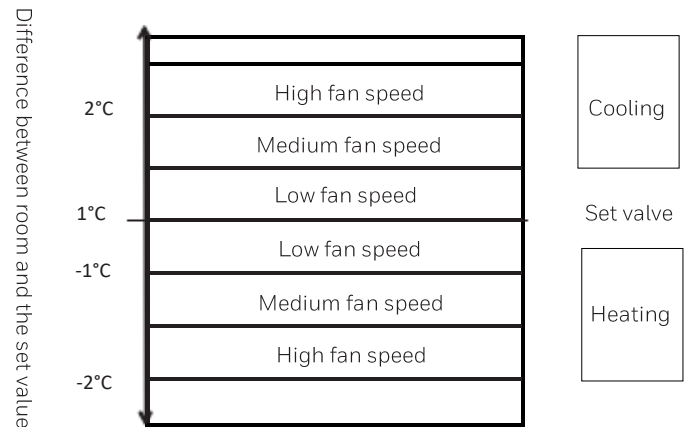


Figure 1. Automatic Fan Speed Control Algorithm

### TEMPERATURE DISPLAY

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

## 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.

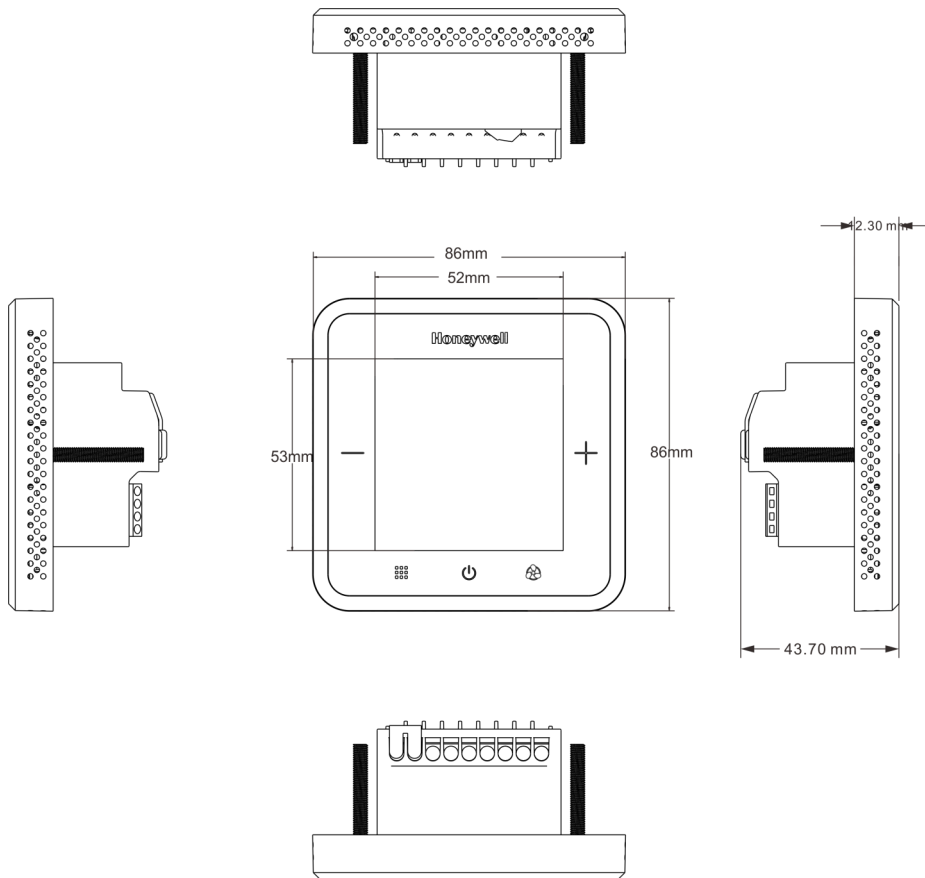
## DISPLAY HUMIDITY

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

## 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.

## PRODUCT SIZE (mm)



# 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.

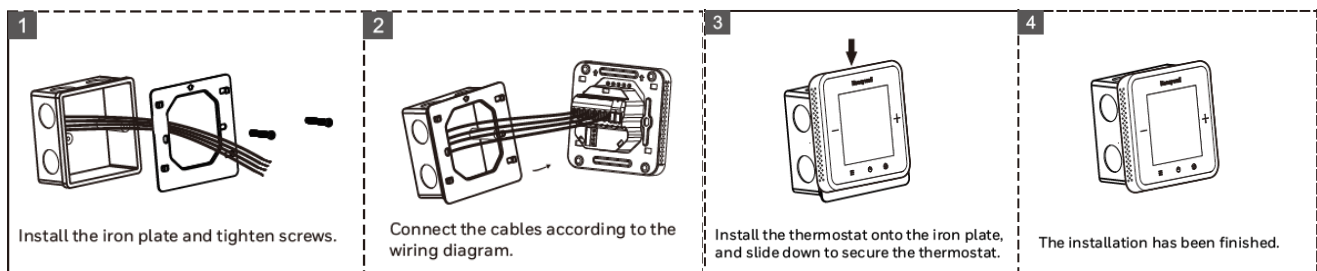


## Installation



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

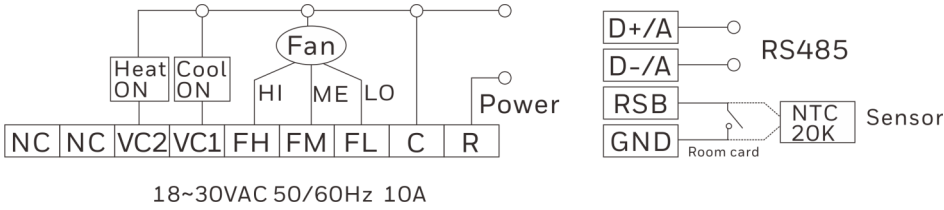
Ensure to tighten the terminal screws to prevent the wire from falling off.



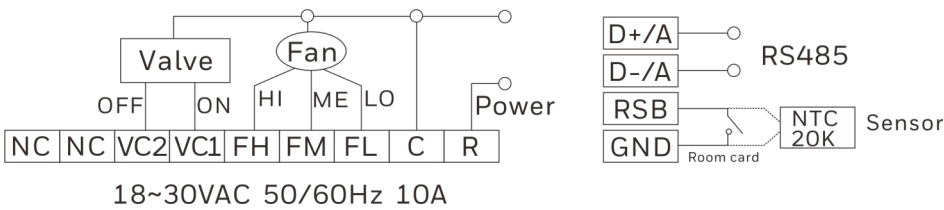
# PRODUCT WIRING DIAGRAM

Part number: **WTS9E4XXXX** **WTS8E4XXXX**

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

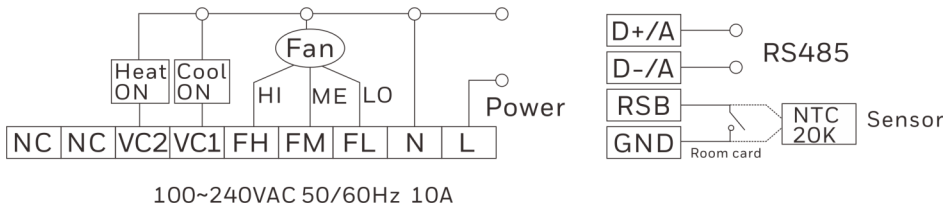


2-Pipe, 3-Wire valve/2-Wire valve, 3-Speed fan, 24VAC power supply

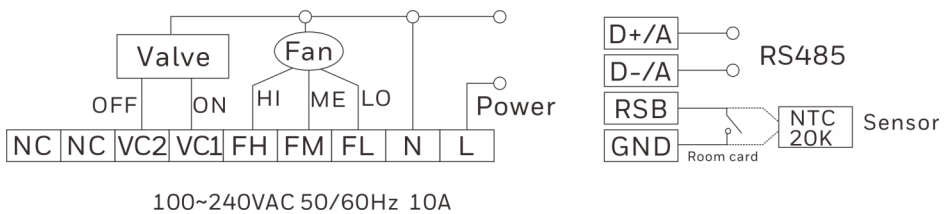


Part number: **WTS9B4XXXX** **WTS8B4XXXX**

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



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



Note: WTS8 series does not support RS485 communication

# TERMINAL DEFINITION

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