WTS SERIES

Touch Button Thermostats for FCU Applications

> The WTS Series Touch Button thermostat is a temperature control device with an extra-large LCD display, capacitive touch interface with color icons and manual or automatic fan speed selection.

The units monitor the actual room temperature, humidity* 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 to the occupant's desired comfort.

Chose from a variety of options including white or black color shell, humidity display, Modbus communications and ECM fan support.

Its ultra-thin design fits any standard 86 x 86mm or smaller wall-mounted installation box. It features built-in temperature and humidity* sensor, anti-freeze protection, lock/unlock operating buttons and timed shutdown function.

The WTS Touch Button thermostat is the perfect blend of functionality, energy efficiency, attractive design and ease of use.

FEATURES AND BENEFITS

Built-in temperature and humidity* sensor. The unit monitors in real-time the actual room temperature and the set temperature to regulate the room temperature by controlling the opening/closing of the fan coil unit valve and the fan speed.

Extra-large LCD and intuitive interface making it easy to set temperature to the occupant's desired comfort. Ultra-thin, sleek design with capacitive touch color icons. Available in Black or White shell.

Enhanced energy efficiency through modulating control of the fan coil unit valve and ECM Fan support*.

Automatic fan speed control algorithm calculates the difference between the room and the set value and automatically adjust the fan speed for greater energy saving.

Wide range of options to meet most of the requirements in buildings control. Additional functions include keypad lockout, timed shutdown and Modbus communications*.

*On selected models, please refer to the part number selection table.

VALVE AND FAN CONTROL

The WTS Series thermostat reads the room temperature from its 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.

Note : WTS3B4RXXX Models have Low and High Fan Speed only.

Difference between RT and SP		
COOL	2°C	Fan Speed is high or off
		Fan Speed is medium or off
	1°C	Fan Speed is low or off
		Set Point
HEAT	-1°C	Fan Speed is low or off
		Fan Speed is medium or off
	-2°C	Fan Speed is high or off

Figure 1. Automatic Fan Speed Control Algorithm

Honeywell

WTS SERIES Technical Specifications

TECHNICAL PARAMETERS

Communication: RS485 MODBUS*

Protocol & Baud Rate: 4800/9600 (Default)/19200/38400 bps

Operating Voltages: 100-240VAC 50/60Hz / 24VAC±10% 50/60Hz

Temperature Setting Range: 10°C-32°C

Temperature Display Range: 0°C-50°C

Control Accuracy: 25°C±1°C

Humidity Measurement Accuracy: 0% ~99% RH; ±10% (Only for "/H" models)

Control Signal: Modulating Output

Load Capacity Fan: Resistive Load 5A; Inductive Load 2A

Valve: Resistive Load 5A; Inductive Load 2A

Remote Sensor Type: NTC20K

*On selected models, please refer to the part number selection table.

ENVIRONMENTAL

Operating Temperature: -10°C to 60°C

Shipping Temperature: -10°C to 60°C

Relative Humidity: 0 to 95% relative humidity (non-condensing)

Relative Humidity: 0 to 95% relative humidity (non-condensing)

Protection Rating: IP20

PERFORMANCE HIGHLIGHTS

- Extra-large LCD display and operating interface
- Temperature display selection (room temperature or set temperature)
- Built-in temperature sensor
- Manual or automatic fan speed selection
- Anti-freeze protection
- Operating buttons lock/unlock
- Timed Shutdown

OUTLOOK DESIGN AND DISPLAY

Either the real-time room temperature or the set temperature can be displayed. This can be selected while installing and setting up the thermostat.
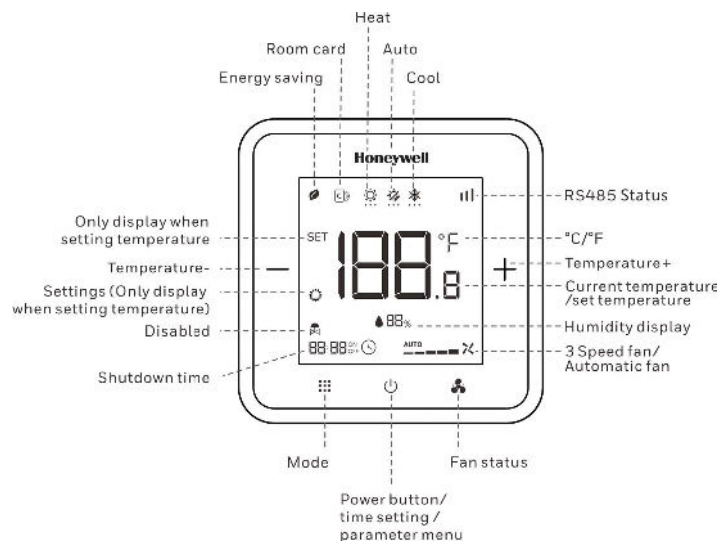
TIMED SHUTDOWN

In shutdown state, enter the timed shutown setting through the combination of keys. Timed shutdown time can be set from 0.5 to 12 hours, with every 0.5 hours in between.

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 not respond when any of the buttons are pressed.

HUMIDITY DISPLAY

On selected models with humidity sensor, the room humidity can be displayed on the main screen, or this parameter can be hidden through the device setting.

OPERATION MODES

COMFORT MODE

In comfort mode, the setpoint can be changed by pressing up or down button. Different applications include cool only, heat only and manual heat/cool changeover.

VENTILATION MODE

In ventilation mode, fan only support manual speed control.

ANTI-FREEZE MODE

Freezing protection can be disabled (default) or enabled.If freezing protection is enabled (it is not available in cool only application) and thermostat is in OFF mode while the room temperature is below 6°C, the thermostat will open heating device before the temperature rises to 8°C.
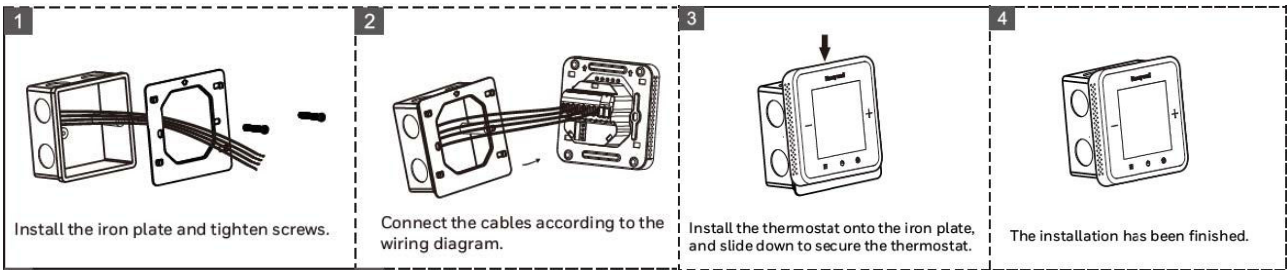
DIMENSIONS
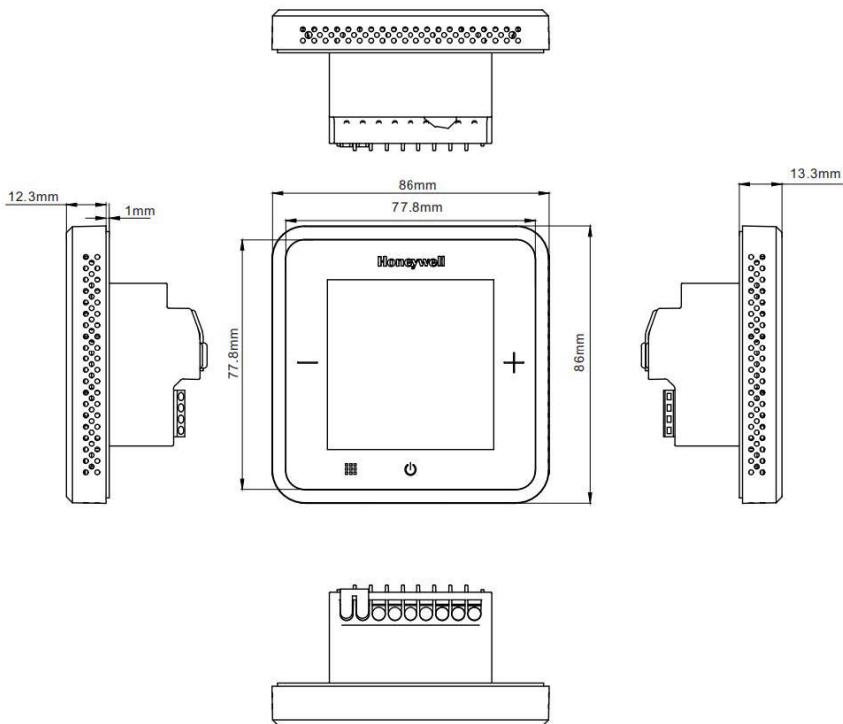
INSTALLATION

Please follow below drawings for wiring and ensure the connection reliable.
Ensure to tighten the terminal screws to prevent the wire from falling off.

1 Install the iron plate and tighten screws.

2 Connect the cables according to the wiring diagram.

3 Install the thermostat onto the iron plate, and slide down to secure the thermostat.

4 The installation has been finished.

WTS SERIES Technical Specifications
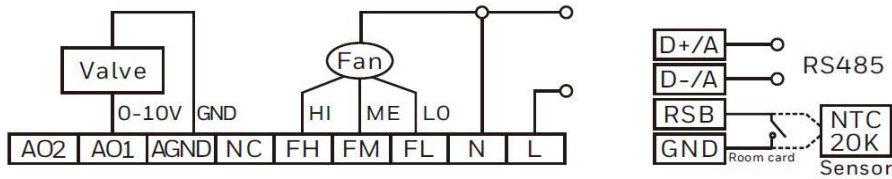
WIRING DIAGRAMS

PART NUMBER: WTS3B4XXXX

4-Pipe, PI (0-10V) Valve, 3-Speed fan, 220 VAC power supply
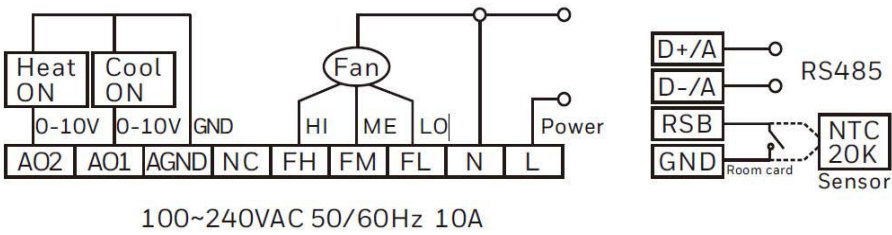
100~240VAC 50/60Hz 10A

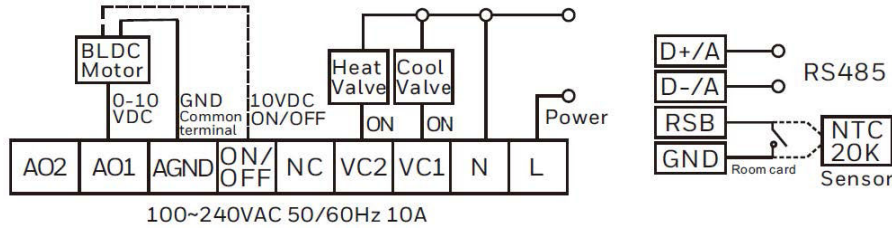2-Pipe, PI(0-10V) Valve, 3-Speed fan, 220 VAC power supply

100~240VAC 50/60Hz 10A

Note: WTS3B4XMB/N does not support RS485 communication
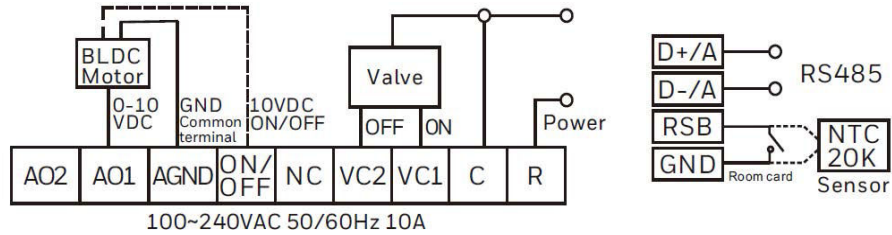
PART NUMBER: WTS6B4XXXX

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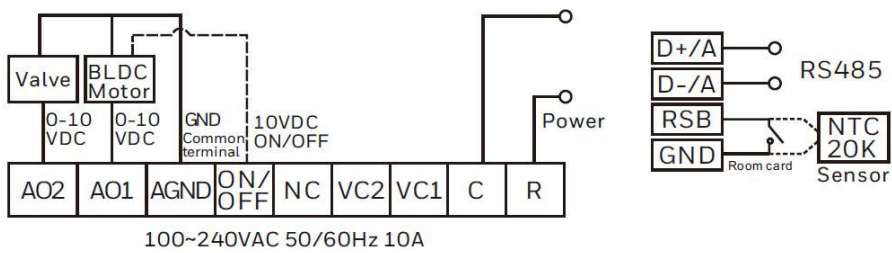

100~240VAC 50/60Hz 10A

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

100~240VAC 50/60Hz 10A

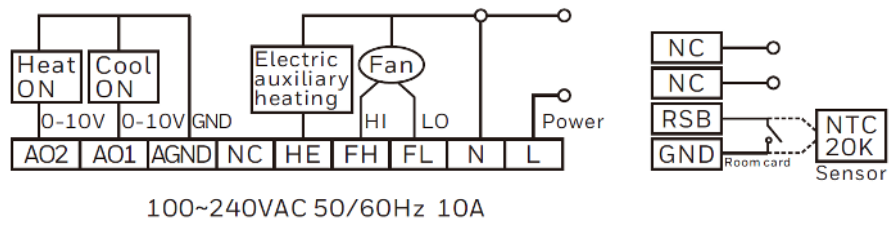100~240VAC 50/60Hz 10A

TERMINAL DEFINITION

SYMBOL DESCRIPTION

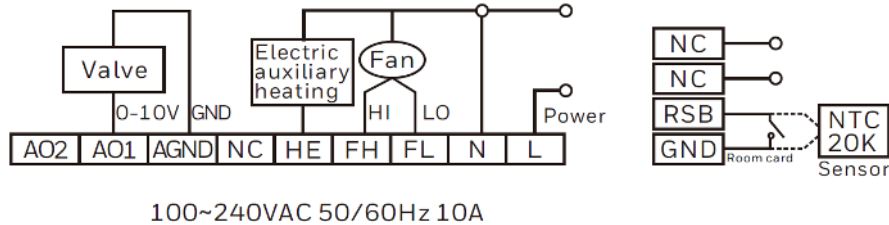| SYMBOL	DESCRIPTION
L or R	Live Wire (220/24V)
N or C	Neutral Wire
FL	Low Fan Speed
FM	Medium Fan Speed
FH	High Fan Speed
AO1	Cooling Valve (Analogue PI 0-10V Output 1)
AO2	Heating Valve (Analogue PI 0-10V Output 2)
NC	Standby
AGND	Analog Signal Ground Wire
(D+/A)/NC	RS485 A+/Standby
(D-/B)/NC	RS485 B-/Standby
RSB	Room Card Signal / External Sensor (NTC20K)
GND	Room Card / Sensor Common Grounding

WTS SERIES Technical Specifications

WIRING DIAGRAMS

PART NUMBER: WTS3B4RMX/X

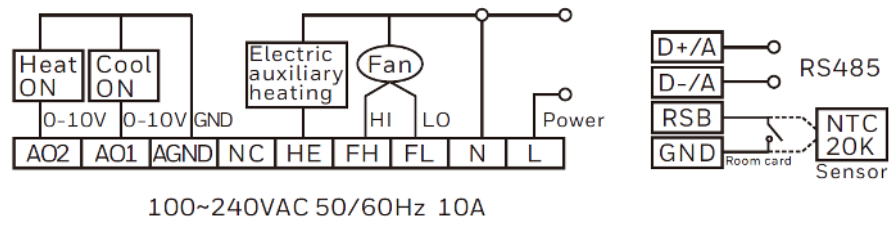4-Pipe, PI(0-10V) Valve, 2-Speed Fan, Electric auxiliary heating, 220VAC Power Supply

100~240VAC 50/60Hz 10A

2-Pipe, PI(0-10V) Valve, 2-Speed Fan, Electric auxiliary heating, 220VAC Power Supply

100~240VAC 50/60Hz 10A

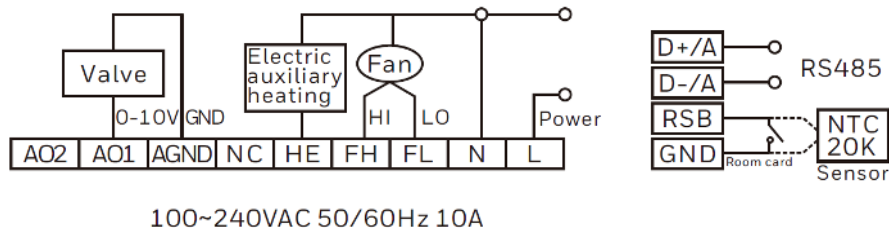### PART NUMBER: WTS3B4RME/X

4-Pipe, PI(0-10V) Valve, 2-Speed Fan, Electric auxiliary heating, 220VAC Power Supply, with RS485

100~240VAC 50/60Hz 10A

2-Pipe, PI(0-10V) Valve, 2-Speed Fan, Electric auxiliary heating, 220VAC Power Supply, with RS485

100~240VAC 50/60Hz 10A

TERMINAL DEFINITION

SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION
L or R	Live Wire (220/24V)
N or C	Neutral Wire
FL	Low Fan Speed
FH	High Fan Speed
HE	Electric auxiliary heating
NC	Standby
AGND	Analog Signal Ground Wire
AO1	Cooling valve (Analog PI 0-10 VDC output 1)
AO2	Heating valve (Analog PI 0-10 VDC output 2)
(D+/A)/NC	RS485 A+/Standby
(D-/B)/NC	RS485 B-/Standby
RSB	Room Card Signal / External Sensor (NTC20K)
GND	Room Card / Sensor Common Grounding

PART NUMBER SELECTION

WTS3/6

WTS3B4WMB/H

WTS=WTS Series	**3**=Modulating Valve / 3 Fan Speed **6**=Modulating / BLDC Motor (ECM Fan)	**B4**=100-240VAC **E4**=24VAC	**W**=White **B**=Black **R**=White/ Electrical Heating	**B**=N/A **E**=Modbus	**N**=N/A **E**=Humidity Display
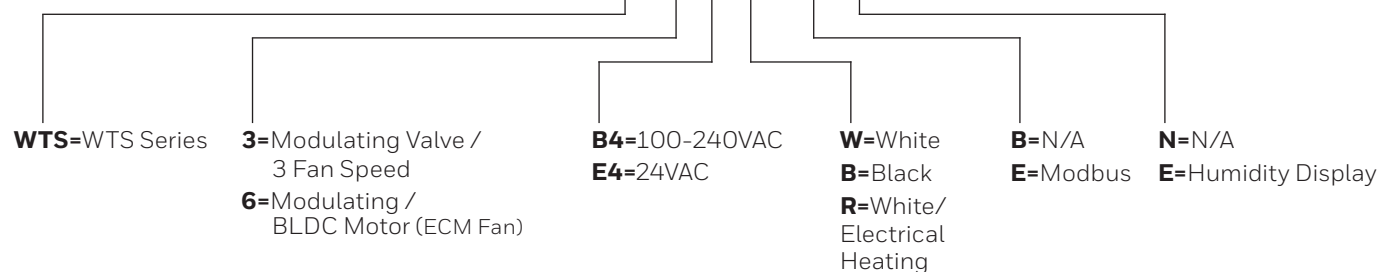
PART NUMBER	OPERATING VOLTAGE	APPLICATION	CONTROL SIGNAL	FAN SPEED	SHELL COLOR	MODBUS	BLDC	HUMIDITY DISPLAY
WTS3								
WTS3B4WMB/H	100-240VAC	2/4pipe	Modulating	Low / Medium / High / Auto	White	No	No	Yes
WTS3B4WMB/N								No
WTS3B4WME/H						Yes		Yes
WTS3B4WME/N								No
WTS3E4WMB/H	24VAC				White	No		Yes
WTS3E4WMB/N								No
WTS3E4WME/H						Yes		Yes
WTS3E4WME/N								No
WTS3B4BMB/H	100-240VAC				Black	No		Yes
WTS3B4BMB/N								No
WTS3B4BME/H						Yes		Yes
WTS3B4BME/N								No
WTS3E4BMB/H	24VAC				Black	No		Yes
WTS3E4BMB/N								No
WTS3E4BME/H						Yes		Yes
WTS3E4BME/N								No
WTS3B4RMB/H	100-240VAC			Low / High / Auto	White	No		Yes
WTS3B4RMB/N								No
WTS3B4RME/H						Yes		Yes
WTS3B4RME/N								No
WTS6								
WTS6B4WMB/H	100-240VAC	2/4pipe	Modulating	ECM Fan (0-10Vdc)	White	Yes	Yes	Yes
WTS6B4WMB/N								No
WTS6E4WMB/H	24VAC							Yes
WTS6E4WMB/N								No
WTS6B4BMB/H	100-240VAC				Black			Yes
WTS6B4BMB/N								No
WTS6E4BMB/H	24VAC							Yes
WTS6E4BMB/N								No

Note: The default Baud rate is 9,600bit/s.

WTS SERIES Technical Specifications
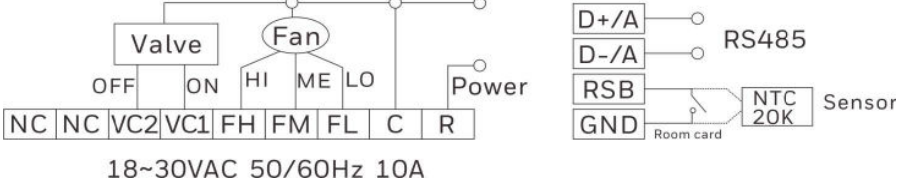
WIRING DIAGRAMS

PART NUMBER: WTS9E4XXXX   WTS8E4XXXX

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

18~30VAC 50/60Hz 10A
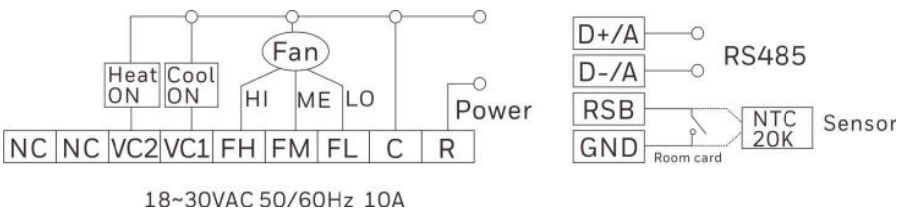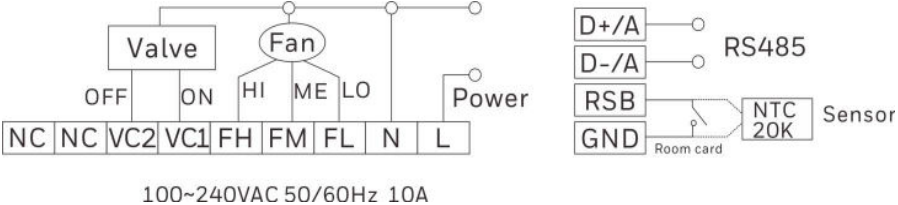
2-Pipe, 3-Wire Valve, 3-Speed fan, 24 VAC power supply

18~30VAC 50/60Hz 10A

PART NUMBER: WTS9B4XXXX   WTS8B4XXXX

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

100~240VAC 50/60Hz 10A
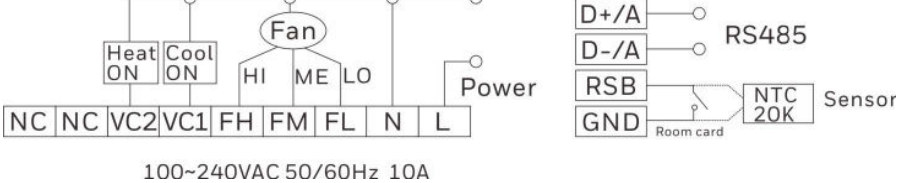
2-Pipe, 3-Wire Valve/2-Wire Valve, 220 VAC power supply

100~240VAC 50/60Hz 10A

Note: WTS8 does not support RS485 communication

TERMINAL DEFINITION

SYMBOL DESCRIPTION

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	Heating / Cooling Valve On
VC2	Heating / Cooling Valve Off
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 Common Grounding

PART NUMBER SELECTION

WTS8/9

WTS8B4WMB/H

WTS=WTS Series

8=N/A
9=Modbus

B4=100-240VAC
E4=24VAC

W=White
B=Black

N=N/A
E=Humidity Display
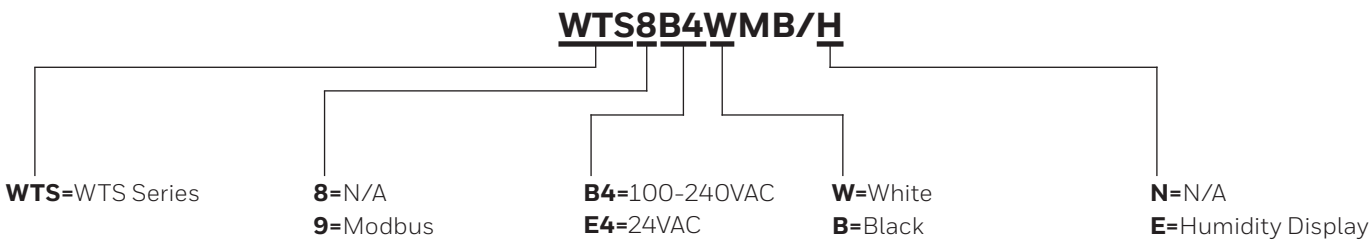
PART NUMBER	OPERATING VOLTAGE	APPLICATION	CONTROL SIGNAL	FAN SPEED	SHELL COLOR	MODBUS	HUMIDITY DISPLAY
WTS8							
WTS8B4WMB/H	100-240VAC	2/4pipe	On/Off	Low / Medium / High / Auto	White	No	Yes
WTS8B4WMB/N							No
WTS8E4WMB/H	24VAC						Yes
WTS8E4WMB/N							No
WTS9							
WTS9B4WMB/H	100-240VAC	2/4pipe	On/Off	Low / Medium / High / Auto	White	Yes	Yes
WTS9B4WMB/N							No
WTS9E4WMB/H	24VAC						Yes
WTS9E4WMB/N							No

Note: The default Baud rate is 9,600bit/s.

For more information

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