T8200, T8600 and T8800
T8 Touch Thermostat Series

Product Bulletin

The T8 Series includes the T8200, T8600 and T8800 touch screen thermostats designed to control heating and cooling in commercial, industrial and residential installation.

Typical applications include the control of Fan Coil units, Packaged terminal air conditioners and combination of heating and cooling equipment. As part of the system, the T8 thermostats control two-way or three-way valves and multi-speed line voltage fans.

In the T8 range beside the T8200 Stand Alone models, the T8600 and T8800 can communicate with any Building Automation System. The T8800 models are designed to be connected to the Johnson Controls Building Automation System Metasys® using BACnet MS/TP communication, while the T8600 models offer connection in Modbus RTU. The integration in Metasys improves usability and enhances energy saving strategies.

The large LCD touchscreen display of the T8 thermostat provides the status of current working mode, the fan speed, the indoor temperature and the temperature set point.

The T8 range is equipped with a capacitance touch screen enhancing the user experience when operating the thermostat.

Keypad includes: Power on/off � Mode selection Ⓜ, Fan Speed Selection ⓢ, Clock/Timer ⓒ and two Adjustment buttons ⋀ & ⋁.

- **Touch screen**

  The touch screen provides clear information and easy operation. When required by building policy it can show Set Point only.

- **Backlit Black Crystal Display**

  Offers Easy-to-Read graphical messages through International icons with backlight timeout.

- **6 Function Keys lockable**

  Protected against misuse in public space, operation can be fully or partially locked to comply with the building energy policy.

- **Stylish appearance**

  Flush mount for stylish low profile installation.

- **Energy Saving**

  Occupancy mode reducing energy consumption when the room unoccupied.

- **Smart Restart**

  Thermostat retains the last events and parameter settings after power loss.

- **Timing Function**

  Daytime, Fan Coil Runtime, and On/Off timer functions are available.

- **Stand-Alone or Communicating**

  From simple stand-alone applications to system managed by a Building Automation System through BACnet MS/TP or Modbus RTU communication buses.

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Product Overview

The T8 thermostat models cover 2-pipe and 4-pipe cooling and heating applications with Auto-High-Med-Low fan speed control.

The On-board high accuracy NTC sensor allows precision comfort control over occupied space area. Some models can connect an alternative remote passive temperature cable sensor and other models can manage an Occupancy status switch.

The T8 thermostats are equipped with Touch screen display, with backlight that has a timeout function to reduce consumption and avoid disturbing occupants during the night.

All models can be equipped with ON/OFF valve control and three speed Fan outputs. All relay outputs provide max. 5Amp (Res.) @ 250Vac.

① Fahrenheit unit	⑦ Fan auto	⑬ Fault	⑲ Auto
② Timer on	⑧ Ventilation	⑭ Day of Week	⑳ Sleep
③ Timer off	⑨ Heating	⑮ Centigrade unit	㉑ Occupancy
④ Time	⑩ Lock	⑯ Internal sensor	㉒ Valve
⑤ Fan speed	⑪ Communication	⑰ Low temperature protection	
⑥ High, mid, low	⑫ Cooling	⑱ Ambient temperature	
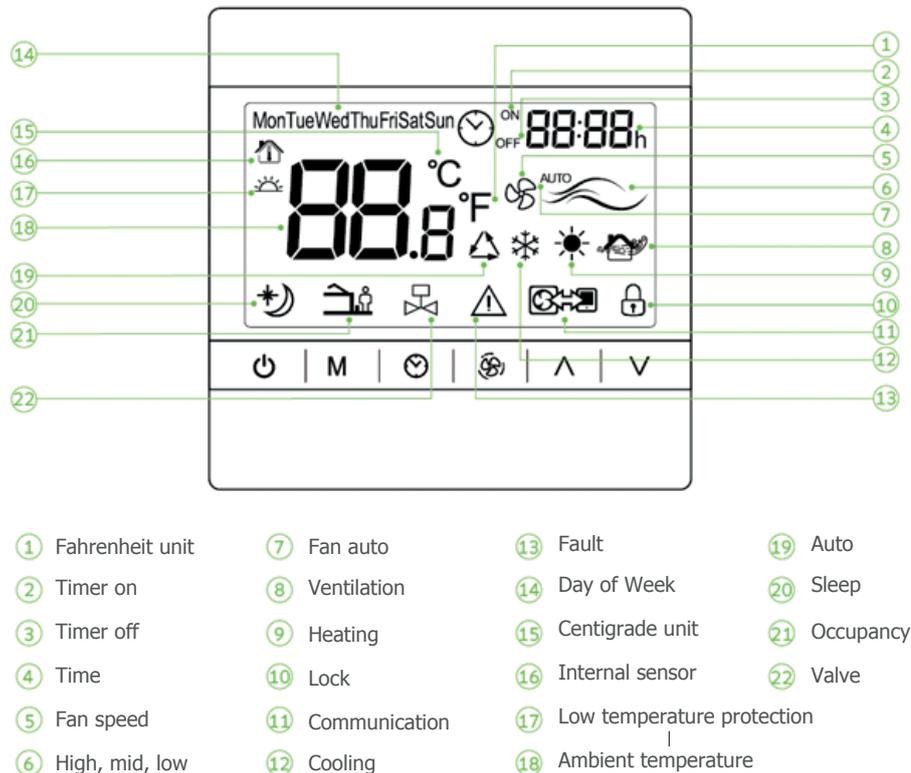
The Ⓜ button on the front panel for the 2-pipe solution selects the thermostat mode: heating, cooling and ventilation only. The 4-pipe models offer the heating and cooling AUTO mode.

The Clock button ⊙ sets the daytime, and the Timer On/Off functions. The Timer function allows user to set the thermostat ON or OFF after a programmable period, programmable from 30 min to 12 hours.

The ⋀ ⋁ buttons are often used to change values during the configuration of the thermostat but their main function is to change the set point. Usually the thermostat is displaying the temperature of the room, when one of those keys are touched the Set point is shown. Where the building policy requires the thermostat to show only the Set Point, this can be configured during the start up.

The fan mode Auto-High-Med-Low fan speeds can be changed pressing the ⊛ Fan button.

The On/Off button allows user to shutdown the thermostat and cutoff the output power for the Fan and for Valve Actuators.

The T8200 is offering Stand-Alone control only, the models T8600 and T8800 can be integrated in any Building Automation systems using, respectively, Modbus RTU and BACnet MS/TP buses.

For any of the above models the display buttons can be locked to avoid misuse in public space. The Thermostats allow the following locking configuration: Lock all keys, Lock all except Fan and Set point, lock On/Off and Clock functions only. When the Key-Lock function is active for a temporary unlock press and hold Fan Key for 5 sec.

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Product Range and Models

Type	Feature	T8200-TBE0-9JR0	T8200-TBE0-9JS0	T8200-TFE0-9JR0	T8200-TFE0-9JS0	T8600-TB20-9JR0	T8600-TB20-9JS0	T8600-TF20-9JR0	T8600-TF20-9JS0	T8800-TB20-9JS0	T8800-TF20-9JS0
Application	2-pipe heating or cooling	●	●	---	---	●	●	---	---	●	---
	4-pipe heating and cooling	---	---	●	●	---	---	●	●	---	---
	Communication	STAND-ALONE				MODBUS RTU				BACNET MS/TP	
Output	ON/OFF	●	●	●	●	●	●	●	●	●	●
Function	Touch Screen with Graphic Icons	●	●	●	●	●	●	●	●	●	●
	Display Temp/SP or Set Point only	●	●	●	●	●	●	●	●	●	●
	Fan Speed (Low, Mid, High, Auto)	●	●	●	●	●	●	●	●	●	●
	Display Key Lock [1]	●	●	●	●	●	●	●	●	●	●
	C°/F° field selectable	●	●	●	●	●	●	●	●	●	●
	Remote Passive Sensor [2]	●	---	●	---	●	---	●	---	●	●
	Auto Mode [3]	---	---	●	●	---	---	●	●	---	●
	RTC [4]	●	●	●	●	●	●	●	●	●	●
	Run Time (Hours)	●	●	●	●	●	●	●	●	●	●
	Low-temperature protection (Anti-Freezing)	●	●	●	●	●	●	●	●	●	●
	Restart after power failure [5]	●	●	●	●	●	●	●	●	●	●
Energy Saving	Ventilation only mode	●	●	●	●	●	●	●	●	●	●
	Remote Occupancy (dry-contact NO/NC)	---	●	---	●	---	●	---	●	●	●
	Unoccupied Heating/Cooling Set-Points	---	●	---	●	---	●	---	●	●	●
	Low Fan when unoccupied	---	●	---	●	---	●	---	●	●	●
	Adjustable Upper/Lower Set Point Limits	●	●	●	●	●	●	●	●	●	●
	Timer ON/OFF [6]	●	●	●	●	●	●	●	●	●	●
Certificate	CE	●	●	●	●	●	●	●	●	●	●
	BACnet BTL [7]	---	---	---	---	---	---	---	---	●	●

(1) Key-Lock function has 4 options: No Lock. Lock all keys. Lock the keys except Fan Speed and Set Point keys. Lock the ON/OFF and Clock keys. When the Key lock function is active for a temporary unlock press and hold fan key for 5 Sec or temporary remove power.

(2) T8600 and T8200 models -9JR0 are supplied with own specific cable sensor in the box. The T8800 do not include the sensor, a TS-6300 10K NTC can be order separately.

(3) Auto mode is available only on 4-Pipe application, deviation from SP of more than + 1 °C change the heating/cooling mode.

(4) Equipped with Standby battery (CR1220) with 1 year life time

(5) After a power loss the thermostat can restart ON, OFF mode or as it was before the event (last condition)

(6) Timer Set On or OFF the thermostat after a programmable time, from 30 min to 12 hours

(7) BACnet MS/TP, BLT certified, up to 100 devices per network controller (NAE55), Auto Baud Rate and Segmentation.

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Products description

T8200 Stand Alone

Model T8200-TBE0-9Jx0

The Model T8200-TBE0-9Jx0 are Stand Alone, line voltage, thermostats designed for cooling or heating in a 2-pipe fan coil unit with ON/OFF valve actuator.

T8200-TBE0-9JS0 has a digital input for Occupancy mode that allows better comfort control and energy cost saving.

T8200-TBE0-9JR0 can connect one remote passive temperature sensor, while the remote sensor is connected, the built-in sensor will be automatically disabled. Please use the 10K NTC cable sensor supplied with the thermostat.
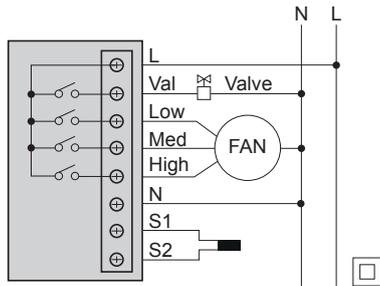
T8200-TBE0-9JR0
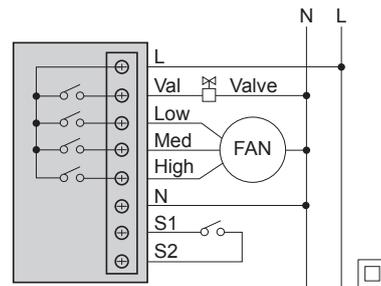
T8200-TBE0-9JS0

Model T8200-TFE0-9Jx0

The Model T8200-TFE0-9Jx0 are Stand Alone, line voltage, thermostats designed for cooling or heating in a 4-pipe fan coil unit with ON/OFF valve actuator.

T8200-TFE0-9JS0 has a digital input for Occupancy mode that allows better comfort control and energy cost saving.

T8200-TFE0-9JR0 can connect one remote passive temperature sensor, while the remote sensor is connected, the built-in sensor will be automatically disabled. Please use the 10K NTC cable sensor supplied with the thermostat.
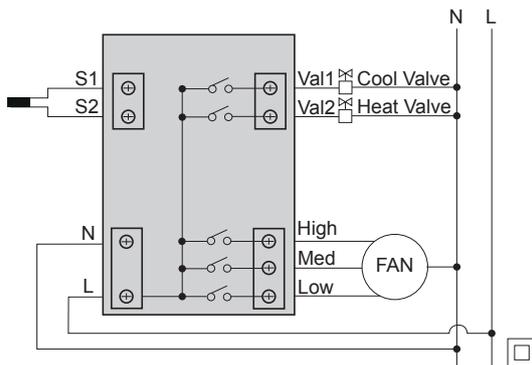
T8200-TFE0-9JR0
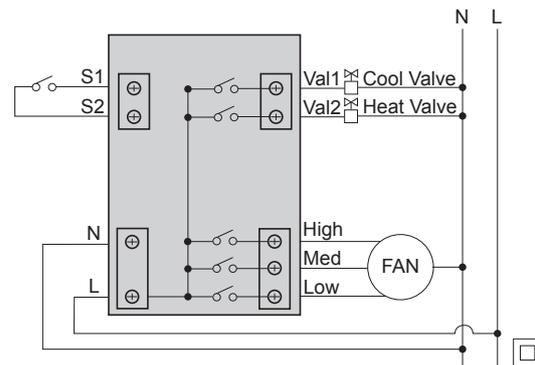
T8200-TFE0-9JS0

NTC 10K Type

AC 230 V 50/60 Hz

T8600 Modbus RTU

Model T8600-TB20-9Jx0

The Model T8600-TB20-9Jx0 are MODBUS RTU, line voltage, thermostats designed for cooling or heating in a 2-pipe fan coil unit with ON/OFF valve actuator.

T8600-TB20-9JR0 has a digital input for Occupancy mode that allows better comfort control and energy cost saving.

T8600-TB20-9JS0 can connect one remote passive temperature sensor, while the remote sensor is connected, the built-in sensor will be automatically disabled. Provided with specific NTC 10K cable sensor.

T8600-TB20-9JR0

NTC 10K Type

T8600-TB20-9JS0

AC 230 V 50/60 Hz
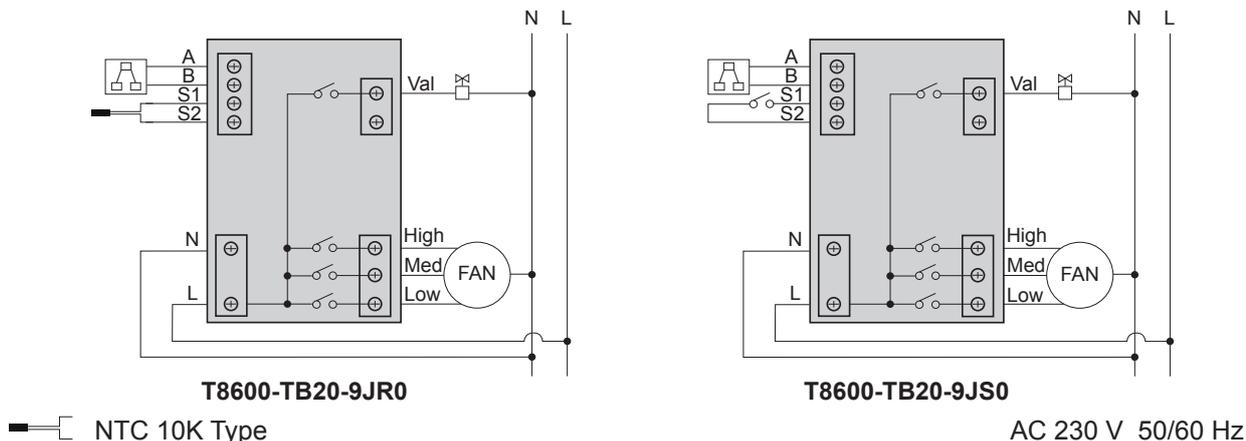
Model T8600-TF20-9Jx0

The Model T8600-TF20-9Jx0 are MODBUS RTU, line voltage, thermostats designed for cooling or heating in a 4-pipe fan coil unit with ON/OFF valve actuator.

T8600-TF20-9JR0 has a digital input for Occupancy mode that allows better comfort control and energy cost saving.

T8600-TF20-9JS0 can connect one remote passive temperature sensor, while the remote sensor is connected, the built-in sensor will be automatically disabled. Provided with specific NTC 10K type cable sensor.


T8600-TF20-9JR0

T8600-TF20-9JS0

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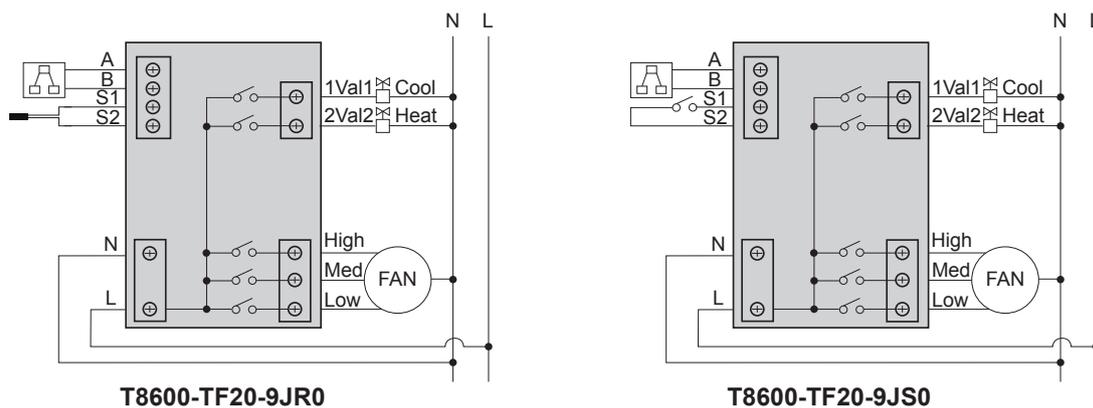
T8800 BACnet MS/TP

The T8800 are BACNET MS/TP, 24VAC Powered, thermostats designed for cooling or heating control. These thermostats can connect a dry NC/NO contact to manage occupancy mode, or they can be wired to a remote passive temperature sensor like the TS-6340K-F00. While the remote sensor is connected to the thermostat, the built-in sensor will be automatically disabled.

T8800-TB20-9JS0 is BACNET MS/TP, 24VAC Powered, thermostat designed for cooling or heating in a 2-pipe fan coil unit with ON/OFF valve actuator.

T8800-TF20-9JS0 is BACNET MS/TP, 24VAC Powered, thermostat designed for cooling and heating in a 4-pipe fan coil unit with ON/OFF valve actuator.
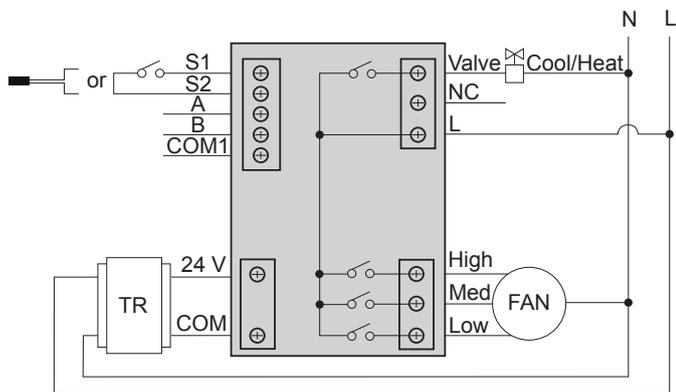
T8800-TB20-9JS0
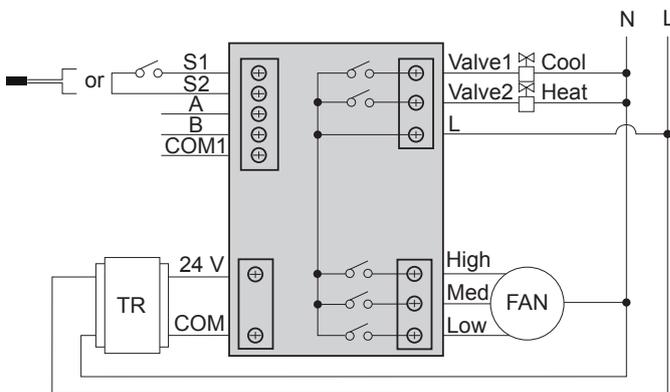
T8800-TF20-9JS0

NTC 10K Type

AC 230 V 50/60 Hz

When the T8800 is the last device on a BACnet network, please add EoL resistor (½ W) at the end, across terminal A & B.

When connected, the On/Off switch of the thermostat does not disconnect power to the unit; only the LCD and Relay outputs are turned OFF.

Dimensions

T8200 models
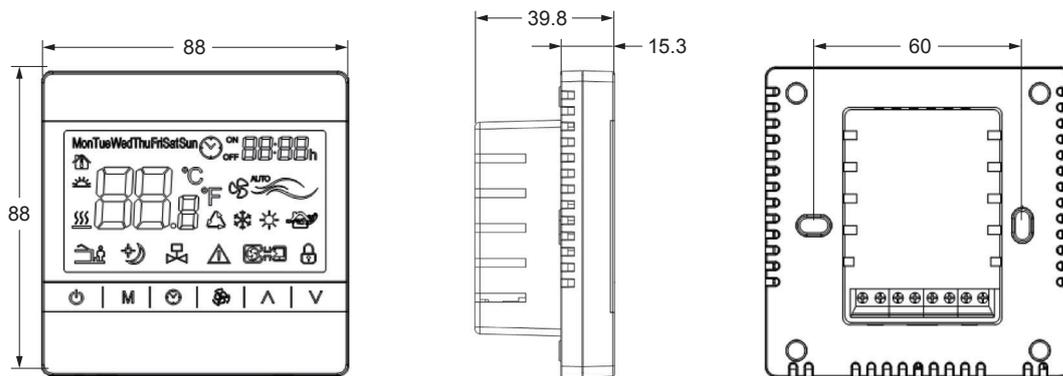
T8200-TBE0-xxxx
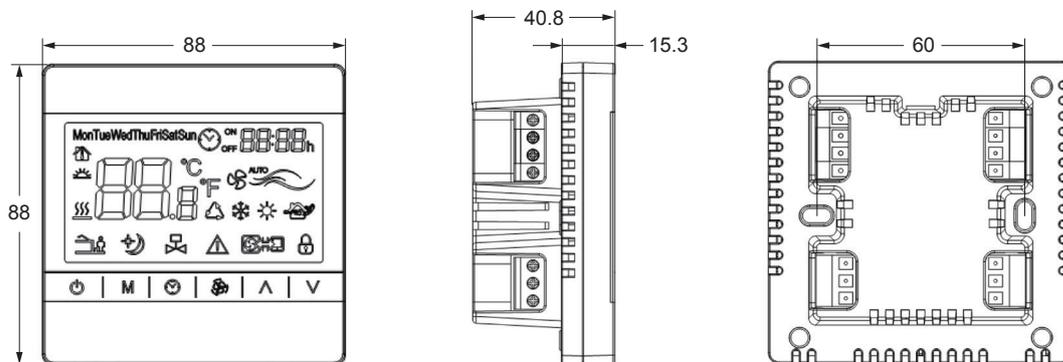
T8200-TFE0-xxxx

T8800 / T8600 models
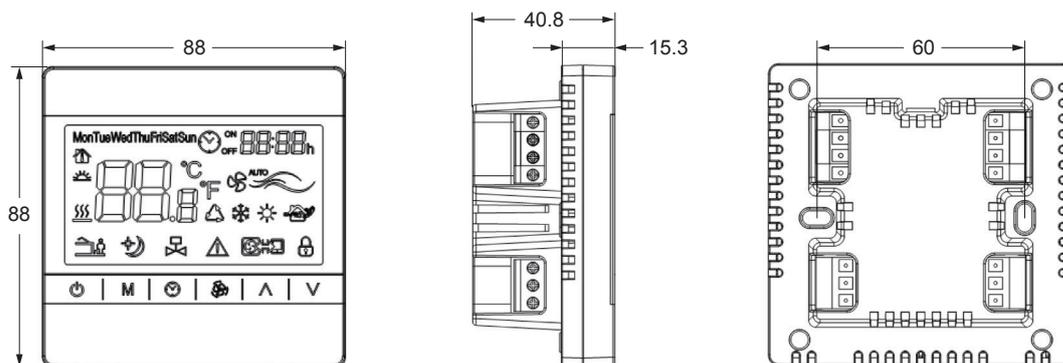
> ⚠ Use this T8800 series thermostat only for operating control. Where failure or malfunction of the T8800 series thermostat could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the system. Incorporate and maintain other devices such as supervisory/alarm systems or safety/ limit controls intended to warn of, or protect against, failure or malfunction of the T8800 series thermostat.

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Installation

Thermostat requires wall or flush box with max external size of 88x88mm with a suitable internal size of 75x75x35mm.
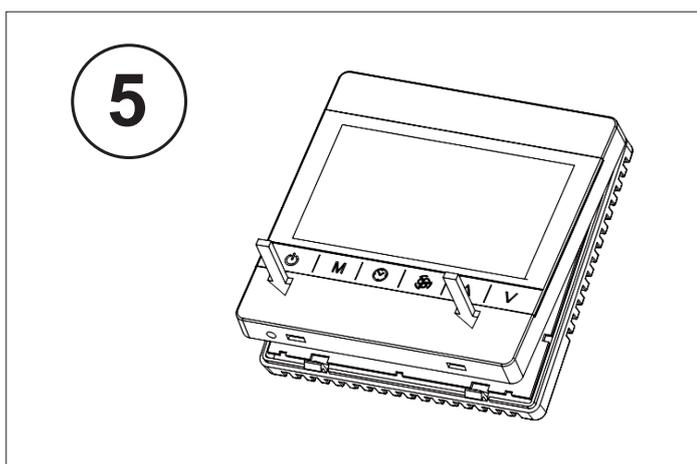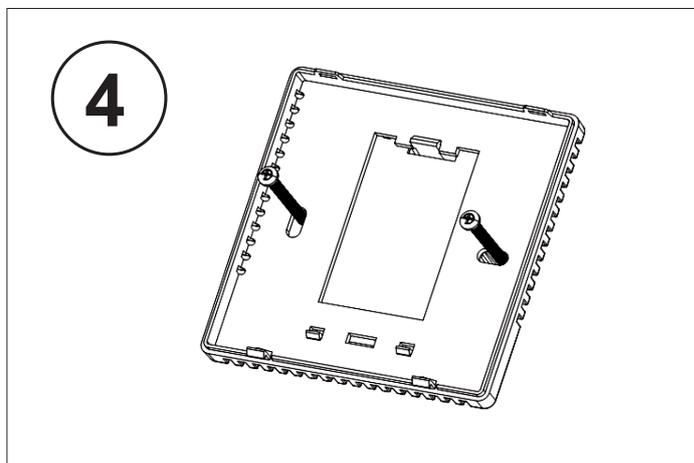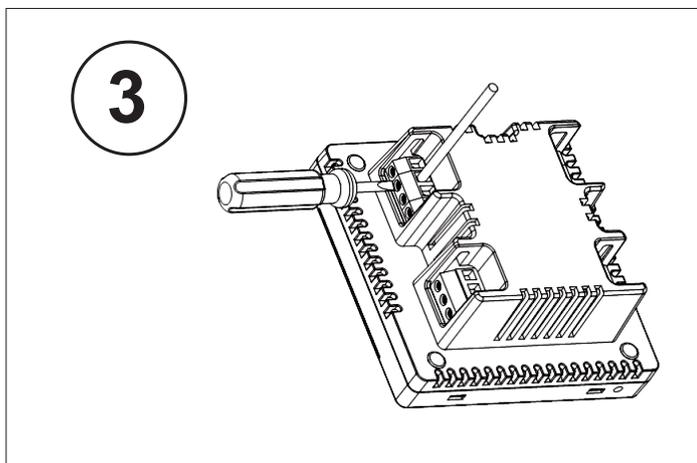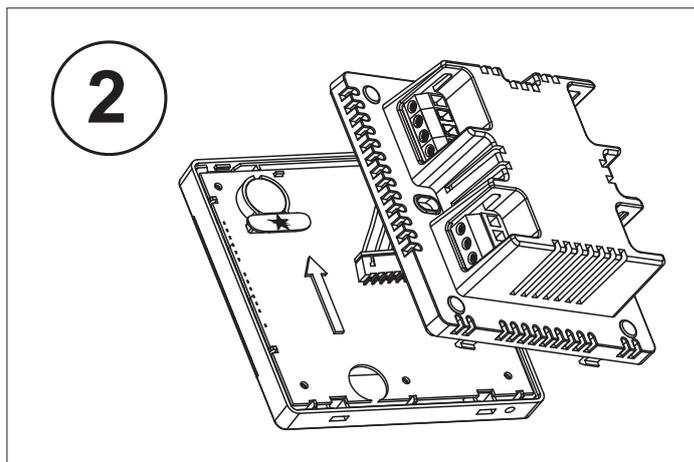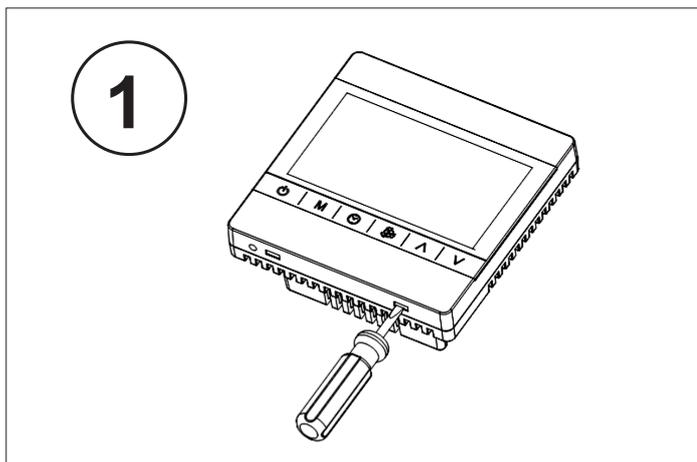
IMPORTANT:
The power supply to the thermostat must include overload protection.
Failure to include overload protection may result in damage to the thermostat.

Ordering Informations

Item Code	Tyme	Application
T8200-TBE0-9JR0	Stand-Alone line thermostat with touch screen	2-pipe Fan Coil, on/off, with occupancy input.
T8200-TBE0-9JS0		2-pipe, Fan Coil on/off, with remote sensor
T8200-TFE0-9JR0		4-pipe, Fan Coil on/off, with occupancy
T8200-TFE0-9JS0		4-pipe, Fan Coil on/off, with remote sensor
T8600-TB20-9JS0	MODBUS RTU line thermostat with touch screen	2-pipe, Fan Coil on/off, with occupancy
T8600-TB20-9JR0		2-pipe, Fan Coil on/off, with remote sensor
T8600-TF20-9JS0		4-pipe, Fan Coil on/off, with occupancy
T8600-TF20-9JR0		4-pipe, Fan Coil on/off, with remote sensor
T8800-TB20-9JS0	BACnet MS/TP 24 VAC thermostat with touch screen	2 pipe, Fan Coil On/off, with Occupancy or remote sensor
T8800-TF20-9JS0		4 pipe, Fan Coil On/off, with Occupancy or remote sensor

NOTE: *T8200 and T8600: the Cable sensor included is a NTC10K type specific, cable lenght is 1,5 mt*
T8800 does not include Cable Sensor, when required please order TS-6340K-F00 (10K NTC Type II)

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Technical Specifications

	T8200	T8600	T8800
Power Requirements	AC 85 - 230 V, 50/60Hz		AC 20 - 30 V, 50/60Hz
Accuracy	±1 °C		
Display Range	0 to 55 °C		
Setpoint Range	5 to 35 °C		
Occupancy Input	External Voltage-Free Contact only on models T8200-xxx-9JS0	External Voltage-Free Contact only on models T8600-xxx-9JS0	1 input for Occupancy voltage-free contact OR passive 10 K NTC sensor 10 K Type II remote TS-6300 sensor
Remote Sensor Input	Input for 10K NTC only on models T8200-xxx-9JR0	Input for 10K NTC only on models T8600-xxx-9JR0	
Remote Sensor Type	10K NTC cable 1,5 m (included)Max distance 20 m (1 mm^2)		TS-6340K-F00 Max distance 20 m (1 mm^2)
Fan Control	3 x Single-Pole, Single Throw (SPST), Relay Output for Hi-Med-Low Fan		
Valve Control Relay	Up to 2 SPST Relays 5A (Res.) 250 VAC depending on Thermostat model		
Communication	Stand-Alone	Modbus	BACnet (BTL)
Termination	Screw terminals		
Operating Conditions	0 to 45 °C 90% Non-Condensing RH		
Storage Conditions	-10 to 60 °C 90% Non-Condensing RH		
Housing Material	PC: UL 94-V0		
Protection Class	IP20		
Dimensions in mm	88 x 88 x 40,8 mm		
Shipping Weight	Approximately: 214 g		
CE **Compliance**	Johnson Controls declares that this product is in compliance with the essential requirements and other relevant provisions of the Low Voltage Directive (LVD), the EMC Directive, and the RoHS Directive.		

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