T9000 Series
Touch Screen Thermostats

The power behind **your mission**

Johnson Controls

Futuristic and Hi-tech Exterior Design

reddot winner 2020

Winner of the 2020 Red Dot Award for Product Design

With a frameless large touch screen, the T9000 Series Thermostats can display ambient temperature clearly and intuitively. The buttons are sensitive and very user-friendly.
The futuristic and hi-tech exterior design is loved by users from high-end office buildings, hotels, private hospitals, and high-end residential buildings.

Superb materials for a stable performance

The service life of the relay is designed to be turned on / off for **100,000 times**. The eco-friendly shell materials meet the **CE standard** for flame retardants. High-quality materials and components ensure that the thermostats are safe, eco-friendly and reliable. The PCB was produced with a high-standard gold depositing procedure, to ensure better electrical performance, more sensitive touch, and more durable.

The thermostats have been certified by multiple industry standards, including CE, RCM, REACH, RoHS, BTL, WEEE and GB, to ensure stable performance.

Energy-efficient and eco-friendly

The T9000 Series Touch Screen Thermostats can be used to control ECM motors far better than industry standards, as they can reduce the motor's energy consumption by **30-50%** and the motor's noise by **1-2 dB (A)**, to make the environment more comfortable.

In addition to the delay on / off function, the T9000 Series Touch Screen Thermostats can also activate the **occupancy (eco) mode** with the signal from a door card, a PIR (Passive Infrared) sensor or other dry contacts, to switch the set point of temperature, and to keep fan motor on low speed or shut down, so as to improve efficiency and save energy.

Intelligent control and system optimization

The T9000 Series Touch Screen Thermostats support multiple operating modes, including cooling, heating, ventilating, and floor heating. They also provide other functions, including the occupancy mode and T9600 support remote temperature sensor. Some models adopt a 32-bit high-performance MCU to ensure more accurate control and more powerful functions. Some models support Modbus or BACnet protocols that can be seamlessly connected to the building automation system, to achieve the best room climate control.

Diverse application scenarios

Each of the T9000 Series Touch Screen Thermostats supports multiple application scenarios. They can control multiple types of equipment, including the 2-pipe fan coil unit (FCU) / 4-pipe FCU; the water source heat pumps; the simple air handling units (AHUs), boilers and floor heating systems; the 3-speed motors and ECM motors; the 2-wiring / 3-wiring on / off valves, modulating control valves and floor heating valves; as well as other air purification units (e.g. TiO_2 / ESP).

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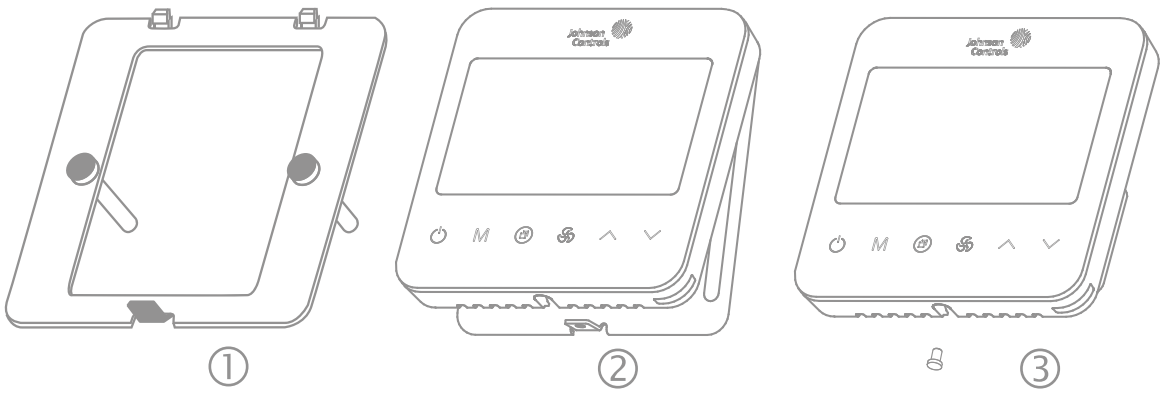
List of the T9200 Series Touch Screen Thermostats

The T9200 Touch Screen Thermostats are standalone thermostats. They are designed to control cooling, heating, air conditioning and ventilating applications in commercial, industrial and residential projects.

The thermostats are powerful, and can be used to control 2-pipe FCU / 4-pipe FCU, Single-speed / 3-speed motors / ECM motors, and on / off valves / regulating valves. Its TiO_2 / ESP features can make the environment to cleaner. The occupancy mode supports comfortable and more energy-efficient temperature setting. The BI input supports dry contact signals from door cards, PIR (Passive Infrared) sensor, dew point sensors, filter's differential pressure switch, etc.

The products apply to multiple scenarios, for example, they can be used for FCU, single-speed AHUs, floor heating systems, water source heat pumps, and boilers.

Model	Application	Fan control	Valve control	Others control
T9200-TF20-1JS0	2-pipe FCU, On / Off valve	3-speed Fan	1 On / Off Valve	
	4-pipe FCU, On / Off valve	3-speed Fan	2 On / Off Valves	
	2-pipe FCU, 3-wire On / Off valve	3-speed Fan	1 3-wire On / Off Valve	
	2-pipe FCU with floor heating, On / Off valve	3-speed Fan	1 On / Off Valve	1 Floor Heating
	2-pipe FCU with TiO_2 / ESP, On / Off valve	3-speed Fan	1 On / Off Valve	1 TiO_2 / ESP
	Water source heat pump	3-speed Fan		1 Compressor 1 Revert Valve
	Boiler/Floor Heating			1 Boiler / Floor Heating
T9200-TB21-1JS0	2-pipe FCU, ECM fan, On / Off valve	ECM fan	1 On / Off Valve	
	4-pipe FCU, ECM fan, On / Off valve	ECM fan	2 On / Off Valve	
	2-pipe FCU, ECM fan, 3-wire On / Off valve	ECM fan	1 3-wire On / Off Valve	
	2-pipe FCU, ECM fan with TiO_2 / ESP, On / Off valve	ECM fan	1 On / Off Valve	1 TiO_2 / ESP
	2-pipe FCU, ECM fan with floor heating, On / Off valve	ECM fan	1 On / Off Valve	1 Floor Heating
	Water source heat pump	ECM fan		1 Compressor 1 Revert Valve
	2-pipe FCU, Prop valve	3-speed Fan	1 Proportion Valve	



Installation three steps

List of the T9600 Series Touch Screen Thermostats

The T9600 Touch Screen Thermostats adopt the Modbus communication protocol. They are designed to control cooling, heating, air conditioning and ventilating applications in commercial, industrial and residential projects.

The thermostats are powerful, and can be used to control 2-pipe FCU / 4-pipe FCU, Single-speed / 3-speed motors / ECM motors, and on / off valves / regulating valves. Its TiO_2 / ESP features can make the environment to cleaner. The occupancy mode supports comfortable and more energy-efficient temperature setting. The BI input supports dry contact signals from door cards, PIR (Passive Infrared) sensor, dew point sensors, filter's differential pressure switch, etc. They support connect to remote sensors, sensor type JCI 10K NTC Temperature Sensors like TE-636S-1.

The products apply to multiple scenarios, for example, they can be used for FCU, single-speed AHUs, floor heating systems, water source heat pumps, and boilers.

Model	Application	Fan control	Valve control	Others control
T9601-TF20-1JS0	2-pipe FCU, On / Off valve	ECM fan	1 On / Off Valve	
	4-pipe FCU, On / Off valve	ECM fan	2 On / Off Valves	
	2-pipe FCU, 3-wire On / Off valve	ECM fan	1 3-wire On / Off Valve	
	2-pipe FCU with floor heating, On / Off valve	ECM fan	1 On / Off Valve	1 Floor Heating
	2-pipe FCU with TiO_2 / ESP, On / Off valve	ECM fan	1 On / Off Valve	1 TiO_2 / ESP
	Water source heat pump	ECM fan		1 Compressor 1 Revert Valve
	2-pipe FCU, Prop valve	ECM fan	1 Proportion Valve	
	2-pipe FCU, Prop valve with Floor Heating	ECM fan	1 Proportion Valve	1 Floor Heating
	2-pipe FCU, Prop valve with Radiator	ECM fan	1 Proportion Valve	1 Radiator
	AHU	Single speed fan	1 Proportion Valve	1 Damper
T9600-TF21-1JS0	2-pipe FCU, Prop valve	3-speed Fan	1 Proportion Valve	
	4-pipe FCU, Prop valve	3-speed Fan	2 Proportion Valves	
T9600-TF20-1JS0	2-pipe FCU, On / Off valve	3-speed Fan	1 On / Off Valve	
	4-pipe FCU, On / Off valve	3-speed Fan	2 On / Off Valves	
	2-pipe FCU, 3-wire On / Off valve	3-speed Fan	1 3-wire On / Off Valve	
	2-pipe FCU with floor heating, On / Off valve	3-speed Fan	1 On / Off Valve	1 Floor Heating
	2-pipe FCU with TiO_2 / ESP, On / Off valve	3-speed Fan	1 On / Off Valve	1 TiO_2 / ESP
	Water source heat pump	3-speed Fan		1 Compressor 1 Revert Valve
T9603-T000-1JF0	Floor heating			1 Floor Heating

IMPORTANT: The T9000 series touch screen thermostat is intended to provide and input to equipment under normal operating conditions. Where failure or malfunction of the thermostat could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control 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 thermostat.

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Technical Specifications

Supply Voltage	100-240 VAC 50 / 60 Hz
Power consumption	Max. 5VA
Terminations	Screw terminal block
AO output(ECM Fan, Proportion Valve)	0-10VDC output, up to 20mA
Relay output (Fan, Valve, Tio2 and etc.)	relay (SPST) output, 2.2A (I_R), cosΦ 0.98; 3.6A (I_X), cosΦ 0.98; 5A (Resistive)
Remote Sensor input	T9600 models support remote sensor, 10K NTC JCI type II, e.g. TE-636S-1
BI input	Dry contact signal
Wire size	Screw terminal block: 1.0-1.5mm² rigid conductor for 5mm connector; 0.14-1.5 mm² rigid conductor for 3.5mm connector
Mounting	Flush-mounted
Temperature measurement range	0 to 49°C (32 to 99°F)
Temperature accuracy	1°C (2°F)
Default temperature set point range	5.0℃ to 35.0°C in 0.5°C increments
Ambient conditions	Operating: 0 to 40°C (32 to 104°F), 10 to 90% RH, noncondensing, 29°C (85°F) maximum dew point
	Storage: -20 to 60°C (-4 to 140°F), 5 to 95% RH, noncondensing
Protection class	IP20
Pollution degree	2
Heat and fire resistance category	D
Temperature for ball pressure test	125°C
Limitation of operating time	Continuous
Shipping weight	Approx 300g
Compliance	CE mark
	RCM mark, Australia / NZ emissions compliance
	RoHS, REACH, WEEE
	RoHS，REACH，WEEE

Note:

1. User can configure one model to different applications by parameter setting
2. I_R is steady-state current of FCU motor, and I_x is transient current of FCU motor
3. Remote sensor need to be ordered separately

T9800 Series Touch Screen Thermostats

Strong system compatibility, adopt the BACnet or Modbus communication protocol

Build in humidity sensor, easy environmental control for BA system

T9800-TB21-1JA0 support 0~10 VDC input, directly access CO_2 or IAQ sensor signal, simplify design and save cost

The thermostats are powerful and can be used to control 2-pipe FCU / 4-pipe FCU, Single-speed / 3-speed motors / ECM motors, and on / off valves / regulating valves. Its TiO_2 / ESP features can make the environment to cleaner. The occupancy mode supports comfortable and more energy-efficient temperature setting. The BI input supports dry contact signals from door cards, PIR (Passive Infrared) sensor, dew point sensors, filter's differential pressure switch, etc. They support connect to remote sensors, sensor type JCI 10K NTC Temperature Sensors like TE-636S-1.

The products apply to multiple scenarios, for example, they can be used for FCU, single-speed AHUs, floor heating systems, water source heat pumps, and boilers.

Product Number	Application	Fan Control	Valve Control	Others Control	Input	Power Supply
T9800-TF21-1JS0	2-pipe FCU, Prop valve	3-speed Fan	1 Proportion Valves		1 BI, Occupancy 1 Remote sensor	24 VAC
	4-pipe FCU, Prop valve	3-speed Fan	2 Proportion Valves			
	2-pipe FCU, On / Off valve	ECM fan	1 On / Off Valve			
	4-pipe FCU, On / Off valve	ECM fan	2 On / Off Valves			
	2-pipe FCU, 3-wire On / Off valve	ECM fan	1 3-wire On / Off Valve			
	2-pipe FCU with floor heating, On / Off valve	ECM fan	1 On / Off Valve	1 Floor Heating		
	2-pipe FCU with TiO_2 / ESP, On / Off valve	ECM fan	1 On / Off Valve	1 TiO_2 / ESP		
	Water source heat pump	ECM fan		1 Compressor 1 Revert Valve		
	2-pipe FCU, Prop valve	3-speed Fan	1 Proportion Valve			
	2-pipe FCU, Prop valve with Floor Heating	ECM fan	1 Proportion Valve	1 Floor Heating		
	2-pipe FCU, Prop valve with Radiator	ECM fan	1 Proportion Valve	1 Radiator		
	AHU	Single speed fan	1 Proportion Valve	1 Damper		
T9800-TF20-1JS0	2-pipe FCU, On / Off valve	3-speed Fan	1 On / Off Valve		1 BI, Occupancy 1 Remote sensor	100~240 VAC
	4-pipe FCU, On / Off valve	3-speed Fan	2 On / Off Valves			
	2-pipe FCU, 3-wire On / Off valve	3-speed Fan	1 3-wire On / Off Valve			
	2-pipe FCU with floor heating, On / Off valve	3-speed Fan	1 On / Off Valve	1 Floor Heating		
	2-pipe FCU with TiO_2 / ESP, On / Off valve	3-speed Fan	1 On / Off Valve	1 TiO_2 / ESP		
	Water source heat pump	3-speed Fan		1 Compressor 1 Revert Valve		
	Boiler			Boiler		
T9800-TB21-1JA0	2-pipe FCU, Prop valve	3-speed Fan	1 Proportion Valve		1 x 0~10 VDC input for feedback signal 1 BI, Occupancy 1 Remote sensor	

Technical Specifications

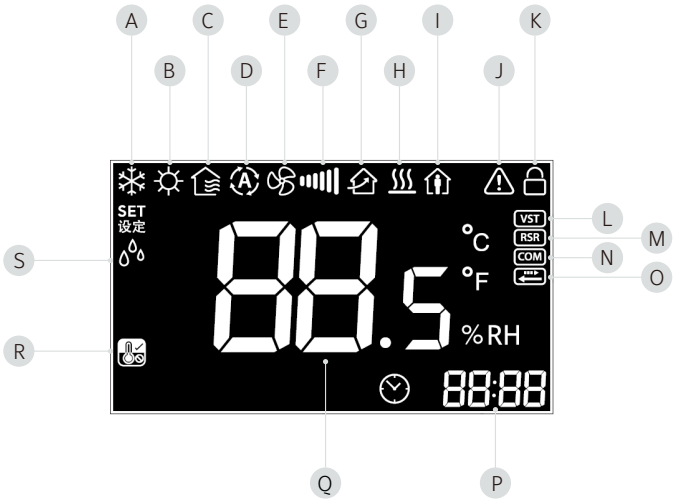
Supply Voltage	100~240 VAC 50 / 60 Hz 20~30 VAC 50 / 60 Hz, only for T9800-TF21-1JS0
Power consumption	Max. 5 VA
Terminations	Screw terminal block
AO output(ECM Fan, Proportion Valve)	0~10 VDC output, up to 20 mA
Relay output (Fan, Valve, Tio2 and etc.)	relay (SPST) output, 2.2 A (I_R), cosΦ 0.98; 3.6 A (I_X), cosΦ 0.98; 5 A (Resistive)
Remote Sensor input	T9800 models support remote sensor, 10K NTC JCI type II, e.g. TE-636S-1
BI input	Dry contact signal
Build-in Humidity Sensor	Accuracy 5%
Analog Input	0~10 VDC, only for T9800-TB21-1JA0
Wire size	Screw terminal block: 1.0~1.5 mm² rigid conductor for 5 mm connector; 0.14~1.5 mm² rigid conductor for 3.5 mm connector
Mounting	Flush-mounted
Temperature measurement range	0 to 49 °C (32 to 99 °F)
Temperature accuracy	1 °C (2 °F)
Default temperature set point range	5.0 °C to 35.0 °C in 0.5 °C increments
Ambient conditions	Operating: 0 to 40 °C (32 to 104 °F), 10 to 90% RH, noncondensing, 29 °C (85 °F) maximum dew point
	Storage: -20 to 60 °C (-4 to 140 °F), 5 to 95% RH, noncondensing
Protection class	IP20
Pollution degree	2
Heat and fire resistance category	D
Temperature for ball pressure test	125 °C
Limitation of operating time	Continuous
Shipping weight	Approx 300 g
Compliance	CE mark
	RCM mark, Australia / NZ emissions compliance
	RoHS, REACH, WEEE
	BTL

Note:

1. User can configure one model to different applications by parameter setting
2. I_R is steady-state current of FCU motor, and I_x is transient current of FCU motor
3. Remote sensor need to be ordered separately

Interface and Icon Definition

Callout	Feature
A	Power button
B	Working mode button
C	General button
D	Fan speed adjustment button
E	Up and down buttons



Callout	Feature	Callout	Feature
A	Cooling	J	Alarm
B	Heating	K	Lock
C	Ventilation	L	Valve status
D	Auto mode	M	Remote sensor
E	Fan auto	N	Communication
F	Fan speed Hi / Med / Low	O	Delay on / off
G	TiO_2 / ESP	P	Delay time
H	Floor heating	Q	Temperature and humidity value
I	Occupancy	R	Low temperature protection
		S	Dehumidify

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At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 105,000 experts in more than 150 countries and over 130 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, York®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, Ansul® and Grinnell®.

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