



TEC4000S Series Thermostats Product Bulletin

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Applications

The TEC4000S Series Thermostats control the following equipment types:

- Pressure dependent VAV:
 - Proportional valve or floating valve
 - Optional single-staged reheat
- Fan coil units (FCU) with a single speed fan, 3-speed fan, or variable speed fan:
 - 2-pipe FCU:
 - On/Off valve, proportional valve, or floating valve
 - Optional single-staged reheat
 - Optional pipe sensor or switch input for automatic changeover
 - 4-pipe FCU:
 - Individual coil
 - Two On/Off valves, proportional valve, or floating valve
 - Single coil:
 - Two On/Off valves, proportional valve, or floating valve without changeover output
 - Single On/Off valve with changeover valve output
 - Single 6-way proportional valve
- Conventional or packaged units:
 - Up to two stages of heating
 - Up to two stages of cooling
 - Single speed fan

- Rooftop unit (RTU) heat pumps:
 - Up to two stages of compressor heating or cooling
 - Up to two stages of supplemental heating
 - Reversing valve
 - Single speed fan
- Vertical stacked heat pump (VSHP):
 - Single-stage compressor heating or cooling
 - Reversing valve
 - 3-speed fan
- Packaged terminal air conditioner (PTAC) with or without a heat pump:
 - Conventional setup without a heat pump:
 - Single On/Off of heating and compressor cooling
 - Single speed or 2-speed fan
 - Setup with a heat pump:
 - Single-stage compressor heating or cooling
 - Reversing valve
 - Single speed or 2-speed fan
- Heat only systems or conventional heating:
 - On/Off type electric heat or gas heat
 - On/Off type radiant heating or proportional radiant heating

Note:

1. FCU with a single speed fan, 3-speed fan or variable speed fan, conventional or packaged units, and heat pumps support dehumidification when cooling is available.
2. You can configure unit heaters with FCU 2-pipe heat only setting with changeover set to heating mode.

Features and benefits

Table 1. TEC4000S features and benefits

Models	Feature	Benefit
All	All applications in one model	TEC4K-SB0-000 for BACnet MS/TP or TEC4K-SN0-000 for standalone operations. Both models have identical applications for HVAC control and house five binary outputs and three configurable outputs. See Applications for details.
	Backlit full-color LCD	Intuitive 4 in. color capacitive backlit touchscreen for quick and easy setup and operation, with AAA WCAG compliance on 95% of the screen. The new UI offers real-time

Models	Feature	Benefit
		control and status monitoring in an easy-to-read display, with an adjustable backlight that brightens during user interaction.
	Three configurable inputs	Extends the control and monitoring capability with three configurable inputs for analog or binary type inputs.
	Invisible occupancy sensor	Eliminates privacy concerns compared to PIR and lens-based solution where users presume there is a camera behind the lens. Provides energy savings in high energy usage commercial buildings without additional occupancy sensor installation time or cost.
	Integral humidity sensor	Provides humidity monitoring and activates dehumidification control when required.
	USB-C port	Use a USB-C drive to rapidly clone the configuration to additional units through a simple backup and restore, which reduces overall installation time. Also supports firmware upgrades in the field which improves the product support experience.
	Multiple language support	Supports English, Spanish, and French.
	Automatic proportional control tuning	Eliminates the need for manual PI tuning to reduce commissioning time and change-of-season recommissioning.
	Scheduled air circulation	Helps achieve the minimum air circulation requirement in an occupied space when the total fan runtime through heating or cooling does not meet the required runtime.
	Built-in schedule	The on board 7-day programmable schedule helps to achieve optimal energy saving results.

Models	Feature	Benefit
	Ready for hospitality	Optimizes widgets and enables user control to save energy in hospitality or similar scenarios.
	UI access control	Protects the thermostat from unauthorized use. Facility managers can apply a passcode lock and control the visibility of widgets from the UI to limit the user interaction with the thermostat display.
	Remote sensor averaging	Capable of averaging multiple external temperature or humidity sensor inputs on the input terminals with on board sensor reading.
	Dehumidification	Supports dehumidification sequence for applicable equipment configurations. For more information, see Applications .
	Digital branding	Show or hide the Johnson Controls logo on the UI.
TEC4K-SB0-000	Network access control	Protects the thermostat from unauthorized use. Facility managers can limit user interaction from the server. This feature improves the time it takes to make site-wide changes.
	BACnet scheduling	Compared to on-device schedule programming, BACnet scheduling enables facility managers to apply schedule definitions and changes from a connected BACnet server in a fraction of the time.
	Field-selectable BACnet MS/TP networked communication	Native BACnet stack of Johnson Controls. Enables the connection of the TEC4000S to a Johnson Controls network engine or third-party BACnet network.
	Inbuilt end-of-line switch	Eliminates the need for additional hardware to terminate a BACnet MS/TP field bus.
	Load shed capability	Offsets the heating and cooling setpoints by a fixed amount to save

Models	Feature	Benefit
		energy when utility costs are higher. Meets California Title 24 requirements defined in joint appendix JA5, section JA5.2.4 for demand response (DR). The trigger for this event is defined at the server or network engine level.
	Mobile Access Portal (MAP) gateway compatibility, MAP release 4.0 or later	Compatible with CWCVT dongle and CWA app. Enables remote configuration and commissioning through CWCVT and CWA app without the need to access a BACnet server or supervisory device.

► **Important:** The TEC4000S Series Thermostat is intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the thermostat controller 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 controller.

► **Important:** Le TEC4000S Series Thermostat est destiné à transmettre des données entrantes à un équipement dans des conditions normales de fonctionnement. Lorsqu'une défaillance ou un dysfonctionnement du thermostat risque de provoquer des blessures ou d'endommager l'équipement contrôlé ou un autre équipement, la conception du système de contrôle doit intégrer des dispositifs de protection supplémentaires. Veiller dans ce cas à intégrer de façon permanente d'autres dispositifs, tels que des systèmes de supervision ou d'alarme, ou des dispositifs de sécurité ou de limitation, ayant une fonction d'avertissement ou de protection en cas de défaillance ou de dysfonctionnement du thermostat controller.

Technical specifications

Table 1. TEC4000S Series technical specifications

Specification	Description
Power supply	19 VAC to 30 VAC, 50/60 Hz, 4 VA, Class 2 or safety extra-low voltage (SELV)
Housing color	Pantone: PQ-11-0601TCX. Best match RAL9016
USB port	FAT32 formatted 32 GB USB-C drive 2.0 or higher or 32 GB USB A drive with USB A to C adapter

Specification		Description
Binary output rating	On/off or floating control	19 VAC to 30 VAC, 15 mA minimum, 1 A maximum, 3 A in-rush, Class 2 or SELV, maximum 100 VA through the device
Analog output rating	0 VDC to 10 VDC	0 VDC to 10 VDC with 5 mA drive current Resolution ± 0.05 V, accuracy ± 0.1 V
Electrical/HVAC wire size		18 AWG (0.75 mm ²) to 22 AWG (0.34 mm ²) preferred
MS/TP network wire size		22 AWG (0.34 mm ²) optimal
Temperature ranges	Heating control	40°F to 90°F (4.5°C to 32°C)
	Cooling control	54°F to 100°F (12°C to 38°C)
Accuracy	Temperature	$\pm 0.9^\circ\text{F}$ at 70.0°F ($\pm 0.5^\circ\text{C}$ at 21.0°C) calibrated
	Humidity	$\pm 5\%$ RH from 20% RH to 80% RH at 50°F to 90°F (10°C to 32°C)
Storage temperature		-22°F to 158°F (-30°C to 70°C)
Minimum deadband		2°F (1°C) between heating and cooling
Occupancy sensor motion detection		Maximum of 120 angular degrees up to a range of 13 ft (4 m), 14.8 ft (4.5 m) at center
Ingress protection		IP30
Compliance	BACnet International	BACnet Testing Laboratories™(BTL) 135-2024 Listed BACnet Advanced Application Controller (B-AAC). BTL certificate pending.
	United States	UL Listed, File E27734, CCN XAPX, Under UL60730 FCC Compliant to CFR 47, Part 15, Subpart B, Subpart C, Clause 15.255, Class B. FCCID:OEJ-TEC4KL60GRS
	Canada	UL Listed, File E27734, CCN XAPX7, Under E60730 Industry Canada Compliant to ICES 003, RSS-210, IC: 279A-TEC4KL60GRS
	Europe	CE Mark – Johnson Controls declares that this product is in compliance with the essential requirements and

Specification		Description
		other relevant provisions of the RED Directive and the RoHS Directive.
		REACH
	Australia and New Zealand	RCM Mark, Australia/NZ Emissions Compliant
Dimensions, H x W x D		4.5 in. x 4.5 in. x 0.8 in. (115 mm × 115 mm × 20.3 mm)
Shipping weight		0.77 lb (0.35 kg)

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products.