Johnson Controls

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TEC2645-4

BACnet® MS/TP Networked Thermostat Controller with Single Proportional Output and One-Speed Fan Control

Description

The TEC2645-4 Thermostat Controller is a BACnet® Master-Slave/Token-Passing (MS/TP) networked device that provides control of two-pipe fan coils, cabinet unit heaters, or other equipment using a proportional 0 to 10 VDC control input and one-speed fan control. The technologically advanced TEC2645-4 Thermostat Controller features a Building Automation System (BAS) BACnet MS/TP communication capability that enables remote monitoring and programming for efficient space temperature control.

The TEC2645-4 Thermostat Controller features an intuitive user interface with backlit display that makes setup and operation quick and easy. The thermostat controller also employs a unique, Proportional-Integral (PI) control algorithm that virtually eliminates temperature offset associated with traditional, differential-based thermostat controllers.

Refer to the *TEC2645-4 BACnet MS/TP Networked Thermostat with Single Proportional Output and One-Speed Fan Control Product Bulletin (LIT-12011586)* for important product application information.

Features

- BACnet MS/TP communication—provides compatibility with a proven communication network; BACnet MS/TP is widely accepted by Heating, Ventilating, and Air Conditioning (HVAC) control suppliers
- password protection option—protects against unwanted thermostat controller tampering
- backlit Liquid Crystal Display (LCD)—offers real-time control status of the environment in easy-to-read, plain text messages with constant backlight that brightens during user interaction
- proportional 0 to 10 VDC control—offers additional application flexibility by providing more advanced control signals
- single/dual setpoint adjustment—enables user setpoint options to accommodate application
- override interface key—allows easy access for temporarily overriding the unoccupied mode
- simplified setpoint adjustment—enables the user to change the setpoint by simply pressing the **UP/DOWN** arrow keys
- two configurable binary inputs—provide additional inputs for advanced functions such as remote night setback, service or filter alarms, motion detector, and window status
- over 20 configurable parameters—enable the thermostat to adapt to any application, allowing installer parameter access without opening the thermostat cover

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Repair Information

If the TEC2645-4 Thermostat fails to operate within its specifications, refer to the *TEC2645-4 BACnet MS/TP Networked Thermostat with Single Proportional Output and One-Speed Fan Control Installation Instructions (Part No. 24-9890-1028)* for troubleshooting details. For a replacement thermostat, contact the nearest Johnson Controls® representative.

Selection Chart

Code Number	Description	Applications
TEC2645-4	Networked BACnet MS/TP, Two-Pipe, Proportional 0 to 10 VDC Control Output, and One-Speed Fan Control Thermostat	Control of Two-Pipe Fan Coils, Cabinet Unit Heaters, or Other Equipment Using a Proportional 0 to 10 VDC Control Input and One-Speed Fan Control

Accessories

Code Number	Description
TEC-6-PIR[1]	Cover with Occupancy Sensor
TE-636M-1[2]	Duct Mount Air Temperature Sensor
SEN-600-4[3]	Remote Indoor Air Temperature Sensor with Occupancy Override and LED
TE-636S-1	Strap-Mount Temperature Sensor
MS-BACEOL-0	RS485 End-of-Line Terminator

1. The TEC-6-PIR Accessory Cover can be used to replace the existing cover on a non-PIR TEC2645-4 Thermostat Controller to provide occupancy sensing capability.
2. Additional TE-636xx-x Series 10k ohm Johnson Controls Type II Thermistor Sensors are available; refer to the *TE-6300 Series Temperature Sensors Product Bulletin (LIT-216320)* for more details.
3. Only the occupancy override function can be accomplished using the SEN-600-4 with the TEC2645-4.
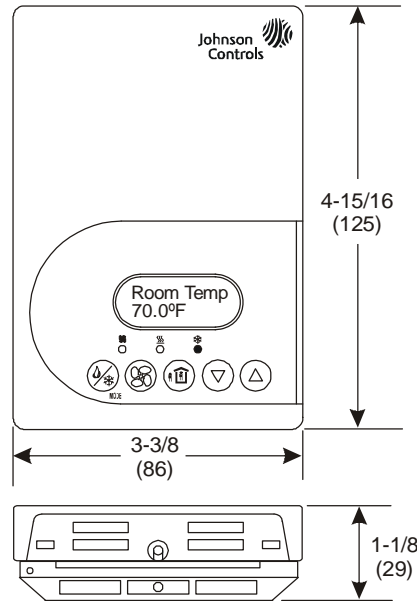
Thermostat Dimensions, in. (mm)

Technical Specifications

TEC2645-4 BACnet MS/TP Networked Thermostat Controller with Single Proportional Output and One-Speed Fan Control		
Power Requirements		19 to 30 VAC, 50/60 Hz, 2 VA (Terminals 4 and 5) at 24 VAC Nominal, Class 2 or Safety Extra-Low Voltage (SELV)
Analog Output Rating		0 to 10 VDC into 2k ohm Resistance (Minimum)
Fan Relay Output Rating		19 to 30 VAC, 1.0 A Maximum, 15 mA Minimum, 3.0 A In-Rush, Class 2 or SELV
Auxiliary Output Rating	**Triac Output**	19 to 30 VAC, 1.0 A Maximum, 15 mA Minimum, 3.0 A In-Rush
Binary Inputs		Voltage-Free Contacts across Terminal Scom to Terminals BI1, BI2, or UI3
Analog Inputs		Resistive Inputs (RS and UI3) for 10k ohm Johnson Controls Type II Negative Temperature Coefficient (NTC) Thermistor Sensors
Wire Size		18 AWG (1.0 mm Diameter) Maximum, 22 AWG (0.6 mm Diameter) Recommended
BACnet Standard		32 Devices Maximum; 4,000 ft Maximum
Temperature Sensor Type		Local 10k ohm Negative Temperature Coefficient (NTC) Thermistor
Resolution		±0.2F°/±0.1C°
Accuracy		±0.9F°/±0.5C° at 70.0°F/21.0°C Typical Calibrated
Temperature Range	**Backlit Display**	-40.0°F/-40.0°C to 122.0°F/50.0°C
	Heating Control	40.0°F/4.5°C to 90.0°F/32.0°C in 0.5° Increments
	Cooling Control	54.0°F/12.0°C to 100.0°F/38.0°C in 0.5° Increments
Minimum Deadband		2F°/1C° between Heating and Cooling
Ambient Conditions	**Operating**	32 to 122°F (0 to 50°C); 95% RH Maximum, Noncondensing
	Storage	-22 to 122°F (-30 to 50°C); 95% RH Maximum, Noncondensing
Compliance	**United States**	UL Listed, File E27734, CCN XAPX, Under UL 873, Temperature Indicating and Regulating Equipment
		FCC Compliant to CFR 47, Part 15, Subpart B, Class A
	Canada	UL Listed, File E27734, CCN XAPX7, Under CSA C22.2 No. 24, Temperature Indicating and Regulating Equipment
		Industry Canada, ICES-003
	European Union	CE Mark, EMC Directive 2004/108/EC
	Australia and New Zealand	C-Tick Mark, Australia/NZ Emissions Compliant
	BACnet International	BACnet Testing Laboratories™ (BTL) 135-2001 Listed BACnet Application Specific Controller (B-ASC)
Shipping Weight		0.75 lb (0.34 kg)