Code No. LIT-1900627
Issued February 8, 2010

TEC21x6(H)-4 and TEC21x6H-4+PIR Series

N2 Networked Thermostat Controllers with Dehumidification Capability, Fan Control, and Occupancy Sensing Capability

Description

The TEC21x6(H)-4 and TEC21x6H-4+PIR Series Thermostat Controllers are N2 networked devices that provide control of two- or four-pipe fan coils, cabinet unit heaters, or other equipment using on/off, floating, or proportional 0 to 10 VDC control input, three speeds of fan control, and dehumidification capability. The TEC21x6H-4+PIR Series Thermostat Controllers have occupancy sensing capability built into the device. These devices maximize up to 30% energy savings in high-energy usage light commercial buildings, such as schools and hotels, during occupied times by using additional standby setpoints.

The technologically advanced TEC21x6(H)-4 and TEC21x6H-4+PIR Series Thermostat Controllers feature a Building Automation System (BAS) N2 Bus communication capability that enables remote monitoring and programming for efficient space temperature control. Specific models are available to accommodate commercial and hospitality applications.

The TEC21x6(H)-4 and TEC21x6H-4+PIR Series Thermostat Controllers feature an intuitive User Interface (UI) with backlit display that makes setup and operation quick and easy. The thermostat controllers also employ a unique, Proportional-Integral (PI) time-proportioning algorithm that virtually eliminates temperature offset associated with traditional, differential-based thermostat controllers.

Refer to the *TEC21x6(H)-4 and TEC21x6H-4+PIR Series N2 Networked Thermostat Controllers with Dehumidification Capability, Fan Control, and Occupancy Sensing Capability Product Bulletin (LIT-12011601)* for important product application information.

TEC21x6-4 Series Thermostat Controller

TEC21x6H-4+PIR Series Thermostat Controller

Features

- BAS N2 communication — provides compatibility with a proven communication network; N2 Bus is widely accepted by Heating, Ventilating, and Air Conditioning (HVAC) control suppliers
- onboard occupancy sensor (Passive Infrared [PIR] Models) — provides energy savings without additional installation time and cost
- password protection option — protects against unwanted thermostat controller tampering
- integral humidity sensing capability (dehumidification models) — increases occupancy comfort by providing dehumidification
- backlit Liquid Crystal Display (LCD) — offers real-time control status of the environment in easy-to-read, English plain text messages with constant backlight that brightens during user interaction
- on/off, floating, or proportional 0 to 10 VDC control — offers additional application flexibility by providing more advanced control signals
- three speeds of fan control — provide easy **FAN** speed selection via the interface key, to meet the application requirements
- single/dual setpoint adjustment — enables user setpoint options to accommodate application
- override interface key (commercial models) — allows easy access for temporarily overriding the unoccupied mode
- temperature scale selector key (hospitality models) — offers guests the ability to select a Fahrenheit (°F) or Celsius (°C) temperature scale display
- 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
- optional discharge air sensor — monitors unit efficiency

Repair Information

If a TEC21x6(H)-4 or TEC21x6H-4+PIR Series Thermostat fails to operate within its specifications, replace the unit. For a replacement thermostat, contact the nearest Johnson Controls® representative.

Selection Chart

Thermostat Controller Models (Part 1 of 2)

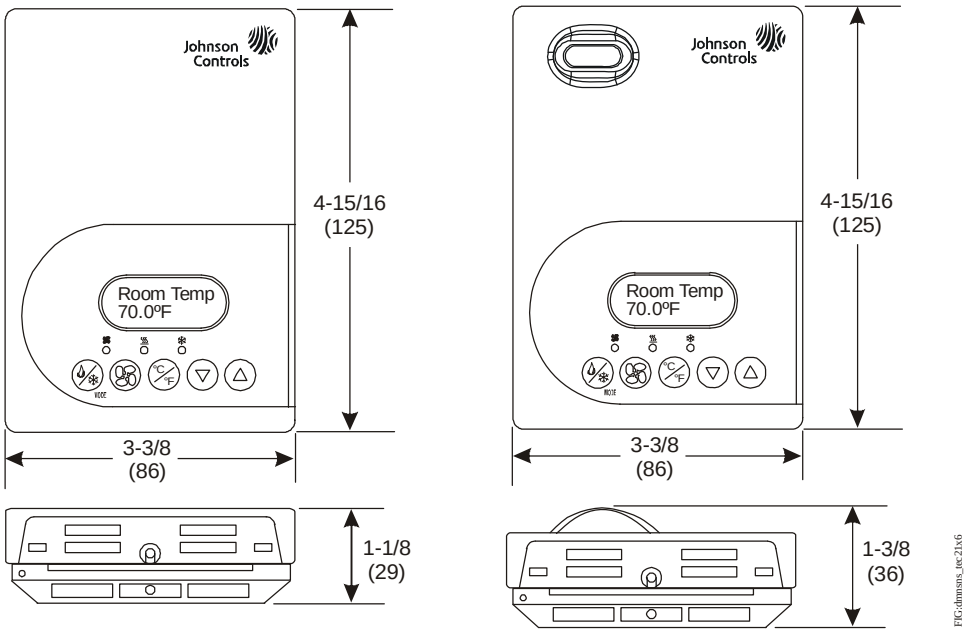
Code Number	Control Outputs	Onboard Occupancy Sensor	Dehumidification Capability	Application
TEC2116-4	Two On/Off	No	No	Commercial Market
TEC2116H-4	Two On/Off	No	No	Hospitality Market
TEC2116H-4+PIR	Two On/Off	Yes	No	Hospitality Market
TEC2126-4	Two On/Off or Floating	No	No	Commercial Market
TEC2126H-4	Two On/Off or Floating	No	No	Hospitality Market
TEC2126H-4+PIR	Two On/Off or Floating	Yes	No	Hospitality Market
TEC2136-4	Two On/Off or Floating	No	Yes	Commercial Market
TEC2136H-4	Two On/Off or Floating	No	Yes	Hospitality Market

TEC21x6(H)-4 and TEC21x6H-4+PIR Series N2 Networked Thermostat Controllers with Dehumidification Capability, Fan Control, and Occupancy Sensing Capability

Thermostat Controller Models (Part 2 of 2)

Code Number	Control Outputs	Onboard Occupancy Sensor	Dehumidification Capability	Application
TEC2136H-4+PIR	Two On/Off or Floating	Yes	Yes	Hospitality Market
TEC2146-4	Two Proportional 0 to 10 VDC	No	No	Commercial Market
TEC2146H-4	Two Proportional 0 to 10 VDC	No	No	Hospitality Market
TEC2146H-4+PIR	Two Proportional 0 to 10 VDC	Yes	No	Hospitality Market
TEC2156-4	Two Proportional 0 to 10 VDC	No	Yes	Commercial Market
TEC2156H-4	Two Proportional 0 to 10 VDC	No	Yes	Hospitality Market
TEC2156H-4+PIR	Two Proportional 0 to 10 VDC	Yes	Yes	Hospitality Market

Dimensions



TEC21x6H-4 and TEC21x6H-4+PIR Thermostat Controller Dimensions, in. (mm)

Accessories (Order Separately)

Code Number	Description
SEN-600-1	Remote Indoor Air Temperature Sensor
TE-6361M-1[1]	Duct Mount Air Temperature Sensor
SEN-600-4	Remote Indoor Air Temperature Sensor with Occupancy Override and LED
TE-636S-1	Strap-Mount Temperature Sensor
TEC-6-PIR[2]	Commercial Fan Coil Cover with Occupancy Sensor
TEC-6H-PIR[2]	Hospitality Fan Coil Controller Cover with Occupancy Sensor

1. 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.
2. The TEC-6-PIR and TEC-6H-PIR Accessory Covers can be used to replace the existing cover on a non-PIR TEC21x6(H)-4 Series Thermostat Controller to provide occupancy sensing capability.

TEC21x6(H)-4 and TEC21x6H-4+PIR Series N2 Networked Thermostat Controllers with Dehumidification Capability, Fan Control, and Occupancy Sensing Capability

Technical Specifications

TEC21x6(H)-4 and TEC21x6H-4+PIR Series N2 Networked Thermostat Controllers with Dehumidification Capability, Fan Control, and Occupancy Sensing Capability		
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)
Relay/Triac Contact Rating	**On/Off and Floating Control**	19 to 30 VAC, 1.0 A Maximum, 15 mA Minimum, 3.0 A In-Rush, Class 2 or SELV
Analog Output Rating	**Proportional Control**	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
Auxiliary Output Rating	**Triac Output**	19 to 30 VAC, 1.0 A Maximum, 15 mA Minimum, 3.0 A In-Rush
Analog Inputs		Resistive Inputs (RS and UI3) for 10k ohm Johnson Controls Type II Negative Temperature Coefficient (NTC) Thermistor Sensors
Binary Inputs		Voltage-Free Contacts across Terminal Scom to Terminals BI1, BI2, or UI3
Temperature Sensor Type		Local 10k ohm NTC Thermistor
Wire Size		18 AWG (1.0 mm Diameter) Maximum, 22 AWG (0.6 mm Diameter) Recommended
Temperature Range	**Backlit Display**	-40.0°F/-40.0°C to 122.0°F/50.0°C in 0.5° Increments
	Heating Control	40.0°F/4.5°C to 90.0°F/32.0°C
	Cooling Control	54.0°F/12.0°C to 100.0°F/38.0°C
Accuracy	**Temperature**	±0.9F°/±0.5C° at 70.0°F/21.0°C Typical Calibrated
	Humidity	±5% RH from 20 to 80% RH at 50 to 90°F (10 to 32°C)
Default 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 CAN/CSA C22.2 No. 24, Temperature Indicating and Regulating Equipment
		Industry Canada, ICES-003
	Europe	CE Mark, EMC Directive 2004/108/EC
	Australia and New Zealand	C-Tick Mark, Australia/NZ Emissions Compliant
Shipping Weight		TEC21x6(H)-4 Models: 0.75 lb (0.34 kg) TEC21x6H-4+PIR Models: 0.77 lb (0.35 kg)