CHV-TSTATEX

infiNET EX® Thermostat

> Wall mount heat/cool thermostat for baseboard, forced air, and heat pump[1] HVAC systems

> Crestron system integration via infiNET EX® wireless network

> Saves on energy costs with advanced programming abilities

> Supports two remote temperature sensors

> Fail-safe mode allows operation in event of control system failure

> Backlit LCD display

> Fan coil unit control[2] (CHV-TSTATEX-FCU model only)

> Available in white, black, or almond finish

The CHV-TSTATEX is a wireless thermostat featuring infiNET EX® technology. The CHV-TSTATEX installs just like a conventional thermostat because no extra wires are needed to connect to the control system. Although functional as a standalone thermostat, the CHV-TSTATEX delivers enhanced functionality as part of a complete Crestron® automation system. Integrating HVAC with a Crestron system can help lower energy bills and increase user friendliness.

The CHV-TSTATEX is designed for one- or two-stage heating and one- or two-stage cooling control of baseboard, forced air, heat pump[1], and dual-fuel heat pump[1] HVAC systems. The large backlit LCD display provides a clear view of temperature, set point, system mode, fan mode, system status, and setup functions. Climate control features include separate heating and cooling set points, and adjustable anticipators to prevent overshooting the desired temperature. Continuous fan operation can be selected when needed for increased circulation.

Fan Coil Unit Support

The CHV-TSTATEX-FCU model of the infiNET EX thermostat provides the functionality of controlling fan coil units[2]. Aesthetically identical to the base model, the CHV-TSTATEX-FCU has custom firmware, display programming and terminal labels designed for three-speed fan applications. The CHV-TSTATEX-FCU supports on/off control of the valves and the fan in four-pipe fan coil applications, eliminating the need for an additional device dedicated to controlling the fan coil unit itself.

infiNET EX Communications

Ultra-reliable infiNET EX wireless technology provides steadfast two-way RF communications throughout a residential or commercial structure without the need for physical control wiring. Employing a 2.4 GHz mesh network topology, each infiNET EX device functions as an expander, passing command signals through to every other infiNET EX device within range (approximately 150 feet or 46 meters indoors), ensuring that every command reaches its intended destination without disruption[3].

The CHV-TSTATEX communicates with a Crestron control system via an infiNET EX Wireless Gateway (model CEN-RFGW-EX, DIN-AP3MEX, or MC3[4]). Up to 100 infiNET EX devices may coexist on a single wireless network, and every non-battery-powered device that is added to the network effectively increases the range and stability of the entire network by providing multiple redundant signal paths[3]. Built-in Dynamic Frequency Allocation continuously monitors RF conditions, automatically selecting the clearest channel to prevent interference from neighboring networks, cordless phones, and microwaves.
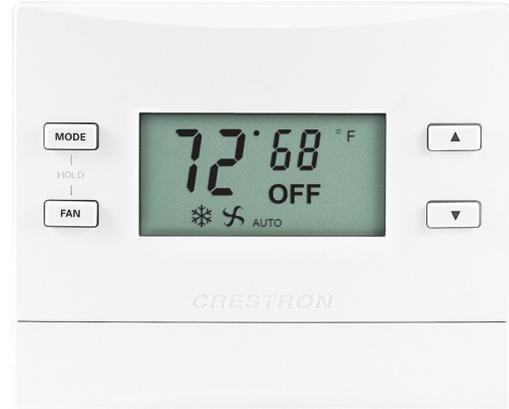
Automation System Integration

The wireless connection to the control system allows the functions of the CHV-TSTATEX to be controlled from touch screens, keypads, wireless remotes, computers, or even a mobile device. It supports unlimited flexibility for remote control, scheduling, and integration with other devices and systems. In the event that communication with the control system is disrupted for any reason, the CHV-TSTATEX will remain operable to control the HVAC system.

Easy Installation

Because no control wires are required, the CHV-TSTATEX can be installed just like any conventional thermostat. To simplify installation, physical switches are provided for the most critical configuration options, including heat/cool type, heat pump behavior, power settings, number of heating/cooling stages, and fan options. These settings allow HVAC contractors to install and test the thermostats prior to the appearance of a Crestron system integrator.

Remote Sensors

Optional remote temperature sensors can be connected to the CHV-TSTATEX for enhanced flexibility and optimized performance. Climate can be regulated according to an average of multiple sensors, or the built-in sensors can be disabled entirely to allow the CHV-TSTATEX to be installed out of view. For heat pump-type systems, outdoor temperature can be monitored to optimize system performance. Compatible sensors include the CHV-RTS and the CHV-RSS.

SPECIFICATIONS

Wireless

RF Transceiver: infiNET EX® 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), default channel 15; IEEE 802.15.4 compliant

Range (typical): 150 ft (46 m) indoor, 250 ft (76 m) outdoor to nearest mesh network device(s); subject to site-specific conditions and individual device capabilities[3]

Gateway: Requires an infiNET EX gateway[4]

CRESTRON®

Connectors

HVAC: CHV-TSTATEX Model:
7 terminal blocks comprising the following (top row, listed left to right):
RS2: Remote sensor 2 (outdoor)
RS1: Remote sensor 1 (indoor)
RSR: Remote sensor return
RSR: Remote sensor return (duplicated for easier wiring)
W2: Heat, second stage
W1: Heat, first stage
RH: Heat return

7 terminal blocks comprising the following (bottom row, listed left to right)
B: Auto changeover (inverted); switched to RC during heat calls
O: Auto changeover; switched to RC during cool calls
G: Fan
Y2: Cool, second stage
Y1: Cool, first stage
RC: Cool return
C: 24 VAC common

CHV-TSTATEX-FCU Model:
7 terminal blocks comprising the following (top row, listed left to right):
RS2: Remote sensor 2 (outdoor)
RS1: Remote sensor 1 (indoor)
RSR: Remote sensor return
RSR: Remote sensor return (duplicated for easier wiring)
N/C: Unused
W: Heat
N/C: Unused

7 terminal blocks comprising the following (bottom row, listed left to right):
24C: 24V supply
R: 24V return
Y: Cool
N/C: Unused
GH: Fan high
GM: Fan medium
GL: Fan low

Buttons

MODE: Cycles through available System Modes: OFF, HEAT, AUX HEAT ONLY (for heatpump or dual-fuel systems only), and COOL
FAN: Toggles fan setting between FAN AUTO and FAN ON
RAISE: Raises the set point
LOWER: Lowers the set point
HOLD (combination): Pressing MODE and FAN buttons simultaneously enters/exits HOLD mode
SETUP (combination): Holding the FAN button, then pressing the RAISE and LOWER buttons simultaneously for 5 seconds enters SETUP mode; pressing mode button advances to next setup parameter/function; pressing RAISE or LOWER adjusts value of current setup parameter or executes current setup function; pressing FAN button exits SETUP mode

Display

Type: Backlit LCD with (2) large 7-segment digits, (2) small 7-segment digits, (14) dedicated symbols;
Displays ambient temperature, set point, system mode, fan setting, call activity, low battery, RF or control system communication errors, firmware download progress, setup parameter/function and value

Measurement Range

Ambient Temperature: -10° to 110°F (-23° to 43°C)
Display Limits: -9° to 99°F (-9° to 43°C)

Temperature Tolerance

Over Full Range: ±1ºF (±0.5ºC)
At Room Temperatures: ±1ºF (+0.4/-0.2ºC)

Setpoint Range

Heat Set Point: 38° to 89°F (3° to 32°C)
Cool Set Point: 59° to 99°F (15° to 37°C), or 38° to 99°F (3° to 37°C) extended cool mode enabled

Relay Rating

1 Amp @ 40 Volts DC or 24 Volts AC (nominal)

Environmental

Temperature: -10° to 110°F (-23° to 43°C)
Humidity: 10% to 90% RH (non-condensing)

Power Requirements

24V: 0.24 Watts (10 mA) @ 24 Volts AC, supplied by heating or cooling system
Battery: (2) AA batteries required, estimated 1 year normal operation

Housing

Plastic, surface-mountable to the front of a horizontally oriented 1-gang electrical box

Dimensions

Height: 4.51 in (115 mm)
Width: 5.50 in (141 mm)
Depth: 1.02 in (26 mm)

Weight

6.7 oz (190 g)

MODELS & ACCESSORIES

Available Models

CHV-TSTATEX-A-T: infiNET EX® Thermostat, Almond Textured
CHV-TSTATEX-B-T: infiNET EX® Thermostat, Black Textured
CHV-TSTATEX-W-T: infiNET EX® Thermostat, White Textured
CHV-TSTATEX-FCU-A-T: infiNET EX® Thermostat, Fan Coil Unit, Almond Textured
CHV-TSTATEX-FCU-B-T: infiNET EX® Thermostat, Fan Coil Unit, Black Textured
CHV-TSTATEX-FCU-W-T: infiNET EX® Thermostat, Fan Coil Unit, White Textured

Available Accessories

CHV-RTS: Remote Temperature Sensor
CHV-RSS: Remote Slab Sensor and Outdoor Temperature Sensor
CEN-RFGW-EX: infiNET EX® Wireless Gateway
CEN-RFGW-EX-PWE: infiNET EX® Wireless Gateway w/PoE Injector
MC3: 3-Series Control System® w/infiNET EX®
DIN-AP3MEX: DIN Rail 3-Series® Automation Processor w/infiNET EX®
CLW-EXPEX-GD-W-T: infiNET EX® Wireless Expander, Ground Pin Down, White Textured
GLA-EXPEX: Crestron Green Light® Wireless Expander for infiNET EX® Networks

Notes:

1. Heat pump systems require an outdoor temperature sensor; contact Crestron for additional design assistance.
2. Four-pipe fan coil units are supported.
3. Any infiNET EX device that provides expander functionality will effectively extend the range of the wireless network beyond the initial range of the gateway. Battery-powered infiNET EX devices do not provide expander functionality. To achieve expander functionality, the CHV-TSTATEX must be connected to a 24-Volt power source. Wireless networks composed pre-dominantly of battery-powered devices may need additional infiNET EX expanders, such as the CLW-EXPEX or GLA-EXPEX (sold separately), or other non-battery-powered infiNET EX devices to ensure proper functionality of the network and battery life for the devices. Refer to the **Best Practices for Installation and Setup of Crestron RF Products, Doc. #6689** for complete system design guidelines, or contact Crestron True Blue Support for further assistance.
4. Item(s) sold separately.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

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