

Crestron **CHV-RTS & CHV-RTHS** Remote Temperature & Humidity Sensors

Installation Guide



Regulatory Compliance

As of the date of manufacture, the CHV-RTS and CHV-RTHS have been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.



Federal Communications Commission (FCC) Compliance Statement

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Industry Canada (IC) Compliance Statement

CAN ICES-3(B)/NMB-3(B)

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

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Remote Temperature & Humidity Sensors: CHV-RTS & CHV-RTHS

Introduction

The CHV-RTS and CHV-RTHS are wall-mounted remote temperature and relative humidity sensors* designed for use with select Crestron[®] thermostats. Using CAT5 or similar low-capacitance wire, the remote sensor may be mounted up to 500 feet (152 meters) from the thermostat. One-piece mounting and a single non-polarized twisted-pair connection make the CHV-RTS and CHV-RTHS simple to install. The 1 1/2 inch (39 mm) diameter face of each protrudes just 1/8 inch (3 mm) from the wall surface and is easily painted or wallpapered to blend into the wall surface.

Up to four CHV-RTS sensors may be connected to a single CHV-THSTAT, CHV-TSTAT, CHV-TSTATEX, or CHV-TSTATEX-FCU thermostat (all sold separately). Up to two CHV-RTHS sensors may be connected to a single CHV-THSTAT or CHV-TSTAT thermostat (all sold separately).

NOTE: When connecting a CHV-RTS or CHV-RTHS sensor to a CHV-THSTAT or a CHV-TSTAT (models without infiNET EX[®]), note that thermostat firmware version 1.xx supports two optional remote sensors, while thermostat firmware version 2.xx and later supports four optional remote sensor inputs, in any combination, for each thermostat.

NOTE: If the maximum number of sensors is exceeded, some of the sensors will be ignored by the system.

* Humidity sensor available only on CHV-RTHS.

Specifications

Specifications for the CHV-RTS and CHV-RTHS are listed in the following table.

CHV-RTS and CHV-RTHS Specifications

SPECIFICATION	DETAILS
Measurement Range Indoor Temperature Outdoor Temperature Humidity*	0° to 110° F (-18° to 43° C) -30° to 120° F (-35° to 49° C) 0% to 100% RH
Temperature Tolerance Over Full Range At Room Temperature	±1° F (±0.5° C) +1° F (+0.1 / -0.4° C)
Humidity Tolerance*	±5%
Connection	10 in (254 mm) 22 AWG twisted-pair pigtail; Non-polarized connection to remote sensor input of CHV-TSTAT, CHV-THSTAT, CHV-TSTATEX, CHV-TSTATEX-FCU; Maximum Cable Length: 500 ft (152 m) via CAT5
Enclosure	Cylindrical plastic, drywall mountable in a 1 in (25 mm) diameter round hole; Protrudes 1/8 in (3 mm) from wall surface; Primed metal cap suitable for paint or wallpaper
Dimensions Diameter Depth	1.50 in (39 mm) 2.22 in (57 mm)

* CHV-RTHS only.

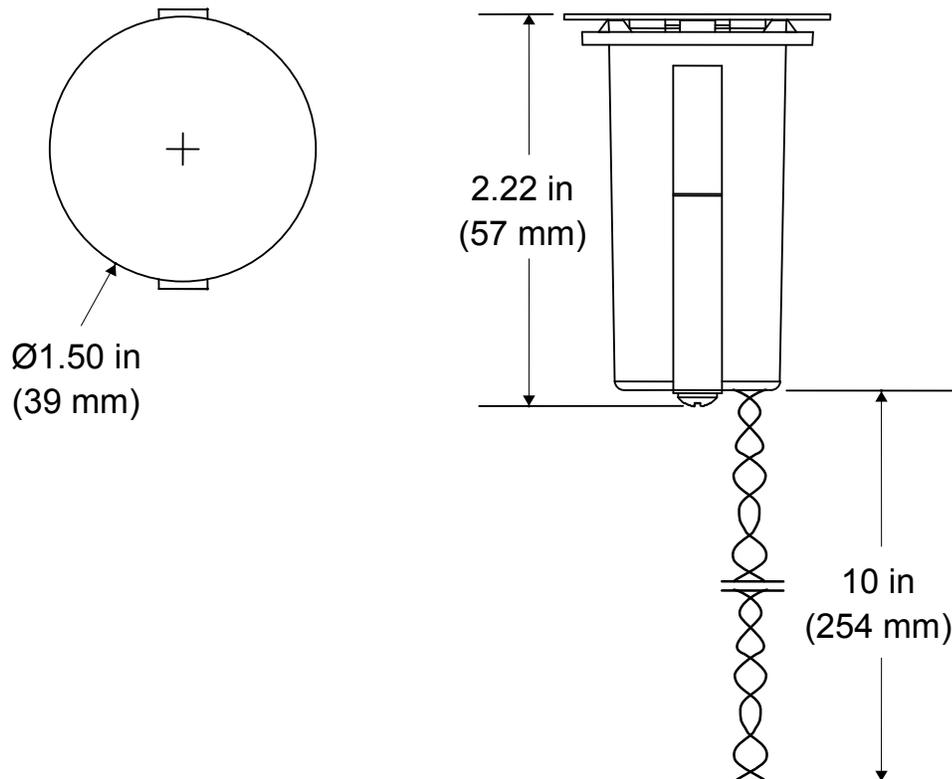
Physical Description

This section provides information on the connections, controls, and indicators available on the CHV-RTS and CHV-RTHS.

CHV-RTS and CHV-RTHS Physical View



CHV-RTS and CHV-RTHS Overall Dimensions (Top and Side Views)



Setup

Installation

NOTE: Ensure the installation location is not close to a heat or humidity source and is away from direct sunlight, skylights, and windows. When mounting the sensor outdoors, do not place in direct sunlight and do not place where the sensor is directly exposed to precipitation. Sensors are suitable for mounting in dry or damp locations as defined by the National Electrical Code.

Complete the following procedure to install the CHV-RTS or CHV-RTHS.

1. Locate an area on the wall that is free of miscellaneous wiring and studs.
2. Make a small hole near the center of the desired area to verify the location is suitable.
3. Drill or cut a 1 inch (25 mm) diameter circular hole in the wall at the desired position.
4. Route the wires from the thermostat to the sensor. For thermostat connection details, refer to the Crestron CHV-TSTAT and CHV-THSTAT Thermostats Operations and Installation Guide (Doc. 8163), the CHV-TSTATEX Thermostat Operations and Installation Guide (Doc. 6989), or the CHV-TSTATEX-FCU Thermostat Operations and Installation Guide (Doc. 7206) at www.crestron.com/manuals.

NOTE: Crestron strongly recommends low-capacitance twisted pair wire such as CAT3 (up to 250 feet (76 meters)) or CAT5 (up to 500 feet (152 meters)) network cable when using remote sensors. Other cable types are satisfactory, provided the total capacitance is less than 7000 pF. Maximum distance from sensor to thermostat is 500 feet (152 meters).

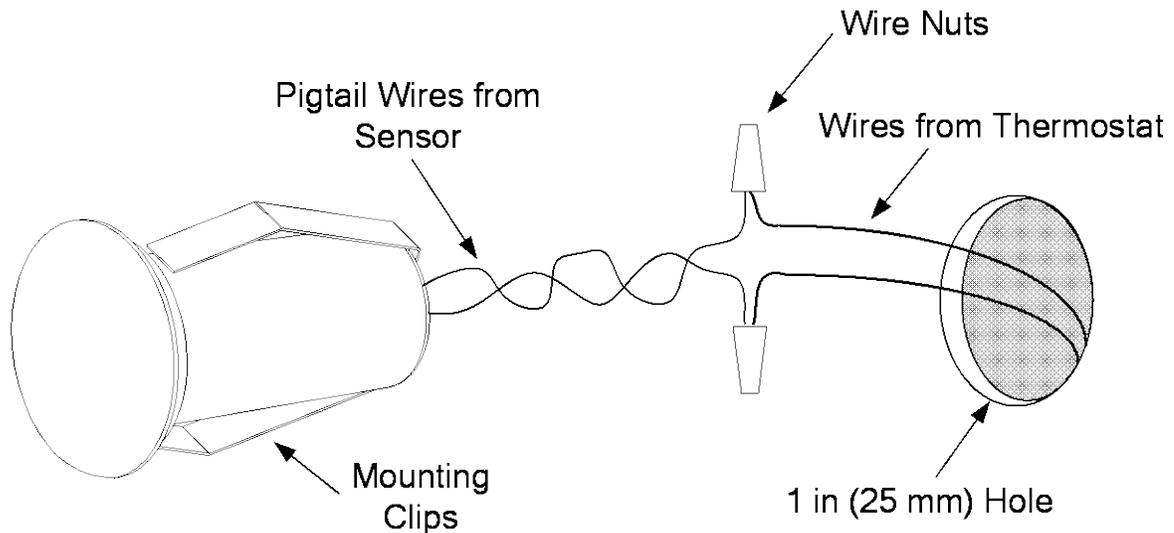
Crestron CHV-RTS & CHV-RTHS Temperature & Humidity Sensors

NOTE: In situations where ordinary two-conductor thermostat wire (18 to 20 gauge) has been installed, it may be used for runs up to 100 feet (30 meters). This is not a preferred method of installation.

NOTE: If multi-conductor cables are used, the unused conductors must NOT be used for other purposes and must be left unconnected at both ends.

5. Connect the wires from the thermostat to the 10 inch (254 mm) sensor pigtail (22 AWG x 12" black/black twisted pair) using wire nuts. The wires are non-polarized. (Refer to “Hardware Hookup,” below.)

Wiring the CHV-RTS and CHV-RTHS



6. Press fit the sensor into the hole; the clips on either side of the sensor hold it in place.

NOTE: The face of the sensor may be painted or wallpapered to match the wall. However, keep the small gap around the outer edge clear of any obstructions.

Hardware Hookup

CHV-RTS and CHV-RTHS sensors connect to the terminal blocks on the back plate of the CHV-TSTAT, CHV-THSTAT, CHV-TSTATEX, and CHV-TSTATEX-FCU thermostats (all sold separately).

NOTE: Sensor wiring is non-polarized.

NOTE: Up to two CHV-RTS sensors or one CHV-RTHS sensor may be connected to a single channel.

NOTE: Use a separate run of wire for each sensor.

NOTE: Sensor lines should not be run parallel to any other wiring. Lines should cross other cables at right angles.

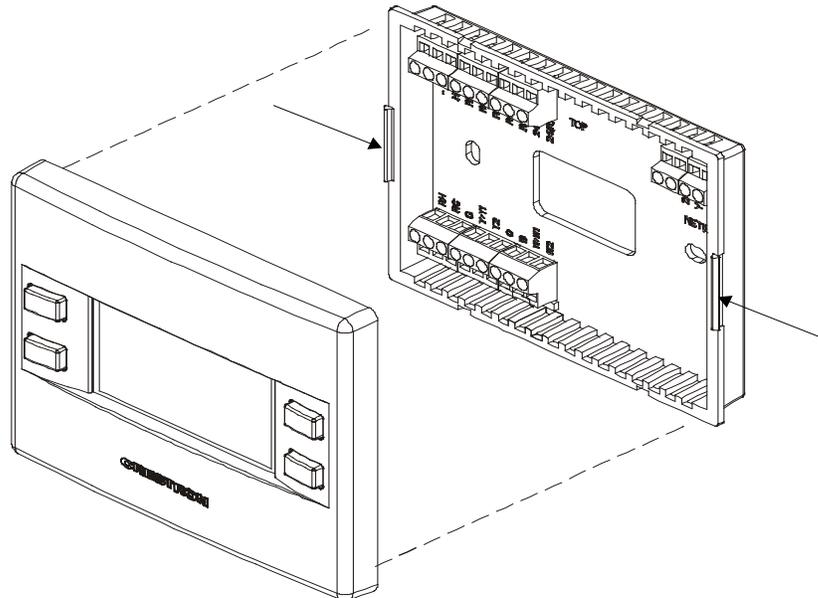
Complete the following procedure to connect the CHV-RTS or CHV-RTHS to the system:

1. Turn off the circuit breaker.

CAUTION: Do not press on the LCD display of the thermostat during this procedure, as this may cause the screen to crack.

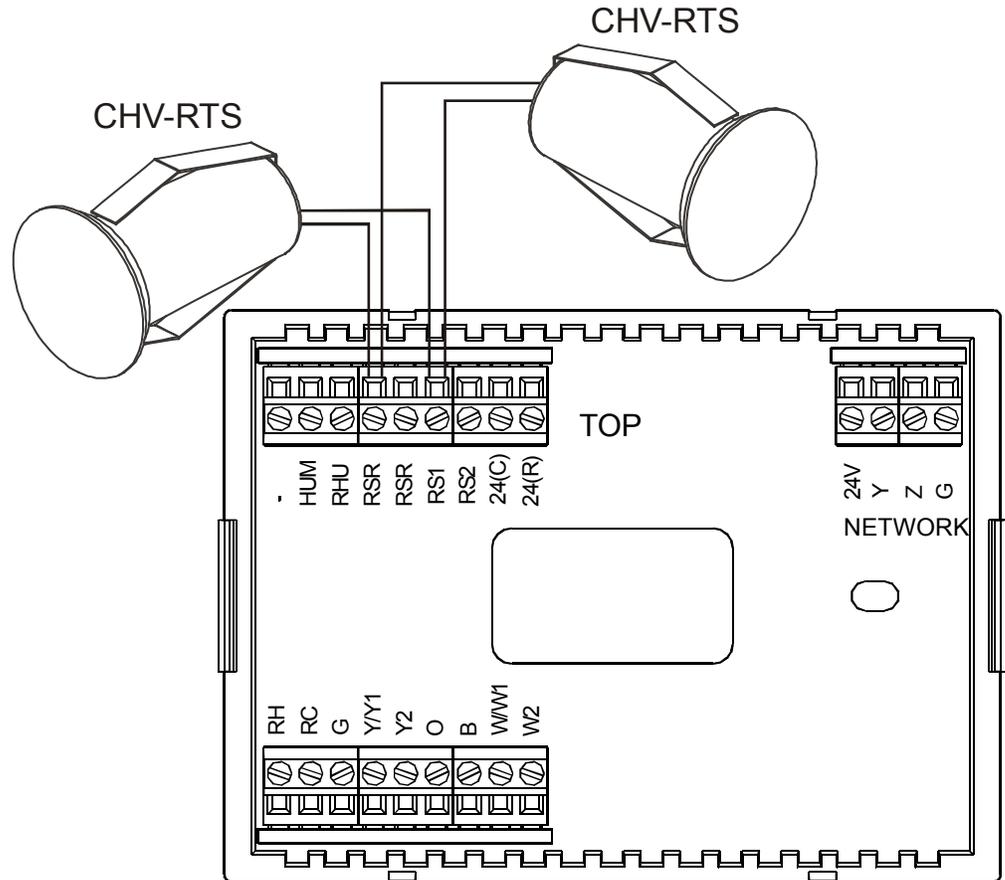
2. Separate the front plate from the back plate of the thermostat (it may be necessary to exert force when removing the faceplate).

Front Plate Removal



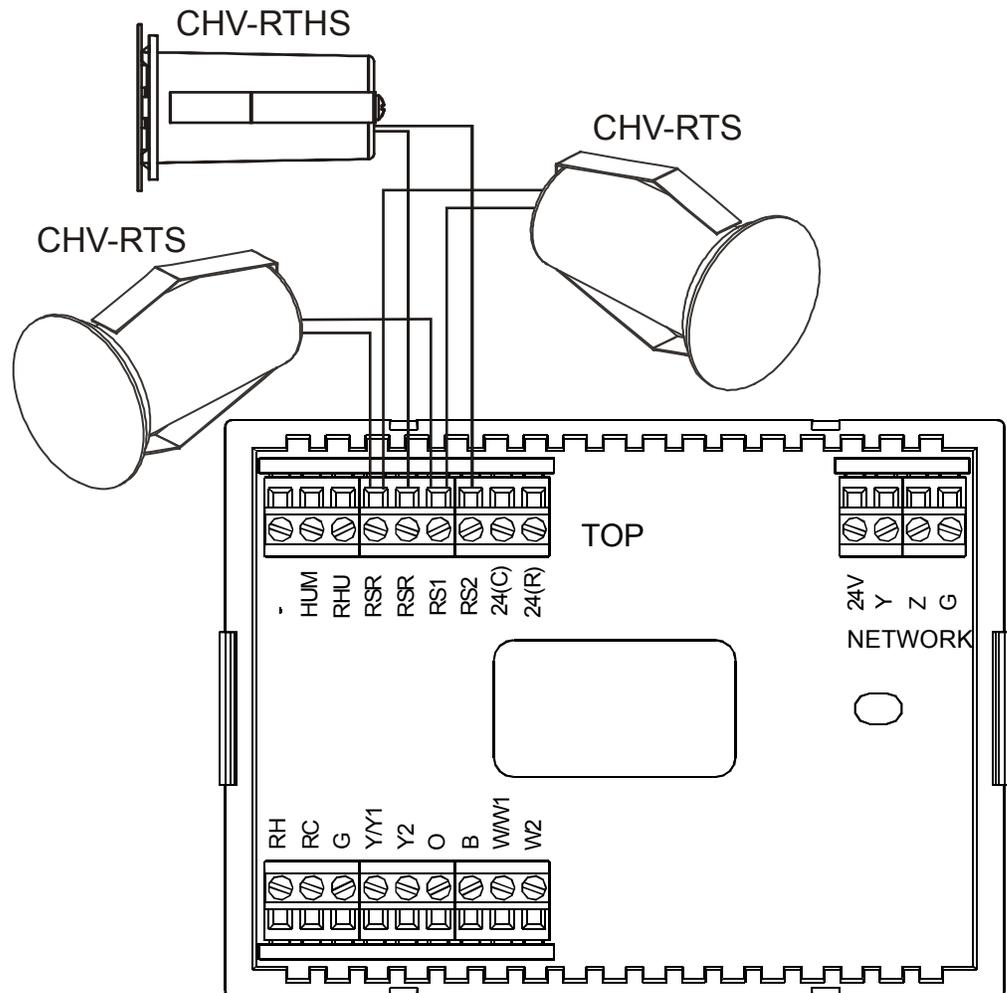
3. To connect a sensor(s) to a single channel on the thermostat, connect up to two CHV-RTS devices or one CHV-RTHS to the **RS1** and **RSR** terminals as shown in the following illustration.

CHV-RTS (Single Channel) Hookup (Two Sensors Shown)



4. To connect sensors using two channels on the thermostat, wire up to two CHV-RTS sensors to the **RS1** and **RSR** terminals and up to two additional CHV-RTS sensors (or one CHV-RTHS sensor) to the **RS2** and **RSR** terminals as shown in the illustration on the following page.

*Dual CHV-RTS and Single CHV-RTHS Hookup
(Three Sensors Shown)*



5. Note the orientation of the front plate connection pins and reattach the front plate (making sure the front plate snaps in place and no wires are pinched).

For additional information about the thermostat connections, refer to the CHV-TSTAT and CHV-THSTAT Thermostats Operations and Installation Guide (Doc. 8163), the CHV-TSTATEX Thermostat Operations and Installation Guide (Doc. 6989), or the CHV-TSTATEX-FCU Thermostat Operations and Installation Guide (Doc. 7206).

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

CHV-RTS and CHV-RTHS Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
The thermostat is not receiving a signal.	Improper connection between the sensor and the thermostat.	Check the connection between the sensor and thermostat (refer to “Hardware Hookup,” on page 5).
	Incomplete (open) circuit exists in wiring.	Check the connection between the sensor and thermostat (refer to “Hardware Hookup,” on page 5).

Reference Documents

All documents mentioned in this guide are available at www.crestron.com/manuals.

List of Related Reference Documents

DOCUMENT TITLE
CHV-TSTAT and CHV-THSTAT Thermostats
CHV-TSTATEX Thermostat
CHV-TSTATEX-FCU Thermostat

Further Inquiries

To locate specific information or resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or, for assistance within a particular geographic region, refer to the listing of Crestron worldwide offices at www.crestron.com/offices.

To post a question about Crestron products, log onto Crestron's Online Help at www.crestron.com/onlinehelp. First-time users must establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the CHV-RTS and CHV-RTHS, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange or service without prior authorization from Crestron. To obtain warranty service for Crestron products, contact an authorized Crestron dealer. Only authorized Crestron dealers may contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number and return address.
2. Products may be returned for credit, exchange or service with a Crestron Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by Crestron, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

Crestron Limited Warranty

Crestron Electronics, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from Crestron, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touch screen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from Crestron or an authorized Crestron dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

Crestron shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended or if it has been subjected to misuse, accidental damage, modification or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall Crestron be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. Crestron is not liable for any claim made by a third party or made by the purchaser for a third party.

Crestron shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, Crestron makes no other warranties, expressed or implied, nor authorizes any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.



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Specifications subject to
change without notice.