

# Crestron **CHV-RTS & CHV-RTHS**

## Remote Temperature/Humidity Sensors

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### Installation Guide



This document was prepared and written by the Technical Documentation department at:



Crestron Electronics, Inc.

15 Volvo Drive

Rockleigh, NJ 07647

1-888-CRESTRON

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# Contents

<b>Remote Temperature/Humidity Sensors: CHV-RTS/CHV-RTHS</b>	<b>1</b>
Introduction.....	1
Specifications .....	2
Physical Description .....	2
Industry Compliance .....	3
Installation .....	4
Hardware Hookup.....	5
Problem Solving .....	8
Further Inquiries.....	8
Future Updates .....	8
Return and Warranty Policies.....	9
Merchandise Returns / Repair Service.....	9
CRESTRON Limited Warranty .....	9



# Remote Temperature/Humidity Sensors: CHV-RTS/CHV-RTHS

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## Introduction

The CHV-RTS is a remote temperature sensor.

The CHV-RTHS is a remote temperature/humidity sensor.

Both products connect to the Crestron family of remote controlled thermostat products, which includes two models: CHV-TSTAT and CHV-THSTAT series. The thermostats are available with and without a humidity sensor (all thermostats contain a temperature sensor).

Firmware release 1.0 supports the addition of two optional remote sensors in any combination (two temperature, two temperature/humidity, or one of each).

Firmware release 2.0 supports the addition of up to four optional remote sensors, in any combination, for each thermostat.

Outdoor conditions can be imported from the optional external sensors CHV-RTS or CHV-RTHS, temperature and temperature/humidity respectively.

### *Functional Summary*

- Small and unobtrusive face allows blending into any décor
- Primed white, may be used as is, painted, or wallpapered
- Easy one-piece mounting (additional hardware not required)
- Readily connects to thermostat with two non-polarized wires

## Specifications

SPECIFICATION	DETAILS
Temperature Range (CHV-RTS and CHV-RTHS)	-30° to 120°F (-34.44C° to 48.89°C)*
Humidity Range (CHV-RTHS only)	0 to 100%

\*Thermostat front panel indoor temperature display is limited to a range of 0 – 110°F (-18° to 43°C). The front panel outdoor thermostat display will display the full range of temperature.

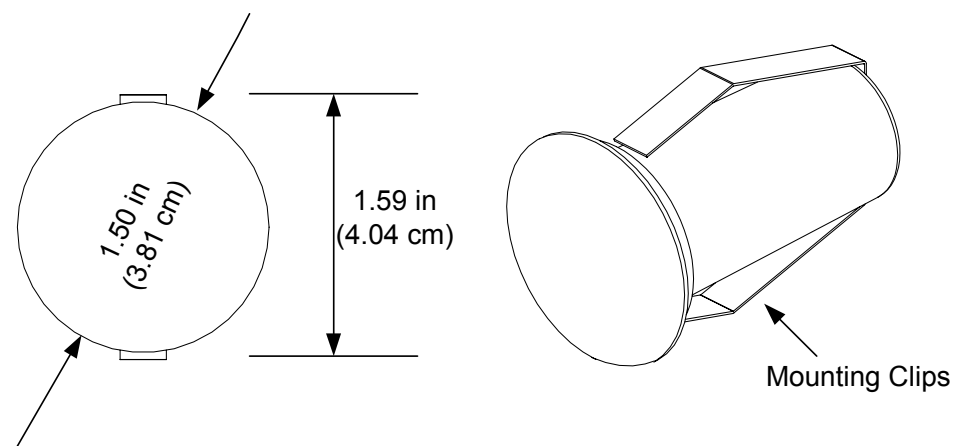
## Physical Description

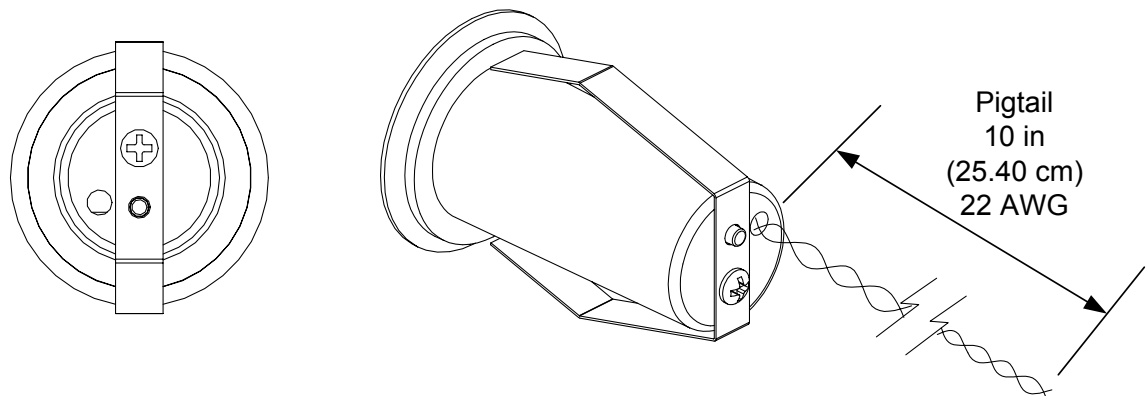
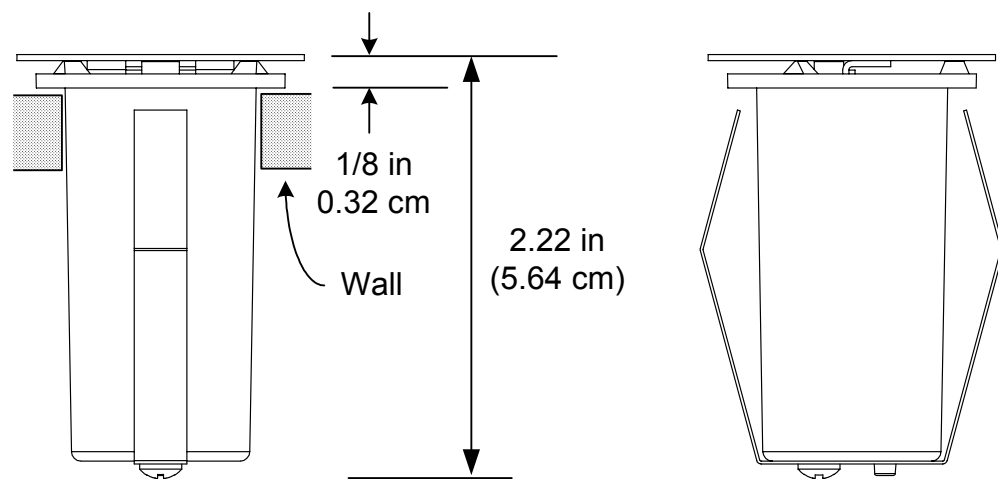
Refer to the illustrations below and on the following page.

The face of the sensor is 1.5 in (3.81 cm) wide. The sensor body is 2.22 in (5.64 cm) long, and mounts nearly flush to the wall.

The CHV-RTS and CHV-RTHS remote sensors are contained in a cylindrical plastic body with a metal cap. They mount in a one-inch diameter hole, exposing a 1.5 in (3.81 cm) diameter disk that protrudes approximately 1/8 in (0.32 cm) from the surface of the wall. Total mounting depth is about 2.25 in (5.72 cm).

### *Front and Angled Views*



*Rear and Angled Views**Side Views***Industry Compliance**

As of the date of manufacture, the CHV-RTS/CHV-RTHS have been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling (N11785).



**NOTE:** This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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## Installation

1. Ensure that the location is not close to a heat or humidity source and 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 will be directly exposed to precipitation. Sensors are suitable for mounting in dry or damp locations as defined by the National Electrical Code.
2. Locate an area on the wall that is free of miscellaneous wiring and studs.
3. Make a small hole near the center of the designated mounting site to verify that the location is suitable.
4. Drill or cut a 1 in (2.54 cm) diameter circular hole in the wall at the desired position.
5. Route the wires from the thermostat to the sensor. For thermostat connection details, refer to the latest version of Crestron CHV-TSTAT & CHV-THSTAT Thermostats Operation and Installation Guide, Doc. 8163.

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**NOTE:** Crestron strongly recommends low-capacitance twisted pair wire such as CAT3 (up to 250 ft, 76.2 m) or CAT5 (up to 500 ft, 152.4 m) network cable when using remote sensors. Maximum distance from sensor to thermostat is 500 ft, 152.4 m

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

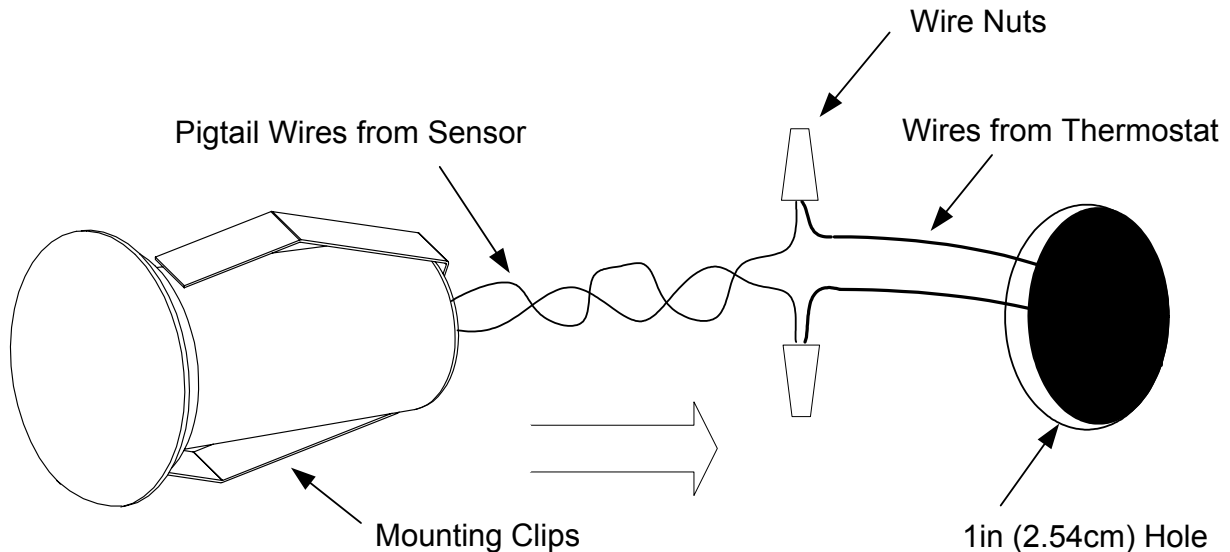
In situations where ordinary two-conductor thermostat wire (18 to 20 gauge) has been installed, it may be used for runs up to 100 feet (30.48 meters). This is not a preferred method of installation.

Other cable types are satisfactory, provided the total capacitance is less than 7000 pF.

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6. Connect the wires from the thermostat to the 10 in (25.4 cm) sensor pigtail (22 AWG x12" black/black twisted pair) using wire nuts. The wires are non-polarized. (Refer to “Hardware Hookup” on page 5).

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



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**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.

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## Hardware Hookup

The sensors are connected to the remote sensor terminals RS1, RS2, and a common connection RSR on the rear plastic housing of the thermostat. Separate the thermostat from its backplate. The thermostat terminal blocks mate to pins protruding out of the front thermostat assembly.

Thermostat firmware release 1.x supports the addition of only two optional remote sensors (temperature and/or temperature/humidity) per thermostat on sensor inputs RS1 and RS2.

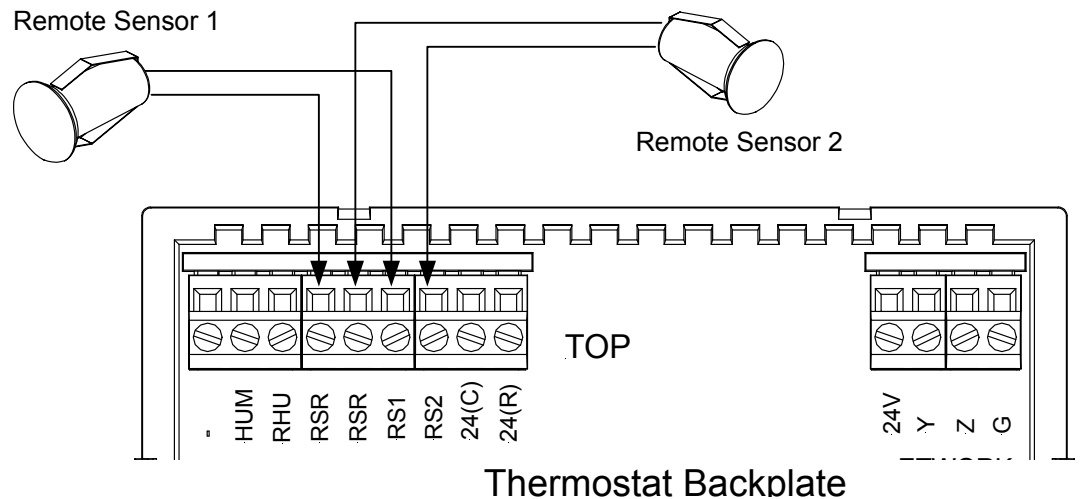
Thermostat firmware release 2.x supports up to four optional temperature (CHV-RTS) or slab sensors (CHV-RSS) or two temperature/humidity sensors (CHV-RTHS).

If you are using one temperature/humidity sensor, then you may add two temperature sensors (CHV-RTS or CHV-RSS) to the other sensor input.

**Connection Example 1:** Connecting two temperature/humidity sensors to the thermostat (maximum number of temperature/humidity sensors):

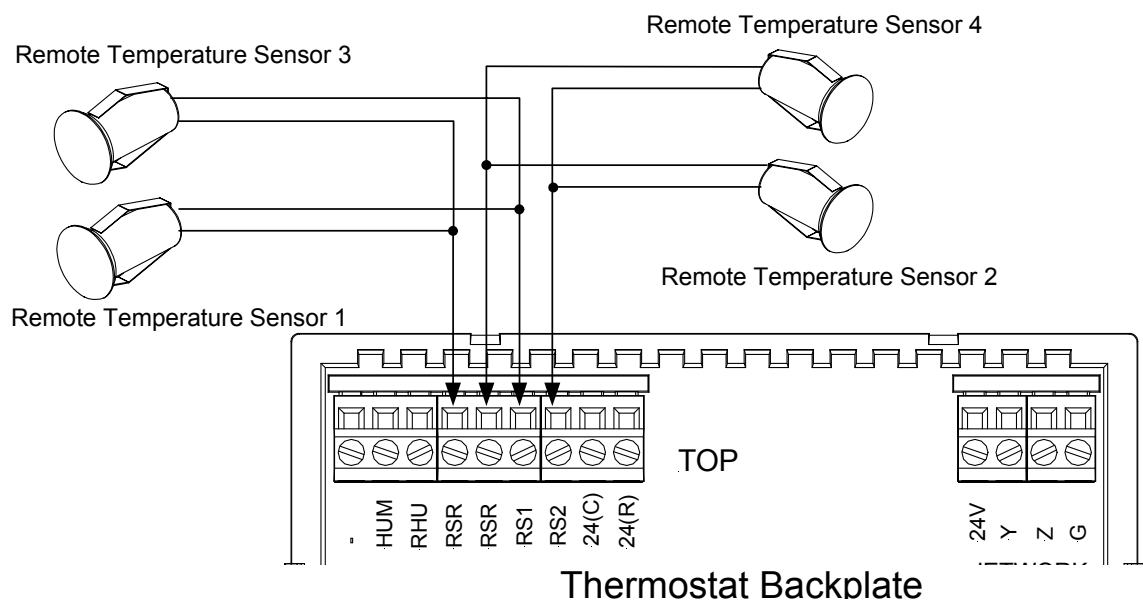
**NOTE:** Sensor wiring is non-polarized

1. Remote sensor 1 connected to RS1 and RSR
2. Remote sensor 2 connected to RS2 and RSR



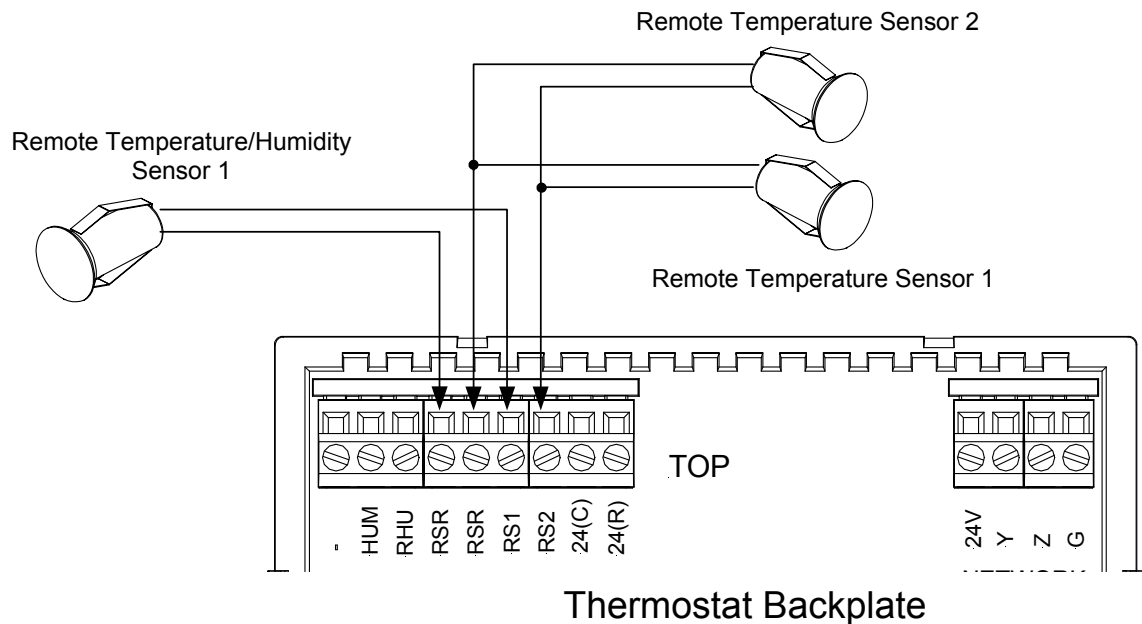
**Connection Example 2:** Connecting four temperature sensors (CHV-RTS) to the thermostat (maximum number of temperature sensors):

1. Remote Sensor 1 and 3 are connected to RS1 and RSR.
2. Remote Sensor 2 and 4 are connected to RS2 and RSR.



**Connection Example 3:** Connecting one temperature/humidity sensor (CHV-RTHS) and two temperature sensors (CHV-RTS) to the thermostat (maximum number of sensors when using one temperature/humidity sensor):

1. Remote Temperature/Humidity Sensor 1 is connected to RS1 and RSR.
2. Remote Temperature Sensor 1 and 2 are connected to RS2 and RSR.



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**NOTE:** For additional firmware details, refer to the latest version of the Crestron CHV-TSTAT/CHV-THSTAT Thermostats Operations and Installation Guide, Doc. 8163, and CHV-RSS Slab Sensor Installation Guide, Doc. 6229. These documents are available on the Crestron website ([www.crestron.com](http://www.crestron.com)).

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## Problem Solving

### Further Inquiries

If after reviewing this Installation Guide, you cannot locate specific information or have questions, please take advantage of the Crestron award winning customer service team by calling:

- In the US and Canada, call Crestron’s corporate headquarters at 1-888-CRESTRON [1-888-273-7876].
- In Europe, call Crestron International at +32-15-50-99-50.
- In Asia, call Crestron Asia at +852-2341-2016.
- In Latin America, call Crestron Latin America at +5255-5093-2160.
- In Australia and New Zealand, call Crestron Control Solutions at +61-2-9737-8203.

### Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of this product, 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 ([www.crestron.com](http://www.crestron.com)) periodically for manual update availability and its relevance. Updates are available from the Download | Product Manuals section and are identified as an “Addendum” in the Download column.

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## 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 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. 07647, 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; touchscreen 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 supercedes all previous warranties.

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**Crestron Electronics, Inc.**  
15 Volvo Drive Rockleigh, NJ 07647  
Tel: 888.CRESTRON  
Fax: 201.767.7576  
[www.crestron.com](http://www.crestron.com)

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**09.04**

Specifications subject to  
change without notice.