

Crestron **CNXVTC-3**
CNX Volume Control Expansion Card

Operations Guide

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CNX Volume Control Expansion Card: CNXVTC-3

Description

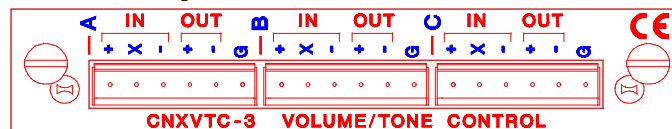
Functional Description

The CNXVTC-3 Volume Control Expansion Card provides volume/tone control interface with one stereo and one mono or three independent mono channels.

Physical Description

The CNXVTC-3, shown below, is a circuit board fastened to an aluminum faceplate. The card is manufactured to easily fit into an unoccupied slot in a Crestron CNX Generation Control System.

CNXVTC-3 Faceplate



The faceplate contains three identical male, 6-pin connectors. Each connector provides balance/unbalance input and output ports as well as chassis ground. Silk screening is applied to the faceplate; pins are labeled A through C. Common ground pins are labeled with a G. Three supplied 6-position connectors can be wired and attached to connectors, A, B, and C.

Leading Specifications

The three tables below provide a summary of leading specifications for the CNXVTC-3. Dimensions are approximations rounded to the nearest hundredth unit.

Leading Specifications of the CNXVTC-3

SPECIFICATION	DETAILS
Power Requirements	24 VDC, network power; 6 Watts
SIMPL Windows	Version 1.19.08 or later
CNX Operating System	Version 5.01.00 or later
CNX Monitor	Version 2.00 or later
Dimensions	Height: 0.980 in (2.490 cm) Width: 5.000 in (12.700 cm)

Volume Specifications of the CNXVTC-3 (Per Channel)

SPECIFICATION	DETAILS
Input Impedance	10K or 600 Ohms
Output Impedance	10 Ohms
Input	Balanced or Unbalanced
Output	Balanced or Unbalanced
Total Harmonic Distortion (THD)	-90 dB
Hum and Noise (ref. 0 Dbv)	-90 dB
Maximum Input Level (Flat Mode)	3.5V rms
Channel Separation	-90 dB
Attenuation Range (Excluding Mute)	0 to -76 dB (maximum)
Mute	-104 dB
Frequency Response	8 Hz to 60 KHz (-3 dB minimum)

Tone Specifications of the CNXVTC-3 (Per Channel)

SPECIFICATION	DETAILS
Flatness (8 Hz to 60 KHz flat mode)	+/- 0.2 dB
Bass Gain Range (100 Hz)	+/- 12 dB
Bass Step Size (100 Hz)	2 dB
Treble Gain Range (10 KHz)	+/- 12 dB
Treble Step Size (10 KHz)	2 dB

As of the date of manufacture, the unit has been tested and found to comply with specifications for CE marking.



Setup

Installation

Items required to install the CNXVTC-3 are already attached to the unit. The only tools required are a Phillips tip screwdriver and a grounding strap. Follow the assembly procedure after this paragraph.

CAUTION: The CNXVTC-3 contains electrostatic sensitive devices (ESD); observe precautions for handling ESDs to avoid damaging the card.

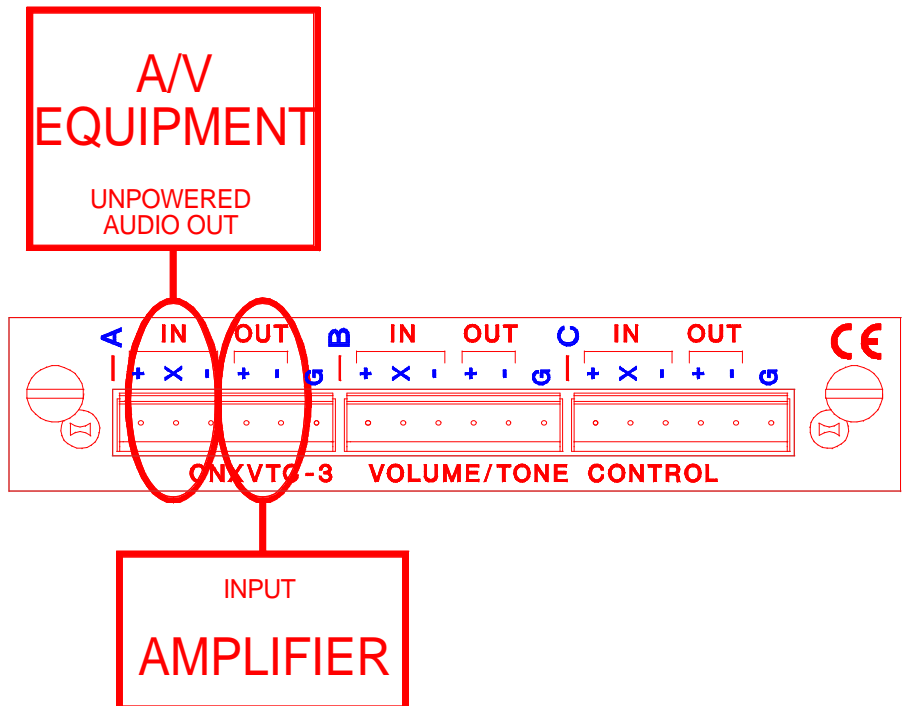
NOTE: If installing the CNXVTC-3 into a CNMSX-AV, it is assumed that the CNXCAGE has been installed.

1. Disconnect power from the CNMSX.
2. Use the Phillips tip screwdriver and remove two screws and blank faceplate from the control system.
3. Align the CNXVTC-3 with the card guides in the open slot and slide the expansion card into position.
4. Firmly press both ends of the CNXVTC-3 faceplate to seat the expansion card into the control system connector.
5. Tighten the thumb-nail screws to secure the CNXVTC-3 to the control system.
6. Reapply power to the CNMSX.

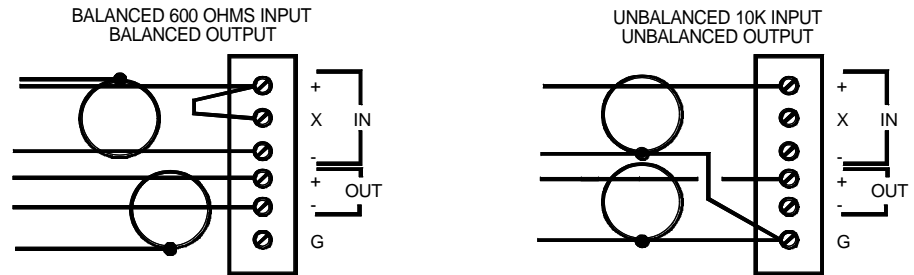
Preparation for Use

Three distinct channels are available from the CNXVTC-3 via three connectors, A, B, and C. Each connector is labeled IN (+, X, and -), OUT (+ and -), and G (ground). Refer to a sample hookup diagram below and aside from reapplying power to the control system last, complete the connections in any order.

Sample Hookup Connections for CNXVTC-3



Input impedance and balance are determined by external connections. Refer to the diagram on the next page.

Balanced and Unbalanced External Connections**Programming with SIMPL Windows®**

SIMPL (Symbol Intensive Master Programming Language) is an easy-to-use programming language that is completely integrated and compatible with all Crestron system hardware. The objects that are used in SIMPL are called symbols. SIMPL Windows offers drag and drop functionality in a familiar Windows® environment.

SIMPL Windows is Crestron Electronics' software for programming Crestron control systems. It provides a well-designed graphical environment with a number of workspaces (i.e., windows) in which a programmer can select, configure, program, test, and monitor a Crestron control system.

The next two subsections describe a sample SIMPL Windows program that utilizes the CNXVTC-3. The first subsection details how the sample program works with a textual description and block diagram. The second subsection provides a broad description of how to actually create the SIMPL Windows program.

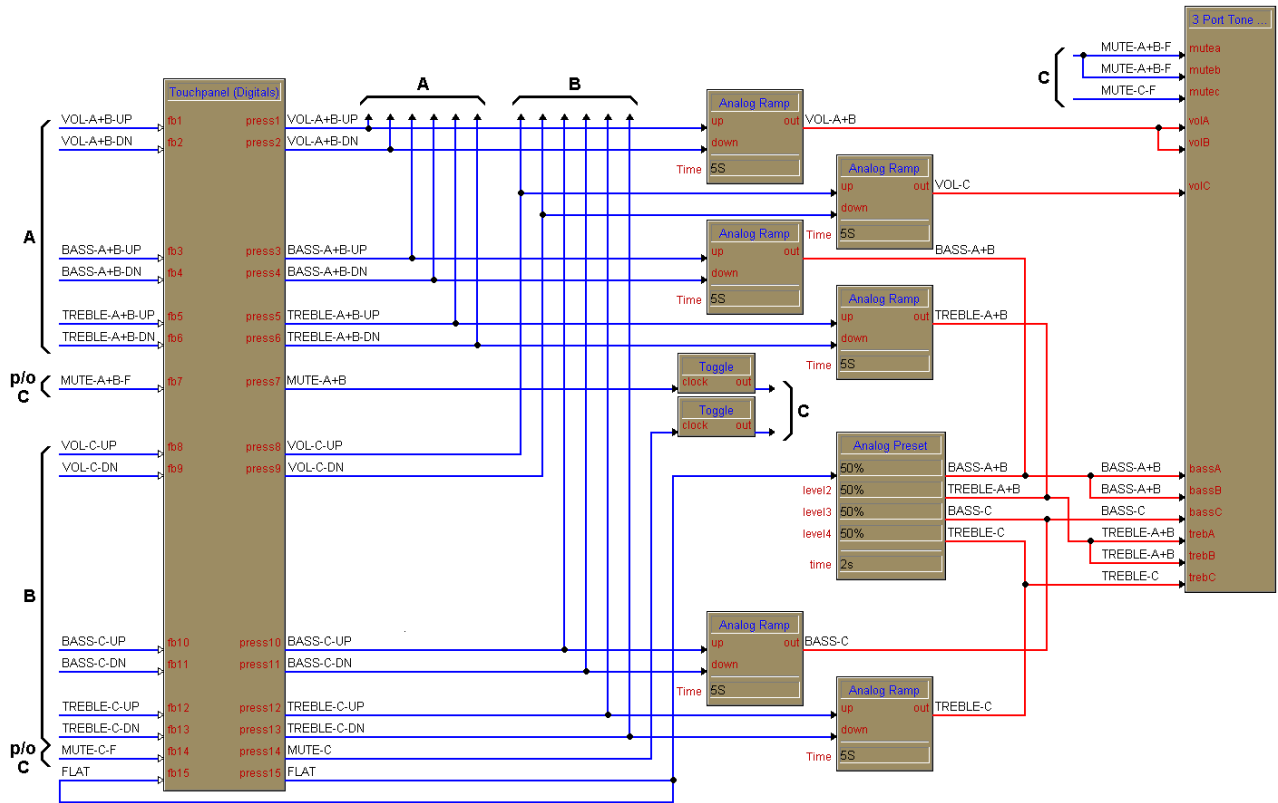
NOTE: The following description assumes that the reader has knowledge of SIMPL Windows. If not, please refer to the extensive help information provided with the software.

NOTE: There is no need to recreate the sample SIMPL Windows program. A copy of this program is available from Crestron's ControlCD (version 4.03 and later). Search for the CNXVTC-3.SMW project in the SIMPL Windows Example Base.

How the Program Works

A basic CNXVTC-3 SIMPL program is shown on the next page in block diagram form. For this example, the CNXVTC-3 occupies slot #1 of a CNMSX-PRO. Assume channels A and B are tied together to provide control over a stereo source that has a left and right channel. Channel C is for a mono source that only has one channel, such as a microphone.

Block Diagram of CNXVTC-3

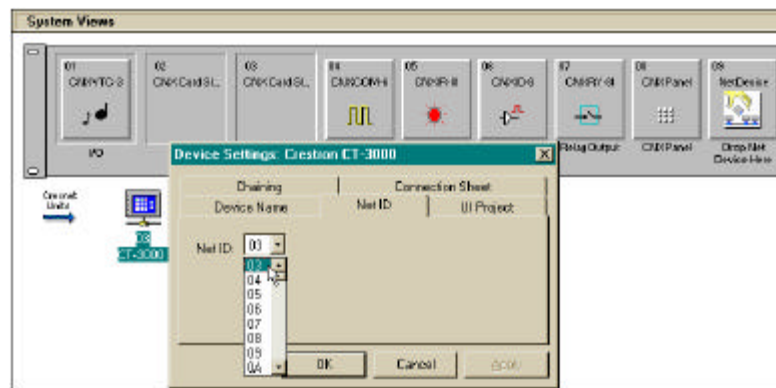


How to Create the Program

Use the Configuration Manager workspace in SIMPL Windows to select and configure all the devices that need to be included into the system. For this example, add a CNXVTC-3 to slot #1 of the CNMSX-PRO. Also add a CT-3000 to the system; its NET ID must be set to 03, shown below.

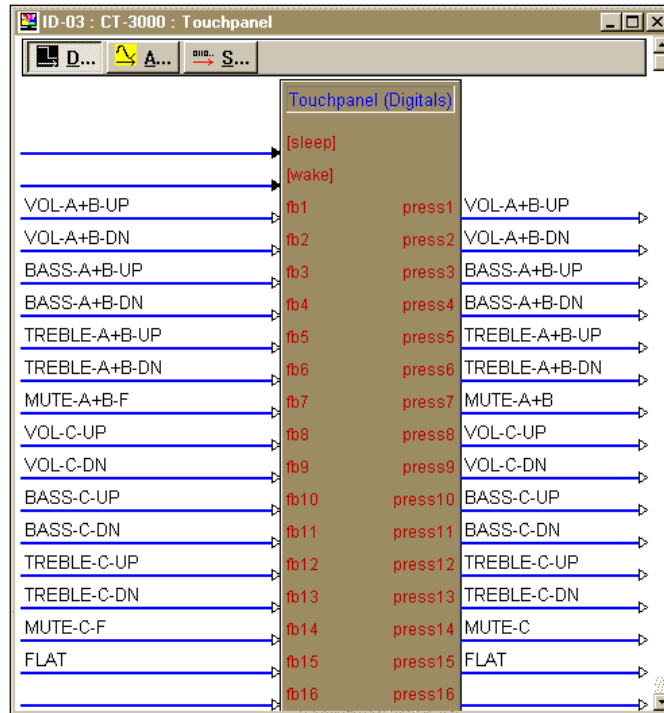
NOTE: SIMPL Windows v1.19.08 or later is required to program the CNMSX-PRO. If using an earlier version of SIMPL Windows, Crestron recommends a SIMPL Windows and operating system upgrade.

Graphical System View of CNXVTC-3 and CT-3000 in SIMPL Windows' Configuration Manager



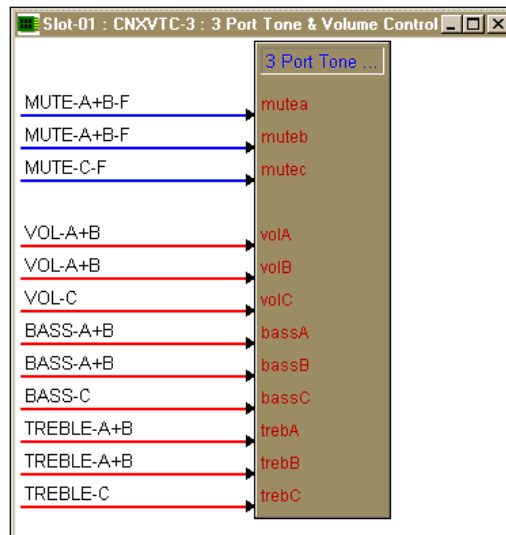
Use the Programming Manager workspace in SIMPL Windows to select symbols and assign their respective signals. For this example, a touchpanel and CNXVTC-3 symbols were added automatically when the devices were added to the system in the Configuration Manager workspace. Expand the Network Modules folder and double click on the touchpanel for a detail view (alternatively CTRL+D or drag and drop into Detail View). Assign signals as shown below.

Graphical Detail View of Touchpanel in SIMPL Windows' Programming Manager



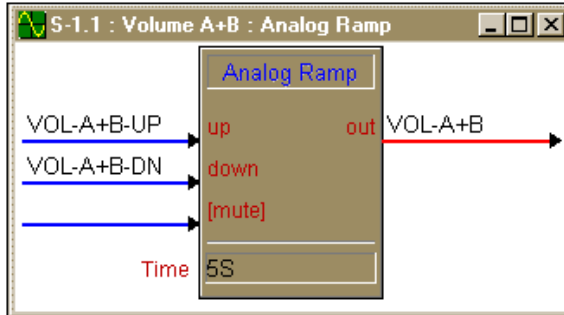
Expand the Central Control Modules folder and double click on the CNXVTC-3 for a detail view (alternatively CTRL+D or drag and drop into Detail View). Assign signals as shown below.

Graphical Detail View of CNXVTC-3 in SIMPL Windows' Programming Manager

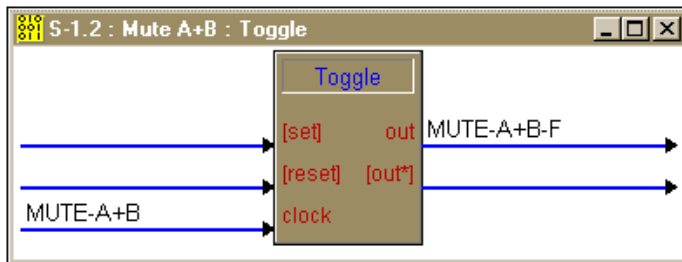


Expand the Logic folder to display the numerous symbols integrated into this program. View each of the nine symbols in detail view (alternatively CTRL+D or drag and drop into Detail View). Assign signals as shown below.

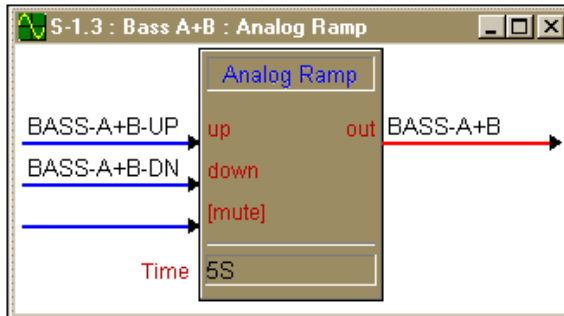
Graphical Detail View of an Analog Ramp (S-1.1) in SIMPL Windows' Programming Manager



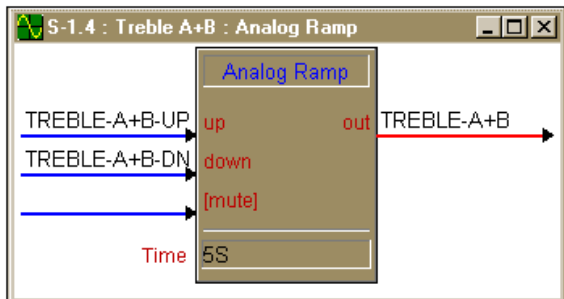
Graphical Detail View of a Toggle (S-1.2) in SIMPL Windows' Programming Manager



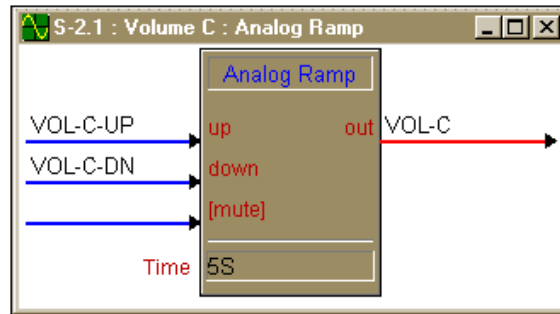
Graphical Detail View of an Analog Ramp (S-1.3) in SIMPL Windows' Programming Manager



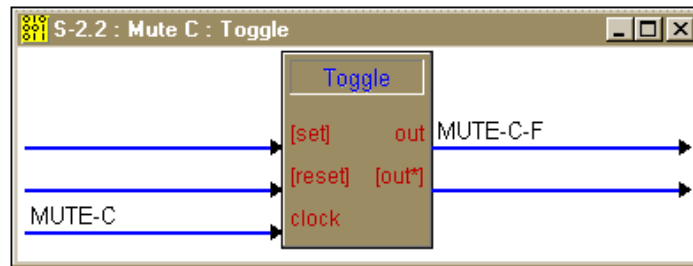
Graphical Detail View of an Analog Ramp (S-1.4) in SIMPL Windows' Programming Manager



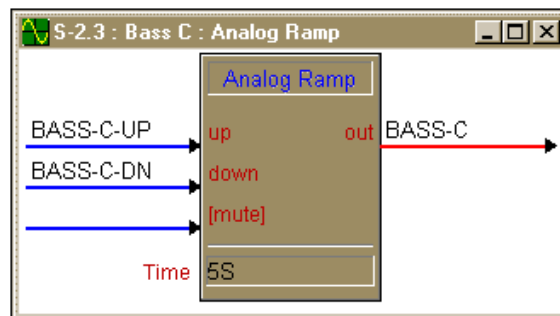
Graphical Detail View of an Analog Ramp (S-2.1) in SIMPL Windows' Programming Manager



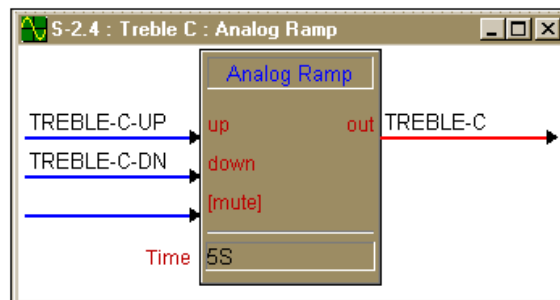
Graphical Detail View of a Toggle (S-2.2) in SIMPL Windows' Programming Manager



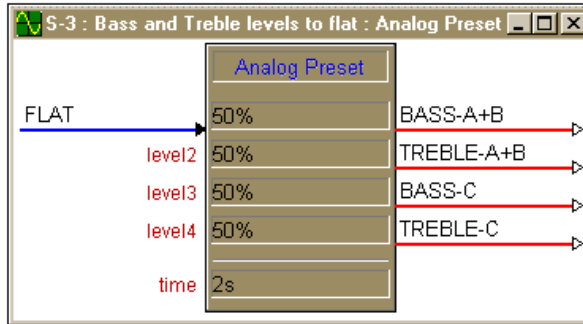
Graphical Detail View of an Analog Ramp (S-2.3) in SIMPL Windows' Programming Manager



Graphical Detail View of an Analog Ramp (S-2.4) in SIMPL Windows' Programming Manager



Graphical Detail View of an Analog Preset (S-3) in SIMPL Windows' Programming Manager



Problem Solving

Troubleshooting

The table below provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron technical support representative.

CNXVTC-3 Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
CNXVTC-3 does not function.	CNX Control System is not receiving power.	Verify power to CNX Control System.
	Circuit card is not properly seated in slot.	Verify CNXVTC-3 is properly inserted into CNX Control System slot per procedures in this Operations Guide.
	Programming error.	Check SIMPL Windows program.
Hum on audio.	Grounding problem.	Either connect or remove ground wire.

Further Inquiries

If after reviewing this Operations Guide for the CNXVTC-3, you cannot locate specific information or have questions, please take advantage of Crestron's award winning technical support team by calling:

- In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876] or 1-201-767-3400.
- 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 +525-574-15-90.

For local support from exclusive Crestron factory-trained personnel call:

- In Australia, call Soundcorp at +613-941-61066.
- In New Zealand, call Amber Technologies at +649-410-8382.

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, Cresskill, 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 Cresnet II products, denoted by a "CN" prefix model number, to be free from manufacturing defects in materials and workmanship for a period of three (3) years from the date of shipment to purchaser. Disk drives and any other moving or rotating mechanical parts are covered for a period of one (1) year. CRESTRON warrants all its other products for a period of one year from the defects mentioned above, excluding touchscreen display components which are covered for 90 days. Incandescent lamps are completely excluded from Crestron's Limited Warranty. 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.

CRESTRON shall not be liable to honor warranty terms 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 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 makes no other warranties nor authorizes any other party to offer any warranty, expressed or implied, including warranties of merchantability for this product. This warranty statement supersedes all previous warranties.

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