Crestron **CNAMPX-12X60**
12 Channel Professional Audio Amplifier
Operations Guide

CRESTRON

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Contents

12 Channel Professional Audio Amplifier: CNAMPX-12X60

Description

Functional Description

The CNAMPX-12X60 is a Crestron® control system (herein referred to as the Cresnet® system) 12 channel, 60-Watts per channel audio amplifier. As part of a Cresnet system, the unit provides remote power on/off and reports ambient temperature within the enclosure. Temperature is available as Fahrenheit or Celsius and the signal can be used to reduce the audio volume, activate an external cooling fan, or turn the unit off under program control.

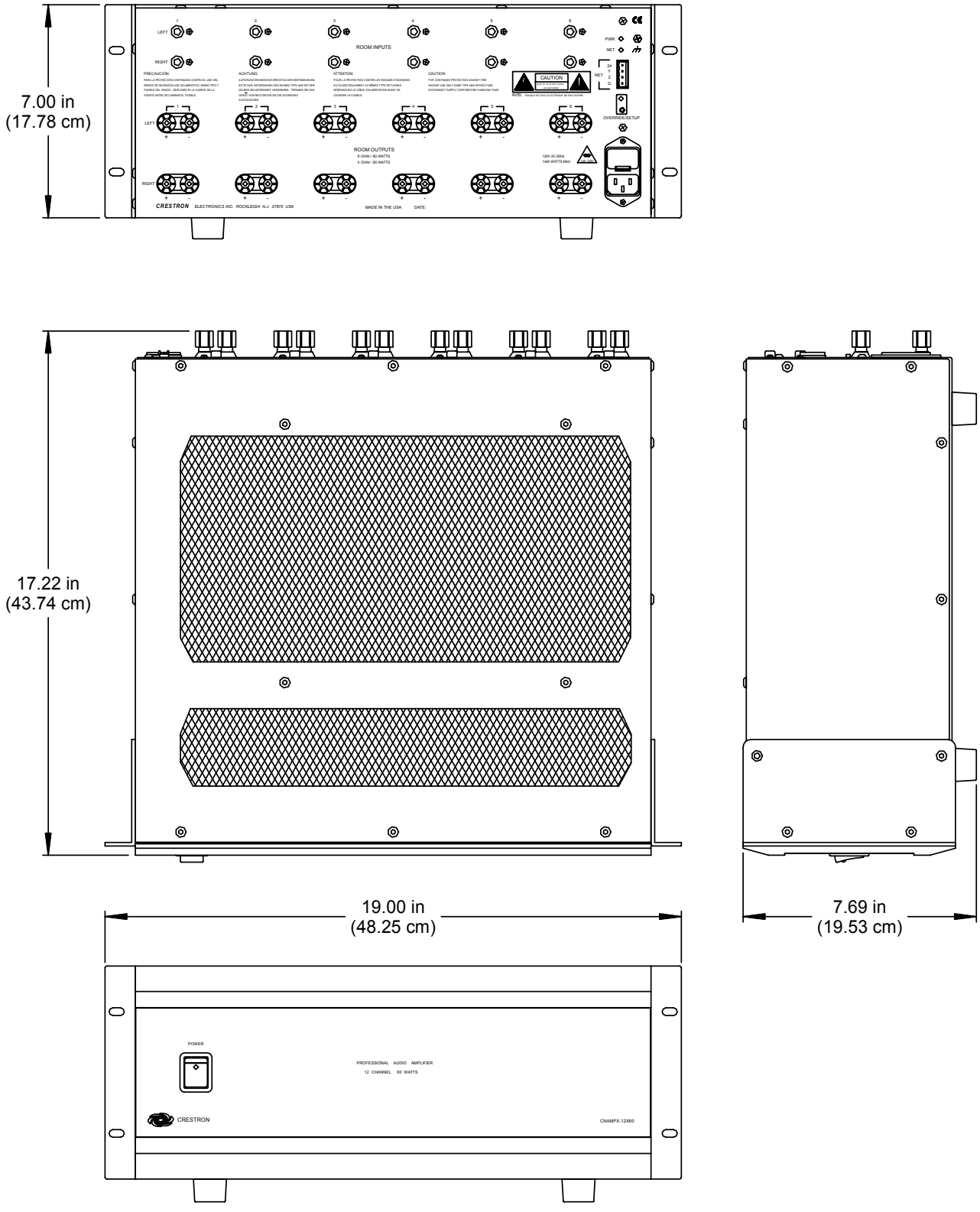
All audio connectors are gold plated to minimize oxidation and three types of wire terminations can connect to the audio outputs. Highly efficient twin toroid transformers provide ample power to six two-channel amplifier modules. The modules are of Crestron Detachable Modular Component (CDMC) design that allows rapid field repair. Each channel (two per module) of each module has its own power supply and filter capacitors that produce over 108,000 microFarads for enhanced dynamic range. The heat sinks of each channel contain more than 300 square inches of radiating surface allowing cooler operation. No fans are required but the unit **must** have a minimum of one rack space above and below for adequate ventilation.

The CNAMPX-12X60 is also available as an international version. All of the features are identical with the exceptions of the international AC power requirements and power cord and the unit nomenclature of CNAMPXI-12X60. Throughout this operations guide, all references to CNAMPX-12X60 apply to both versions except where noted.

Physical Description

The CNAMPX-12X60, shown on the next page, is housed in a black enclosure with silk-screened labels on the front and rear panels. The enclosure consists of 13-gauge powder-coated steel with stainless steel screws. The front panel contains the main power switch and light-emitting diode (LED). All audio input and output, Cresnet system, and power connections are made on the rear panel. There are four rubber feet on the base of the unit for stability and to prevent slippage and two mounting ears with screws are provided for rack mounting.

CNAMPX-12X60 Physical Views



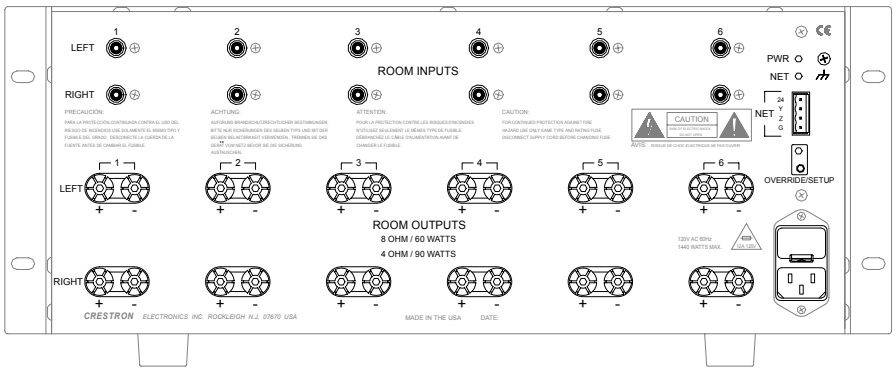
General Safety Precautions

- Read all information and instructions provided in this operations guide.
- Retain this operations guide.
- Heed all warnings and cautions printed in this operations guide.
- Follow all instructions in the order that they are provided.
- Do not use this unit near water.
- Clean only with a damp cloth.
- Do not block any of the ventilation openings. Install in accordance with the instructions in this operations guide.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat. If installing multiple CNAMPX-12X60s, follow the instructions provided in this operations guide.
- Do not defeat the safety purpose of the polarized or ground-type plug. A polarized plug has two blades with one wider that the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into an outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles (if provided), and the point where they exit the unit.
- Use only attachments/accessories specified in this operations guide.
- When an equipment rack is used, use caution when moving the rack/unit combination to avoid injury or tip-over.
- Unplug this unit during lighting storms or when unused for long periods of time.
- Refer all service to certified Crestron service personnel. Servicing is required when the unit has been damaged in a way, such as power cord or plug is damaged, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

CNAMPX-12X60 Rear Ports and Indicators

A number of ports and indicators are provided on the rear of the CNAMPX-12X60. Refer to the illustration below and the descriptions on the next page.

CNAMPX-12X60 Rear Panel



PWR Indicator

This LED (green) is illuminated when 24VDC via the Cresnet connector is supplied to the CNAMPX-12X60.

NET Indicator

This LED (yellow) indicates that the SIMPL program currently loaded in the control system has a network device defined at the same NET ID code as the CNAMPX-12X60. The LED flashes when communication with the Cresnet system and the CNAMPX-12X60 is occurring.

Chassis Ground Screw (Not Labeled)

Use this chassis screw to connect the audio device(s) common ground(s) to the CNAMPX-12X60.

NET

The 4-pin network connector is used to connect the CNAMPX-12X60 to the Cresnet system. Refer to "Network Wiring" on page 6 when making connections to the ports labeled NET.

OVERRIDE/SETUP Button and Indicator

The OVERRIDE/SETUP button is used to activate AC power to the CNAMPX-12X60 and activate all room outputs. This button functions only when 24VDC is applied to the NET connector. The LED (red) illuminates when the OVERRIDE is activated.

Power Connector and Fuse Compartment

The power connector provides AC operating power to the CNAMPX-12X60 via the supplied power cord. The fuse electrically protects the internal circuitry from power overloads and is located (a spare fuse is included) within the compartment above the power connector.

NOTE: If it becomes necessary to replace the fuse(s), refer to the latest revision of the CNAMPX-12/16X60 Service Guide (Doc. 5885) for further instructions. This document can be obtained from the Downloads | Product Manuals section of the Crestron website (www.crestron.com). The name of the file is cnampx-12x60_16x60-service.pdf.

ROOM INPUTS 1 - 6

Each of the six pair of RCA connectors is typically used to connect the pre-amplified audio to the CNAMPX-12X60. The left channel audio is input to the connectors with the **white** center insulators and right channel audio connectors have **red** center insulators.

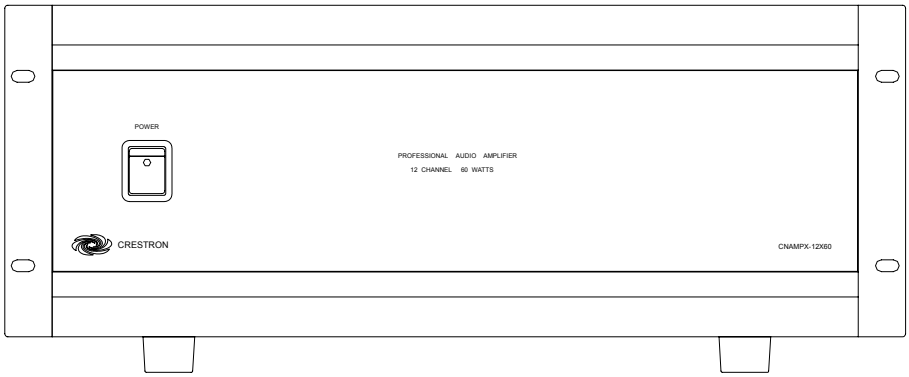
ROOM OUTPUTS 1 – 6

These six pair of speaker dual-binding posts output the left and right amplified audio to the corresponding speakers. The audio positive posts have **red** screw-on caps and the audio negative posts have **black** screw-on caps. Each post is gold-plated and accepts bare wire, banana plugs, or spade lugs. The posts of the international CNAMPXI-12X60 **do not** accept banana plugs.

CNAMPX-12X60 Front Panel Power Switch

As shown below, the front panel of the CNAMPX-12X60 contains a power switch with an LED indicator. This two-position (ON/OFF) switch enables operating power to the CNAMPX-12X60 circuitry and must be positioned to ON when the unit is controlled by the control system. When the Cresnet system 24VDC is applied to the proper pin of the NET connector (located on the rear panel of the CNAMPX-12X60), AC power is applied to the circuitry and the LED (green) illuminates.

CNAMPX-12X60 Front Panel



Leading Specifications

The table below and continued on the next page provides a summary of leading specifications for the CNAMPX-12X60. Dimensions and weight are rounded to the nearest hundredth unit.

Leading Specifications of the CNAMPX-12X60

SPECIFICATION	DETAILS
Power Input Requirements: US version International version	120VAC +/-10%, 50-60Hz, 1440 Watts 230VAC +/-10%, 50-60Hz, 1440 Watts
Cresnet Power Requirements	3 Watts (24VDC @ 0.125A)
Default NET ID	3F
Channels	12 grouped into 6 stereo pairs
Output Power - All channels driven, 20Hz to 20KHz, at rated Total Harmonic Distortion (THD).	60 Watts/Channel into 8 ohm loads 90 Watts/Channel into 4 ohm loads 220 Watts/Channel Bridged [1]
Input Impedance	28Kohms
Power Bandwidth - 3dB	3Hz to 50KHz
Frequency Response @ 1W 8ohm	Flat +0, -0.1dB from 20Hz to 20KHz
THD @ full power	0.03% or less
IHF I.M. Distortion	0.01% or less
SMPTE I.M. Distortion	0.03% or less
Dynamic Headroom	2dB or more
Signal to Noise Ratio (S/N) "A" Weighted	>110dB
Gain	28dB
Damping Factor	>1000
Channel Separation over full bandwidth	>100dB
SIMPL™ Windows®	Version 1.61 or later [2 & 3] with the addition of smwlib113.exe and smwlib113.txt. [2 & 3]

Leading Specifications of the CNAMPX-12X60 (continued)

SPECIFICATION	DETAILS
Crestron Home Wizard	Version 1.2 or later [3]
CEN/CN-TVAV Update File	Version 51013V.UPZ or later [4]
CNMSX-AV/Pro Update File	Version 51011X.UPZ or later [4]
CNRACKX/-DP Update File	Version 51011W.UPZ or later [4]
ST-CP Update File	Version 40104S.UPZ or later [4]
Rack Space Required	4U
Environmental Temperature Range	41° to 104°F (5° to 40°C)
Environmental Humidity	10% to 90% RH (non-condensing)
Dimensions & Weight	Height: 7.69 in (19.53 cm) Width: 19.00 in w/ears (48.26 cm) Depth: 17.22 in (43.74 cm) Weight: 81.40 lb (37.00 kg)

1 To bridge any two channels into the CNAMPX-12X60, Crestron recommends the CNXBRMO Mono Converter & Bridge. Documentation for the CNXBRMO (Doc. 8158) can be obtained from the Downloads | Product Manuals section of the Crestron website (www.crestron.com). New users are required to register in order to obtain access to the FTP site. For further information, contact Crestron customer service.

2 The latest software versions can be obtained from the (Downloads | Software Updates section of the Crestron website (www.crestron.com). Refer to the NOTE after the last footnote.

3 Any software that uses the CNAMPX-16X60 symbol, including SIMPL Windows (version 1.40.07 or later with the addition of smwlib87.exe and smwlib87.txt) and the Crestron Home Wizard, may be used to program the CNAMPX-12X60. If used, only 12 audio channels will be utilized and the following inputs and outputs of the CNAMPX-16X60 symbol are ignored; Rm*_En, Rm_To_Monitor, Rm*_Amp_Fault, Rm*_Wire_Fault, LeftSigLevel, and RightSigLevel.

4 CNX update files are required for either CNMSX-AV/Pro or CNRACKX/-DP. Filenames for CNX update files have a UPZ extension and ST-CP files are in one EXE or zipped UPZ file. To avoid program problems, make certain you are using the update file with the correct suffix letter (e.g., S, V, W, X).

NOTE: Crestron software and any files on the website are for Authorized Crestron dealers and Crestron Authorized Independent Programmers (CAIP) only. New users may be required to register to obtain access to certain areas of the site (including the FTP site).

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

CE

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.

Setup

Network Wiring

NOTE: When installing network wiring, refer to the latest revision of the wiring diagram(s) appropriate for your specific system configuration, available from the Downloads | Product Manuals | Software and Wiring Diagrams section of the Crestron website (www.crestron.com).

When calculating the wire gauge for a particular Cresnet run, the length of the run and the load factor of each network unit to be connected must be taken into consideration. If Cresnet units are to be daisy-chained on the run, the load factor of each unit to be daisy-chained must be added together to determine the load factor of the entire chain. If the unit is a home-run from a Crestron system power supply network port, the load factor of that unit is the load factor of the entire run. The length of the run in feet and the load factor of the run should be used in the following resistance equation to calculate the value on the right side of the equation.

Resistance Equation

$$R < \frac{40{,}000}{L \times LF}$$

Where: R = Resistance (refer to next table).
L = Length of run (or chain) in feet.
LF = Load factor of entire run (or chain).

The required wire gauge should be chosen such that the resistance value is less than the value calculated in the resistance equation. Refer to the table below.

Wire Gauge Values

RESISTANCE (R)	WIRE GAUGE
4	16
6	18
10	20
15	22
13	Doubled CAT5
8.7	Tripled CAT5

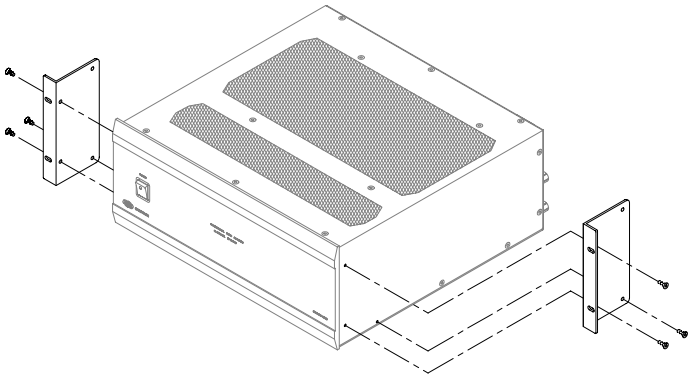
NOTE: All Cresnet wiring must consist of two twisted-pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

NOTE: When daisy-chaining Cresnet units, always twist the ends of the incoming wire and outgoing wire which share a pin on the network connector. After twisting the ends, tin the twisted connection with solder. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. After tinning the twisted ends, insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Rack Mount Ear Installation

Two rack mount ears are provided with the CNAMPX-12X60 and must be installed prior to mounting. To attach the ears to the unit, position as shown below and install the provided screws **finger-tight**. With the **1/8-inch** hex wrench supplied with the unit, tighten the screws an additional **1/8-turn**.

Ear Attachment for Rack Mounting



Rack Mounting

WARNING: To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

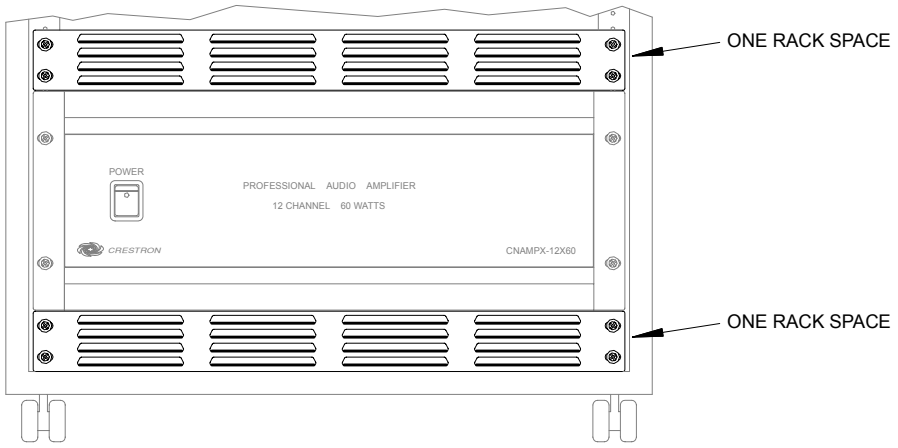
WARNING: The CNAMPX-12X60 weighs in excess of 81.40 pounds (37.00 kg). Use more than one person to install unit into rack.

- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- The unit should be mounted at the bottom of the rack if it is the only unit in the rack.

CAUTION: Due to the heat dissipation of the CNAMPX-12X60 (and all audio amplifiers in general), allow at least one free rack space above and below the CNAMPX-12X60 for proper circulation. Refer to the diagram below.

CNAMPX-12X60 Rack Spacing



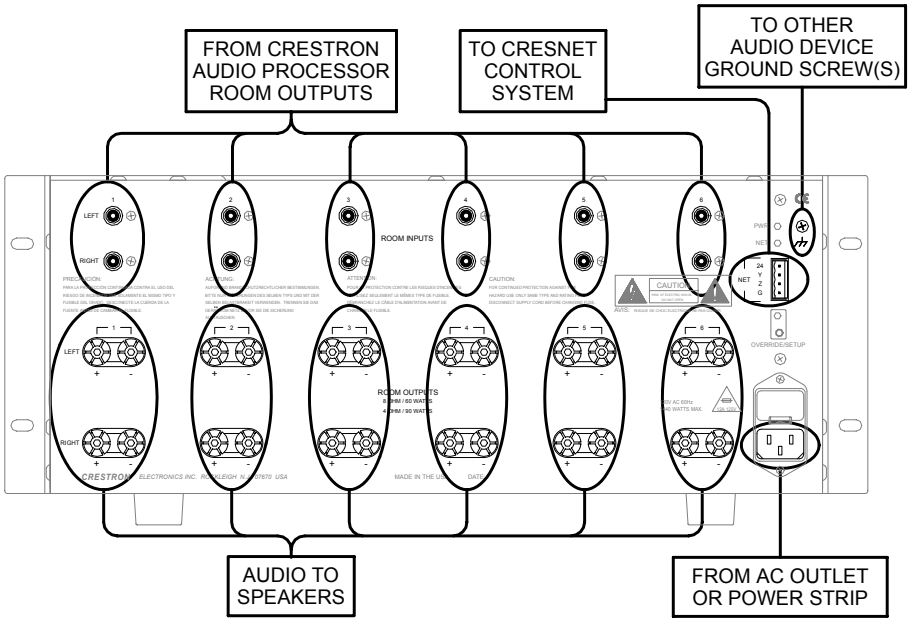
NOTE: Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit. (e.g., use of power strips).

Hookup

Refer to the hookup diagram after this paragraph. Other than making the power connection last, complete the connections in any order. The power cord is supplied but RCA audio cables, speaker wire, or Cresnet cables are **not** provided.

NOTE: Refer to "Network Wiring" on page 6 when making connections to the ports labeled NET.

Hookup Connections for the CNAMPX-12X60



Identity Code

Every equipment and user interface within the Cresnet system requires a unique NET ID. These codes are recognized by a two-digit hexadecimal number from 03 to FE. The NET ID of the unit must match an ID code specified in the SIMPL Windows program. The NET ID of the CNAMPX-12X60 is factory set to **3F**. The NET IDs of multiple CNAMPX-12X60 must all be unique and changed from a personal computer (PC) via SIMPL Windows or VisionTools™ Pro-e (VT Pro-e).

NOTE: VT Pro-e is a Windows compatible software package for creating Crestron touchpanel screen designs.

The method for changing the unit's NET ID is identical regardless of the software chosen. Complete the following steps to change the NET ID.

1. Attach one of the CNAMPX-12X60s to the control system (verify that the software is running).
2. From the SIMPL Windows or VT Pro-e menu, select **Tools | Viewport** to open the Crestron Viewport.
3. From the Viewport menu, select **Functions | Set Network ID**. The software checks the baud rate and then opens the "Set Network ID" window.

4. In the "Set Network ID" window, select the CNAMPX-12X60 from the *Current Network Devices* text window.
5. From the *Choose the new network ID for the selected device (Hex)*: text box, select the new Net ID for the CNAMPX-12X60.
6. Click **Set ID** to initiate the change. This will display the "ID command has been sent" window.
7. In the "Command Complete" window, click **OK**.
8. In the *Current Network Devices* text window, verify the new NET ID code.
9. In the "Set Network ID" window, click **Close**.

NOTE: The new NET ID code may also be verified by selecting **Diagnostic | Report Network Devices** in the Viewport.

10. Repeat this procedure for each CNAMPX-12X60 to be added to the Cresnet system.

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's 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 three sections describe a CNAMPX-12X60 within a SIMPL Windows program. The first section provides initial configuration information, the second section details the SIMPL symbol and the third section provides the location of the example program.

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

Configure CNAMPX-12X60 Program

To create a program with a CNAMPX-12X60 in the Configuration Manager of SIMPL Windows, refer to the table below for initial configuration information.

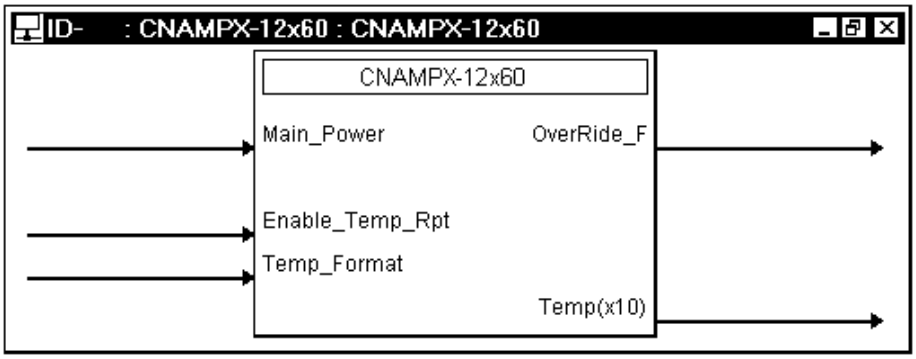
Configure CNAMPX-12X60 Program

DEVICE LIBRARY	SYMBOL REQUIRED	DROP WHERE	ADDITIONAL SETUP
Control Systems	Desired control system	System Views	Refer to the documentation supplied with the specific control system for additional setup information.
Network Control Modules	CNAMPX-12X60	System Views, Cresnet Units	CHANGE NET ID (OPTIONAL) - Double-click on CNAMPX-12X60 (or single-click then right mouse-click) on CNAMPX-12X60. Select Configure. Select NET ID then select desired hexidecimal ID.

CNAMPX-12X60 Symbol

The diagram below shows the CNAMPX-12X60 symbol in the SIMPL Windows Programming Manager. The two tables on the next page list the input and outputs, respectively, and their functional descriptions.

Detail View of the CNAMPX-12X60 Symbol in SIMPL Windows' Programming Manager



NOTE: Any software that uses the CNAMPX-16X60 symbol, including SIMPL Windows and the Crestron Home Wizard, may be used to program the CNAMPX-12X60. If used, only 12 audio channels will be utilized and the following inputs and outputs of the CNAMPX-16X60 symbol are ignored; Rm*_En, Rm_To_Monitor, Rm*_Amp_Fault, Rm*_Wire_Fault, LeftSigLevel, and RightSigLevel.

NOTE: All signals listed in the following tables are *DIGITAL* signals unless noted otherwise. A digital signal can be high (logic level of 1), low (logic level of 0), and also have rising edge (when it goes from low to high) and falling edge (from high to low) transitions. Depending upon how the symbol was created, symbol inputs may work at the logic levels or on transitions.

CNAMPX-12X60 Symbol Input Signal Descriptions

INPUT	DESCRIPTION
Main_Power	This signal activates the main operating power to the CNAMPX-12X60 circuitry. High/1=power on Low/0=power off
Enable_Temp_Rpt	This signal selects whether or not the **Temp(x10)** analog output described in the next table is updated with the CNAMPX-12X60 enclosure temperature. High/1 = update temperature Low/0/default = temperature not updated
Temp_Format	This signal selects the format of the temperature to be displayed. High/1 = Celsius Low/0/default = Fahrenheit

CNAMPX-12X60 Symbol Output Signal Descriptions

OUTPUT	DESCRIPTION
OverRide_F	This signal indicates that the audio output override function is activated. High/1 = override active Low/0 = override not active
Temp(x10)	This ***analog*** signal corresponds to the ambient temperature within the CNAMPX-12X60 enclosure. The temperature reports approximately once every 2-seconds. (The **Enable_Temp_Rpt** entry in previous table must be driven high/1 for this to update.) The temperature reports in tenths of a degree (eg, 725 corresponds to 72.5 degrees).

Example Program

An example program for the CNAMPX-12X60 is available from the Crestron FTP site (ftp://ftp.crestron/Examples). Search for CNAMPXE1.ZIP that contains the example program, associated files and a README.TXT file that describes the program.

NOTE: Any software that uses the CNAMPX-16X60 symbol, including SIMPL Windows and the Crestron Home Wizard, may be used to program the CNAMPX-12X60. If used, only 12 audio channels will be utilized and the following inputs and outputs of the CNAMPX-16X60 symbol are ignored; Rm*_En, Rm_To_Monitor, Rm*_Amp_Fault, Rm*_Wire_Fault, LeftSigLevel, and RightSigLevel.

Problem Solving

Troubleshooting

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

CNAMPX-12X60 Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
No functions and no indicators illuminate.	CNAMPX-12X60 is not receiving VAC power.	Verify that POWER switch is positioned to ON, AC power cord is plugged into CNAMPX-12X60 power port and cord is plugged into a good power source.
		Refer to "CNAMPX-12/16X60 Service Guide" to replace AC Power Fuse. *
	CNAMPX-12X60 is not receiving 24VDC Cresnet power.	Verify that 24VDC is present at cable plugged into NET port.
	Cresnet System Interface Card bad.	Refer to "CNAMPX-12/16X60 Service Guide" to replace Cresnet System Interface Card. *
Green PWR LED does not illuminate.	CNAMPX-12X60 in SIMPL Windows program not properly configured.	Verify SIMPL Windows CNAMPX-12X60 program.
	CNAMPX-12X60 is not receiving 24VDC Cresnet power.	Verify that 24VDC is present at cable plugged into NET port.
Yellow NET LED does not illuminate.	Improper NET ID.	Verify that CNAMPX-12X60 NET ID matches NET ID in software program.
Hum on audio.	Grounding problem.	Either connect or remove chassis ground wire.
Audio is supplied to all rooms regardless of programming.	Override/Setup function selected.	Press OVERRIDE/SETUP button on rear panel of CNAMPX-12X60.
Audio distorted or not present at one room output.	Audio input cable(s) loose or not connected.	Verify that audio input cable(s) plugged into ROOM INPUTS port(s) are secure.
	Room output (speaker) wire(s) loose or not connected.	Verify that speaker wire(s) connected to ROOM OUTPUTS terminal(s) are secure.
	Amplifier module faulty.	Refer to "CNAMPX-12/16X60 Service Guide" to replace module. *

* For further instructions, refer to the latest revision of the CNAMPX-12/16X60 Service Guide (Doc. 5885). This document can be obtained from the Downloads | Product Manuals section of the Crestron website (www.crestron.com). The name of the file is cnampx-12x60_16x60-service.pdf.

Further Inquiries

If after reviewing this Operations Guide for the CNAMPX-12X60, you cannot locate specific information or have questions, please take advantage of Crestron's 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 Pacific at +613-9480-2999.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the CNAMPX-12X60, additional information and programming examples 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) periodically for manual update availability and its subjective value. Updates are available from the Download | Product Manuals section and 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 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 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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