



Version 1.1

# CXV-225 2 x 250W 100V LINE AMPLIFIER

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Cloud Electronics Limited

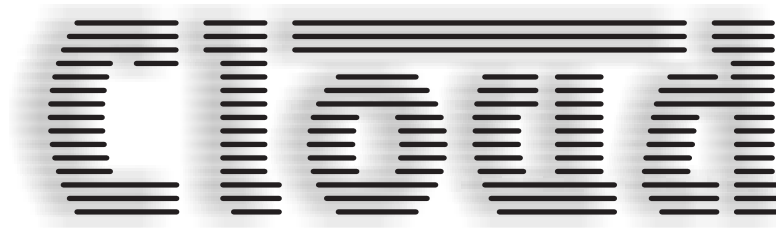
# CXV-225

## Quick Installation Guide

CONTACT DETAILS

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CLOUD ELECTRONICS LIMITED



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140 STANIFORTH ROAD • SHEFFIELD S9 3HF • ENGLAND

TEL: +44 (0) 114 244 7051  
EMAIL: TECHNICAL@CLOUD.CO.UK

FAX +44 (0)114 242 5462  
HOMEPAGE: WWW.CLOUD.CO.UK

## Safety Considerations and Information

- The unit must be earthed. Ensure that the mains power supply provides an effective earth connection using a three-wire termination.
- When the mains switch is in the off 'O' position the live and neutral conductors of the mains transformer are disconnected.

### CAUTION - Installation

- Do not expose the unit to water or moisture.
- Do not expose the unit to naked flames.
- Do not block or restrict any air vent.
- Do not operate the unit in ambient temperatures above 35°C.
- Do not place liquid filled containers on or close to the unit.
- Always ensure that the speaker terminal cover on the rear panel is in place before operating this product.

### CAUTION - Hazardous Live

- Do not touch any part or terminal carrying the hazardous live symbol (⚡) while power is supplied to the unit.
- Terminals to which the hazardous live symbol refers require installation by a qualified person.
- In addition to mains terminals this product has high internal DC supplies that remain at a high potential for a few minutes after the unit has been switched off. Wait ten minutes after switching off this product before removing any covers and attempting any internal adjustments or repair.

### CAUTION - Mains Fuse

- Replace the mains fuse only with the same type and rating as marked on the rear panel. The fuse body size is 20mm x 5mm.

### CAUTION - Servicing

- The unit contains no user serviceable parts. Refer servicing to qualified service personnel.
- Do not perform servicing unless you are qualified to do so.
- Disconnect the power cable from the unit and wait 10 minutes before removing the top panel and do not make any internal adjustments with the unit switched on, or within 10 minutes of the unit being switched off.
- Only reassemble the unit using screws identical to the original parts.

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## General Description

The Cloud CXV-225 is a two channel, 250W per channel 100V Line Amplifier. With the increase of high quality 100V line loudspeaker solutions comes the need for high quality amplification. The transformer-less topology employed in the design of the CXV-225 addresses the problems of limited frequency response, cost, saturation, size and weight, resulting in an amplifier that will be the automatic choice for 100V line applications.

- Optional VCA cards enable the use of remote plates to control music level.
- Mono-stereo switch.
- Equalisation Modules for Bose® Speakers.

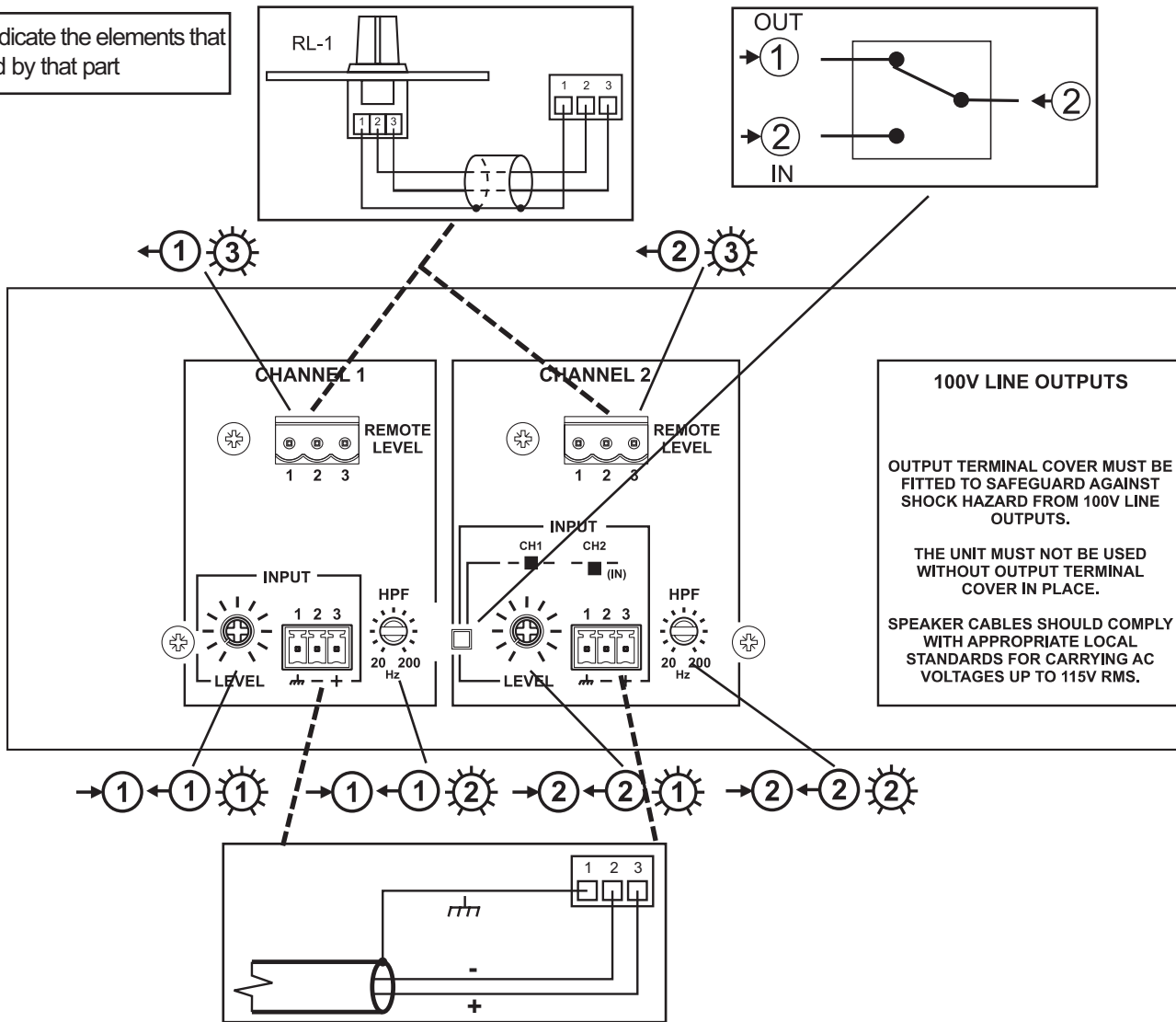
In the interest of continuing improvements Cloud Electronics Limited reserves the right to alter specifications without prior notice.

# REAR PANEL CONTROLS AND CONNECTIONS

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Key	
	Input
	Output
	Control

Symbols indicate the elements that are effected by that part



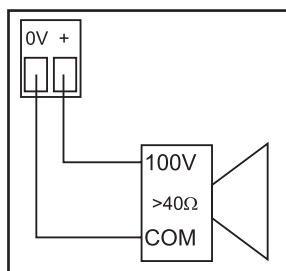
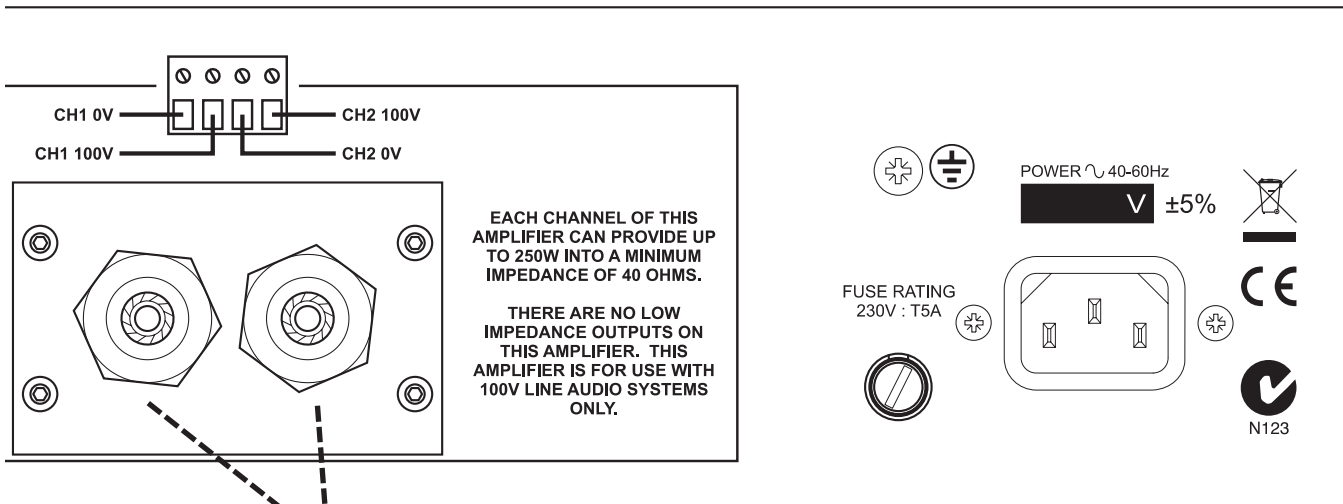
**100V LINE OUTPUTS**

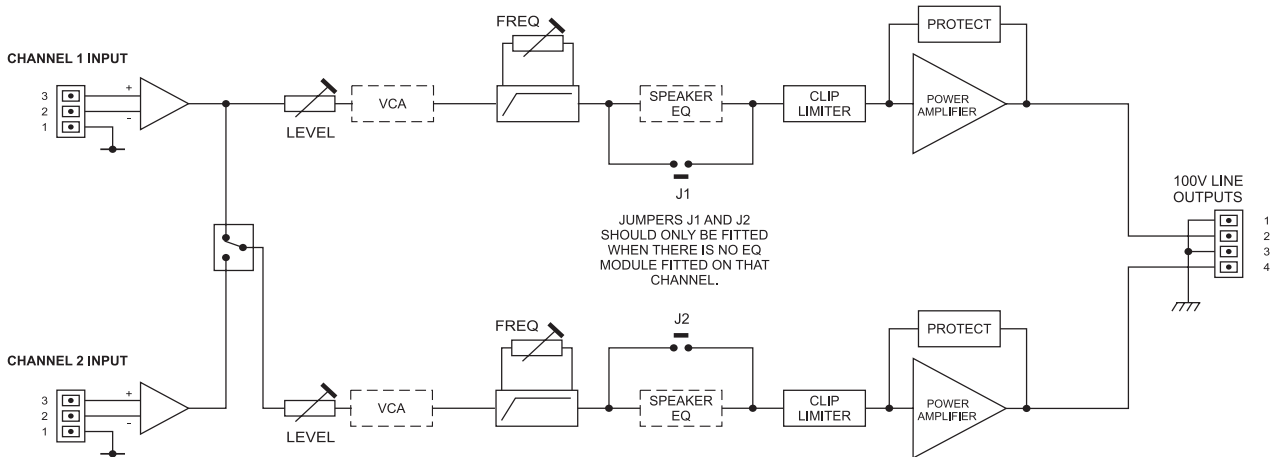
OUTPUT TERMINAL COVER MUST BE FITTED TO SAFEGUARD AGAINST SHOCK HAZARD FROM 100V LINE OUTPUTS.

THE UNIT MUST NOT BE USED WITHOUT OUTPUT TERMINAL COVER IN PLACE.

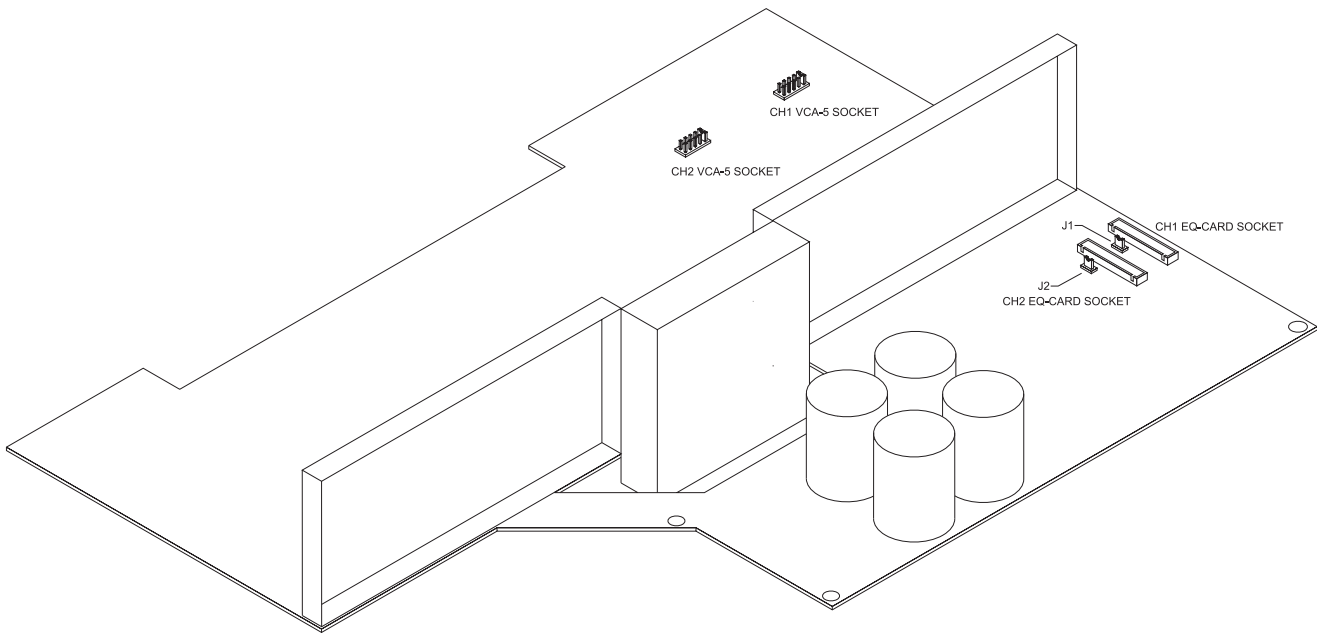
SPEAKER CABLES SHOULD COMPLY WITH APPROPRIATE LOCAL STANDARDS FOR CARRYING AC VOLTAGES UP TO 115V RMS.

- : Channel 1 Input (0dBu)
- : Channel 2 input (0dBu)
- : Channel 1 Output (250W, min load 40 ohms)
- : Channel 1 Output (250W, min load 40 ohms)
- : Level Control
- : High Pass Filter (20Hz to 200Hz)
- : Remote Music Control





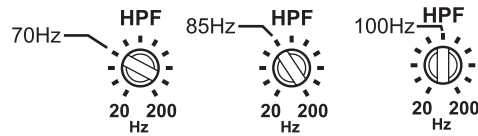
- When removing the top panel, ensure that the power cable is disconnected.
- When replacing the top panel, use only the original parts or identical replacements.



**SPEAKER EQUALISATION & VCA MODULES**

- Equalisation modules available for the CXV-225 can be seen in the table at the foot of this page.
- Fit the EQ module to the connector for the channel you wish to equalise. The diagram above shows the connectors and which channels they correspond to. Symbols correspond to those on previous diagrams.
- Remove jumper J1 when fitting a speaker EQ module for channel 1. Remove jumper J2 when fitting a speaker EQ module for channel 2.
- Up to two of the single channel VCA-5 module can be fitted to allow volume adjustment via the RL-1 wall plate or external DC control voltage.
- The VCA-5 connector locations are shown on the above diagram. For detailed fitting instructions please refer to the VCA-5 manual.

<b>BOSE®</b>
M8, M32, MA12, 402, 502A, 802, MB4, MB24, 502B, 502BEX
LT3302, LT4402, LT9402, LT9702, M16



## High Pass Filters

Very few of the transformers fitted to 100V line speakers are capable of handling high level signals at 20Hz. In fact most will saturate at much higher frequencies. When the transformer saturates this creates a very intrusive distortion and places the system under unnecessarily high stress. Because of this a correctly set up high pass filter is an essential part of any 100V line system. The CXV-225 has a variable frequency high pass filter to allow the installer to choose a frequency that suits the speakers and the application. Setting this filter to the 20Hz position in an attempt to get good low frequency performance out of the system will rarely be beneficial and in most cases will simply cause problems. In particular it will probably lead to very severe distortion from the speaker transformers when high level bass notes are played through the system, for example a bass drum, low notes on a bass guitar or breath blasts from microphones. The 20Hz setting should only be used when the system has some other form of filter or protection from high level low frequency signals, for example if a dedicated speaker processor is used. When selecting a setting for all other systems bear in mind that the higher the frequency you choose then the less likely it is that the system will suffer from saturation problems.

### 1. For speech only systems

Settings somewhere between the middle position (100Hz) and the 200Hz position are appropriate. Set the control to 100Hz and rotate it towards the 200Hz position whilst listening to speech through the system, until you can perceive a detrimental loss of bass in the voice. Few voices contain any useful signal below 200Hz, so in many cases you will be able to set the filter to 200Hz without any real loss of quality. Often a setting this high will actually enhance the clarity of the speech, reduce microphone handling noise and reduce breath blasts.

### 2. For music systems

Here the optimum setting depends on the speakers and their transformers. It should be noted that many 100V line speakers are inherently incapable of producing the same bass performance as good low impedance speakers. If the manufacturer recommends a setting, use this as the minimum setting, otherwise, settings between 70Hz and 100Hz should be appropriate. Unless the speakers are designed for good bass reproduction, a setting of 85-100Hz may be required. Test the system at full volume with a variety of music containing high level, low bass notes and listen for any distortion, if the transformers saturate this distortion will be clearly audible. If distortion is present rotate the control clockwise until it disappears.

## General Specifications

Inputs	Balanced via plug in screw terminal connectors
Outputs	2-pin plug-in screw terminal connectors for cables up to 2.5mm <sup>2</sup>
Protection	Clip Limiting, VI Limiting, DC Offset, Thermal & switch-on delay
Status Indicators	LED Indicators on each channel for Signal, Peak & Protect
Cooling	Force cooled using variable speed DC fan
Dimensions	482.60mm x 88.00mm(2U) x 300.00mm deep (+ connectors)
Weight	8.8kg net

## Technical Specification

Outputs	100V rms, 250 watts into minimum 40Ω load
Frequency Response	20kHz -0.6dB, -3dB 20Hz-200Hz variable filter
Distortion	<0.04% 1kHz 1dB below limiting, 40Ω load
Crosstalk	-80dB @10kHz
Sensitivity	0.775Vrms (0dBu)
Input Impedance	10kΩ Balanced, 5kΩ unbalanced
Noise	-96dBr rms 22Hz - 22kHz Relative to 100V rms
Power input	230V ±5%
Fuse rating	230V - T5A H
Fuse type	20mm x 5mm 250V

Notes: