

*G.A.
Systems*

— Modular —
— Amplifier —
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USER GUIDE

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Modular Amplifier

General Information

The amplifier system is based around a 3U nest unit which can accommodate a maximum of six 75 watt amplifier modules. A power supply unit is situated at one end of the nest unit and supplies power to all amplifier modules within the nest.

Nest Unit General

An amplifier bus board is fitted to the rear of the nest in each location an amplifier is required. The bus board provides mounting for input and output connectors, control signals input connectors and input attenuation controls. Input signals can be bussed in any combination from bus board to bus board as can power and control signals. A power supply unit is mounted to the right of the nest and supplies A.C. power along the bus boards to each of the amplifier modules. Rectification and D.C. smoothing is incorporated on each amplifier module. Mains power is fed to each nest by means of a fused IEC mains input socket. The front of the power supply module incorporates the main On/Off switch.

Amplifier Module General

The amplifier module is built on a 100 x 220mm board, and is mounted to a front panel which has two LED's used to indicate the status of the two input's. Connection to the bus board is via a Multi pole connector. Each amplifier has two line level inputs each with pre-set attenuation to limit input signal, or set maximum output level if required. Control inputs to each amplifier are via a 3 pin connector on the bus board and include the following inputs.

DETAILED Page 5

1. A mute facility initiated by a contact closure.
2. The option of either a. or b.
 - a. An automatic on-board cross fade between inputs 1 and 2 at a pre-set rate, initiated by a contact closure.
 - b. A control voltage between 0 and 10 volts can be applied to either cross fade between inputs or to obtain a mix of inputs 1 and 2.

When only one input is being used the control voltage input can be used as a programmable volume control (VCA input) instead of a cross fade.

Modular Amplifier

Amplifier Specification

Power output	75 Wrms / 130 W peak into 4 ohm .
Slew rate	11V/us
Signal to noise Ratio	114dB @ 40W
Frequency response	15Hz to 28Khz
Minimum input level	500mV
Input impedance	10K
External gain control	0-10V @ 1mA or external contact closure utilising internal ramp generator.
External Mute control	Contact closure
Input connections	2 x RCA phono sockets
Output connections	1/4" mono jack socket
Gain and mute connections	3 way push on connector
Power requirements	2 x 30v ac
Built in protection	Under voltage, over voltage, over current, thermal overload and short circuit protection.

Main frame Details

Power requirements	240 V ac 50/60 Hz 500W
Frame capacity	Up to 6 modules
Mains connections	IEC Socket
Dimensions	3U x 19 inch standard nest frame

CONTROL INPUT CONNECTOR

This 3 pin connector is located on the bus board and is accessible from the back of the amplifier nest unit. Below is a description of the function available via this connector.

ON-BOARD RAMP GENERATOR

NOTE. Link A on the main amplifier board must be fitted to enable the on-board ramp generator. The ramp generator is activated by a contact closure on pins 1 and 2 of the 3 pin CONTROL input connector located on the Bus board.

Cross Fade

Assuming audio is present at both inputs 1 and 2 and with pins 1 and 2 of the control input connector open circuit, audio from input 1 will be Amplified. When pins 1 and 2 on the control input are shorted together the amplifier with cross fade from input 1 to input 2 at the rate set by R14 (ramp time adjust on the main amplifier board) , input 2 will then be amplified as long as the short remains on the control input, when released the amplifier will cross fade back to input 1 at the pre-set rate.

0 to 10v CONTROL VOLTAGE INPUT

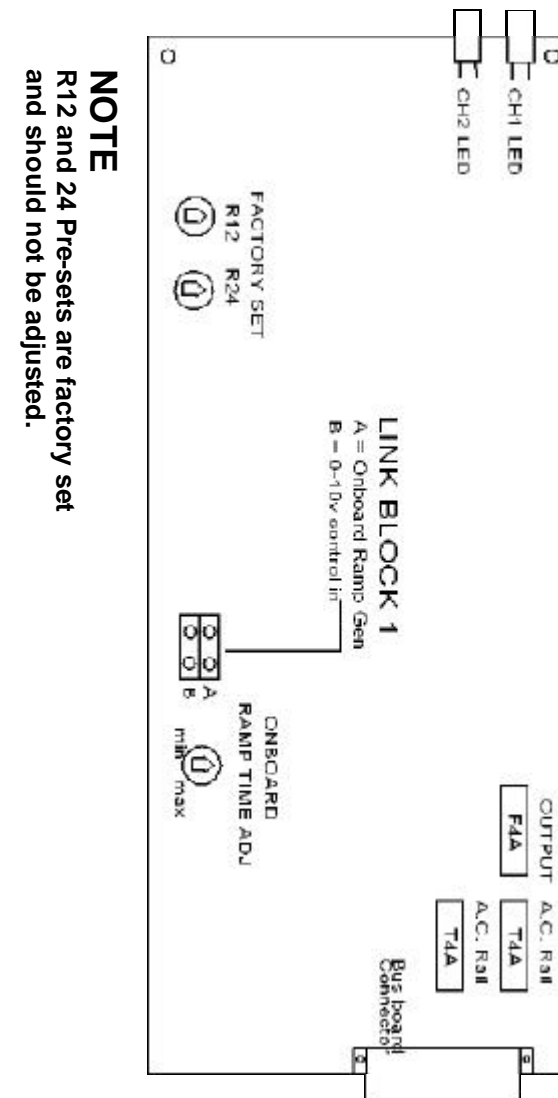
NOTE. Link B on the main amplifier board must be fitted to allow the 0-10v control voltage input to function. With an external control voltage connected to pins 1 and 2 on the control input connector (PIN 1 V+ and PIN 2 0v) the amplifiers will output as follows:

- a: With 10V D.C. applied the amplifier will output the program from INPUT 1 only.
- b: With 0 volts applied the amplifier will output the program from INPUT 2 only.
- c: With any voltage between 0 and 10v any mix of INPUTS 1 and 2 is possible. i.e. 5V applied with give 50% mix of inputs 1 and 2.

MUTE FUNCTION

Amplifiers can be muted from the control input connector by shorting pins 2 and 3, the amplifier will remain in a muted state whilst the short circuit remains.

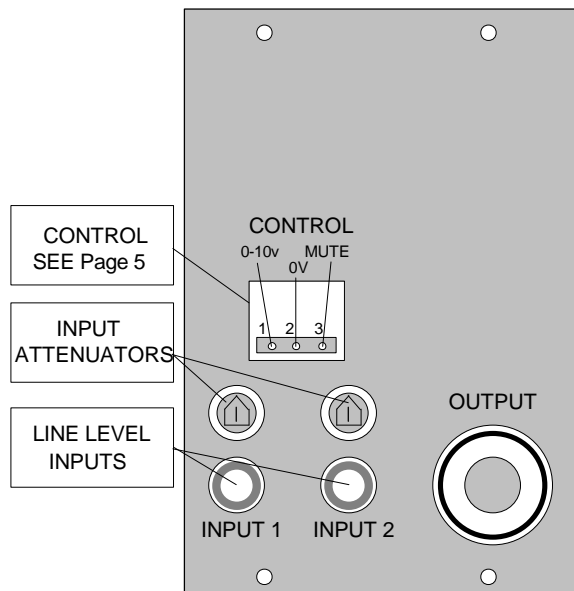
This is a general layout of the Amplifier main PCB including link blocks, connectors and control pot positions. Use this diagram to locate link blocks etc. should you need to format or re-format any particular amplifier.



Modular Amplifier Bus Board Connections

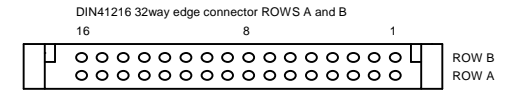
Each amplifier module fitted in the nest frame has a panel as pictured below. Two input signals can be fed to the amplifier unit via the PHONO SOCKETS marked INPUT 1 and INPUT 2, audio output is via a standard 1/4in JACK SOCKET. Control of the two audio inputs and Muting are via the CONTROL connector. (See Page 5)

Amplifier Unit rear Bus Board Panel



Modular Amplifier Main Board to Bus Connector

The connector shown and listed below carries all input, output, control and A.C. power to the Main Amplifier PCB.



AMPLIFIER PCB
VIEW INTO SOCKET MOUNTED ON AMPLIFIER BOARD

Pin	ROW A	ROW B
1	A.C. Input Rail 1	A.C. Input Rail 1
2	A.C. Input Rail 1	A.C. Input Rail 1
3	A.C. Input Rail 2	A.C. Input Rail 2
4	A.C. Input Rail 2	A.C. Input Rail 2
5	AUDIO OUTPUT	AUDIO OUTPUT
6	AUDIO OUTPUT	AUDIO OUTPUT
7	POWER GROUND	POWER GROUND
8	POWER GROUND	POWER GROUND
9	POWER GROUND	POWER GROUND
10	SIGNAL GROUND	SIGNAL GROUND
11	MUTE INPUT	MUTE INPUT

CONNECTOR DETAILS Main Amplifier PCB to Bus

13	SIGNAL GROUND	SIGNAL GROUND
14	CHANNEL 2 INPUT	CHANNEL 2 INPUT
15	CHANNEL 1 INPUT	CHANNEL 1 INPUT
16	SIGNAL GROUND	SIGNAL GROUND