

SOUNDMASTER

VF 400

MOS-FET POWER AMPLIFIER

OWNERS MANUAL

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INTRODUCTION

Please read this manual before connecting the amplifier.

Introduction

Your new SOUNDMASTER amplifier has been manufactured from the highest quality components and materials. Please read these instructions carefully and your amplifier will provide many years of service. This amplifier is designed for use in professional high power sound systems and it should be installed by a competent technician as described in the following instructions.

Before switching the amplifier on please check that the mains lead is correctly wired and that the mains voltage selector is set to the correct supply voltage. The mains voltage selector is set in the factory to 240v AC

Technical Specification

Output power per channel	250 watts into 4 Ω RMS 175 watts into 8 Ω RMS
Bandwidth	5Hz to 60KHz
Input sensitivity	0dB (0.775v)
Input impedance	10Kohms Balanced
Hum and Noise	Less than -96dB
Output rise time	7uS
A.C.Power input	220-240v AC 50Hz 600VA max
Dimensions	19" x 3.5" x 15.5"
Shipping weight	14 kilos

Protection Details

A.C.Power supply fuse
D.C.Power supply fuse (2 per channel)
Thermal cut-outs set at 100°C
Five second switch on delay
Speaker outputs disconnect if a D.C. output of greater than ± 6 volts is present.

Declaration of Conformity

Equipment	Soundmaster VF 400 power amplifier
Manufacturer	M Jay Electronics Limited
Address	Albion Mills Church Street Morley Leeds LS27 8LY
European Standards	1) EN 50 081-1 Emission 2) EN 50 082-2 Immunity 3) EN 60 555 Conducted Emissions 4) EN 60065
Conformity Criteria	1) Radiated emissions are less than 30 dB μ V/m @ 10m from the equipment. Conducted emissions are less than 56dB μ V/m. 2) The performance of the equipment will not be impaired by a radiated signal in the band 27MHz to 500MHz with a signal strength of 3v/m and with 80% modulation 3) The AC power input current harmonics are within the limits set by EN 60 555-3,-3. The conducted RF emissions are below the limits described in EN55 022 class b.
Description of Equipment	450 watt Audio Power Amplifier
<p>I certify that the apparatus identified above conforms to the requirements of Council Directives 89/336/EEC and 73/23/EEC and therefore complies with the requirements of Council Directive 73/23/EEC, (The Low Voltage Directive) on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits as amended by Article 13 of Council Directive 93/68/EEC</p>	
Signed John Varley B.Eng(Hons) C.Eng MIEE
Date	19 August 1997
Position	Managing Director
Company	M Jay Electronics Limited

FRONT PANEL FEATURES

A.C.Power Switch

The power switch is a double pole type to ensure that both the live and neutral mains supply is disconnected from the amplifier when it is not in use. When the mains power supply is on, the ON LEDs on the front panel will be illuminated. There is a five second switch on delay before the amplifier outputs are connected to the speakers.

Input Attenuators

Both the input channels have an input attenuator to adjust the incoming signal and these are usually set to the same position for stereo or mono applications. If the amplifier is used in systems when the two channels are supplying different signals or different loads they can be set separately e.g. Bi-amplified speaker systems or for sound distribution to two different rooms in a building.

The amplifier is designed for an input signal level of 0dB to provide full drive to the output (which is the output level of most sound mixers) so that the controls may be set to maximum (10) to obtain full output.

Caution The use of a graphic equalizer between the mixer and the amplifier can result in the signal to the amplifier being higher than 0dB. The use of V.U. type meters on some mixers can cause under reading on certain types of signal, in this case the output level should be set using the amplifier output peak indicators to ensure that the output of the amplifier does not go into distortion.

Peak LED

If the output of either channel is greater than 2dB below the maximum output level the peak LED will be illuminated. The indicator is Peak Reading with a fast attack and a slow decay time. When the amplifier is used with music or speech it is possible to exceed the full power rating of the amplifier, this is due to the power stored in the reservoir capacitors being discharged only by peaks in the music and recharging in quiet passages. In these circumstances up to double the rated output power may be available for short periods.

Bridge Indicator

When the amplifier is used in the bridged mode (the switch is located inside the amplifier, behind the LED on the front panel) this green LED will be illuminated. The right input should not be used and the right channel input attenuator should be turned to O. The speaker load should now be connected between the positive outputs of the left and right channels. (Pin 1+ on the speakon connectors). N.B. the minimum load should be 8Ω.

Protection Indicator

Each channel is separately protected against overheating. The thermal cutout will operate at a temperature of 100°C on the power transistors and this disconnects the load from the amplifier and illuminates the Red LED for that channel. The output will be reconnected when the temperature drops below 85°C.

The protection indicator will also be illuminated if the amplifier output DC voltage changes from zero. This will protect the speakers should an electrical failure occur in the amplifier

Signal Inputs

Each channel can be connected by either of the XLR type connectors. The female and male XLR connector are wired in parallel to enable amplifier inputs to be linked together for large sound systems. The inputs are balanced and should be wired in accordance with BS5428 part 5/3 and IEC-268 part 12:

Pin 1	Screen
Pin 2	Positive phase
Pin 3	Negative phase

For unbalanced inputs either the screen and negative phase should be connected together or the input can be wired signal to the positive phase, screen to the negative phase. DO NOT leave either of the negative or positive phase inputs unconnected as this will result in a reduced output level and increased noise.

Amplifier Outputs

Two Speakon type connectors are provided for each channel. The minimum load impedance is 4Ω. The connectors are wired:

Pin 1- Ground	
Pin 1+	Signal

In the bridge mode the output should be taken between pin 1+ of each channel.

A.C. Power Input

The AC power is supplied via a 3 pin IEC Euro-Connector moulded plug and cable which is supplied with the amplifier. The free end of the cable is not supplied with a 3 pin plug so that the cable can be wired into the equipment rack power distribution system.

The lead should be wired using the following code:

Green/Yellow	Earth
Brown	Live
Blue	Neutral

CAUTION - THIS AMPLIFIER MUST BE CONNECTED TO EARTH, FAILURE TO DO SO COULD BE FATAL.

DO NOT disconnect the green/yellow mains safety earth. This amplifier has a special electronic circuit to eliminate hum loops.

D.C.Fuses

There are two 20mm D.C. fuses for each amplifier, one for the positive and one for the negative power supply and they are rated at 6.3A quick blow. Before changing a fuse turn the amplifier mains switch off and disconnect the mains supply from the amplifier.

INTERNAL FACILITIES

Bridge Switch

The bridge switch is located inside the amplifier behind the bridge LED so that it is not inadvertently operated and therefore requires the removal of the lid to operate it. When the switch is in the bridge position the green LED will be illuminated. Caution You should disconnect the mains supply before removing the amplifier lid.

Voltage Selector

The voltage selector is located inside the amplifier on the slow start P.C.B. It is set at 240v at the factory. To change voltage settings the lid of the amplifier will require removal and this is done by unscrewing the 6 screws in the lid. Caution Disconnect the mains supply before opening the lid.

The selector link is coloured red and is inserted into the required sockets.

GENERAL DETAILS

Ventilation

To keep the amplifier cool a good flow of air is required. If the amplifier is housed in a rack or other enclosed space it is essential that adequate ventilation is provided, with holes in the bottom of the rack for cool air to enter and holes in the top for hot air to escape. In large systems involving many amplifiers in the same rack, forced air ventilation may be required.

Service

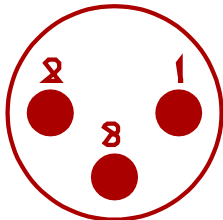
This amplifier is a precision piece of equipment, should it require servicing it should be returned to the dealer or agent it was purchased from. Service work should only be carried out by qualified and experienced engineers. Work or modifications by inexperienced persons may invalidate the guarantee.

Rack Fitting Details

The amplifier will fit in a standard 19" rack and is 2 units (3.5" or 88mm) high.

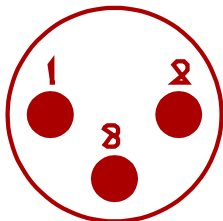
CONNECTOR WIRING

INPUT CONNECTORS VIEW FROM THE WIRING SIDE



MALE XLR FREE PLUG

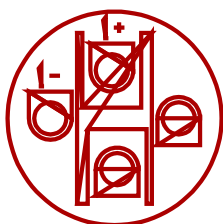
PIN 1	GROUND
PIN 2	+VE PHASE
PIN 3	-VE PHASE



FEMALE XLR FREE SOCKET

PIN 1	GROUND
PIN 2	+VE PHASE
PIN 3	-VE PHASE

OUTPUT CONNECTORS



SPEAKER FREE SOCKET

PIN 1+	+VE PHASE
PIN 1-	-VE PHASE

M-Jay Electronics have a policy of continuing development and we reserve the right to alter models and/or specifications at any time. E&OE

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