

# SM Pro Audio

## VALUE SERIES

### Operating Manual - SM HP4 V

Version 1.0 November 2002



## **SAFETY INSTRUCTIONS**

**CAUTION:** To reduce the risk of electrical shock, do not remove the cover or rear panel of this unit. No user serviceable parts inside. Please refer servicing to qualified personnel only.

**WARNING:** To reduce the risk of fire or electrical shock do not expose this appliance to rain or moisture.

### **DETAILED SAFETY INSTRUCTIONS:**

All safety and operation instructions of this manual should be read and adhered to before operation.

#### **Retain Instructions:**

Please retain all safety and operating instructions for future reference.

#### **Follow instructions:**

All operation and user instructions should be followed.

#### **Water, liquid and Moisture:**

The appliance should not be used near water, rain or other liquids. Make sure that no liquid can leak, spill or otherwise seep into the appliance.

#### **Ventilation:**

Please place the appliance so no obstacles interfere or impede the flow of air through the ventilation openings.

#### **Heat:**

The appliance should be situated away from other heat sources such as heaters, radiators, ovens, or other appliances that produce heat.

#### **Power Source:**

Make sure your appliance is set to the correct voltage for the country in which it will be used.

#### **Grounding and Polarization:**

Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

#### **Power-Cord Protection:**

Power supply cords should be routed so that they are not likely to be walked on, pinched, damaged, worn, or rubbed by any other device or obstacle.

#### **Cleaning:**

The appliance should be cleaned only with a light soft cloth. Do not use any damaging or corrosive products on the unit.

#### **Periods of inactivity:**

The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

#### **Damage Requiring Service:**

The appliance should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.

#### **Servicing:**

The user should not attempt to service the appliance beyond that is described in the Operating Instructions.

All other servicing should be referred to qualified service personnel.

---

## **SM HP4Value Main Features**

Professional, multi-purpose headphone amplifier system for stage and studio applications

- Four totally independent stereo high-power amplifiers in Half 1 RU package
- High quality audio even at extremely high volume levels
- Two independent stereo input sections
- Output level control for each channel
- Independent selection of input for each output
- High-quality components and rugged construction
- External 16Vac power supply

## **FOREWORD**

Dear Customer,

Thank you very much for expressing your confidence in SM ProAudio products by purchasing this unit. The SM HP4Value has been designed to be used as a standard tool for home/pro studios, P.A. rental companies etc. With much experience in the audio industry over a long period of time, and along with valuable suggestions from our customers, our engineers have developed a product we know you will be satisfied with. We guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely affordable price.

Regards,

SM ProAudio

---

+ It should be pointed out, that extreme output volumes may damage your ears and/or your headphone units. Turn down the LEVEL controls before you switch on the unit.

## **TABLE OF CONTENTS**

### **1. INTRODUCTION**

### **2. THE DESIGN CONCEPT**

2.1 High quality components and design

2.2 Inputs and outputs

### **3. INSTALLATION**

3.1 Rack mounting

3.2 Mains voltage

3.3 Audio connections

### **4. FRONT PANEL CONTROLS**

4.1 Independent signal selector switch for each amplifier

4.2 Independent (4 x) rotary volume pot controls for each headphone output

### **5. APPLICATION**

5.1 Using the SM HP4 as a headphone amplifier

### **6. SPECIFICATIONS**

### **7. WARRANTY**

---

## **1. INTRODUCTION**

In purchasing the new SM HP4 Value, you have acquired a headphone amplifier of high class that meets all the demands and requirements of studio and live work. Due to its extensive functions the SM HP4 Value is an extremely efficient and universal headphone amplifier. It has been designed above all as a reference unit for musicians in the studio. The unit features switching possibilities and a sound quality few headphone amplifiers can offer. Apart from its extremely powerful amplifiers the unit also offers an ingenious line distribution system. The SM HP4 Value finds widespread application throughout the world, in home/pro studios, sound reinforcement systems and in many other audio fields.

The SM HP4 Value features a variety of monitoring and distribution options: each of the four stereo amplifiers can accept signal from any of the two stereo inputs on the rear of the unit. This allows two completely independent monitor signals to each set of headphones connected to the SM HP4 Value! Ever had the drummer wanting a different mix feed from the keyboard player?? I bet you have and now it is finally possible using the SM HP4 Value.

## **2. THE DESIGN CONCEPT**

### **2.1 High quality components and design**

The philosophy behind SM ProAudio products guarantees a no-compromise circuit design and employs the best choice of components. The operational amplifiers NJM4558D which are used in the SM HP4 Value, are exceptional. They boast extreme linearity and very low distortion characteristics. To complement this design the choice of components includes high tolerance resistors and capacitors, and several other stringently selected elements.

### **2.2 Inputs and outputs**

All inputs and outputs are secured firmly to the exterior chassis housing. This ensures robust quality and confidence in performance under all conditions.

---

### **3. INSTALLATION**

Your SM ProAudio SM HP4 Value was carefully packed in the factory and the packaging was designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage, which may have occurred in transit.

+ If the unit is damaged, please do not return it to us, but notify your dealer and the shipping company immediately, otherwise claims for damage or replacement may not be granted. Shipping claims must be made by the consignee.

#### **3.1 Rack Mounting**

The SM ProAudio SM HP4 Value fits into a Half Rack standard 19" rack unit of space (1 3/4"). Be sure that there is enough air space around the unit for cooling. As to avoid overheating, please do not place the SM HP4 Value on high temperature devices such as power amplifiers.

#### **3.2 Mains voltage**

The SM HP4 Value has an External 16V Power supply which connects via a cable to the Main power supply. Before you connect your SM HP4 to the mains, please make sure that your local voltage matches the voltage required by the unit!

#### **3.3 Audio connections**

Analog inputs - On the rear of the SM HP4 Value there are 4(2x stereo pair) 1/4 inch line level audio jacks which will accept 2 x stereo (L&R) input signals.

Stereo headphone outputs - On the front of the SM HP4 Value there are 4 x stereo 1/4 Inch output jacks for connection of 4 x stereo headphone sets.

---

## 4. CONTROLS

### SM HP4 Value front panel

The SM HP4 has four independent headphone amplifiers or line distribution channels. The unit provides 2 rotary controls and 2 stereo jacks per channel.

#### 4.1 The front panel input signal selector switch

Each channel features a selector switch which allows for selection of any of the 2 x stereo input source signals connected to the rear of the SM HP4V to be routed to the selected channels headphone amplifier output. Simply choose the source signal desired for that channel.

#### 4.1 The front panel rotary volume pot controls

Each channel features a rotary volume pot for variable adjustment of the desired output level.



## 5. APPLICATION

### 5.1 Using the SM HP4V as a headphone amplifier

Connect a stereo (L&R) program source (2 x 1/4" Inch Jacks) to the rear of the SM HP4V using one of the available 2 x stereo input pairs on the rear panel. You can also connect a Mono signal to the uinput channel and split the signal into both sides of the headphone.

Connect a set of headphones using a stereo 1/4 Inch cable to any of the headphone outputs on the front of the SM HP4V.

Select the source signal from the selector switch for the channel in use.

Set to an appropriate level for monitoring.

\*Owing to the four independent channels of the SM HP4V, four individual mixes for four musicians can be achieved with a single unit. In the application of studio recording, you can configure sub-groups, aux sends or single outputs of your audio mixer to feed signal independently to the SM HP4V. This enables each musician to receive a specific configuration of instruments of their choice in there headphones.

Note - If four headphone outputs are not enough, you can interface and link any number of SM HP4V's for additional outputs .

### 5.3 Chaining multiple SM HP4V's together for additional headphone/line distribution requirements.

It is very easy to chain multiple SM HP4V's together. Use appropriate stereo 1/4 Inch jack > to Y (2 x mono) cables and make connections from one of the outputs to the stereo (L&R) audio inputs on the rear of your second SM HP4V.

This effectively allows an addition 3 x headphone outputs You can continue to chain as many units as you want using this procedure.

---



## 6. SPECIFICATIONS

### AUDIO INPUTS

Connectors	1/4" jack
Type	unbalanced
Impedance	47k Ohms
Peak input level	+25dB
Gain control range	40dB

### HEADPHONE POWER AMPLIFIER OUTPUTS

Max. output level	300mW@32 Ohms (max 1W@32 Ohms)
Output impedance	22 Ohms
Max. gain	+20 dB

### DIST, FREQ, S/N RATIO & CROSSTALK

Frequency response	20Hz~20kHz, 0dB~-2B
Distortion	0.02%
S/N Ratio	better than 80dB
Crosstalk rejection	>72dB@1kHz;-20dBinput

### FUNCTION CONTROLS

Volume per channel	variable
Signal selectors	variable

### POWER SUPPLY

Mains voltages	USA/Canada ~ 120 V AC, 60 Hz U.K./Australia ~ 240 V AC, 50 Hz Europe ~ 230 V AC, 50 Hz General export model ~ 100-120 V AC, ~ 200-240 V AC, 50-60 Hz
Power consumption	6.5VA
Fuse	100-120 V AC: 630 mA (slow-blow) 200-240 V AC: 315 mA (slow-blow)
Mains connection	Using External Power Supply 16Vac

### PHYSICAL

Dimension	1 3/4" (44.5 mm) * 19" (482.6 mm) * 8 1/2" (217 mm)
Net weight	approx. 3.15 kg

SM ProAudio is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or shown.

## **7. WARRANTY**

### **1 WARRANTY CARD**

To be protected by this warranty, the buyer must complete and return the enclosed warranty card (signed/stamped by retail dealer) within 14 days of the date of purchase to SM ProAudio (see address below 3). Failure to return the card in due time (date as per postmark) will void any extended warranty claims.

### **2 WARRANTY**

1. SM ProAudio warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (3) years from the original date of purchase, in accordance with the warranty regulations described below. If any defects occur within the specified warranty period that are not caused by normal wear or inappropriate use, SM ProAudio shall, at its sole discretion, either repair or replace the product.

2. If the warranty claim proves to be justified, the product will be returned freight prepaid by SM ProAudio within Australia. Outside of Australia, the product will be returned at the buyer's expense.

3. Warranty claims other than those indicated above are expressly excluded.

### **3 RETURN AUTHORIZATION NUMBER**

1. To obtain warranty service, the buyer must call SM ProAudio during normal business hours BEFORE returning the product (Tel.: +61 3 9555 8081). All inquiries must be accompanied by a description of the problem. SM ProAudio will then issue a return authorization number.

2. The product must be returned in its original shipping carton, together with the return authorization number, to the following address:

SM Pro Audio  
Service Department  
W25, 26-28 Roberna St  
Moorabbin  
Melbourne, Victoria  
Australia 3189

---

## 4 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by an original retail dealer's invoice. Any product deemed eligible for repair or replacement by SM ProAudio under the terms of this warranty will be repaired or replaced within 30 days of receipt of the product at SM ProAudio.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship.

The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, SM ProAudio shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections, maintenance/repair work and replacement of parts are expressly excluded from this warranty, in particular if caused by inappropriate use. Likewise, the warranty does not cover defects of expendable parts caused by normal wear of the product. Expendable parts are typically pots, potentiometers, switches and similar components.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- Misuse, neglect or failure to operate the unit in compliance with the instructions given in the user or service manuals.
- Connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- Damages/defects that are caused by any other condition beyond the control of SM ProAudio.

5. Any repair carried out by unauthorized personnel will void the warranty.

6. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. SM ProAudio will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 4 weeks after notification, SM ProAudio will return the unit C.O.D. with a separate invoice for freight and packing. Such cost will also be invoiced separately when the buyer has sent in a written repair order.

## **5 WARRANTY TRANSFERABILITY**

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of SM ProAudio.

## **6 CLAIM FOR DAMAGES**

Failure of SM ProAudio to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of SM ProAudio exceed the invoiced value of the product.

## **7 OTHER WARRANTY RIGHTS**

This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

The information contained in this manual is subject to change without notice. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording of any kind, for any purpose, without the express written permission of SM ProAudio.

**ALL RIGHTS RESERVED © 2002 SM ProAudio**

SM Pro Audio  
Service Department  
W25, 26-28 Roberna St  
Moorabbin  
Melbourne, Victoria  
Australia 3189

PH: +61 3 9555 8081  
FAX: +61 3 9555 8083

---