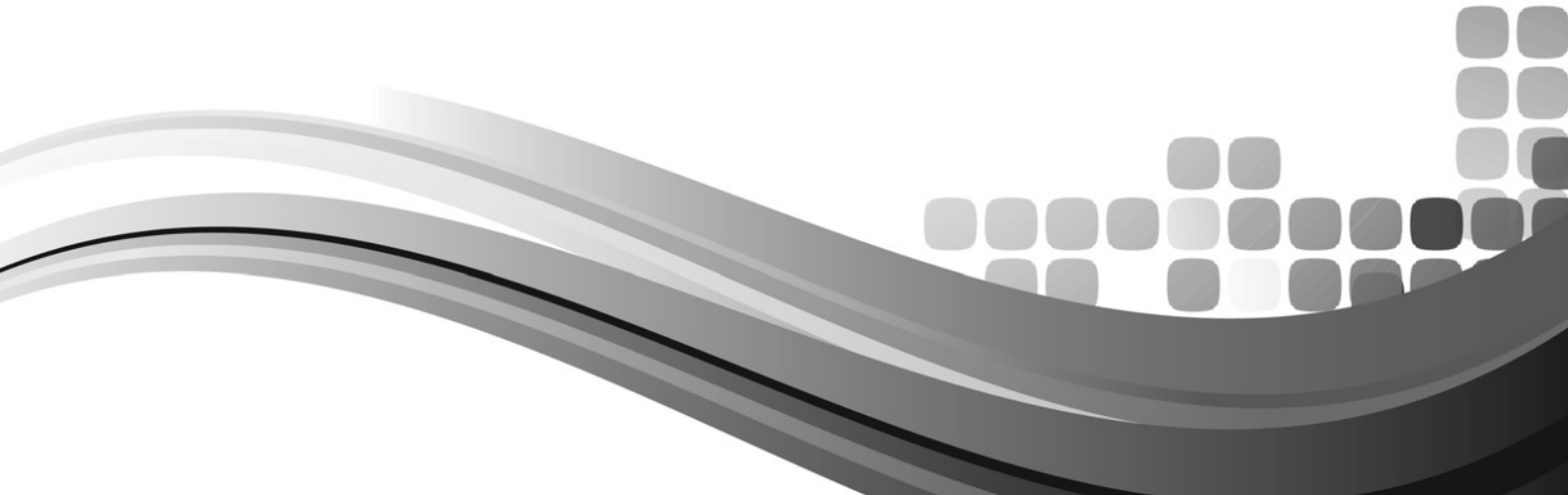
AUSTRALIAN MONITOR
INTEGRATION INTELLIGENCE
A Hills Business

INSTALLATION AND OPERATION MANUAL

AMP SERIES

CONSTANT VOLTAGE INSTALLATION
AUDIO POWER AMPLIFIERS

AM42P
AM41P
AM22P
AM21P



IMPORTANT SAFETY INFORMATION

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. This appliance shall not be exposed to dripping or splashing water and that no object filled with liquid such as vases shall be placed on the apparatus.
16. Plug this apparatus to the proper wall outlet and make the plug to be disconnected readily operable.
17. Mains plug is used as disconnected device and it should remain readily operable during intended use. In order to disconnect the apparatus from the mains completely, the mains plug should be disconnected from the mains socket outlet completely.
18. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
19. An appliance with a protective earth terminal should be connected to a mains outlet with a protective earth connection.
20. The apparatus should be disconnected from the mains completely before speaker wiring. The speaker output should be proper protected from direct contact and pay attention to speaker connections, terminals and speaker wiring during normal operation.

PRÉCAUTIONS DURANT UTILISATION

1. LISEZ ces instructions.
2. Tenez ces instructions.
3. Notez tous les avertissements.
4. Suivez toutes les avertissements.
5. N'utilisez pas ce produit près de l'eau (la piscine, la plage, le lac, etc.).
6. Nettoyez seulement avec une étoffe sèche.
7. Ne bloquez aucuns troux de ventilation. Installez en accord avec les instructions du manufacturier.
8. N'installez près aucunes sources de chaleur comme radiateurs, registres de chaleur, fours ou les autres équipements (y compris amplificateurs) qui produisent la chaleur.
9. Ne défaites pas le but de sécurité de la fiche polarisée ou base-type. Une fiche polarisée a deux tranchants avec un plus large que l'autre. Une fiche de base type a deux a deux tranchants et une troisième pointe de base, le tranchant large ou la troisième pointe est fourni pour votre sécurité. Si la fiche donnée ne conforme pas votre prise de contact, consultez un électricien pour remplacement de la prise de contact obsolète.
10. Protegez le cordon de secteur contre être marchée dessus ou pincez en particulier aux fiches, aux douilles de convenance, et au point où ils sortent de l'appareil.
11. Seulement utilisez attachements/accessoires spécifiés par le manufacturier.
12. Utilisez seulement avec un chariot, un stand, un trépied, un support ou une table indiquée par le manufacturier, ou vendue avec l'appareil. Quand un chariot est utilisé, faites attention en déplaçant la combinaison d'appareil/chariot pour éviter de se déséquilibrer.
13. Arrachez la fiche du dispositif durant éclair et orage ou quand pas utilisé pour longues périodes de temps.
14. Référez au personnel qualifié de service pour toutes réparations. La réparation est donnée quand le système a été endommagé à n'importe façon, par exemple un fil ou une fiche endommagé(e) de la source d'alimentation. Avoir été exposé à pluie ou humidité, n'opère pas normalement, ou avoir été tombé.

15. L'appareil ne doit pas être exposé aux écoulements ou aux éclaboussures et aucun objet ne contenant de liquide, tel qu'un vase, ne doit être placé sur l'objet.
16. Branchez l'appareil à une source appropriée et faire que la prise à débrancher soit facilement accessible.
17. La prise du secteur ne doit pas être obstruée ou doit être facilement accessible pendant son utilisation. Pour être complètement déconnecté de l'alimentation d'entrée, la prise doit être débranchée du secteur.
18. AVERTISSEMENT: Pour éviter le risque d'incendie ou de chocs électriques, ne pas exposer cet appareil à la pluie ou à l'humidité.
19. Un appareil avec la borne de terre de protection doit être connecté au secteur avec la connexiion de terre de protection.
20. Assurez-vous que l'appareil est hors tension avant de connecter les hauts parleurs. Verifiez que la sortie des enceintes soit protégées contre un contact physique. Respecter les polarités des terminaux ainsi que le câblage des enceintes pendant le fonctionnement afin d'assurer une utilisation sécurisee.

AMP SERIES

Congratulations on choosing Australian Monitor for your professional amplification requirements.

The design of our AMP constant voltage installation series audio power amplifiers embraces all the aspects of a well designed amplifier. The visual design, mechanical, electrical and sonic parameters, along with our dedicated manufacturing process, have all been optimized to provide a professional tool that exhibits quality, reliability and longevity.

The AMP series amplifiers are 1 unit 1.75" high, 19" wide, rack mountable units.

Each channel of the amplifier comprises a balanced active input, level potentiometer, voltage controlled attenuator and fan-cooled class D output stage. The amplifier operates from a power factor corrected switch mode power supply.

These amplifiers have been specifically designed to deliver their high power output with minimal distortion, and provide the critical degree of control required by your speakers.

Revision 1.0: Nov 2014

WARNING!

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT USE THE PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

TO PREVENT ELECTRICAL SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT & FULLY INSERT.

CAUTION

THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

WARNING:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For European Union countries: This symbol on the product or its packaging indicates that this product must not be disposed of with other waste.

Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.

Please contact your local authority for further details of your nearest designated collection point.

Rating plate and caution marking are marked on the back enclosure of the apparatus

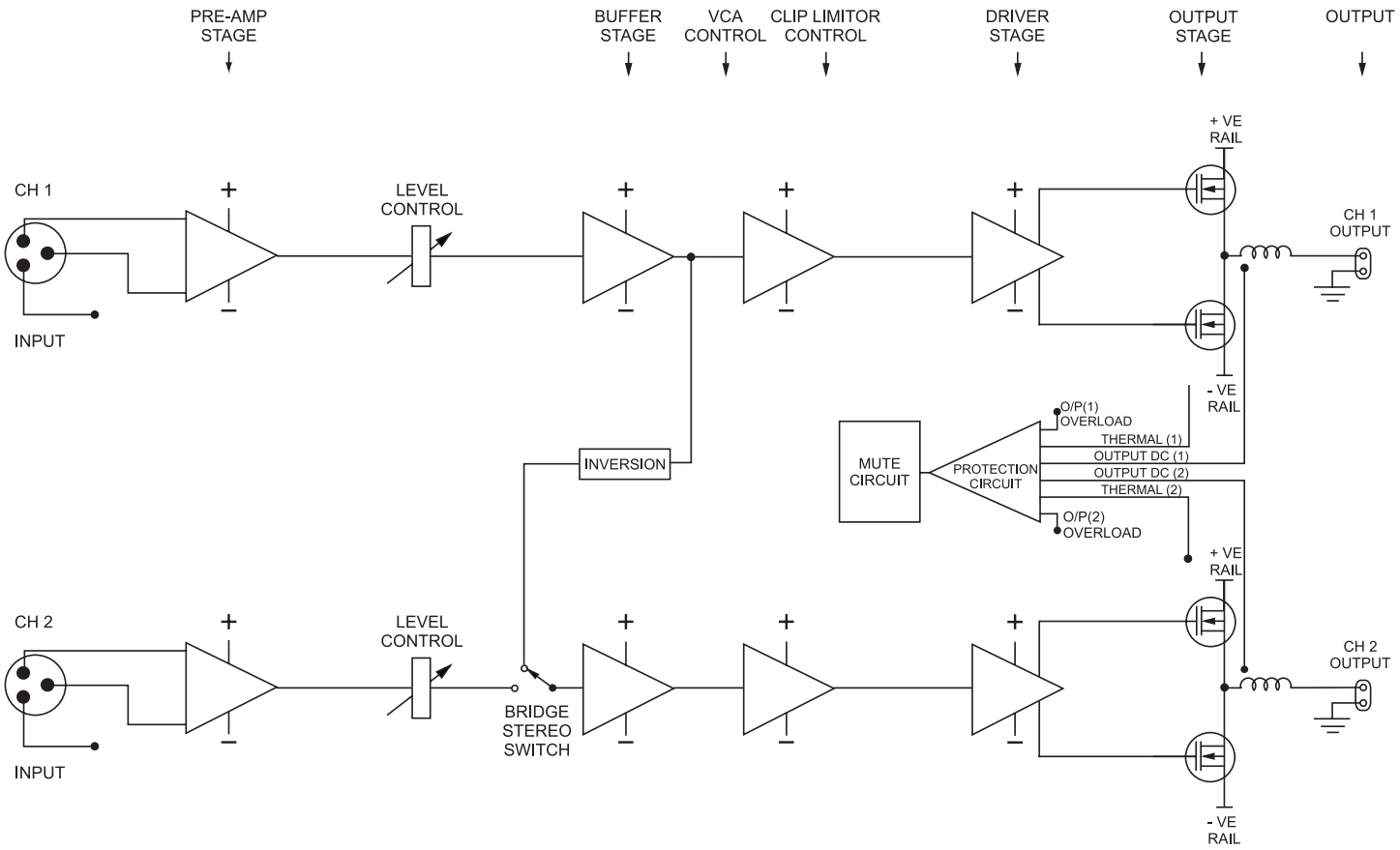
FEATURES & PROTECTION FEATURES

FEATURES

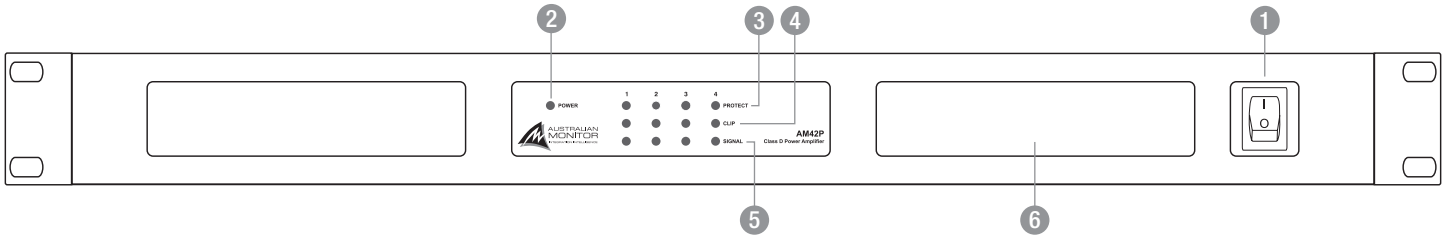
- Class-D amplification
- 4Ω/70V/100V Operation
- Balanced inputs
- Output Limiter
- Ground Lift
- Bridge mode
- Voltage controlled attenuation (VCA)
- Protect/Clip and Signal LED indicators
- Power factor corrected universal switch mode power supply
- Efficient front to back cooling
- Dual, twin speed axial fans.
- 6 pin output screw terminal per channel
- Custom designed, 1RU heavy-duty steel chassis
- Front rack mount ears
- Symmetrical layout – even weight distribution

PROTECTION FEATURES

- Short-circuit protection
- Suppression of inrush current at mains turn-on
- Internal, independent DC supply rail fuses
- Radio-frequency interference suppression



Amplifier Block Diagram



FRONT PANEL

The AMP Series differ only slightly across all models and all share the same features on their front panels.

The functions of the controls and indicators are as follows:

1 Power Switch

Press the switch to up for power on and down for power off. At start-up (turn-on), the input to the amplifier is muted for approximately two seconds.

2 Power Indicator

This blue LED will illuminate and indicates that the amplifier is on and receiving mains power.

3 Protect Indicator

This yellow LED indicates a problem with the amplifier or that it has over heated. In the advent of a thermal overload, the internal operating temperature of one or both amplifier channels has exceeded a safe level of operation and the channel will be automatically muted. The fans will continue to run and once the effected channel/s have cooled, they will unmute and return to normal operation.

The AMP series is also fitted with DC protection, if there is a DC voltage at the output the protection LED will glow yellow.

It should be noted that the minimum load for the amplifier is 4 ohms per channel (8 ohms bridged).

If an overload occurs, the amplifier will run into a current limit mode, restricting the excess current beyond set limits.

4 Clip Indicator

This red LED will illuminate when clipping occurs. Clipping can occur under extreme operating conditions such as:

- complex or very low loads
- over driving the amplifier

⚠ **NOTE:** The amplifier is not damaged by running into clipping, but speakers may be. To maximise the life of your speakers, try to keep clipping infrequent.

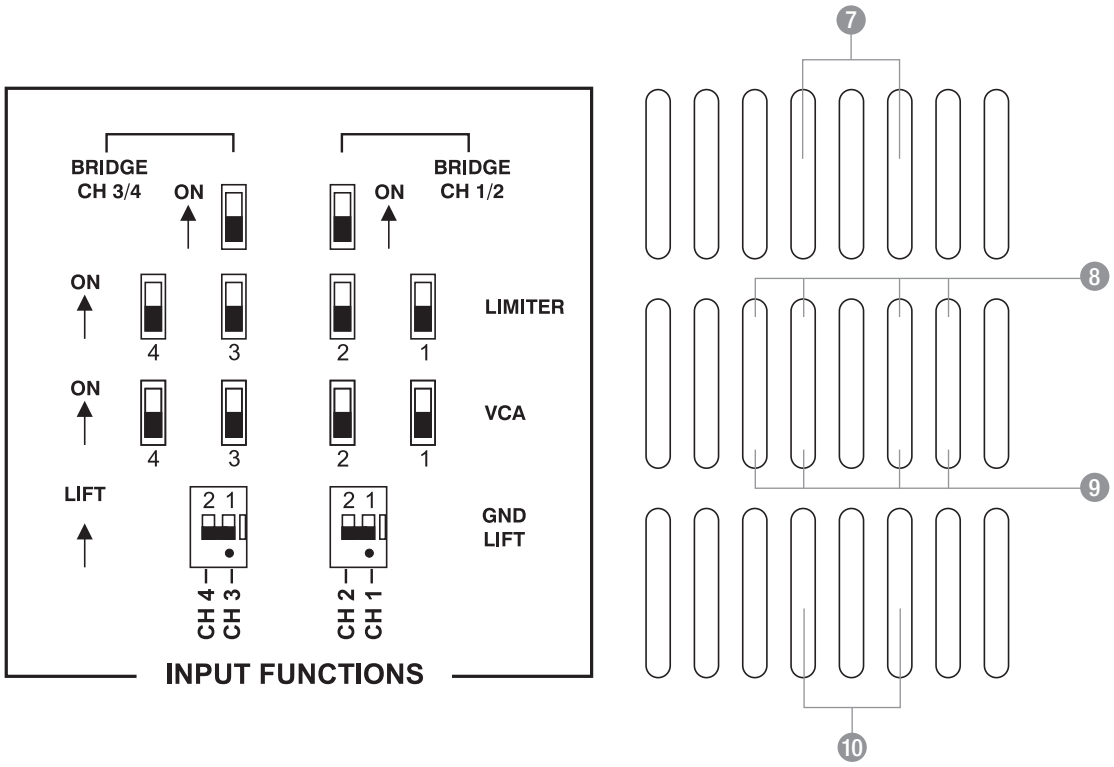
5 Signal Indicator

This green LED will illuminate when an input signal is detected.

6 Fan Grill

This is where air is drawn into the amplifier for cooling.

⚠ **NOTE:** You should always ensure that the fan grille is kept clean and the foam is free from dust or lint. This will ensure longer operation of your amplifier and reduce the possibility of it prematurely going into thermal shutdown mode. Refer to the “Maintenance” section on page 11 for further information.



TOP PANEL

The switches on the top panel are accessed through a vent opening. Use a small rod through the vents to move the switches to the desired positions.

NOTE: Only make changes to these switches when the unit is powered off.

7 Bridge / Stereo

Turn the bridge switch on to enable BRIDGED mode. In this mode your amplifier will only accept signal applied to channel 1's balanced input. The level is controlled by the channel 1 level potentiometer and/or VCA attenuator. The output from channel 2 will automatically be of the opposite polarity (reversed phase) and speaker termination should be sourced from the 4Ω output of each channel respectively. (see Speaker Connector Wiring Diagram)

8 Limiter Switch

Turn the limiter switch on to engage the clip limiter circuitry. The threshold level is referenced to the supply rail and the output voltage is sampled allowing true clip detection and limiting.

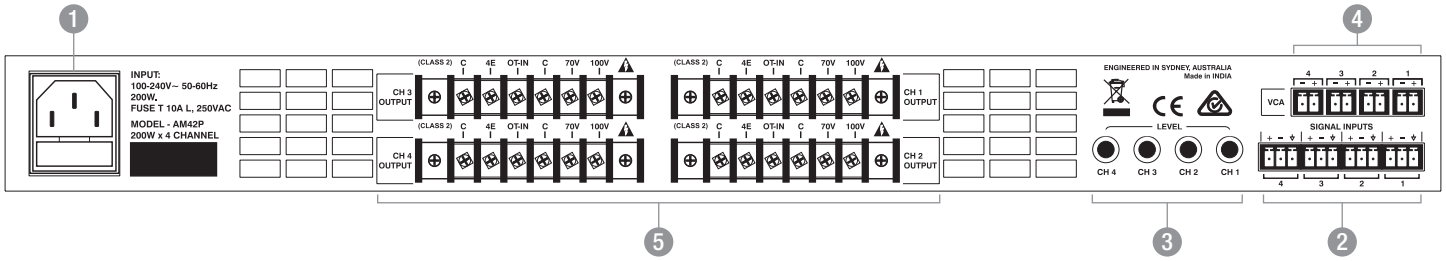
9 VCA Switch

Turn the VCA switch on to engage the voltage controlled attenuation input.

10 Signal Ground Lift Switch

When this switch is engaged it disconnects signal ground from the respective input channel.

It is intended to be used when "hum" is caused by earth loops (due to different ground potentials between source equipment and the amplifier) or stray magnetic field pick up on the input ground/shield wiring. (It does not interrupt signal ground continuity on the strapping connector). The amplifier should be turned off before engaging this switch!



REAR PANEL

1 Mains Input Connector

Your amplifier is fitted with a standard IEC 60320-C14 socket for mains connection. Use the mains cable supplied to power up the unit.

NOTE: Your unit must always be earthed!

2 Signal Input

A balanced male 3-pin (3.81mm) Phoenix type connector is provided on each input:

Pin 1 = Hot (non-inverting or in phase)

Pin 2 = Cold (inverting or reverse phase)

Pin 3 = Signal Ground

3 Level Control

A potentiometer to provide attenuation to the signal input.

4 VCA Control

Connect an Australian Monitor RC1 remote panel or any 500kΩ potentiometer between the + and – terminals of the VCA input for external level control.

5 Speaker Outputs

The output for each channel can be 100V Line, 70V Line or 4 Ohm low impedance. Only one output type should be used per channel.

Power Requirements

Power consumption for your model of the AMP Series amplifier is indicated on the rear panel for 1/8th output power.

Ensure that your mains voltage is the same as the rear panel mains voltage marker (+/- 10%).

Mounting

The AMP series amplifiers are one rack units high (1U) and will fit a standard EIA 19" rack. A rack rear support bracket is supplied and must be installed when rack mounting the amplifier. The rear support bracket should be installed to the rack (rear rails) prior to mounting the amplifier. Failure to mount or support the amplifier correctly may lead to chassis damage which is not covered by warranty.

Typically amplifiers may be stacked directly on top of each other with no need for spacing between units, unless installed in high ambient temperature environments were a single rack unit space between amplifiers will assist cooling further.

Cooling

Your AMP Series amplifier is cooled by axial fans which draw cool air from the front of the amplifier and expels the heated air out the rear of the amplifier. These amplifiers offer variable speed fans which run at half speed up to full speed when the internal heatsink temperature exceeds 60° C (128° F).

An unrestricted airflow into and out from the amplifier must be provided. Any restriction of the air flow will cause heat to build up within the unit and possibly force the unit into its thermal shutdown mode.

If the amplifiers are to be operated in an environment where the airflow is restricted such as sealed racks, the cooling should be supplemented by extra cooling fans to evacuate the heated air and aid the flow of cool air through the unit.

Input Wiring

IMPORTANT: Do not directly connect pin 3 on the amplifier's input to the amplifier's chassis, speaker ground or power ground!

WARNING: Input signal ground is not to be used as a safety ground (earth).

The input to your amplifier is a balanced 3-pin configuration and requires all three pins to be connected. Only high quality twin-core shielded cable should be used.

Pin 1 = HOT (In Phase - non inverting).

Pin 2 = COLD (Reverse Phase - inverting).

Pin 3 = GROUND / SHIELD.

When wiring from an unbalanced source you must ensure that pin 2 is connected to pin 3 (input ground), either by linking the pins in the input connector or by the source equipment's output wiring.

When wiring for an unbalanced source:

Pin 1 = HOT (in phase with the amplifier's output)

Pin 2 = GROUND/SHIELD (joins to pin 3).

Pin 3 = GROUND/SHIELD

Output Wiring

When wiring to your speakers always use the largest gauge wire your connector will accept. The longer the speaker lead, the greater the losses will be, resulting in reduced power and less damping at the load. We recommend using a heavy duty, two core flex (four core flex if bi-amping) 10 to 12 gauge (2mm2 to 2.5mm2 or 50/0.25 or equivalent) as a minimum.

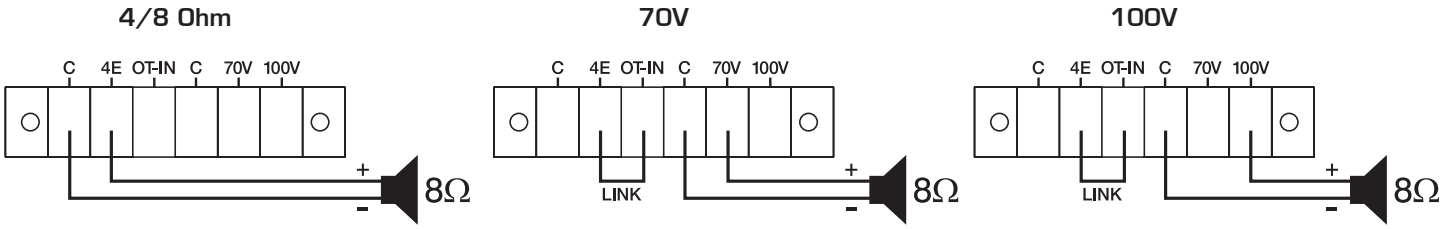
Speaker Outputs

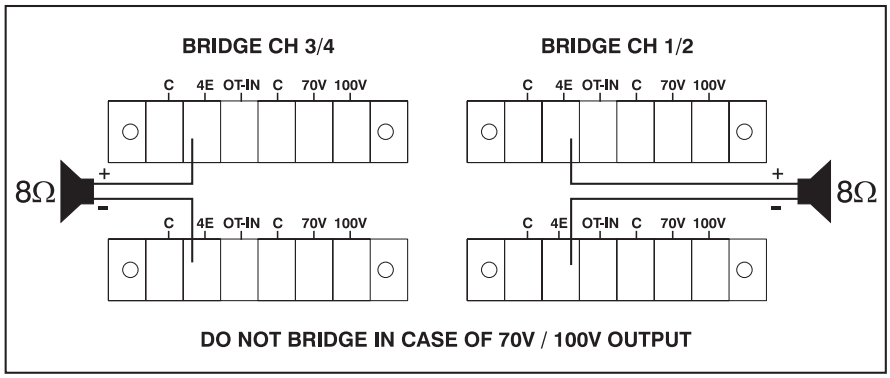
Each channel has a 6 pin output screw terminal with a pre-fitted link between the 4Ohm and high voltage line transformer.

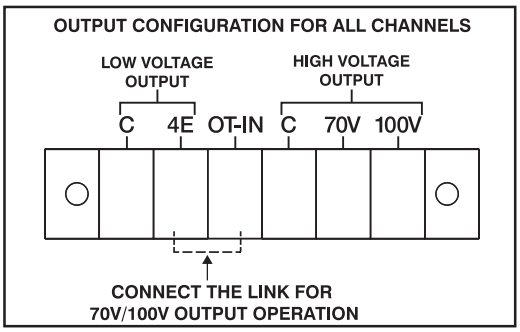
IMPORTANT: Ensure the link is fitted if you are using the 70V or 100V output.

Speaker Connector Wiring Diagram

Connect the speaker/s based on your required operating mode as shown in the diagrams below







Hum Problems

Most equipment is designed for minimum hum when used under ideal conditions. When connected to other equipment, and to a safety earth in an electrically noisy environment, problems may occur.

The three "E"s of hum and hum related noise which can plague your audio system are:

a) Electrostatic radiation,

b) Electromagnetic radiation, and

c) Earth loops

Electrostatic radiation capacitively couples to system elements, causing an interference voltage that mainly affects higher impedance paths, such as amplifier inputs. The source is generally a nearby high voltage, such as a mains lead or a speaker lead. The problem can usually be reduced by moving the offending lead away, or by providing additional electrostatic shielding (i.e. an earthed conductor which forms a barrier to the field).

Electromagnetic radiation induces interference currents into system elements that mainly effect lower impedance paths. Radio transmitters or stray magnetic fields from mains transformers are often the cause of this problem. It is generally more difficult to eliminate this kind of interference, but again, moving the source away or providing a magnetic shield (i.e. a steel shield) should help.

Earth loops can arise from the interfacing of the various pieces of equipment and their connections to various safety earths.

This is by far the most common cause of hum, and it occurs when source equipment and the amplifier are plugged into different points along the safety earth where the safety earth wiring has a current flowing through it. The current flowing through the wire produces a voltage drop due to the wire's resistance. This voltage difference between the amp earth and source equipment earth appears to the amplifier's input as a signal and is amplified as hum. There are three things you can do to avoid earth loop problems:

- Ensure the mains power for the audio system is "quiet" i.e. without equipment on it such as air-conditioning, refrigeration or lighting which may generate noise in the earth circuit.
- Ensure all equipment within the system shares a common ground/ safety earth point. This will reduce the possibility of circulating earth currents, as the equipment will be referenced to the same ground potential.
- Ensure that balanced signal leads connecting to the amplifier are connected to earth at one end only.

OPERATION

IMPORTANT: All signal source equipment should be adequately earthed. This not only ensures your safety but everybody else's as well. Faults can and do occur in mains connected equipment where the chassis can become "live" if it is not properly earthed. In these instances, the fault in a "floating" (ungrounded) piece of equipment will look for the shortest path to ground, which could possibly be your amplifier's input. If the fault current is large enough, it will destroy the input to your amplifier and look for the next available path, which may be you!

Before making any connections to your AMP Series amplifier, observe the following:

- Ensure the mains voltage supply matches the label on the rear panel of your amplifier (+/- 10%).
- Ensure that the power switch is OFF.
- Ensure that all system grounds (earth) are connected from a common point. Avoid powering equipment within a system from multiple power sources that may be separated by large distances.
- Check the continuity of all interconnecting leads to your amplifier; ensure that there are no open or short circuited conductors.
- Ensure that the power handling of your load (speakers) can adequately cope with the power output of the amplifier.

Before operating your AMP Series amplifier, ensure that:

- The BRIDGE Switch is not engaged if you are not running the amp in bridged mode.

Powering Up

REMEMBER: The amplifier should be the last piece of equipment that you turn on and the first piece of equipment that you turn off. We recommend turning the attenuators on your amplifier down when turning the unit on.

Sensitivity

Your amplifier is a linear device operating with a fixed input to output voltage gain (less attenuation). The maximum output voltage swing is determined by the applied mains voltage, load, load type and the duty cycle of the applied signal.

The input sensitivity for your AMP Series amplifier when the level control is at maximum position (fully clockwise) and the VCA is disabled is nominally:

+2.2dBu (1.00 volts in) for rated power into a 4 Ohm load.

Each channel of your AMP Series amplifier has a nominal balanced input impedance of 30kOhms (@1kHz) and should not present a difficult load for any signal source.

Your signal source (i.e. the equipment feeding signal to the amplifier) should have an output impedance of 600 Ohms or lower to avoid unwanted high frequency loss in the cabling.

Maintenance

Only competent or qualified persons should attempt any service or maintenance of your amplifier. Your AMP Series amplifier will need minimal maintenance. No internal adjustments need to be made to the unit to maintain optimum performance. To provide years of unhindered operation we suggest a maintenance inspection be carried out on a regular basis, say every 12 months or so.

Fans

Due to the openness of the air path through your AMP Series amplifier, very little dust should settle within the amplifier. The unit has been designed so that any dust and/or foreign particles that do settle within the amplifier will not unduly hinder the cooling of the amplifier.

The grille in front of the fans will act to limit the amount of dust and lint entering the amplifier. You will find in time that there will be a build up of dust and lint on the grille which may start to hinder the airflow through the amplifier. You should periodically remove the dust and keep the grille clean. Removal of dust from the rear grille will also aid cooling.

Over time, dust may build up on the leading edge of the fan blades and reduce their cooling efficiency. The time taken for this to happen will depend on the environment and the amount of use.

The fan blades are accessible once the lids are removed and can be easily cleaned. You need only hold the fan rotor still and wipe the dust off the blades. Many users stall the fan and use compressed air to blow the dust off the fan blades. It is important to note that the fan blades must be held still whilst blowing air over the blades otherwise you may burn out the bearings in the fan.

Fuses

There are two rail fuses provided internally per amplifier channel. These rail fuses are in series with the positive and negative output supply and provide overall protection for the output stage. If the amplifier is subjected to heavy use such as short circuits, 1 Ohm or bridged 2 Ohm loads, these fuses will eventually fatigue and may require replacing to ensure they do not fail at an inconvenient time.

⚠ **WARNING:** Make sure the unit is off and is unplugged from the mains. Give the main filter capacitors time to discharge before removing lids and inspecting the fuses.

You should replace the fuse if the element is sagging or discoloured. Only ever replace with the same type fuse and current rating.

When checking for a failed fuse, do not rely on visual inspection alone. You should use an Ohm meter to check continuity

SPECIFICATIONS

Model	AM21P	AM22P	AM41P	AM42P	Conditions/Comments
Topology	Class-D	Class-D	Class-D	Class-D	
Channels	2	2	4	4	
Power Output (per channel)					
Single Channel 4Ω	120W	210W	120W	210W	1kHz. 1%THD. -10W/+30W
4Ω (All Driven)	110W	200W	110W	200W	1kHz. 1%THD. -10W/+30W
Bridged 8Ω	230W	400W	230W	400W	1kHz. 1%THD. -10W/+30W
Single Channel 100V	120W	210W	120W	210W	1kHz. 1%THD. -10W/+30W
100V (All Driven)	110W	200W	110W	200W	1kHz. 1%THD. -10W/+30W
Maximum Output Level	28.24dBu (20Vrms)	31.25dBu (28.28Vrms)	28.24dBu (20Vrms)	31.25dBu (28.28Vrms)	20Hz–20kHz, <1%THD
System Gain	26dB	29dB	26dB	29dB	
Frequency Response 4Ω	20Hz–25kHz	20Hz–25kHz	20Hz–25kHz	20Hz–25kHz	3dB below clipping, +0/-3dB.±5Hz
Frequency Response 100V	100Hz–16kHz	100Hz–16kHz	100Hz–16kHz	100Hz–16kHz	3dB below clipping, +0/-3dB.±5Hz
Signal to Noise Ratio	> 95 dBr	> 95 dBr	> 95 dBr	> 95 dBr	Max Output, 1kHz, 20kHz BW, A-Weighted
THD+N. 4Ω, 8Ω. 1kHz	< 0.2%	< 0.2%	< 0.2%	< 0.2%	3dB below clipping, 1kHz. 20kHz BW, Unity Gain, A-Weighted
THD+N. 100V. 1kHz	< 0.3%	< 0.3%	< 0.3%	< 0.3%	3dB below clipping, 1kHz. 20kHz BW, Unity Gain, A-Weighted
Channel Separation (crosstalk)	> 65 dB (for < 1KHz) > 60 dB (for > 1KHz)	> 65 dB (for < 1KHz) > 60 dB (for > 1KHz)	> 65 dB (for < 1KHz) > 60 dB (for > 1KHz)	> 65 dB (for < 1KHz) > 60 dB (for > 1KHz)	20Hz–20kHz, Max output, Adjacent Channels
Damping Factor	> 90	> 90	> 90	> 90	20Hz–1kHz, 8Ω. ±10
Input Connectors	Two 1x3 terminal plug (3.81mm)	Two 1x3 terminal plug (3.81mm)	Four 1x3 terminal plug (3.81mm)	Four 1x3 terminal plug (3.81mm)	
Input Impedance	30kΩ	30kΩ	30kΩ	30kΩ	Balanced, line to line
Output Impedance	80mΩ	80mΩ	80mΩ	80mΩ	
Input Sensitivity	1.0 Vrms	1.0 Vrms	1.0 Vrms	1.0 Vrms	±0.2V. Level control at maximum
Input CMRR	> 55dB	> 55dB	> 55dB	> 55dB	20Hz–20kHz
Output Connectors	6 pin Screw Terminal per channel	6 pin Screw Terminal per channel	6 pin Screw Terminal per channel	6 pin Screw Terminal per channel	
LED Status	Signal, Clip, Protect	Signal, Clip, Protect	Signal, Clip, Protect	Signal, Clip, Protect	
User Controls	Gain, switches (Bridge, Limiter, VCA, GND lift)	Gain, switches (Bridge, Limiter, VCA, GND lift)	Gain, switches (Bridge, Limiter, VCA, GND lift)	Gain, switches (Bridge, Limiter, VCA, GND lift)	
VCA Attenuation (via potentiometer)	500kΩ	500kΩ	500kΩ	500kΩ	
Limiter	95W	200W	95W	200W	±5W, 5%THD
AC Input	100-240Vac, 50-60Hz	100-240Vac, 50-60Hz	100-240Vac, 50-60Hz	100-240Vac, 50-60Hz	±10%
AC Power Factor	0.97	0.99	0.99	0.99	Max Output, 1kHz
AC Connector	IEC 60320-C14	IEC 60320-C14	IEC 60320-C14	IEC 60320-C14	
Maximum Inrush Current	18.8A	18.8A	18.8A	31.83A	264VAC, 53Hz
Overload Protection	Temperature, Over Voltage, Current Limit	Temperature, Over Voltage, Current Limit	Temperature, Over Voltage, Current Limit	Temperature, Over Voltage, Current Limit	

Model	AM21P	AM22P	AM41P	AM42P	Conditions/Comments
AC Mains Fuse	T2.5AL 250V	T5AL 250V	T5AL 250V	T10AL 250V	Time Lag, Low Breaking capacity
AC Internal Fuses, Power Supply	T8AH 250V, T3.15AL 250V	T8AH 250V, T3.15AL 250V	T8AH 250V, T3.15AL 250V	T8AH 250V, T3.15AL 250V	Time Lag, High Breaking capacity Time Lag, Low Breaking capacity
DC Amplifer Fuse	T5AL 250V	T5AL 250V	T5AL 250V	T5AL 250V	Fast, Low Breaking capacity
RMS Current Draw					
Idle	0.133A	0.176A	0.200A	0.371A	230Vac, 50Hz. Bridged 8Ω
1/8th Power	0.262A	0.441A	0.472A	0.87A	230Vac, 50Hz. Bridged 8Ω
1/3 Power	0.486A	0.862A	0.905A	1.73A	230Vac, 50Hz. Bridged 8Ω
Full Power	1.15A	2.23A	2.27A	4.47A	230Vac, 50Hz. Bridged 8Ω
Power Consumption					
Idle	28W	38W	43W	72W	230Vac, 50Hz. Bridged 8Ω
1/8th Power	58W	98W	100W	195W	230Vac, 50Hz. Bridged 8Ω
1/3 Power	107W	196W	206W	392W	230Vac, 50Hz. Bridged 8Ω
Full Power	264W	510W	522W	1030W	230Vac, 50Hz. Bridged 8Ω
Efficiency					
1/8th Power	43%	51%	50%	51%	230Vac, 50Hz. Bridged 8Ω
1/3 Power	62%	68%	65%	68%	230Vac, 50Hz. Bridged 8Ω
Full Power	76.00%	71.00%	77.00%	78.00%	230Vac, 50Hz. Bridged 8Ω
Thermal Dissipation					
Idle	96	130	147	246	Excludes Load Power (1W = 3.412BTU/Hr)
1/8th Power	113	164	171	324	Excludes Load Power (1W = 3.412BTU/Hr)
1/3 Power	138	214	248	428	Excludes Load Power (1W = 3.412BTU/Hr)
Full Power	218	375	416	785	Excludes Load Power (1W = 3.412BTU/Hr)
Dimensions (W x D x H)	483mm x 448mm x 44mm (19" x 17.63" x 1.73")	483mm x 448mm x 44mm (19" x 17.63" x 1.73")	483mm x 448mm x 44mm (19" x 17.63" x 1.73")	483mm x 448mm x 44mm (19" x 17.63" x 1.73")	Not including rack ears
Shipping Dimensions (W x D x H)	545mm x 515mm x 105mm (21.46" x 20.28"x 4.13")	545mm x 515mm x 105mm (21.46" x 20.28"x 4.13")	545mm x 515mm x 105mm (21.46" x 20.28"x 4.13")	545mm x 515mm x 105mm (21.46" x 20.28"x 4.13")	
Net Weight	7.4 Kg (16.31 lbs)	7.8 Kg (17.20 lbs)	9.42 Kg (20.77 lbs)	11.3 Kg (24.91 lbs)	
Shipping Weight	9.5Kg (20.94 lbs)	9.5Kg (20.94 lbs)	12.6Kg (27.78 lbs)	12.6Kg (27.78 lbs)	
Mounting	1 RU	1 RU	1 RU	1 RU	
Operating Temperature	0°C to 40°C (95% RH)	0°C to 40°C (95% RH)	0°C to 40°C (95% RH)	0°C to 40°C (95% RH)	
Cooling system	Fan assisted convection cooling	Fan assisted convection cooling	Fan assisted convection cooling	Fan assisted convection cooling	
Finish	Powder coated steel/ ALU front panel	Powder coated steel/ ALU front panel	Powder coated steel/ ALU front panel	Powder coated steel/ ALU front panel	
Colour	Black	Black	Black	Black	
Accessories	IEC Mains cable. Rubber Feet x 4, Two 1x3 terminal socket, Two 1x2 terminal socket, Rack mount support	IEC Mains cable. Rubber Feet x 4, Two 1x3 terminal socket, Two 1x2 terminal socket, Rack mount support	IEC Mains cable. Rubber Feet x 4, Four 1x3 terminal socket, Four 1x2 terminal socket, Rack mount support	IEC Mains cable. Rubber Feet x 4, Four 1x3 terminal socket, Four 1x2 terminal socket, Rack mount support	

NOTES

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