



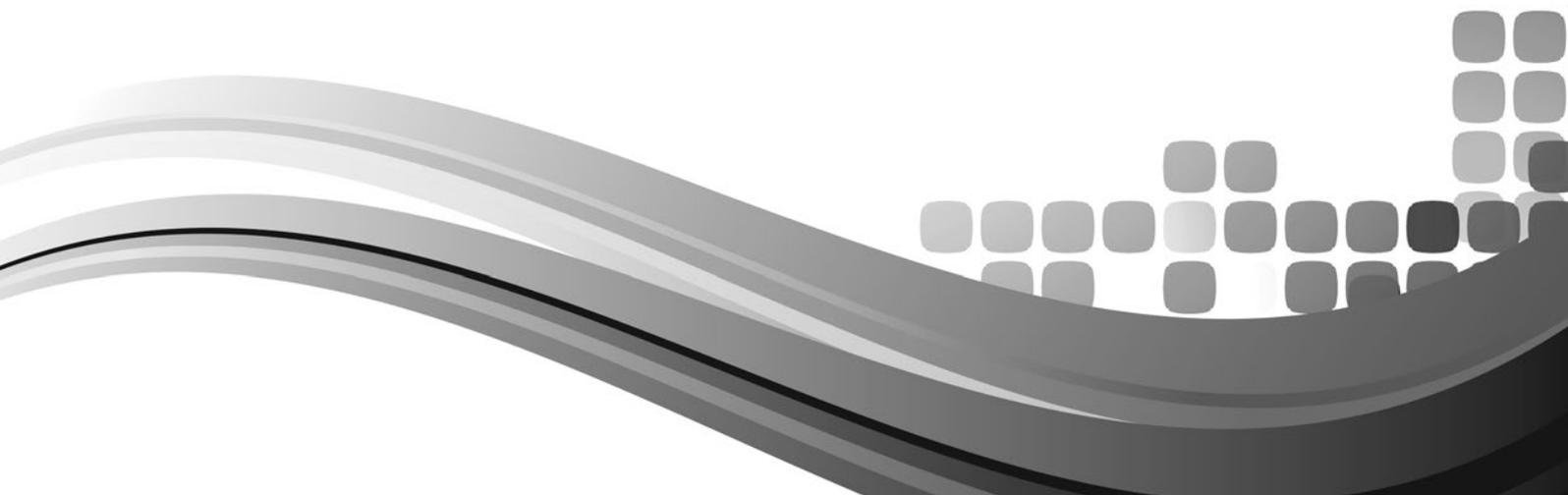
INSTALLATION AND OPERATION MANUAL

AMH SERIES

PROFESSIONAL AUDIO POWER AMPLIFIERS

AMH3600

AMH2400



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 trous de ventilation. Installez en accord avec les instructions du fabricant.
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 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. Protégez 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 fabricant.
12. Utilisez seulement avec un chariot, un stand, un trépied, un support ou une table indiquée par le fabricant, 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 connexion de terre de protection.
20. Assurez-vous que l'appareil est hors tension avant de connecter les hauts parleurs. Vérifiez 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 sécurisée.





AMH

Congratulations on choosing Australian Monitor for your professional amplification requirements.

The design of our new AMH 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 new AMH Series amplifiers are 2 unit (3.5") high, 19" wide, rack mountable units. Each channel of the amplifier comprises a balanced active input with a buffered attenuator driving a differential class A drive stage which in turn drives a fan-cooled, class AB, output stage configured as an emitter follower. The amplifier operates from a high current-capable Class H dual Rail switched 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, at high duty cycles for extended periods.

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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.

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

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



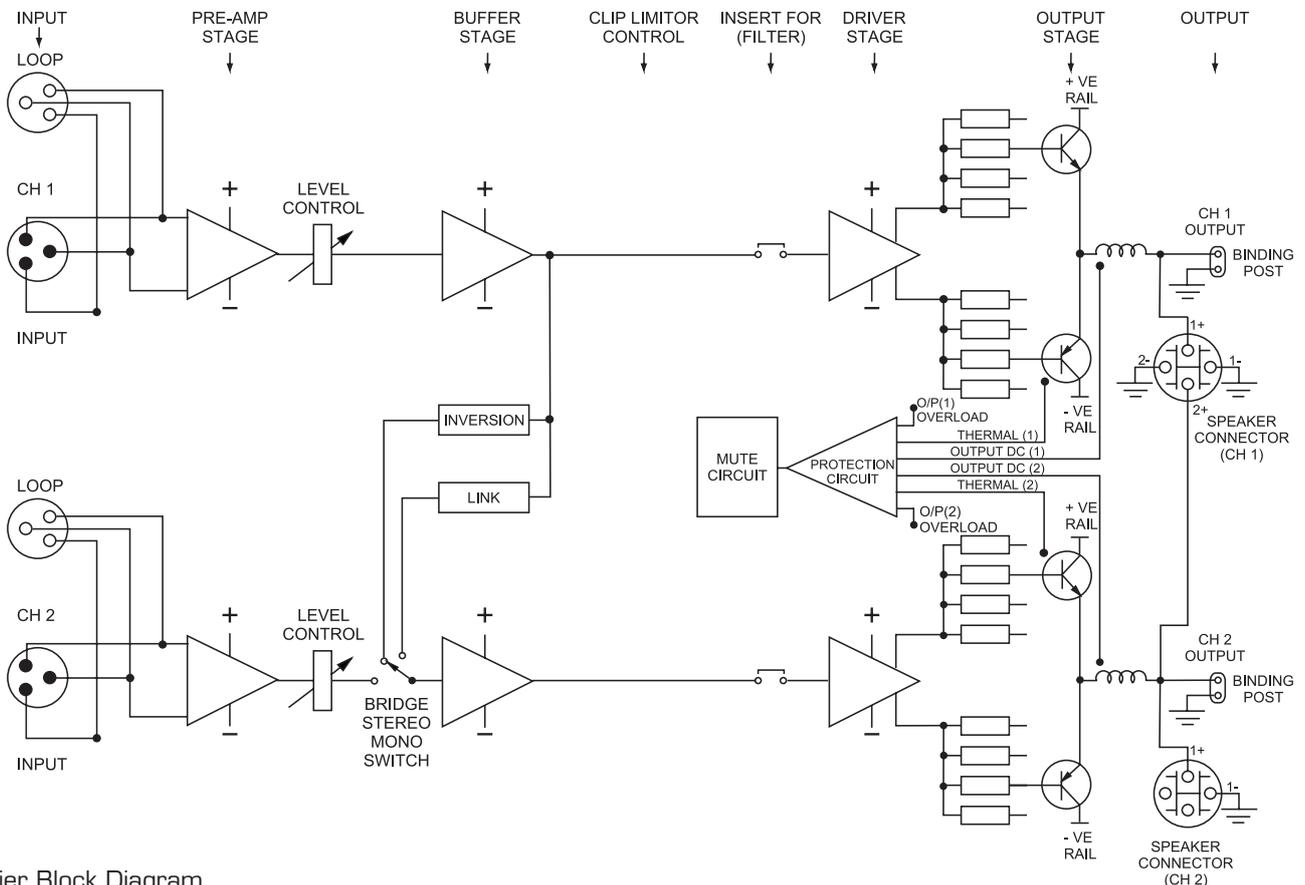
FEATURES & PROTECTION FEATURES

Features

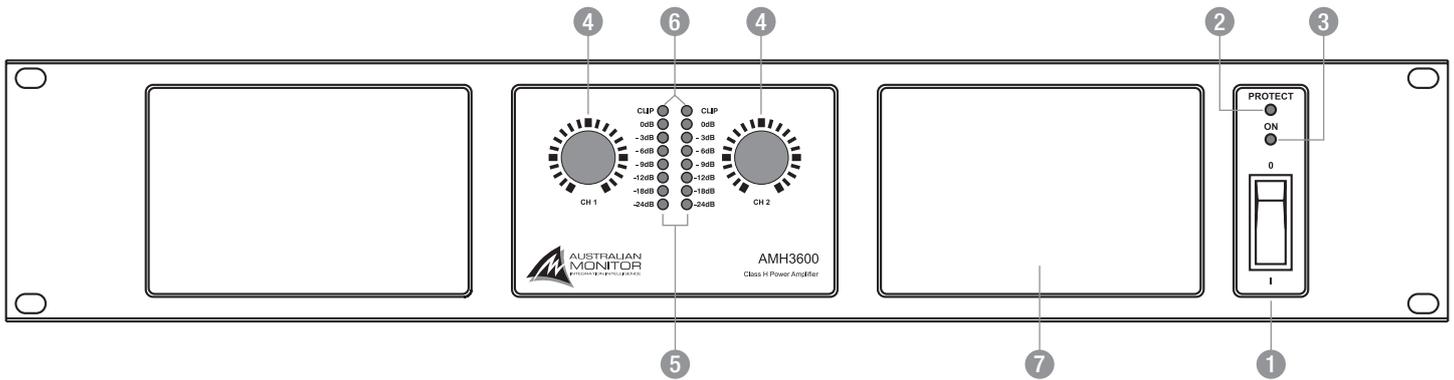
- Custom designed, 2RU heavy-duty steel chassis
- Front / Rear rack mount ears
- Symmetrical layout – even weight distribution
- High current switching power supply
- High efficiency Class H DC Rail switching with SMPS
- Efficient front to back cooling
- Dual, twin speed axial fans.
- Balanced inputs and buffered attenuators.
- Input signal strapping (loop through) connectors
- Signal ground lift switch
- Built in limiter circuit (selectable)
- Stereo / bridged / Mono (parallel) operation (selectable)
- Binding post and 4 pole speaker output connection
- Output clip indication per channel
- Multi-role output fault indication
- High-quality, close-tolerance components throughout
- Individual 7 step Signal LED Bar Graph for status indication per channel
- Filter selectable switch (LPF/HPF) per channel.

Protection Features

- Suppression of inrush current at mains turn-on
- Input overvoltage protection
- Radio-frequency interference suppression
- Short-circuit protection and indication
- High overload mains circuit breaker
- Internal, independent DC supply rail fuses
- Layout, grounding, decoupling and componentry have been optimized to provide the user with stability, reliability and longevity



Amplifier Block Diagram



FRONT PANEL

The new AMH Series differ only slightly across both the models and both share the same features on their front panels. The above illustration shows the panel layout of an AMH3600 amplifier. It is similar for the AMH2400. The functions of the controls and indicators are as follows:

1 Power Switch

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

2 On Indicator

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

3 Protection Indicator

This red LED will illuminate when any of the following faults occur.

Thermal Protection

In the advent of a thermal overload, this LED will turn red, indicating that the internal operating temperature of one or both amplifier channels has exceeded a safe level of operation and the channels will be automatically muted. The fans will continue to run and once the effected channel/s have cooled, they will un-mute and return to normal operation.

In case of significant problem with the amplifier or if there is a DC voltage at the output, then this LED will glow red & cut off the output.

Over Load

It should be noted that the minimum load for the amplifier is 2 Ohms per channel (4 Ohm bridged).

If an overload occurs, the amplifier will shut down and mute the channel output. If the overload is only transitory, then the amplifier will resume normal operation after approximately 3 seconds. If the fault is continuous, then the amplifier will remain muted.

4 Attenuator

Level control for your amplifier is provided by a potentiometer on the front panel and indicates gain. There are 2 controls on the new AMH Series amplifiers. Each control is labelled for the channel that it operates.

5 Signal Bar Graph Indicator

There is a 7 step LED Bar graph given on the front panel for each channel. They indicate (0dB, -3dB, -6dB, -9dB, -12dB, -18dB, -24dB) levels of output signal. If using this indicator to line up sensitivities, apply a steady state tone (e.g. 1kHz tone).

6 Clip Indicator

The clipping RED LEDs will glow once the output reaches the threshold of clipping of the amplifier's output stage. The threshold of clipping is referred to the amplifier supply rails and alters with changes in the mains supply, changes in the load and duty cycle fluctuations.

The attack and decay time (ballistics), of the status circuit are those of a Peak Program Meter (P.P.M.)



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



NOTE: You should always ensure that the fan grille and Front ventilation foam are kept clean and free from the build up of dust and lint. This will ensure longer operation of your amplifier and reduce the possibility of it prematurely going into thermal shutdown mode. See the section "Installation - Cooling" on page 7 for recommended cooling procedures.

7 Fan Grill

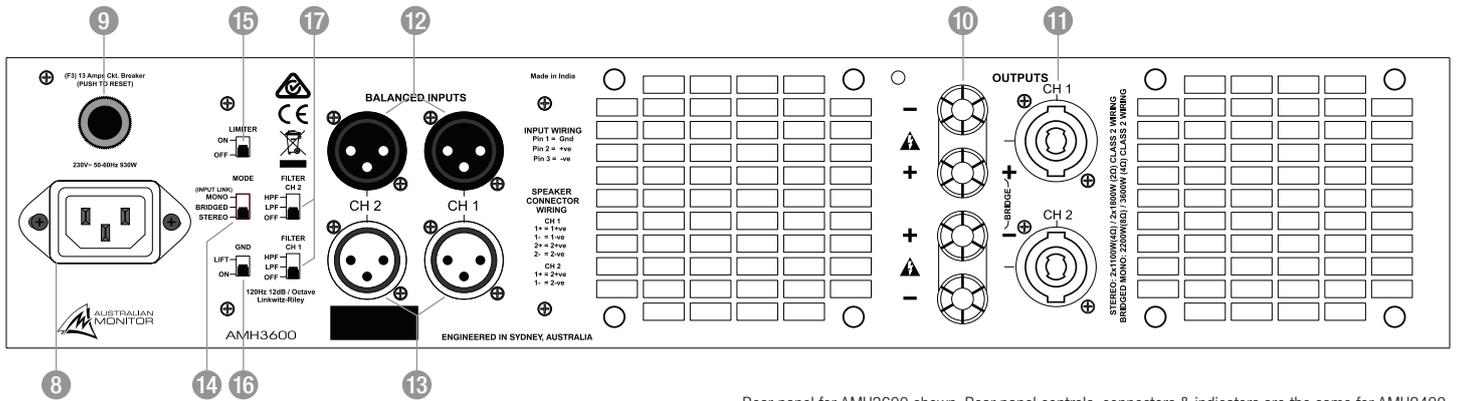
This is where air is drawn into the amplifier for cooling.



NOTE: You should always ensure that the fan grille and Front ventilation 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 10 for further information.



CONTROLS, CONNECTORS & INDICATORS



Rear panel for AMH3600 shown. Rear panel controls, connectors & indicators are the same for AMH2400.

REAR PANEL

8 Mains Input Connector

The AMH2400 is fitted with a standard 3 pin IEC 60320-C14 socket. The AMH3600 is fitted with a high current 3 pin IEC 60320-C20 socket. Use the mains cable supplied with the unit to power up the unit.

NOTE: Your unit must always be earthed!

IMPORTANT: The AMH3600 is a high current 16A mains inlet and does NOT accept standard IEC60320-C13 power cords.

9 Mains Circuit Breaker

The amplifier is fitted with a resettable circuit breaker. If the circuit breaker trips, allow 3 minutes for the contacts to reset thermally before pushing the reset button to reset it mechanically.

10 Binding Post Outputs

Touch proof binding posts (banana jacks) are provided for speaker output termination with banana plugs or bare wire. The red post is used as positive and the black post is used as negative. For bridge connection, use only the red posts.

11 Speaker Output Connector

A 4 pole Neutrik speakON connector is provided as an additional speaker output. This standard of loudspeaker-amplifier connection allows access to both channels of the amplifier via the one connector for biamp applications. Channel 1 is considered the dominant channel and has both channels wired to the speaker connector. See the installation section of this manual for detailed information on speaker connector wiring.

12 Balanced Input

A female 3-pin XLR type connector is provided on each input:

- Pin 1 = Signal Ground;
- Pin 2 = Hot (non-inverting or in phase);
- Pin 3 = Cold (inverting or reverse phase).

13 Signal Strapping

A male 3-pin XLR type connector is provided and wired in parallel with the female input XLR for strapping / looping signal between amplifiers.

14 Bridge / Stereo / Mono (parallel)

Keeping this switch in middle position engages the BRIDGED/ MONO mode of operation. In this mode your amplifier will only accept signal applied to channel 1's input XLRs and the level of both channels will be controlled by the channel 1 attenuator. The output from channel 2 will automatically be of the opposite polarity (reversed phase) and speaker termination should be sourced from the red binding-post outputs.

Alternatively, the speaker could be connected to poles 1+ & 2+ of the 4 pole speaker connector (See Installation Output Wiring on Page 7). Keeping this switch in bottom position will run the amplifier in stereo mode. Keeping this switch in top most position will run the amplifier in mono (parallel) mode. In this case also CH 1 level control will control both the channels.

15 Limiter Switch

Adjust the switch to the ON position 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.

16 Signal Ground Lift Switch

Adjust the switch to the ON position to disconnect signal ground from the input connectors on both channels. 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!

17 Filter Switch

Individual channel selectable low pass filter (LPF) or high pass filter (HPF). The filter is a Linkwitz-Riley operating at 120Hz with a 12dB/octave attenuation.



Power Requirements

Power consumption for your model of the AMH 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

Your amplifier is designed for standard 19" rack mounting and occupies 2 EIA rack units (3.5"). The mounting centres are:

Vertical: 3.0" (76.2mm)

Horizontal: 18.2" (462.5mm) to 18.7" (473.8mm).

The slots in the mounting flange will accept bolt diameters up to 1/4" (6.35mm).

Cooling

Each channel of your new AMH Series amplifier is cooled by an axial fan which draws cool air from the front of the amplifier and expels the heated air out the rear of the amplifier. These amplifiers offer two speed fans that run at half speed, switching to full speed when the internal heat-sink temperature exceeds 65°C.

An unrestricted airflow into and out from the amplifier must be provided. Any restriction of the airflow 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 1 on the amplifier's input or strapping XLR, 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.

When wiring for a balanced source, the connector going to the input of your amplifier should be wired as follows:

Pin 1 = GROUND / SHIELD

Pin 2 = HOT (In Phase - non inverting)

Pin 3 = COLD (Reverse Phase - inverting)

When wiring from an unbalanced source you must ensure that pin 3 is connected to pin 1 (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 = GROUND/SHIELD

Pin 2 = HOT (in phase with the amplifier's output)

Pin 3 = GROUND/SHIELD (joins to pin 1)

NOTE: In-line XLR connectors often have a termination lug that connects directly to the chassis of the connector.

IMPORTANT: Do not link this lug to pin 1 at the amplifier's input as it will defeat the amplifier's input grounding scheme.

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 biamping) 10 to 12 gauge (2mm² to 2.5mm² or 50/0.25 or equivalent) as a minimum.

Binding Post Outputs

When terminating to the 4mm binding post (banana jack) output connectors, banana plugs or bare wires can be used. The red terminal is positive and the black terminal is negative (ground).

If running in BRIDGE mode, only the red binding posts are used.

When bridging, Channel 1 provides the positive output to the load and Channel 2 provides the negative output to the load.

Speaker Outputs

When using the 4 pole speaker connector for speaker output, use only the mating 4 pole in-line connector. This connector is designed so that both channels can be fed from a single connector.

Two speaker connectors are provided on the amplifier.

The "Channel 1" speaker connector actually carries both Channel 1 and Channel 2 outputs (see Speaker Connector Wiring Diagrams).

The "Channel 2" speaker connector carries the Channel 2 output only.

This arrangement allows you the option of connecting to the outputs separately or together. Connecting through a single connector has the advantage of minimising connections, preserving phasing and simplifying channel allocation, which is particularly important when bi-amping or in bridge mode.

IMPORTANT: Do not overload your amplifier by connecting the channel B output twice!

Channel 1 is used as the "dominant" channel and when sourcing a dual output from Channel 1, the following standard should normally be used (depending on speaker system wiring):

Channel 1 = Left or Low Frequencies.

Channel 2 = Right or High Frequencies.

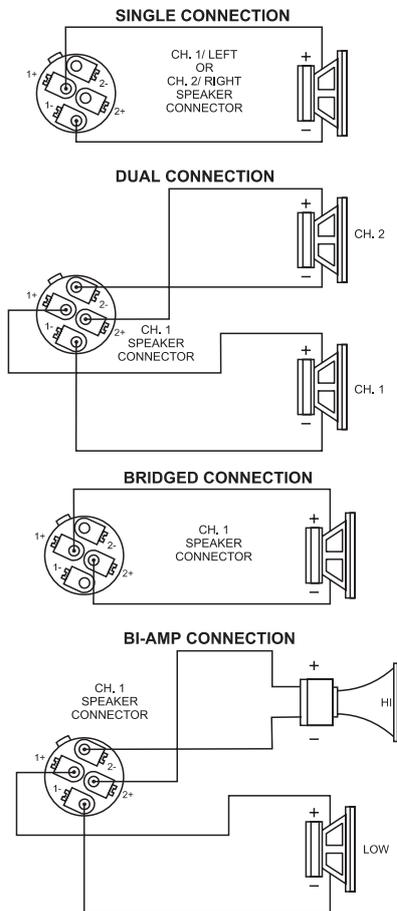
When in bridge mode:

Pin 1+ = Bridge Output Positive

Pin 2+ = Bridge Output Negative



Speaker Connector Wiring Diagram



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:

- Electrostatic radiation,
- Electromagnetic radiation, and
- 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 airconditioning, refrigeration or lighting that 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.

Signal Ground-Lift Switch

When proper system hook-up has been made, you may still have some hum or hum related noise. This may be due to any of the previously mentioned gremlins.

Your new AMH Series amplifier has a "Signal Ground Lift" switch which disconnects the input ground wiring from the amplifier. A substantial drop in hum and/or hum related noise can result from the judicious use of this switch.

NOTE: If the input ground lift switch is used, you must ensure adequate shielding of the input wiring. If the signal source equipment does not provide adequate shielding (i.e. a definitive connection to ground), you must disconnect the shield from the input connector's ground pin (Pin-1) and re-connect it to the "drain" contact on the input connector. This will ensure the shield on your input wiring actually goes to the amplifier chassis and subsequently to earth.

IMPORTANT: Do not connect Pin-1 directly to the drain connection. You will defeat the amplifiers internal grounding scheme and possibly cause instability to the amplifier.

Always ensure that your amplifier is off and the attenuators are down when you engage this switch. This switch should only be used when the amplifier is operated from a balanced signal source.

NOTE: Be wary of quasi-balanced outputs, these are often no more than floating unbalanced outputs.



⚠ 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 AMH 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 AMH Series amplifier, ensure that:

- The attenuators are at the "OFF" position (fully anticlockwise).
- 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.

When you power up your AMH Series, your amplifier goes through an initialising period before it will accept signal. The Inrush Current Suppression (ICS) circuit is in operation for the first 0.5 seconds. This limits the mains current, to prevent "nuisance-tripping" of circuit breakers.

During this period you will hear a couple of relays "click", indicating mains is now directly applied to the amplifier and the signal path is connected.

While the ICS circuit operates there is also a 30dB mute on the signal input. After two seconds this mute will release, allowing any applied signal to pass un-attenuated.

When switching the amplifier off, wait a couple of seconds before switching the amplifier on again. This allows the ICS circuit to reset.

Level Matching

The normal operating position for the attenuator is the max position (fully clockwise, no attenuation). In this position the amplifier operates at full gain. Turning the attenuator back (anticlockwise) reduces the input sensitivity.

⚠ NOTE: If full power output is required, you should operate your amplifier with the front panel attenuator above the half way (12 o'clock) position, otherwise clipping of the input circuitry and its resultant distortion will occur before full output power is achieved.

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 AMH Series amplifier when the attenuator is at maximum position (fully clockwise) is nominally:

+4.0dBu (1.23 volts in) for rated power into a 4 Ohm load.

Each channel of your AMH Series amplifier has a nominal balanced input impedance of 20kOhms (@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 AMH 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 AMH 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 four (4) rail fuses provided internally in the unit. These rail fuses are in series with the positive and negative output supply to each amplifier channel 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



Model	AMH2400	AMH3600	Conditions/Comments
Topology	Class H	Class H	
Channels	2	2	
Power Output (per channel)			
Single Channel 2Ω	1600W	2300W	1kHz, 1%THD, ±50W
Single Channel 4Ω	1000W	1400W	1kHz, 1%THD, ±50W
Single Channel 8Ω	570W	800W	1kHz, 1%THD, ±50W
Mono 2Ω (Both Driven)	1200W	1800W	1kHz, 1%THD, ±50W
Mono 4Ω (Both Driven)	900W	1100W	1kHz, 1%THD, ±50W
Mono 8Ω (Both Driven)	525W	700W	1kHz, 1%THD, ±50W
Bridged 4Ω	2400W	3600W	1kHz, 1%THD, ±50W
Bridged 8Ω	1850W	2200W	1kHz, 1%THD, ±50W
Maximum Output Level	67.5Vrms	80Vrms	20Hz - 20kHz, <1%THD, Single Channel 8Ω
System Gain	33.7dB	34.6dB	
Frequency Response	25Hz - 20kHz	25Hz - 20kHz	3dB below clipping, +0/-3dB, ±10Hz
Signal to Noise Ratio	> 100 dBA	> 100 dBA	Max Output, 1kHz, 20kHz BW, A-Weighted
THD+N, 4Ω, 8Ω, 1kHz	< 0.06%	< 0.06%	3dB below clipping, 1kHz, 20kHz BW, Unity Gain, A-Weighted
Channel Separation (crosstalk)	> 65dB	> 65dB	20Hz - 20kHz, Max output, Adjacent Channels
Damping Factor	> 400	> 400	20Hz - 1kHz, 8Ω
Input Connectors	2 Female XLR, 2 Male XLR	2 Female XLR, 2 Male XLR	
Input Impedance	22kΩ	22kΩ	Balanced, line to line
Output Impedance	20mΩ	20mΩ	
Input Sensitivity	1.23Vrms (+4.0dBu)	1.23Vrms (+4.0dBu)	±0.2V. Level control at maximum
Input CMRR	> 55dB	> 55dB	20Hz - 20kHz
Output Connectors	2 Binding Posts 2 Neutrik speakON	2 Binding Posts 2 Neutrik speakON	10-24 AWG Wire
LED Status	Signal, Limit, Clip, Fault	Signal, Limit, Clip, Fault	
User Controls	On/Off, Gain, Bridge/stereo/parallel switch LPF/HPF/OFF switch, GND lift switch	On/Off, Gain, Bridge/stereo/parallel switch LPF/HPF/OFF switch, GND lift switch	
Attenuation	-24dB Log scale	-24dB Log scale	21 step volume control
Limiter	62Vac ±3V, 8%THD ±1%	70Vac ±3V, 8%THD ±1%	+10dBu, 20Hz - 20kHz
Filter	120Hz LPF/HPF, ±0.5dB	120Hz LPF/HPF, ±0.5dB	12dB/Octave, Linkwitz-Riley
AC Input	230Vac, 50-60Hz	230Vac, 50-60Hz	±10%
AC Power Factor	0.58	0.62	Max Output, 1kHz
AC Connector	IEC 60320-C14	IEC 60320-C20	
Maximum Inrush Current	79A	84A	253VAC, 53Hz

Specifications continued over page

SPECIFICATIONS (continued)

Model	AMH2400	AMH3600	Conditions/Comments
Overload Protection	Temperature, Over/Under Voltage, Current Limit	Temperature, Over/Under Voltage, Current Limit	
AC Mains Fuse	10A Circuit breaker	13A Circuit breaker	
DC Amplifier Fuse	F16A 250V	F20A 250V	Time Lag, High Breaking capacity
RMS Current Draw	Pink noise IEC 60268-1	Pink noise IEC 60268-1	
Idle	0.49A	0.57A	230Vac, 50Hz. Bridged 4Ω
1/8th Power	7A	8.45A	230Vac, 50Hz. Bridged 4Ω
1/3 Power	10.5A	15.3A	230Vac, 50Hz. Bridged 4Ω
Full Power	23A	31.81A	230Vac, 50Hz. Bridged 4Ω
Power Consumption	Pink noise IEC 60268-1	Pink noise IEC 60268-1	
Idle	52W	60W	230Vac, 50Hz. Bridged 4Ω
1/8th Power	1052W	1324W	230Vac, 50Hz. Bridged 4Ω
1/3 Power	1660W	2560W	230Vac, 50Hz. Bridged 4Ω
Full Power	4004W	5800W	230Vac, 50Hz. Bridged 4Ω
Efficiency	Pink noise IEC 60268-1	Pink noise IEC 60268-1	
1/8th Power	29%	34%	230Vac, 50Hz. Bridged 4Ω
1/3 Power	48%	47%	230Vac, 50Hz. Bridged 4Ω
Full Power	60%	62%	230Vac, 50Hz. Bridged 4Ω
Thermal Dissipation	Pink noise IEC 60268-1	Pink noise IEC 60268-1	
Idle	177	205	Excludes Load Power (1W = 3.412BTU/Hr)
1/8th Power	2566	2982	Excludes Load Power (1W = 3.412BTU/Hr)
1/3 Power	2934	4640	Excludes Load Power (1W = 3.412BTU/Hr)
Dimensions (W x D x H)	483mm x 400mm x 88mm (19" x 15.75" x 3.5")	483mm x 400mm x 88mm (19" x 15.75" x 3.5")	Including rack ears
Shipping Dimensions (W x D x H)	540mm x 532mm x 190mm (21.26" x 20.9" x 7.48")	540mm x 532mm x 190mm (21.26" x 20.9" x 7.48")	
Net Weight	11.5kg (25.35 lbs)	11.9Kg (26.23 lbs)	
Shipping Weight	13.6 kg (29.98 lbs)	13.9Kg (30.64 lbs)	
Mounting	2 RU	2 RU	
Operating Temperature	0°C to 40°C (95% RH)	0°C to 40°C (95% RH)	
Cooling system	Fan assisted convection cooling	Fan assisted convection cooling	
Finish	Powder coated steel	Powder coated steel	
Colour	Black	Black	
Accessories	IEC 60320-C13 Mains cable. Rubber Feet x 4	IEC 60320-C19 Mains cable. Rubber Feet x 4	



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