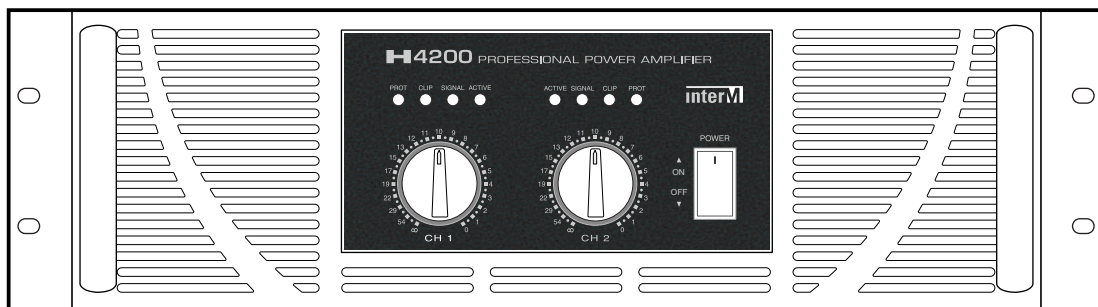


Operating Manual



H-3200/4200 Professional Power Amplifier



interM

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Welcome

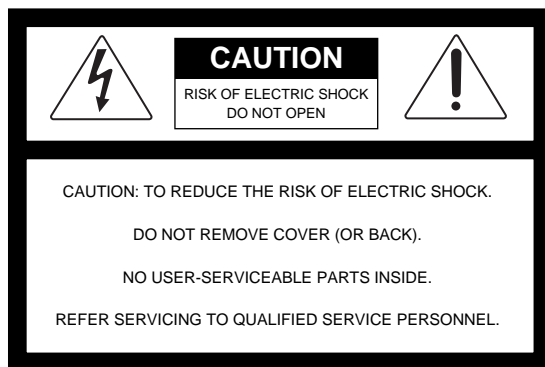
A personal welcome to you from the management and employees of Inter-M

All of the co-workers here at Inter-M are dedicated to providing excellent products with inherently good value, and we are delighted you have purchased one of our products.

We sincerely trust this product will provide years of satisfactory service, but if anything is not to your complete satisfaction, we will endeavor to make things right.

Welcome to Inter-M, and thank you for becoming part of our worldwide extended family!

Warning



WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

*Do not install this equipment in a confined space such as a book case or similar unit.

*The apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.



This symbol 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.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attentions: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.

Unpacking

Please take a few minutes to read this manual to familiarize yourself with important information regarding installation, product features, and operation.

As with most electronic devices, ORIGINAL PACKAGING (OR EQUAL) IS REQUIRED in the unlikely event that the product needs to be returned for servicing.

Short Form Instructions

1. Do not connect the AC power until step 6. The POWER switch should be in the OFF position.
2. Adjust both of the LEVEL controls to the fully attenuated position (counter clockwise).
3. Connect an appropriate line level input signal to either the balanced XLR or the balanced 1/4" TRS (Tip-Ring-Sleeve) connector marked INPUTS.
4. Move the MODE selector to the desired position. The Stereo position is the most common.
5. Connect the OUTPUTS to the speaker load according to the mode of operation determined in the previous step.
6. With the power switch in the OFF position, install the appropriate AC mains plug for your application then connect to an appropriate AC source.
7. Depress the power switch to the ON position. The power switch will illuminate.
8. The product is ready for operation. Slowly increase the LEVEL control to the desired operating level. Avoid illuminating the PEAK indicator and do not apply too much power to the speakers.
9. Operate the product and the system in a manner which DOES NOT illuminate the PEAK warning indicator.

Installation

Environment

Never place this product in an environment which could alter its performance or reduce its service life. Such environments usually include high levels of heat, dust, moisture, and vibration.

Safety

1. Read these instructions.
2. Follow all instructions.
3. Keep all warnings.
4. Do not use this apparatus near water.
5. Clean only with a damp cloth.
6. Do not block any of the ventilation openings.
7. 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 is provided for your safety. When 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. Use only the attachments/accessories specified by the manufacturer.
12. Use only with a 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.



Description

- H-3200
A 3U rack space, 2 channel amplifier capable of 3200W into 4 Ω load (bridged mono).
- H-4200
A 3U rack space, 2 channel amplifier capable of 4200W into 4 Ω load (bridged mono).

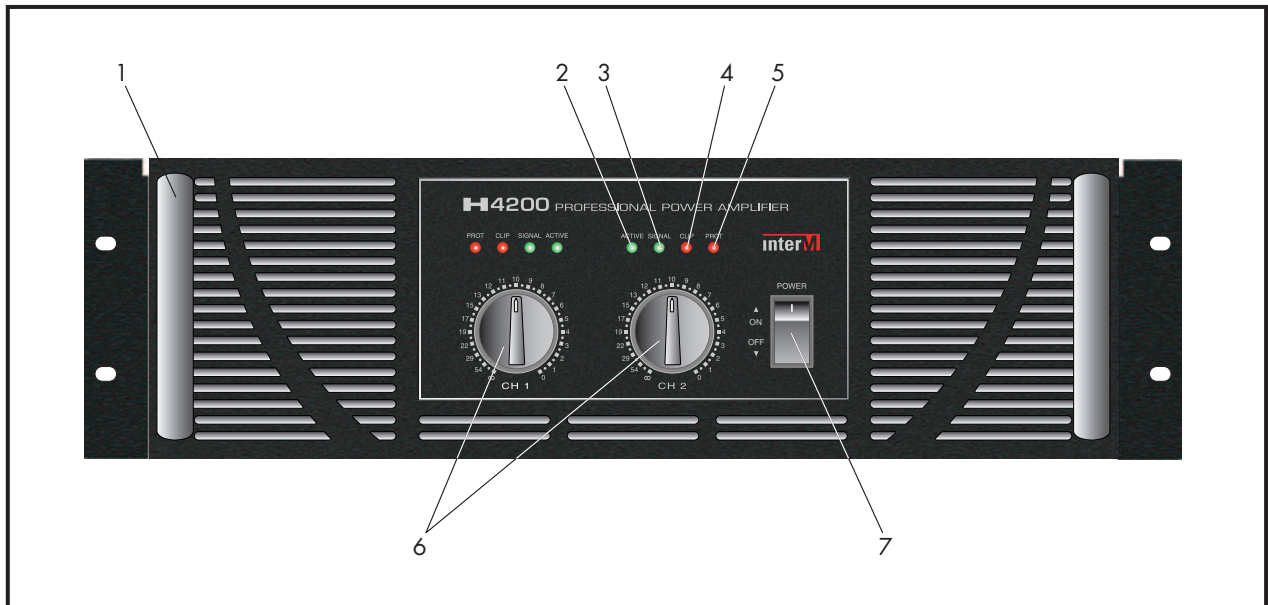
Features

- 2 Ω stable per channel, 4 Ω stable in bridge mono
- 3U rack space
- Selectable High Pass Filter on each channel
- Clip limiter circuitry
- Forced air cooled (front panel intake, rear panel exhaust)
- Front panel indicators of operating mode
- Front panel indicators for signal strength, clip, protect, and power
- Rack Ears for permanent installation in a standard 19" (rack mount width) enclosure.

Accessories

No accessories are provided for use with this product.

Front Panel



1. HANDLES

These are provided for easy transportation and installation into equipment enclosures or racks.

2. POWER INDICATOR

This confirms the amplifier is switched ON and receiving AC MAINS POWER when illuminated.

3. LEVEL INDICATOR

This LED confirms the level of the input signal is greater than -40dB. This should be illuminated on each channel during normal operation.

4. CLIP LIMITER INDICATOR

This LED warns of a problem in the system when illuminated. Reduce the LEVEL of the device which supplies signal to the amplifier or reduce the LEVEL control(s) on the amplifier. This should not be illuminated during normal operation.

5. PROTECTION INDICATOR

This LED warns of a problem in the system when illuminated. Reduce the volume and look for what has caused the LED to illuminate (e.g. check if the temperature of the amplifier is too hot, or the speaker load impedance is too low). This should not be illuminated during normal operation.

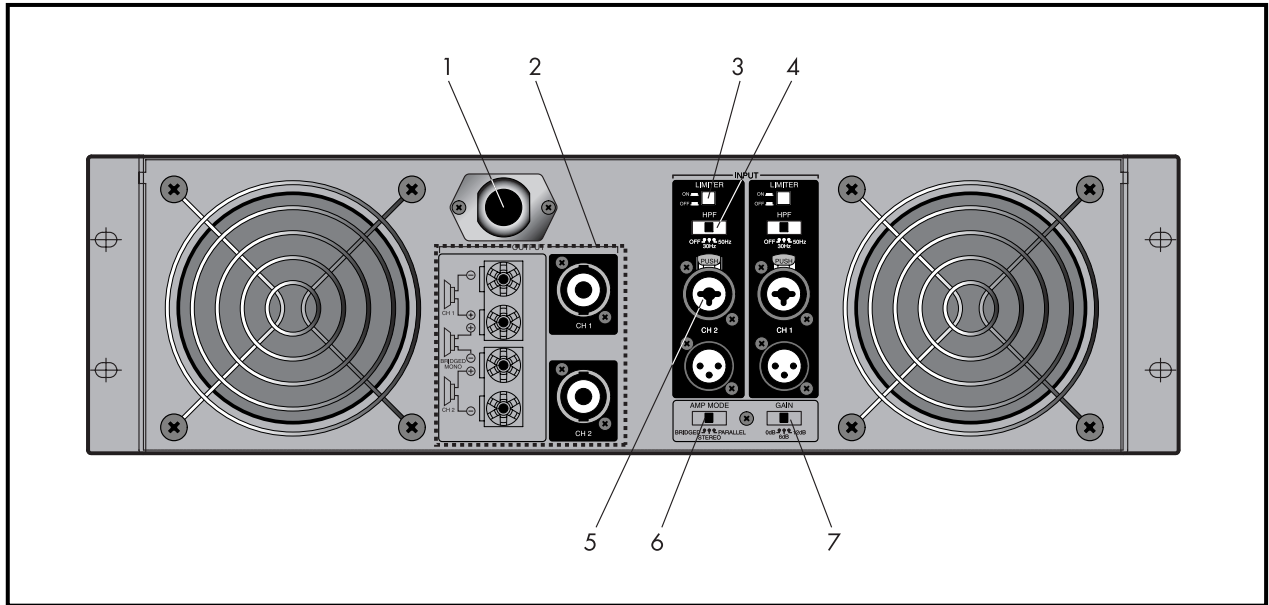
6. LEVEL CONTROLS

These controls adjust the input signal level for each channel. In stereo or parallel mode the controls will adjust the signal level independently for each channel. In the bridge mono mode channel 2 will be turned fully clockwise and channel 1 will be turned clockwise only as needed to achieve the desired level.

7. POWER SWITCH/CIRCUIT BREAKER

The position of this switch selects whether the AC MAINS power is ON or OFF. The power-on status is confirmed by the illumination of the power indicator. Amplifiers should always be the last item in a system to be turned on, to avoid damage to the attached loudspeakers that may be caused by the “hump” noise caused by switching on other system components. It is wise to reduce the level controls before applying AC power. The circuit breaker protects the amplifier by switching OFF the AC MAINS power if the amplifier operates abnormally due to overload or malfunction. Switch ON to reset.

Rear Panel

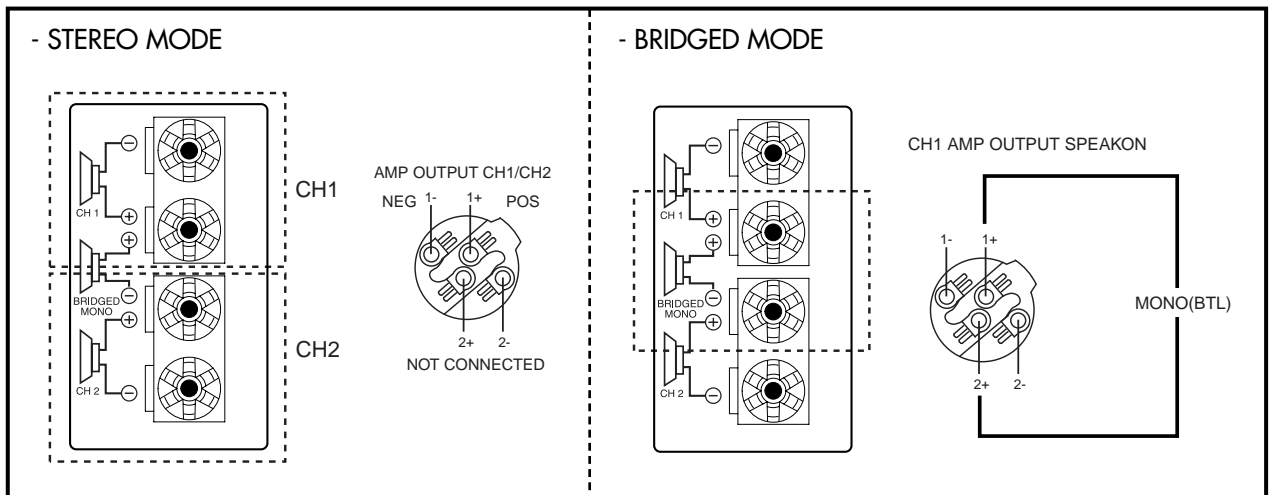


1. AC MAINS INPUT

Connect the amplifier to an appropriate AC MAINS power source using the supplied AC MAINS Power Cord. It is the responsibility of the user to supply/install the appropriate AC MAINS plug, and then to connect the amplifier to an AC MAINS power source that is rated appropriately for the current required by the amplifier.

2. OUTPUT CONNECTORS

Binding Posts and Speakon connectors are provided for connection to the cables for the loudspeakers. Please note that Bridged Mono operation requires a different method of interconnection to the speaker cables than normal Stereo operation. Also be sure that the amplifier is in the correct mode before connecting the speaker load.



3. CLIP LIMITER SWITCH

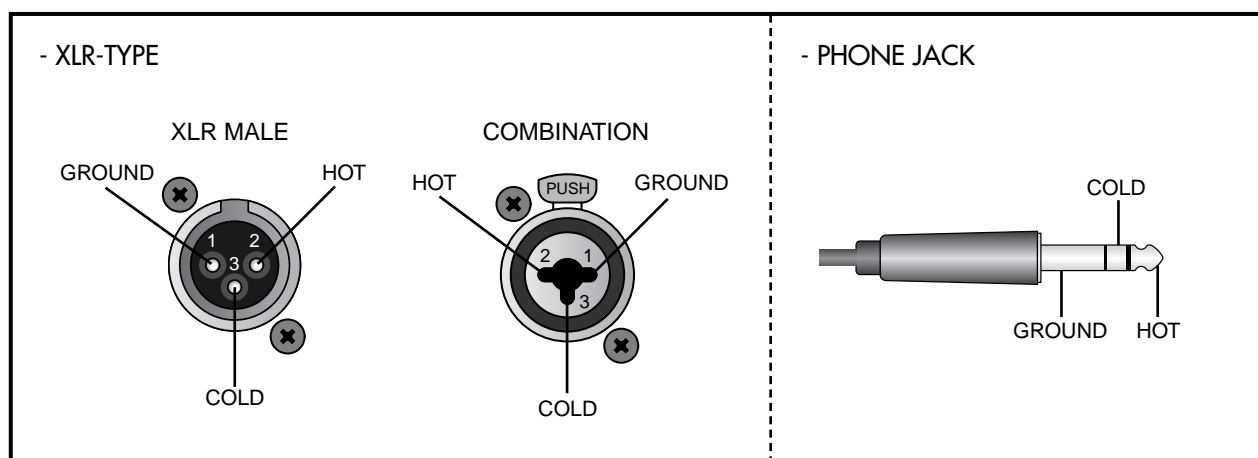
The CLIP LIMITER reduces the signal level as necessary to insure that excessive signals do not overdrive the amplifier. It is recommended to leave this switched to the "ON" position to help prevent distortion and to help provide protection to high frequency drivers.

4. HIGH PASS FILTER SWITCH

Select the filter position that is appropriate for your application. The OFF position allows full frequency range signals be amplified. The 30Hz/50Hz positions of this switch filter (reduce the signal strength) signals below 30/50 Hz to reduce AC MAINS power requirements and also to help protect the speaker by reducing the level of subsonic signals.

5. BALANCED INPUT CONNECTORS

Each input channel is equipped with a special "combo" connector that will accept either a 1/4" TRS or an XLR connector. Although the connector is of this special design, standard rules of interconnect apply.



6. MODE SELECTOR SWITCH

Select the appropriate position of this switch for STEREO, PARALLEL or BRIDGED MONO as required.

The Stereo mode is the standard mode of operation. Channel 1 input sends signals to the channel 1 output. The channel 2 input sends signals to the channel 2 output.

The Parallel mode uses the channel 1 input to send signals to both the channel 1 and channel 2 outputs. No input should be supplied to channel 2 when in Parallel mode.

The Bridge Mono mode combines both amplifier channels to create a mono amplifier. Input signal applied to channel 1 will be available across the positive terminals of Channel 1 and channel 2. Do not connect a signal to the channel 2 input. Do not connect speaker cables to the negative outputs.

7. INPUT SENSITIVITY SWITCH

The input sensitivity may be reduced by either -6dB or -12dB as needed to reduce the possibility of excessive input signal levels overdriving the amplifier.

Connections

Inter-M products are wired to reflect accepted wiring practices used throughout the world.

Balanced XLR connectors are wired as described:

Pin #1 Shield

Pin #2 Positive/Hot

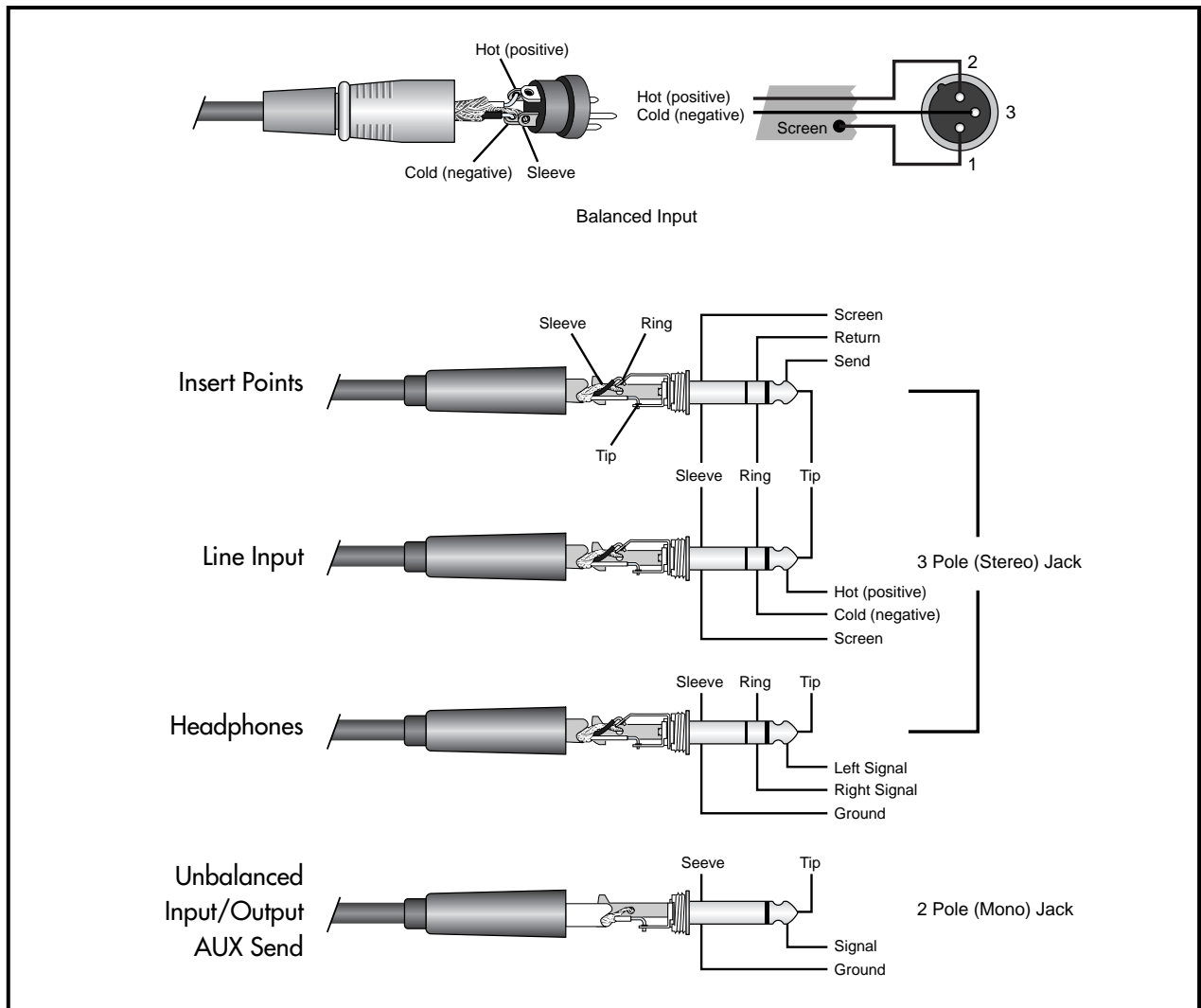
Pin #3 Common/Cold

Balanced 1/4" TRS connectors are wired as described:

Tip is Positive/Hot

Ring is Common/Cold

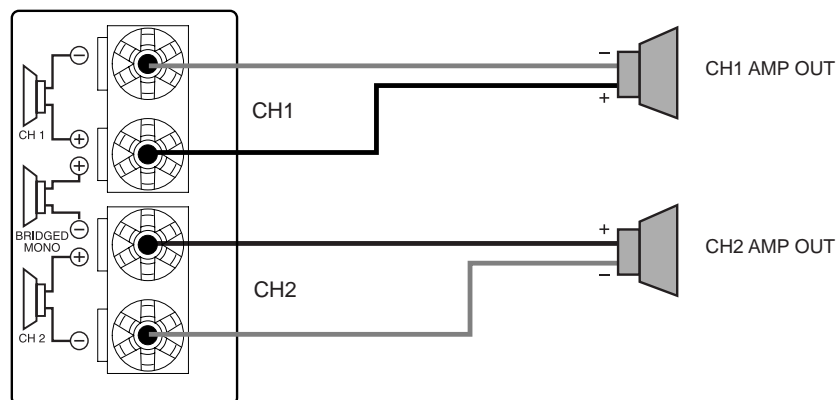
Sleeve is Shield



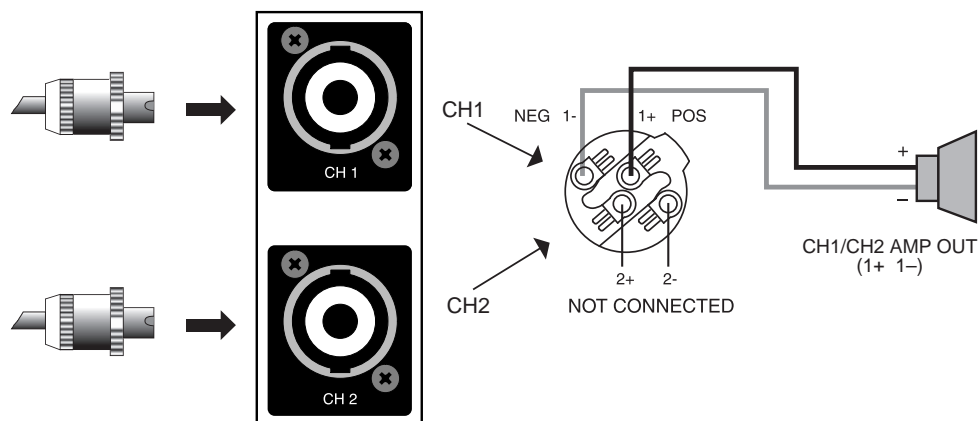
Applications-1

- Parallel/Stereo Installation

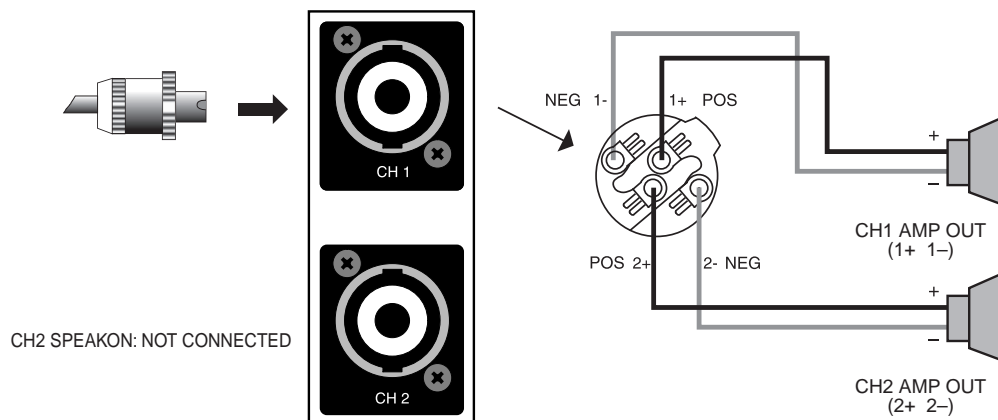
- Binding Post Outputs



- 2 Channels & 2 Speakon™ Outputs



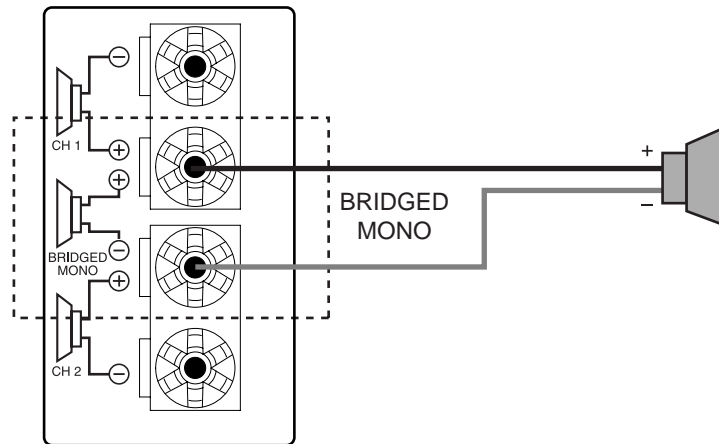
- 2 Channels & 1-Speakon™ Outputs



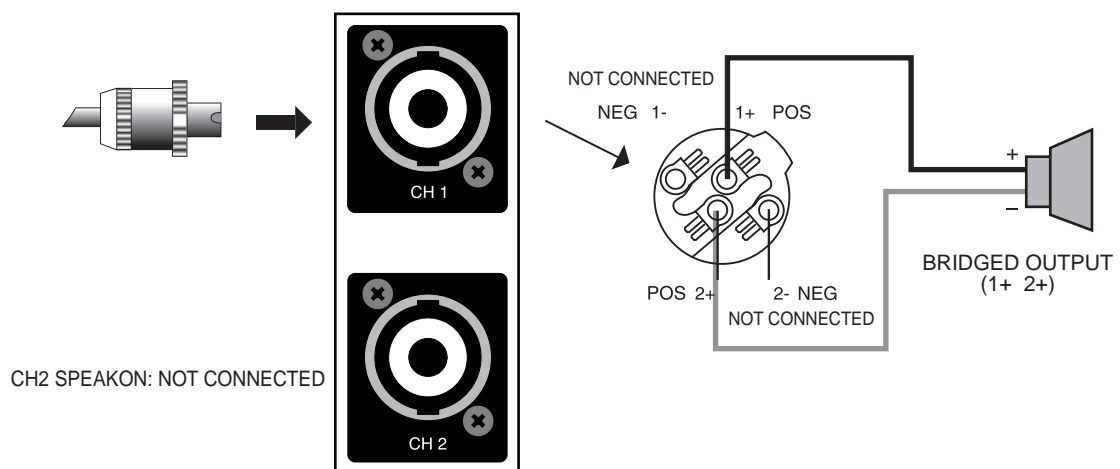
Applications-2

- Bridge Mono Installation

- Binding post outputs

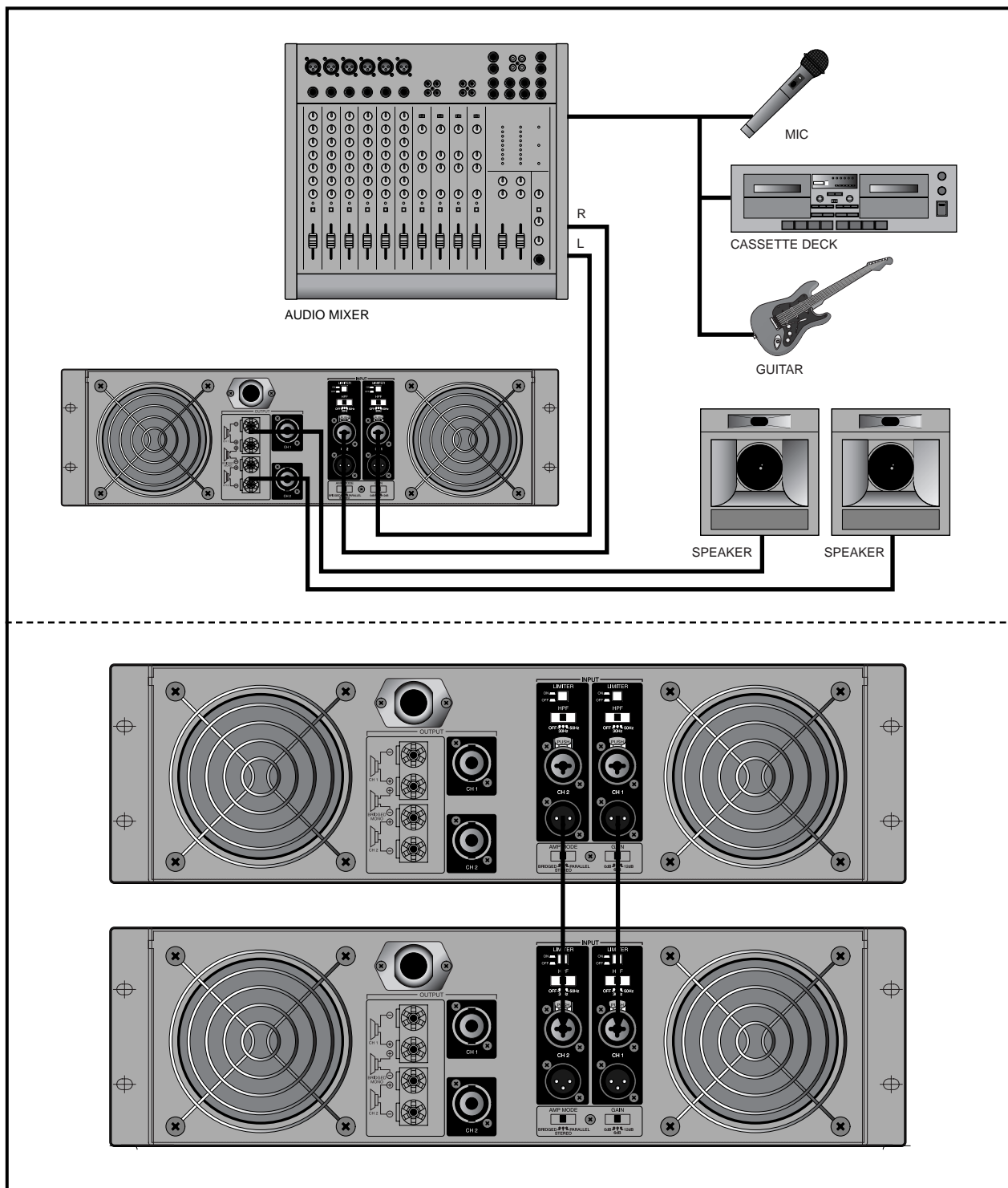


- Speakon™ Outputs

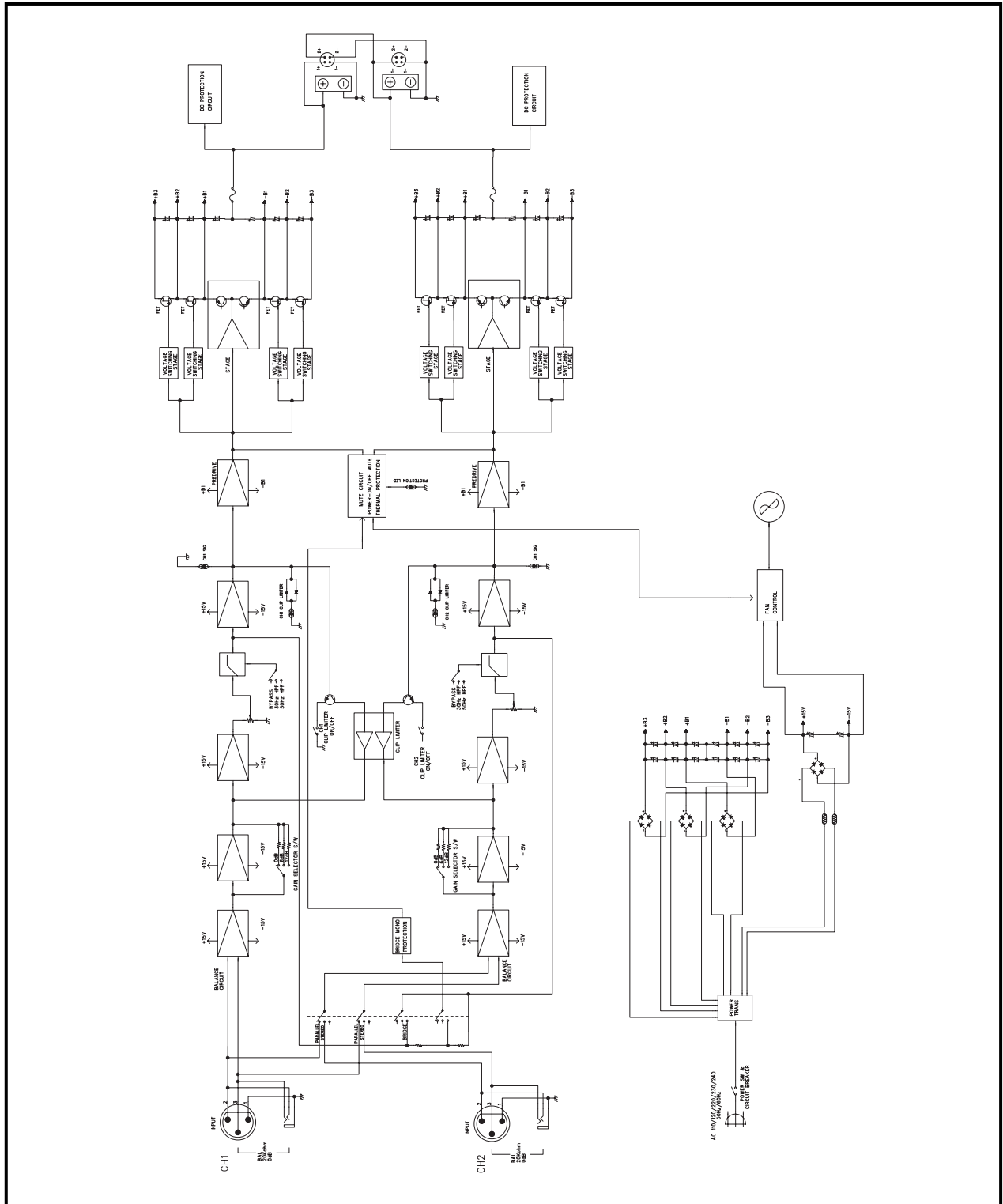


Applications-3

- Linked Installation: Linking works with Stereo/Parallel or Bridged Mono Operation



Block Diagram



Specifications

- ELECTRICAL

	H-3200	H-4200
Power Output Level		
STEREO 1 kHz both channels driven		
$R_L=8\Omega$ @ 0.1% THD	800W	1000W
$R_L=4\Omega$ @ 0.1% THD	1200W	1600W
$R_L=2\Omega$ @ 0.1% THD (1ch driven)	1600W	2100W
BRIDGED $R_L=8\Omega$ 1kHz @ 0.1% THD	2400W	3000W
$R_L=4\Omega$ 1kHz @ 0.5% THD	3200W	4200W
Frequency Response $R_L=8\Omega$, $P=1W$	20Hz~20kHz: $\pm 0/1dB$, 5Hz~70kHz: -3dB	
Total Harmonic Distortion(THD+N)		
$f=20Hz\sim 20kHz$, 1/10 Power		
STEREO $R_L=8\Omega$ & 4Ω	$\leq 0.03\%$	
BRIDGED $R_L=8\Omega$	$\leq 0.03\%$	
Channel Separation Half Power $R_L=8\Omega$, $f=1kHz$, ATT. max. Input 600 Ω shunt	$\geq 80dB$	
Residual Noise (DIN Audio Filter)	$\leq -85dB$: ATT min.	
Signal-to-Noise Ratio (DIN Audio Filter) Input 600 Ω Shunt	$\geq 107dB$	
Standard Input Sensitivity (Rated Power into 4 Ω 1kHz)	1V	1V
Damping Factor $R_L=8\Omega$, $f=1kHz$	≥ 450	
Voltage Gain (ATT max.) 4 Ω 1kHz	69dB	78dB
Output Circuitry	H-Class	H-Class
Input Impedance (ATT max.)	$\geq 20k\Omega$ (Balanced/Unbalanced)	
Indicators	Active, Clip/Limiter, Signal, Protection	
Protection	Power SW ON/OFF muting, Full short circuit Thermal, RF, Ultrasonic	
Fan Circuit	Low-Speed-Variable-Hi-Speed	
Connectors	Input: balanced combination connector (XLR type+1/4" TRS) Output 5-Way binding posts $\times 2$, Speakon™ Terminal $\times 2$	

- GENERAL

Power Source	100–120VAC or 220–240VAC; 50/60Hz (Supplied AC mains transformer depends on country requirements)	
Weight	32kg/70.5lb	35kg/77.2lb
Dimensions	482(W) \times 132(H) \times 475(D)mm/19(W) \times 5.2(H) \times 18.7(D)in	

Current		LOAD	Typical (1/8 Power)	1/3 Power	Full Power
H-3200	120V	8ohm	5.2A	9.3A	21A
		4ohm	8.4A	15.4A	37.6A
		2ohm	9.2A	24A	55.6A
	230V	8ohm	2.2A	5.7A	12.6A
		4ohm	4.3A	9.3A	21.2A
		2ohm	5.7A	14.2A	32.4A
H-4200	120V	8ohm	6A	11.8A	26.8A
		4ohm	8.6A	19.6A	47.2A
		2ohm	12.6A	31.6A	80.8A
	230V	8ohm	3.1A	7A	15.8A
		4ohm	4.6A	11.4A	26.2A
		2ohm	7A	17.8A	40.4A

* Specifications and design subject to change without notice.

Service

Procedures

Ensure the problem is not related to operator error, or system devices that are external to this unit. Information provided in the troubleshooting portion of this manual may help with this process. Once it is certain that the problem is related to the product contact your warranty provider as described in the warranty section of this manual.

Schematic

A Schematic is available by contacting your warranty provider.

Parts List

A Parts List is available by contacting your warranty provider.

Variations and Options

Variations

Products supplied through legitimate sources are compatible with local AC power requirements.

Options

No optional items are available for this product.

Warranty

Warranty terms and conditions vary by country and may not be the same for all products. Terms and conditions of warranty for a given product may be determined first by locating the appropriate country which the product was purchased in, then by locating the product type.

To obtain specific warranty information and available service locations contact Inter-M directly (in Korea or the USA) or the authorized Inter-M Distributor for your specific country or region.



Inter-M, Ltd. (Korea) began operations in 1983.

Since then, Inter-M has grown to become one of the largest manufacturers of professional audio and commercial sound electronics equipment in the world.

Inter-M has gained worldwide recognition for its own branded products, as well as private label manufacturing of electronics sold under other names (OEM).

The company is no longer just a Korean company, but rather a global company that is truly international in scope, with factories and offices in Korea and China, and sales and marketing operations located in Japan, Europe, and the U.S.A.

With more than 850 employees around the globe, Inter-M is well-poised for further growth and expansion.

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