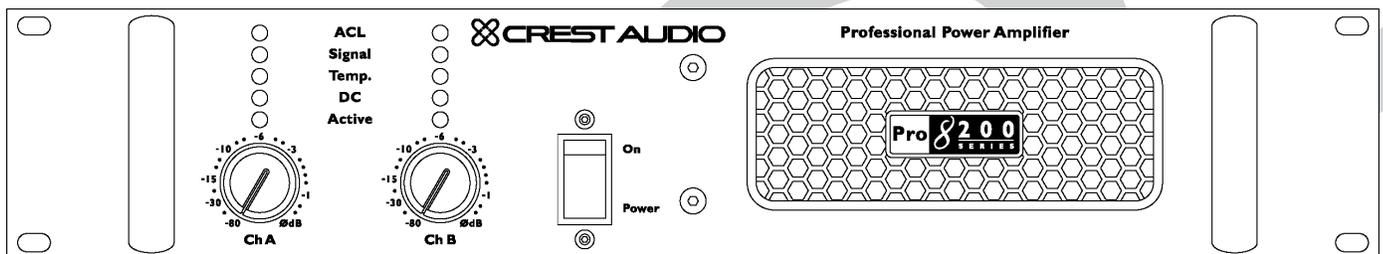


PRO 200 Series Amplifier Owner's Manual





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.



Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock — DO NOT OPEN!

CAUTION: To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

WARNING: To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance, read the operating guide for further warnings.



Este símbolo tiene el propósito, de alertar al usuario de la presencia de “(voltaje) peligroso” sin aislamiento dentro de la caja del producto y que puede tener una magnitud suficiente como para constituir riesgo de descarga eléctrica.



Este símbolo tiene el propósito de alertar al usuario de la presencia de instrucciones importantes sobre la operación y mantenimiento en la información que viene con el producto.

PRECAUCION: Riesgo de descarga eléctrica ¡NO ABRIR!

PRECAUCION: Para disminuir el riesgo de descarga eléctrica, no abra la cubierta. No hay piezas útiles dentro. Deje todo mantenimiento en manos del personal técnico cualificado.

ADVERTENCIA: Para evitar descargas eléctricas o peligro de incendio, no deje expuesto a la lluvia o humedad este aparato. Antes de usar este aparato, lea más advertencias en la guía de operación.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur la présence d'une tension dangereuse pouvant être d'amplitude suffisante pour constituer un risque de choc électrique.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur qu'il ou qu'elle trouvera d'importantes instructions concernant l'utilisation et l'entretien de l'appareil dans le paragraphe signalé.

ATTENTION: Risques de choc électrique — NE PAS OUVRIR!

ATTENTION: Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée par l'utilisateur. Confiez l'entretien et la réparation de l'appareil à un réparateur agréé.

AVERTISSEMENT: Afin de prévenir les risques de décharge électrique ou de feu, n'exposez pas cet appareil à la pluie ou à l'humidité. Avant d'utiliser cet appareil, lisez attentivement les avertissements supplémentaires de ce manuel.



Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.



Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.

VORSICHT: Risiko — Elektrischer Schlag! Nicht öffnen!

VORSICHT: Um das Risiko eines elektrischen Schlages zu vermeiden, nicht die Abdeckung entfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.

ACHTUNG: Um einen elektrischen Schlag oder Feuergefahr zu vermeiden, sollte dieses Gerät nicht dem Regen oder Feuchtigkeit ausgesetzt werden. Vor Inbetriebnahme unbedingt die Bedienungsanleitung lesen.

Important Safety Instructions

WARNING: When using electrical products, basic cautions should always be followed, including the following:

1. Read all instructions.
2. Keep all instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this device near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus 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 plug. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided 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 device during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the device is damaged in any way, such as liquid has been spilled or objects have fallen into the device, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. Never break off the ground pin. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.

16. If this product is to be mounted in an equipment rack, rear support should be provided.

17. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time.

The U.S. Government's Occupational and Health Administration (OSHA) has specified the following permissible noise level exposures:

Sound Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Ear plugs or protectors inserted into the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits listed above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels be protected by hearing protectors.

SAVE THESE INSTRUCTIONS!

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Contents

Appendices

1 How to use this manual

Introduction

Congratulations on your purchase of a Crest Audio Pro 200 Series power amplifier. Designed for years of reliable operation under rigorous use, these power amplifiers offer the sonic superiority and unsurpassed reliability for which Crest Audio is famous. Advanced technology and extensive protection circuitry allow more efficient operation, especially when working with difficult loads and power conditions. The Automatic Clip Limiting (ACL) circuit protects drivers, maintains sonic integrity and ensures trouble-free operation into loads as low as 2 Ohms.

Crest Audio's high efficiency design uses tunnel-cooled heat sinks and variable-speed DC fans to maintain a lower overall operating temperature, resulting in longer output transistor life. Pro 200 Series models 8200, 7200 and 5200 use Crest Audio's innovative Power Density circuitry and packaging.

Although these amplifiers are simple to operate and housed in ultra-strong steel chassis, improper use can be dangerous. These are very high-powered amplifiers that can put out high voltages and sizable currents at frequencies up to 30 kHz. Always use safe operating techniques with these amplifiers.

FOR YOUR SAFETY, READ THE IMPORTANT PRECAUTIONS SECTION AS WELL AS THE INPUT, OUTPUT AND POWER CONNECTION SECTIONS OF THIS MANUAL.

Conventions

Warnings

Procedures **not** to attempt. 
Issues or hazards to keep in mind when operating the equipment.

Indicators

What to look for on the equipment display. 
Alerts, indicators, or prompts that may appear.

Tips

Preferred methods. 
Helpful hints.
Feature insights.

See

See—refers to other sections of the manual containing supplementary information on the current topic or a related issue

Note

Note—supplementary feature information

- **What to do with the shipping carton**
- **Proper rack-mounting technique**
- **Keeping the amplifier cooled**
- **Tips for trouble free operation**
- **Routine maintenance practices**

Unpacking

Mounting

**Cooling
Requirements**

**Additional
Guidelines**

Maintenance

2 Installation

Unpacking

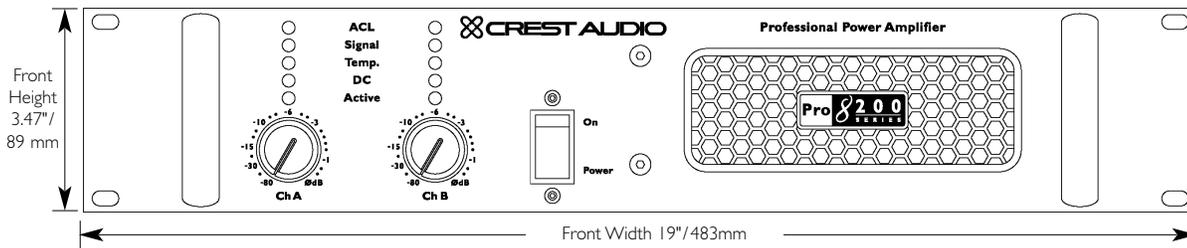
Upon unpacking, be sure to inspect the amplifier. If you find any damage, notify your supplier immediately. Only the consignee may institute a claim with the carrier for damage incurred during shipping. Be sure to save the carton and all packing materials. Should you ever need to ship the unit, use only the original factory packing. If the shipping carton is unavailable, contact Crest to obtain a replacement.

For replacement packaging, call Crest Audio's Customer Service Department directly. see—**service and support**

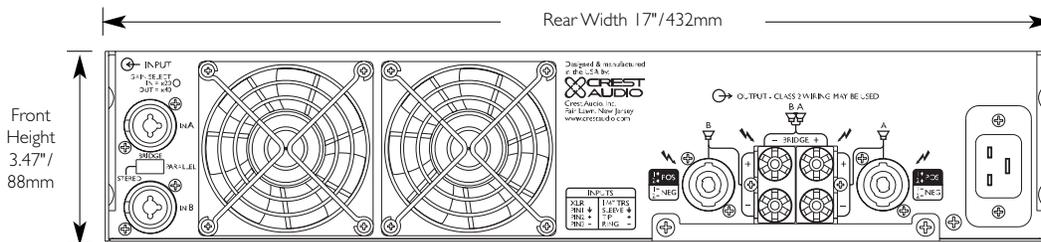
Mounting

Pro 200 Series amplifiers will mount in standard 19" racks. Rear mounting ears are also provided for additional support, which is recommended in non-permanent installations like mobile or touring sound systems. Because of the cables and connectors on the rear panel, a right-angle or offset screwdriver or hex key will make it easier to fasten the rear mounting ears to the rails.

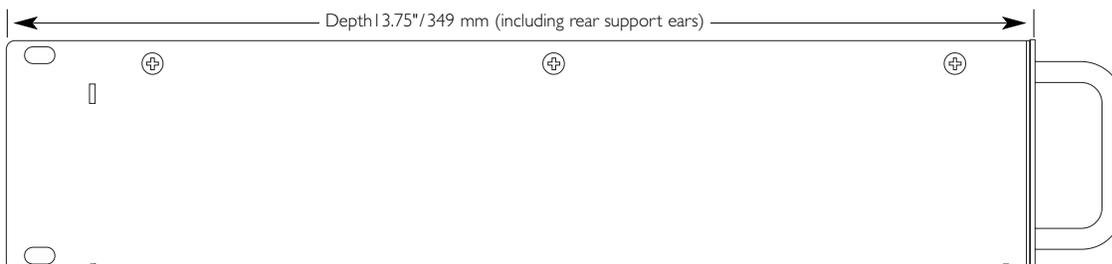
Front Panel (8200 shown - 7200 & 5200 have the same dimensions)



Rear Panel



Side Panel



Cooling Requirements

Pro 200 Series amplifiers use a forced-air cooling system to maintain a low, even operating temperature. Air is drawn into the amplifier by fans on the rear panel, which passes over the cooling fins of the heat sinks and exhausts through the front grille. If either heat sink gets too hot, its sensing circuit will open the output relay, disconnecting the load from that particular channel. It is important to have an adequate air supply at the back of the amplifier, and enough space around the front of the amplifier to allow the cooling air to escape. If the unit is rack mounted, do not use doors or covers on the front of the rack; the exhaust air must flow without restriction. If you are using racks with closed backs, use fans on the rear rack panel to pressurize the rack to ensure an ample air supply. Also make sure there is one standard rack space opening for every three mounted power amplifiers.

Make certain that there is enough space around the front and rear of the amplifier to allow the heated air to escape. When mounting in a rack, try to avoid using doors or covers on the front and rear of the enclosure; the exhaust air must not be impeded



suggestion
In racks with closed backs allow at least **one** standard-rack-space opening for every four amps.

Additional Guidelines

Make sure the mains voltage is correct and the same as that printed on the rear of the amplifier. Damage caused by connecting the amplifier to improper AC voltage is not covered by any warranty. See the Connecting Power section in Chapter 5 for more information on voltage.

Note — Always turn off and disconnect the amplifier from mains voltage before making audio connections. As an extra precaution, have the attenuators turned down during power-up.

Although Pro 200 Series amplifiers have AutoRamp circuitry, which raises the signal level gradually after the output relay closes, it is always a good idea to have the gain controls turned down during power-up. This will prevent speaker damage if there is a high signal level at the inputs. Whether you buy or make them, use high quality connections, input cables and speaker cables, along with a good soldering technique. Most intermittent problems are caused by faulty cables.

Consult the the Wire Gauge Charts in Appendix C to determine proper gauges for different load impedances and cable lengths. Cable resistance robs amplifier power in two ways: power lost directly to resistance (I^2R loss) and by lowering the total load impedance. Also make sure the mode switch is set correctly for the desired application. See Chapter 4 for more information on modes.

Maintenance

Pro 200 Series amplifiers require little routine maintenance.

When used in an extremely dusty or smoky environment, it should be periodically blown free (using compressed air) of any foreign matter that may have built up inside.

When used in an environment where residue from smoke/fog machines is regularly present, the amplifier(s) should be periodically checked (by authorized Crest service personnel) for build-up of that residue

Users will not need to make any adjustments to the amplifier during its lifetime. There are no user-serviceable parts or adjustments that require opening the unit.

Features Overview **3**

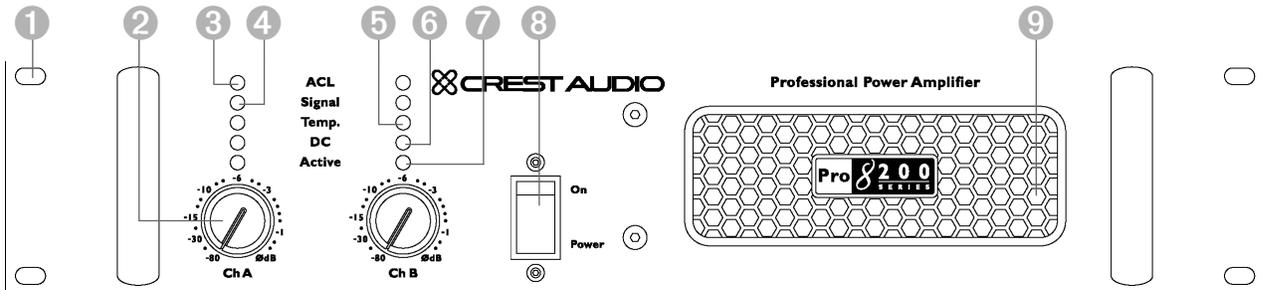
- ▶ **Controls and Connectors**
- ▶ **Legend of Panel Symbols**

Front Panel

Rear Panel

3 Features Overview

Front Panel - Pro 8200 shown



Front Panel

1 Rack Mounting Ears

Two front-panel mounting holes are provided on each mounting ear.

2 Input Attenuator

Whenever possible, set the attenuator fully clockwise to maintain optimum system headroom. The input attenuator controls (one for each channel) are located at the front panel, adjust gain for their respective channels in all modes. See the specifications at the end of this manual for standard voltage gain and input sensitivity information.

When operating in the bridged mode, both attenuator must be in the same position so the speaker load will be equally shared between the channels.

See — Chapter 4 on Bridged Mono mode operation for more information and precautions.

3 ACL (Automatic Clip Limiting) LED

A channel's ACL LED will light at the onset of clipping. If the LEDs are flashing quickly and intermittently, the channel is at its clip threshold. A steady, bright glow means the unit is clip limiting, or reducing gain to prevent severely clipped wave forms from reaching the speakers. During initial power up, the ACL LED will light to indicate that the Auto Ramp gain reduction circuitry is activated. This will prevent sudden signal bursts when the speaker relays are closed.

4 Signal LED

This LED lights when its channel produces an output signal of approximately 4 Volts RMS or more (>0.1 Volt at the input, with 0 dB attenuation and x40 Voltage gain). The state of this LED is useful in determining whether a signal is reaching the input and is being amplified. This is especially true when the unit is operated far from the connected speakers

Each Pro 200 Series amplifier channel features five front panel LED indicators: ACL, Signal, Temp, DC and Active. These LEDs inform the user of operating status and warn of possibly abnormal conditions.

5 Temp LED

The Temp LED lights when a channel's output relay is open, disconnecting the speaker(s) because of an overheating condition. Once the channel temperature has returned to a safe level, the LED will turn off and the speaker(s) will be reconnected.

6 DC LED

The DC LED lights when the channel's output relay is open, disconnecting the speaker(s) when the amplifier senses a DC voltage or subsonic signal at its output.

7 Active LED

The Active LED indicates that a channel's output relay is closed and operational. It lights under normal operation and remains on, even when the channel is in ACL gain reduction. These protection features leave the output relay closed. If the Active LED goes off, there will be no signal at the output connector(s).

8 Airflow Outlet Grille

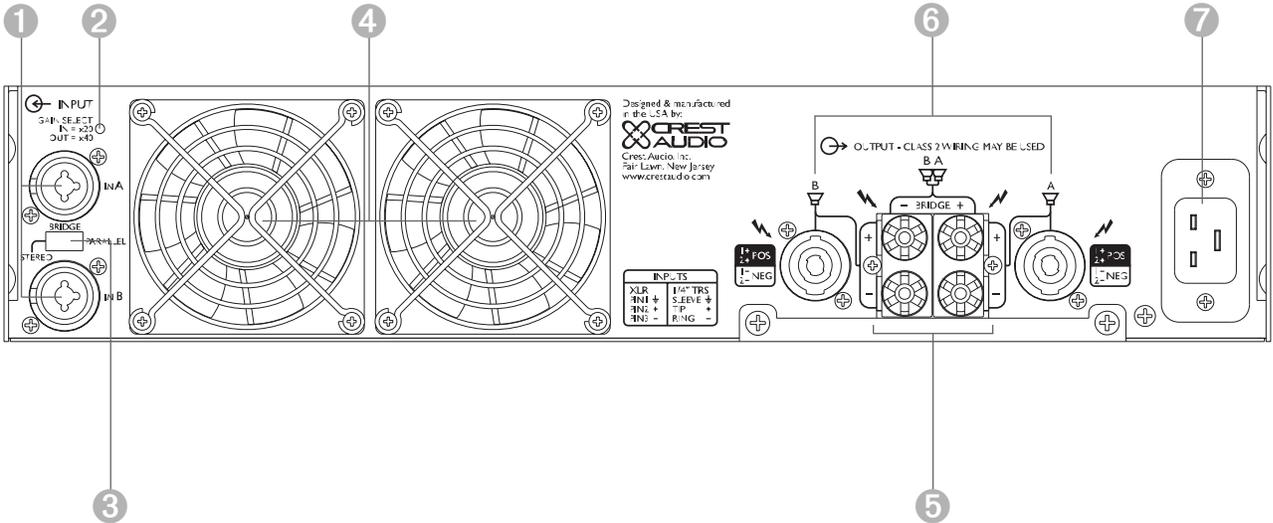
Pro 200 Series amplifiers are cooled by dual, variable-speed, rear-mounted fans. Cool air flows over the heat sink and exhausts through the front grille. Make sure this outlet remains clear to allow unrestricted airflow.

9 AC Power Switch/Circuit Breaker

Pro 200 Series amplifiers have a combination AC switch/circuit breaker on the front panel. If the switch shuts off during normal use, push it back to the ON position once. If it will not stay on, the amplifier needs servicing.

3 Features Overview

Rear Panel



Rear Panel

1 Input Connectors

Input signals can be connected to the amp via the Neutrik Combicon connectors, using either a TRS or XLR connector. Input sensitivity is **.775v** (0 dBv) for full rated output power.

See — Input Connections in Chapter 5 for more information.

2 Gain Select Switch

The rear panel Gain Select switch determines whether the amplifier has an overall gain of 40x (32 dB) or 20x (26 dB).

The OUT position will select x40

The IN position will select x20.

3 Mode Select Switch

The rear panel Mode Select Switch determines whether the amplifier is in stereo, parallel or bridged mono mode. Do not operate the Mode Select Switch with the amplifier on.

See — Chapter 4 for more information on operation modes.

Rear Panel Legend

-  Input Connection
-  Output Connection

-  Channel A stereo/parallel
-  Bridged mono
-  Channel B stereo/parallel

INPUTS	
XLR	1/4" TRS
PN1 +	SLEEVE +
PN2 +	TIP +
PN3 -	RING -

Input Connector Polarity Table

-  Speakon Output Polarity Table

Do **not** adjust the mode selection switch while the amplifier is turned-on. 

Rear Panel cont.

4 Cooling Fans

The cooling fans operate continuously while the amplifier is on. An internal temperature sensor increases the speed of the fans during high temperature conditions. Air enters through the rear and exits through the front grille. Be sure to allow adequate air flow from the rear of the rack in which the amp is mounted.

5 Binding Post Output Connectors

Speakers can be connected via the high current binding posts. One pair of posts is provided (Red- hot, Black- ground) for each channel.

See — Output Connections in chapter 7 for information on Bridged Mono operation using Binding Posts.

6 Speakon Output Connectors

Speakers can also be connected via industry-standard Speakon (NL-4) connectors.

One connector is provided for each channel. In Bridged Mono mode, the Speakon connector for Channel A is used exclusively

Note — Both Binding Post and Speakon output connectors may be used at the same time. Both sets are parallel to each other; so if you use them together be sure calculate the total impedance for each channel.

For example: If you connect a 4 ohm load to the binding posts on channel A, and another 4 ohm load via the Speakon connector on channel A, the total impedance for channel A will be 2 ohms, not 4.

7 IEC power connector

Accepts a standard IEC terminated power cable

See — Connecting Power in Chapter 5.

Never connect a **hot** (red) output to ground or to another **hot** (red) output!



In situations where an UNBALANCED signal is fed to the amp, it's important to ground the unused input. If the inverting (-) input of an amp channel is left floating, the gain will drop by 3 dB.



In effect, the amp will not be as loud. For more information about this, ask your dealer or contact Crest Audio Technical Support directly.

- Choosing the appropriate mode
- Switching between operation modes
- Special considerations when using bridged mode

Stereo

Parallel

Bridged

4 Operation Modes

Mode Selection

The rear panel Mode Select Switch determines whether the amplifier is in stereo, parallel or bridged mono mode. Do not operate the Mode Select Switch with the amplifier on. See the next chapter on Connections for proper wiring in each mode.

Stereo

For stereo (dual channel) operation, turn the amplifier off and set the Mode Select Switch to the stereo position. In this mode, both channels operate independently of each other, with their input attenuator controlling their respective levels. Thus, a signal at Channel A's input produces an amplified signal at Channel A's output, while a signal at Channel B's input produces an amplified signal at Channel B's output.

Parallel

For parallel (dual-channel/single input) operation, turn the amplifier off and set the Mode Select Switch in the parallel position; both amplifier channels are then driven by the signal at Channel A's input. No jumper wires are needed. Output connections are the same as in the stereo mode. In the parallel mode, only Channel A's input is active; Channel B's input is not in the circuit. Both input attenuator remain active, allowing you to set different levels for each channel. Power and other general performance specifications are the same as in the stereo mode.

Bridged Mono

Both amplifier channels can be bridged together to make a very powerful single-channel monaural amplifier. Use extreme caution when operating in the bridged mode, as potentially lethal voltage may be present at the output terminals. To bridge the amplifier, turn the power off, and set the rear panel mode select switch to the bridge position. Apply the signal to Channel A's input and connect the speakers across the hot outputs (the "+" binding posts of channels A and B) or the Speakon connector for Channel A.

Unlike the stereo and parallel modes, in which one side of each output is grounded, both sides are hot in bridged mono mode. Channel A's side is the same polarity as the input. For proper operation, both input attenuator must be in the same position. This keeps the load balanced between the channel outputs.

As in the parallel mode, only Channel A's input is active. If an output patch panel is used, all connections must be isolated from each other and from the panel. For all models the recommended minimum nominal load impedance in the bridged mode is 4 Ohms (equivalent to driving both channels at 2 Ohms). Driving bridged loads of less than 4 Ohms will activate the ACL circuitry, resulting in a loss of power, and may also cause a thermal overload.

Connecting amplifier outputs to oscilloscopes or other test equipment while the amplifier is in **bridged** mode may damage both the amplifier and test equipment!



- Connecting the amplifier to AC power
- Proper signal paths: Stereo, Parallel & Bridged Mono
- Proper wiring schemes for output connectors

Power

Input

Output

5 Connections

Power

Unless otherwise specified when ordered, Pro 200 Series amplifiers are shipped from the factory set to one of following voltage options:

Option 1 US domestic

Nominal 120Vac 60Hz for rated power output (safe operating range 100 - 132Vac)

Option 2 Export

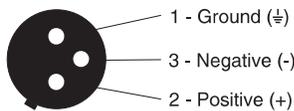
Nominal 230Vac 50Hz for rated power output (safe operating range 200 - 264Vac)

Note — Due to the nature of the switching power supplies in the Pro 200 Series, 50 - 60Hz operation is acceptable for either option above.

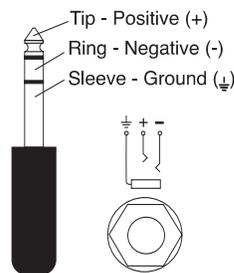
Inputs

Pro 200 series amplifiers are configured standard with pin 2 hot on XLR inputs and Tip hot on TRS inputs.

Female XLR



TRS pinouts

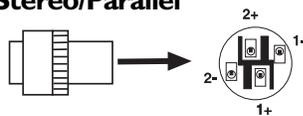


When using Pro 200 Series amplifier with other amplifiers, be sure to check the XLR polarity of those amplifiers. Some amplifiers use pin 3+ and pin 2-. Mis-matched polarity across multiple amplifiers could cause undesirable system performance. 

Outputs

Speakers are connected using the high-current five-way binding posts or Speakon connectors, or both.

Stereo/Parallel



Speaker + to PIN 1+
Speaker - to PIN 1-

Bridged Mono

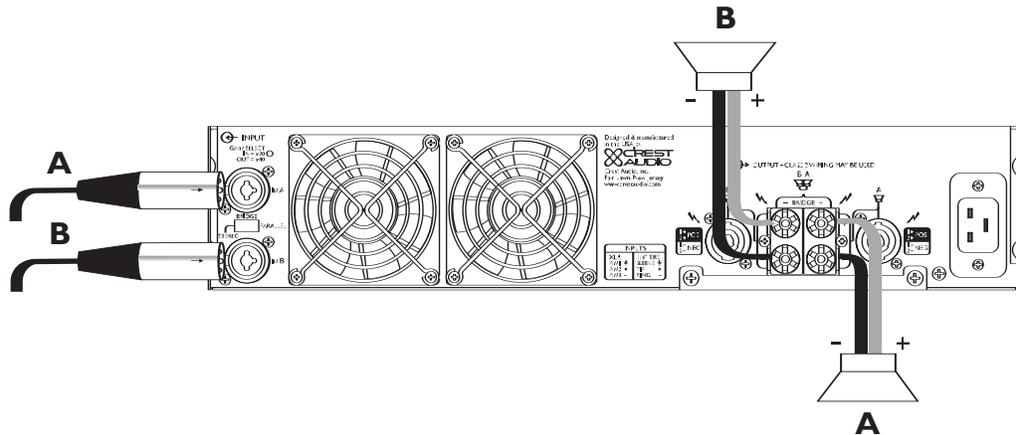


Speaker + to PIN 1+
Speaker - to PIN 2+

Very high current is available at the outputs. 
Please connect your output cable to the + and - terminals of each section precisely as shown.

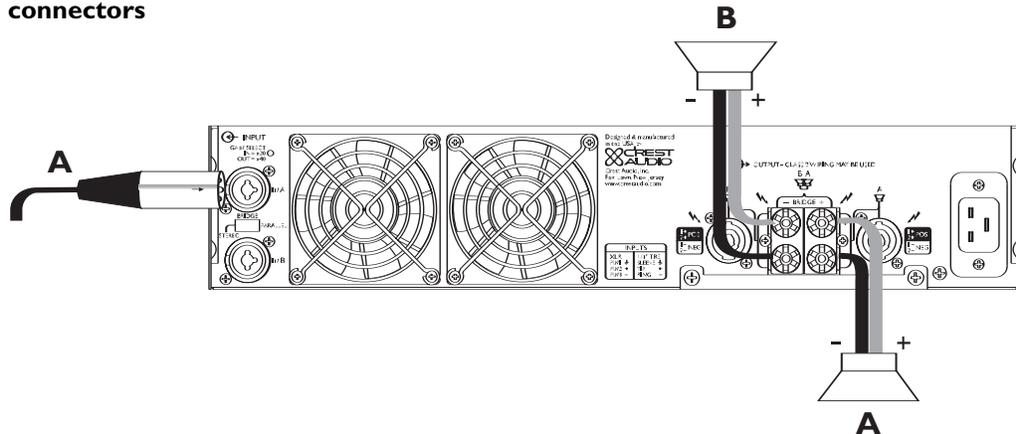
Stereo Mode

5-way binding post connectors



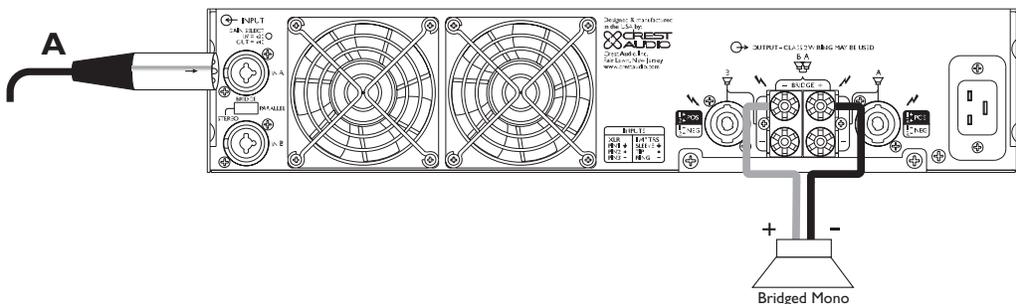
Parallel Mode

5-way binding post connectors



Bridged Mono Mode

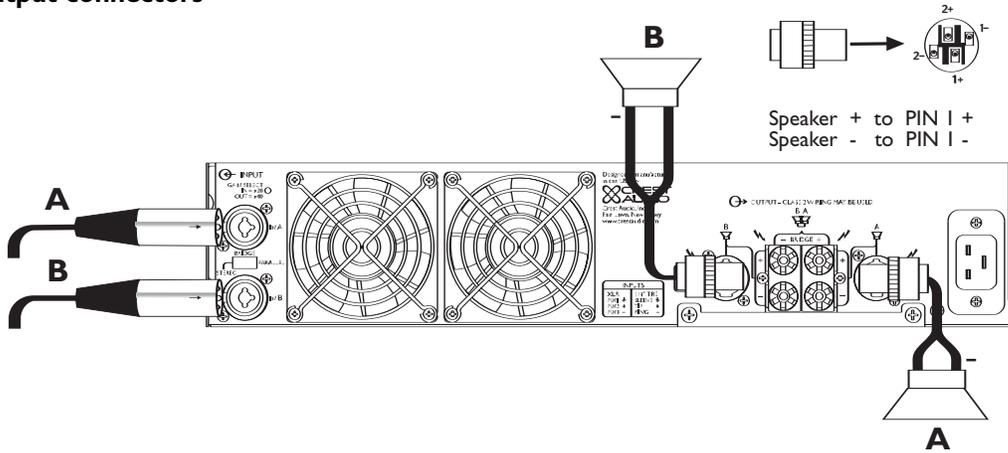
5-way binding post connectors



5 Connections

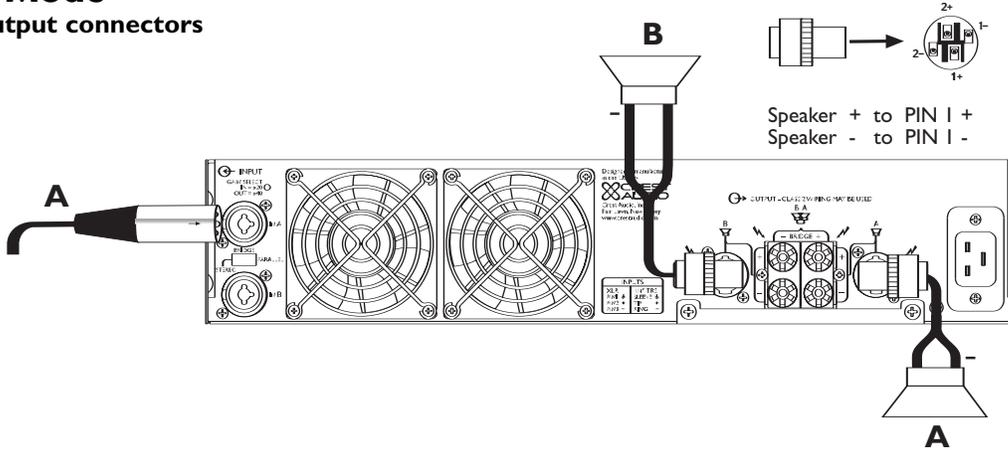
Stereo Mode

Speakon output connectors



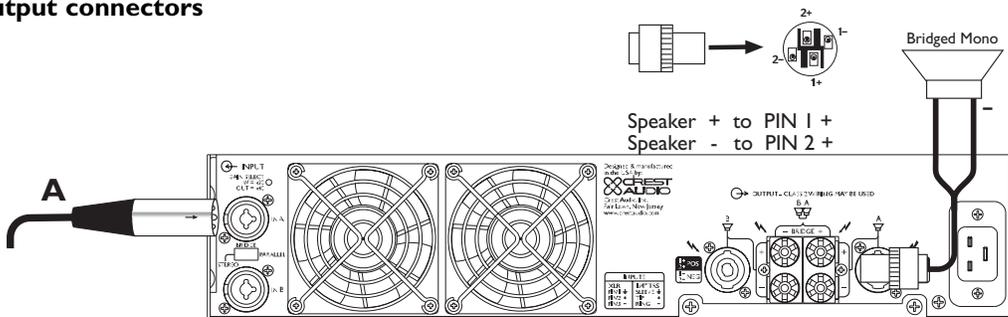
Parallel Mode

Speakon output connectors



Bridged Mono Mode

Speakon output connectors



- The owner's role in amplifier safety
- Protecting your speakers
- Description of protection features

**User
Responsibility**

**Speaker
Protection**

**Protection
Features**

6 Safety

User Responsibility

Your Pro 200 Series amplifier is very powerful and can be potentially dangerous to loudspeakers and operators alike. It is your responsibility to read all precautions and make sure that the amplifier is installed, wired, and operated properly as instructed in this manual.

Many loudspeakers can be easily damaged or destroyed by overpowering, especially with the high power available from a bridged amplifier. Always be aware of the speaker's continuous and peak power capabilities. Crest Audio is not responsible for damage to loudspeakers for any reason.

Speaker Protection

All loudspeakers have electrical, thermal and physical limits which must be observed to prevent damage or failure. Too much power, severely clipped wave forms, low frequencies applied to high frequency drivers and DC voltage can all be fatal to cone and compression drivers. Crest Audio Pro 200 Series amplifiers automatically protect speakers from DC voltages and subsonic signals.

Be sure that the low and mid bands of an electronic crossover are connected to the correct amplifiers and drivers, and not accidentally connected to those for a higher frequency band. The amplifier's clipping point is its maximum peak output power, and some of the higher-powered Pro 200 Series amplifiers can deliver more power than many speakers can safely handle. Be sure the peak power capability of the amplifier is not excessive for your speaker system.

To ensure the speakers never receive excessive power and that the amplifier never clips, use a properly adjusted external limiter (or a compressor with a ratio of 10:1 or higher) to control power output; in systems with active electronic crossovers, use one for each frequency band. The clip limiter will automatically limit the duration of squared-off, continuous wave forms applied to the speakers. The amplifier will, however, allow normal musical transient bursts to pass. When the amplifier does clip, it is at its maximum output power. Some speaker systems are packaged with processors that have power limiting circuits and should not require additional external limiting. Fuses may also be used to limit power to speaker drivers, although as current-limiting rather than voltage limiting devices. Some poor quality fuses have a significant series resistance that could degrade the amplifier's damping of the speaker's motion and may even deteriorate the system's sound quality. If you elect to use fuses, check with the speaker manufacturer to determine the proper current rating and time lag required.

Do not drive any low frequency speaker enclosure with frequencies lower than its own tuned frequency; the reduced acoustical damping could cause a ported speaker to bottom out even at moderate power. Consult the speaker system specifications to determine its frequency limits.

The wire gauge charts in Appendix C will assist you in determining the optimum copper wire gauge for your speaker cables. Remember that the speaker cable resistance robs amplifier power in two ways: through power lost directly to resistance (often referred to as I²R loss), and through increased total load resistance, which decreases the amount of power available from the amplifier. Appendix C gives cable length figures in feet/AVG wire gauges and in metric values.

Protection Features

Pro 200 Series amplifiers incorporate several circuits to protect both themselves and loudspeakers. Crest Audio has attempted to make the amplifiers as foolproof as possible by making them immune to short and open circuits, mismatched loads, DC voltage and overheating. If a channel goes into ACL gain reduction mode, the speaker load will remain connected but clipping percentage or output power will be instantly reduced. When a problem occurs that causes a channel to go into a protection mode, the Temp LED or DC LED for that channel will glow. DC voltage on the output, excessive subsonic frequencies or thermal overload will cause the channel's output relay to open, disconnecting the speaker load until the condition is corrected.

Automatic Clip Limiting (ACL)

Any time a channel is driven into hard, continuous clipping, the clip limiter circuit will automatically reduce the channel gain to a level just slightly into clipping, which protects the speakers against the damaging, high power, continuous square waves. Situations that may activate the clip limiter include uncontrolled feedback, oscillations, and improper equipment setting or a malfunction upstream from the amplifier. Normal program transients will not trigger the clip limiter; only steady, excessive clipping will. The ACL LED will glow brightly and continuously when limiting occurs.

IGM Impedance Sensing

Pro 200 Series amplifiers feature innovative circuitry that allows safe operation into any load. When an amplifier sees a load that overstresses the output stage, the Instantaneous Gain Modulation (IGM) circuit adjusts the channel gain to a safe level. This method of output stage protection is far superior to the conventional, brute force-type limiting found on other amplifiers. The IGM circuit is sonically transparent in normal use and unobtrusive when activated.

Thermal Protection

The internal fans will keep the amplifier operating well within its intended temperature range under normal conditions. If a channel's heat sink temperature reaches 75°C (which may indicate an obstructed air supply), that channel will independently protect itself by disconnecting its load and shutting down until it has cooled. During this time, the channel's Temp LED will light, the Active LED will extinguish and the cooling fans will run at their highest speed.

Short Circuit

If an output is shorted, the IGM and thermal circuits will automatically protect the amplifier. The IGM circuit senses the short circuit as an extremely stressful load condition and attenuates the signal, protecting the channel's output transistors from over-current stress. If the short circuit remains, the channel will eventually thermally protect itself by disconnecting the load.

DC Voltage Protection

If an amplifier channel detects DC voltage or subsonic frequencies at a channel output, the respective output relay will immediately open to prevent loudspeaker damage. The channel's DC LED will light.

6 Safety

Turn-On/Turn-Off Protection

At power-up, the amplifier stays in the protect mode with outputs disconnected for about six seconds, while the power supplies charge and stabilize. While the output relays are open, the ACL LEDs will light. When the power is turned off, the speaker loads immediately disconnect so that no thumps or pops are heard.

Auto Ramp Signal Control

Whenever a Pro 200 Series amplifier powers up or comes out of a protect mode, the Auto Ramp circuit activates. While the speakers are disconnected, the Auto Ramp circuit fully attenuates the signal. After the output relay closes, the signal slowly and gradually raises up to its set level. The Auto Ramp Signal Control circuit has some important advantages over the conventional instant-on circuits:

1. If a signal is present during power-up or when coming out of a protect mode, the speakers are spared a sudden, potentially damaging burst of audio power.
2. Because the gain is reduced until after the output relay closes, no arcing occurs at the contacts, thereby extending their useful life.

Service, Support & Warranty **7**

- **When to get support**
- **Ways to contact Crest Audio**

Support

Contact Crest

Warranty

7 Service, Support & Warranty

Support

In the unlikely event that your amplifier develops a problem, it must be returned to an authorized distributor, service center or shipped directly to our factory. Because of the complexity of the design and the risk of electrical shock, all repairs must be attempted only by qualified technical personnel.

If the unit needs to be shipped back to the factory, it must be sent in its original carton. If improperly packed, the unit may be damaged.

To obtain service, contact your nearest Crest Audio Service Center, Distributor, Dealer, or any of the worldwide Crest Audio offices. For those with Internet access, please visit the Crest Audio web site.

For replacement packaging, call Crest Audio's Customer Service



Contact Crest

Customer Service

Phone 201.909.8700 USA
Fax 201.909.8744 USA
Email customerserve@crestaudio.com

Technical Support

Phone 201.909.8700 USA
Fax 201.587.0550 USA
Email techserve@crestaudio.com

Web Site

www.crestaudio.com

Postal Mail

Crest Audio Inc.
16-00 Pollitt Drive
Fair Lawn, NJ 07410 USA

Warranty

Your Crest Audio Amplifier is covered against defects in material and workmanship. Refer to the warranty card provided with this manual for more details.

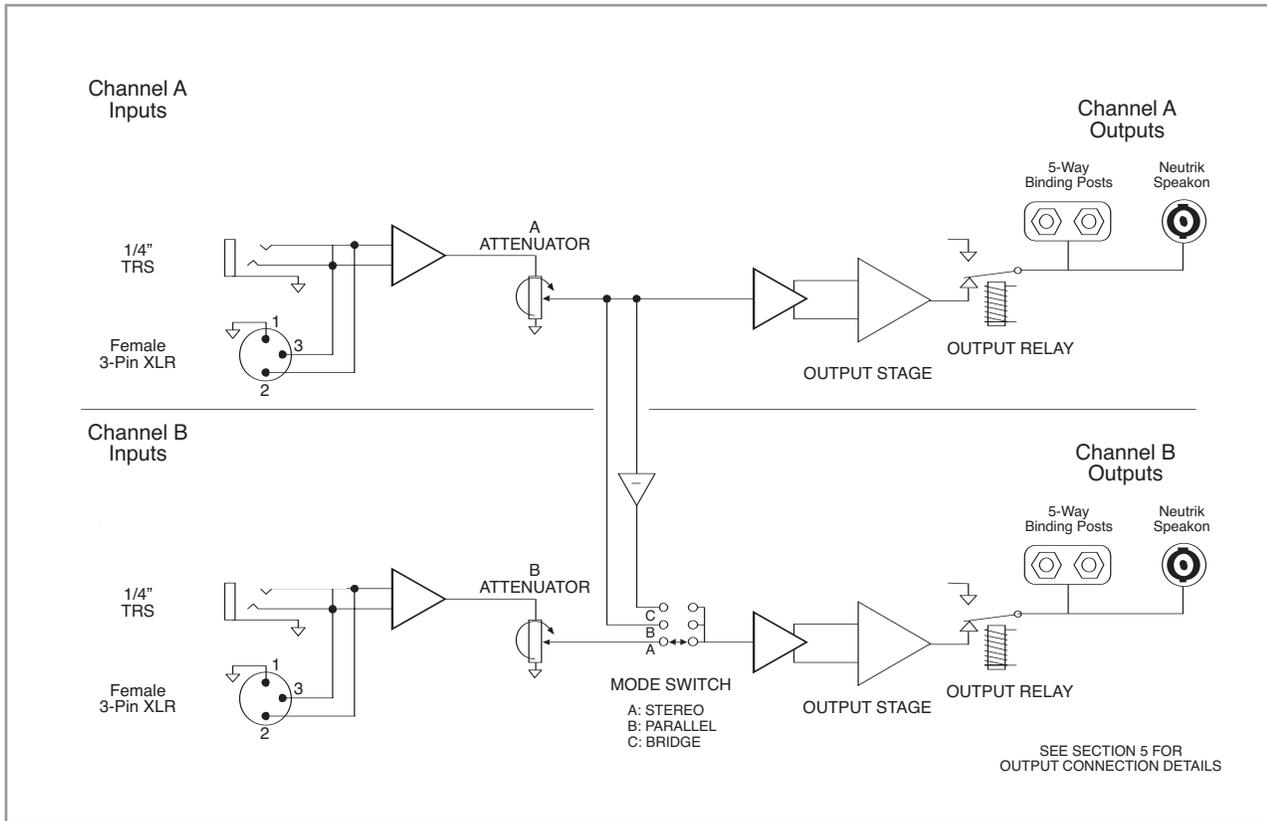
Specifications

Pro 200 Series

	5200	7200	8200
Bridge Power 4Ω	1,800W (1kHz at <0.1% T.H.D)	3,300W (1kHz at <0.1% T.H.D)	4,500W (1kHz at <0.1% T.H.D)
Stereo Power (per channel, both channels driven) 2Ω	850W (1kHz at <0.05% T.H.D)	1,650W (1kHz at <0.1% T.H.D)	2,250W (1kHz at <0.1% T.H.D)
	4Ω 525W (1kHz at <0.01% T.H.D)	1,000W (1kHz at <0.1% T.H.D)	1,450W (1kHz at <0.05% T.H.D)
	8Ω 290W (1kHz at <0.01% T.H.D)	590W (1kHz at <0.05% T.H.D)	825W (1kHz at <0.05% T.H.D)
	Bridge Power 2Ω	950W (1kHz at <0.02% T.H.D)	2,000W (1kHz at <0.1% T.H.D)
	4Ω 550W (1kHz at <0.01% T.H.D)	1,150W (1kHz at <0.05% T.H.D)	1,600W (1kHz at <0.05% T.H.D)
	8Ω 300W (1kHz at <0.005% T.H.D)	625W (1kHz at <0.05% T.H.D)	880W (1kHz at <0.05% T.H.D)
Minimum Load Impedance	2Ω	2Ω	2Ω
Maximum output RMS Voltage Swing	52 volts	75 volts	90 volts
Frequency Response 1W @ 8Ω	10Hz-100kHz; +0 , - 3dB	10Hz-100kHz; +0 , - 3dB	10Hz-100kHz; +0 , - 3dB
Power Bandwidth @ rated 4Ω power	10Hz-60kHz; +0 , - 3dB	10Hz-50kHz; +0 , - 3dB	10Hz-50kHz; +0 , - 3dB
Damping Factor (8Ω)	>300:1 @ 20Hz - 1kHz	>300:1 @ 20Hz - 1kHz	>300:1 @ 20Hz - 1kHz
Input cmrr	>85 dB @ 1kHz	>85 dB @ 1kHz	>85 dB @ 1kHz
Input sensitivity 4Ω rated output power (40x)	1.12 volts +/- 3%	1.58 volts +/- 3%	1.87 volts +/- 3%
Input sensitivity 4Ω rated output power (20x)	2.24 volts +/- 3%	3.16 volts +/- 3%	3.74 volts +/- 3%
Input impedance	15 k Ohms, balanced	15 k Ohms, balanced	15 k Ohms, balanced
Hum and noise "A" weighted, rated power @ 8Ω	>110dB	>110dB	>110dB
Crosstalk 1kHz at rated power, 8Ω	> -65 dB	> -70 dB	> -70 dB
Slew rate	<15V/μs	<15V/μs	<15V/μs
Class	?	?	?
T.H.D. (2x2Ω) 20 Hz - 20kHz	<0.1% @ 800W/ch	<0.2% @ 1,475W/ch	<0.2% @ 1,900W/ch
T.H.D. (2x4Ω) 20 Hz - 20kHz	<0.05% @ 500W/ch	<0.15% @ 950W/ch	<0.15% @ 1,300W/ch
T.H.D. (2x8Ω) 20 Hz - 20kHz	<0.05% @ 275W/ch	<0.1% @ 550W/ch	<0.15% @ 775W/ch
Current draw 1/8 power, 120Vac	2Ω - 1,380W, 4Ω 875W	2Ω - 1,400W, 4Ω 875W	2Ω - 1,875W, 4Ω 1,250W
Current draw 1/3 power, 120Vac	2Ω - 2,100W, 4Ω 1,310W	2Ω - 3,900W, 4Ω 2,500W	2Ω - 4,350W, 4Ω 3,050W
Cooling	2, variable speed, high output, DC fans		
Connectors	Input - Combined female TRS/XLR, Output - 5-Way Binding Post & Speakon, Power - 20A IEC Mains		
Controls	Front Panel Attenuator(2), Rear Panel Mode and Gain switches		
LED indicators	2 each: ACL, Signal, Temp, DC, Active		
Protection	Thermal, DC, Turn-on bursts, subsonic, incorrect load		
Construction	16 gauge steel with 5mm aluminum front panel		
Imperial Dimensions	3.5" x 19" x 12.25" (+ 1.5" rear support ears)		
Metric Dimensions	89mm x 483mm x 311mm (+ 38mm rear support ears)		
Net Weight	25 lbs. - 11.34 kg.		
Gross Weight	27 lbs. - 12.25 kg.		

All power measurements made at 120 VAC. 2 Ohm sine wave power is time-limited by magnetic circuit breaker and internal protection circuit.

b Block Diagram



Wire Gauge

Stranded Cable Length	Wire Gauge	Power Loss		
		8 Ω load	4 Ω load	2 Ω load
2 meters	0.3mm ²	2.9%	5.6%	10.8%
	0.5	1.74	3.4	6.7
	0.75	1.16	2.3	4.5
	1.5	0.58	1.16	2.3
	2.5	0.35	0.70	1.39
	4.0	0.22	0.44	0.87
5 meters	0.5mm ²	4.3%	8.2%	15.5%
	0.75	2.9	5.6	10.8
	1.5	1.45	2.9	5.6
	2.5	0.87	1.74	3.4
	4	0.55	1.09	2.2
	6	0.37	0.73	1.45
10 meters	0.5mm ²	8.24%	5.5%	28%
	0.75	5.6	10.8	19.9
	1.5	2.9	5.6	10.8
	2.5	1.74	2.9	6.7
	4	1.09	1.74	4.3
	6	0.73	1.09	2.9
30 meters	0.75mm ²	15.5%	0.73%	45%
	1.5	8.2	15.5	28
	2.5	5.1	9.8	18.2
	4	3.2	6.3	12.0
	6	2.2	4.3	8.2
	10	1.31	2.6	5.1

C Wire Gauge

Stranded Cable Length	Wire Gauge	8 Ω load	Power Loss 4 Ω load	2 Ω load
5 feet	18AWG	0.81%	1.61%	3.2%
	16	0.51	1.02	2.0
	14	0.32	0.64	1.28
	12	0.20	0.40	0.80
	10	0.128	0.25	0.51
10 feet	18AWG	1.61%	3.2%	6.2%
	16	1.02	2.0	4.0
	14	0.64	1.28	2.5
	12	0.40	0.80	1.60
	10	0.25	0.51	1.01
40 feet	18AWG	6.2%	11.9%	22%
	16	4.0	7.7	14.6
	14	2.5	5.0	9.6
	12	1.60	3.2	6.2
	10	1.01	2.0	4.0
	8	0.60	1.20	2.4
80 feet	18AWG	11.9%	22%	37%
	16	7.7	14.6	26
	14	5.0	9.6	17.8
	12	3.2	6.2	11.8
	10	2.0	4.0	7.7
	8	1.20	2.4	4.7

