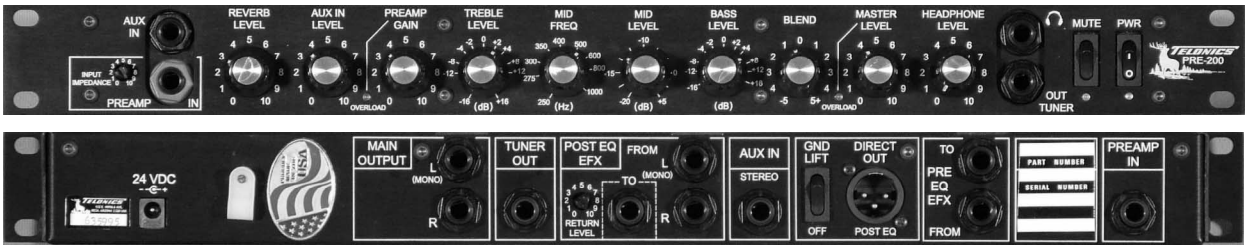
Telonics Pro Audio

Telonics PRE-200 Preamplifier

Users Manual

PB-008684 Rev A 2010.08.13

The Telonics PRE-200



Congratulations on purchasing one of the world's finest professional instrument preamplifiers! The PRE-200 preamplifier is a state of the art audiophile quality unit designed and built with the latest and best sounding technology.

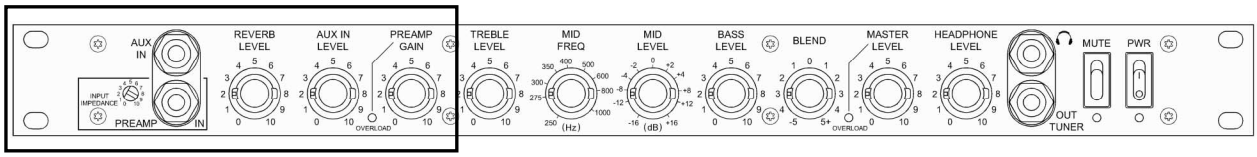
The PRE-200 preamplifier gives you dramatically better control of your sound. The result is transparent smooth clean sound with added sustain, tight bottom end and silky highs. It's just what you've been looking for!

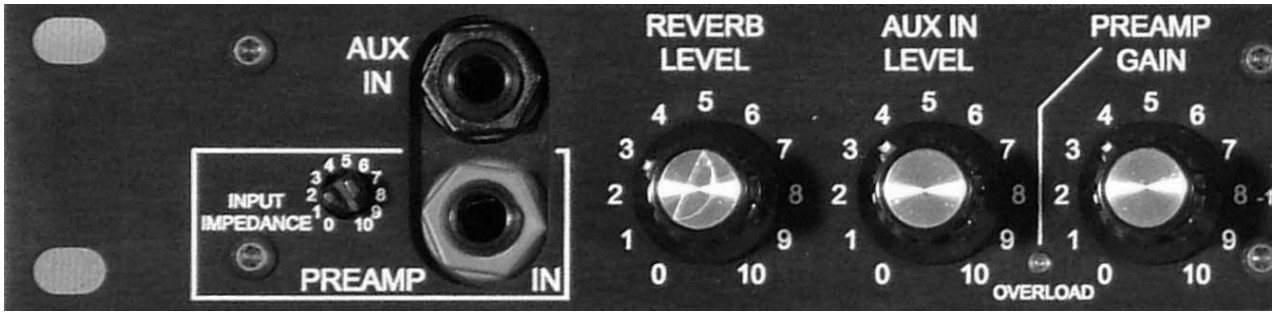
Telonics PRE-200 Preamp Features:

- Superb string separation at all volume levels. No muddiness!
- All pure analog. No digitization of your sound thru A/D or D/A converters.
- Has Insert To/From feature, Pre EQ. (Rear panel mounted).
- Adjustable input impedance control to fine tune your sound.
- Warm tube-like sound with crystal clear highs.
- Ultra low noise – studio quality.
- High headroom.
- High output level available on demand.
- Studio style effects send and returns. Can be used in stereo or mono.
- Built in digital reverb with front panel level control.
- Input and Output Overload LED indicators.
- Special "Blend" EQ control for personalizing your tone.
- Special Power On/Off circuit to minimize "pops" and speaker damage.
- Built in high output headphone amp with separate volume control.
- Noiseless Mute circuit with LED indicator.
- Balanced XLR output for stage and studio use. Includes ground lift switch.
- Buffered output for tuner.
- Input jacks located both front and rear. Use only one or the other (the front panel jack auto-disconnects the rear).
- Auxiliary stereo inputs for home practice or solo gigs with front panel level control. For CD players or a second effects return. Jacks located both front and rear.
- Only requires 1U rack space.
- Durable construction throughout. Made for years of trouble free use.
- Proudly made in the U.S.A. by musicians and engineers.

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

FRONT PANEL

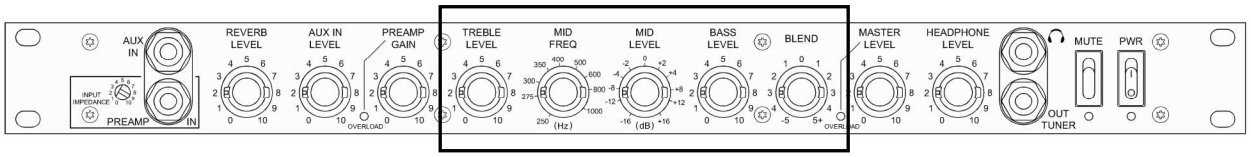


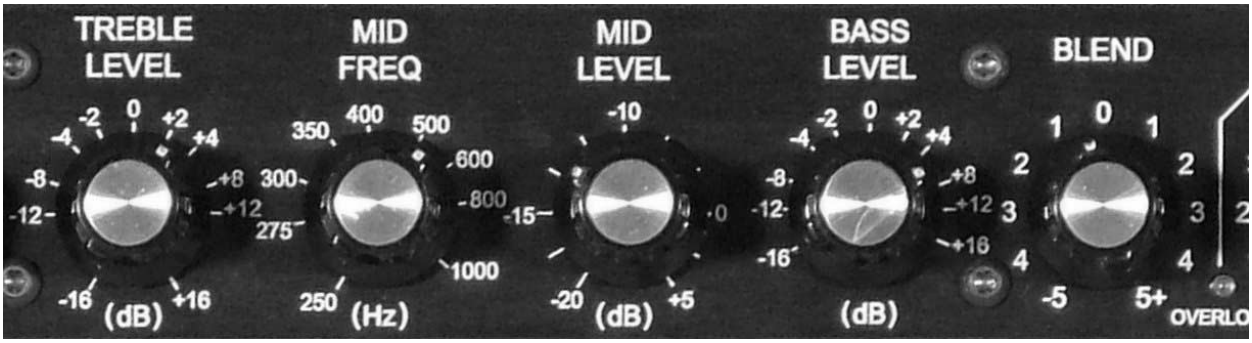


Preamp In	There are two input connectors. Insertion of a plug into the front panel input connector auto-disconnects rear input connector. This reduces or eliminates possible noise sources.
Input Impedance Adjust	Set for best tone. If a pedal is used before the preamp, set fully clockwise. If this function is not desired, set to taste (5 to 8 for normal tone). Adjustment range is 20 k ohms to 500 k ohms. See FAQ's
Aux In	There are two stereo input connectors. Insertion of a plug into the front panel input connector auto-disconnects rear input connector.
Reverb Level	The Reverb Level controls how much of the wet signal from the internal digital reverb is added to the output. Adjust to desired level. Note: Reverb input is the combination of Post EQ EFX signal (Return Level rear panel) and the normal dry mix (Preamp Gain on front panel).
Aux In Level	Sets the level for the stereo auxiliary input. This level control acts as an attenuator. Fully clockwise (CW) is no attenuation and counterclockwise is full attenuation. The Aux In is summed into the final stage and is not affected by the [Preamp Gain] and [Master level]. *If fully CW does not give enough volume you will need to turn up the level at the source.*
Preamp Gain	Sets the gain for the first audio stage. Start at 3 or 4. This gain control sets the level for the [PRE-EQ/EFX To] connector on the back panel.

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

FRONT PANEL (CONTINUED)

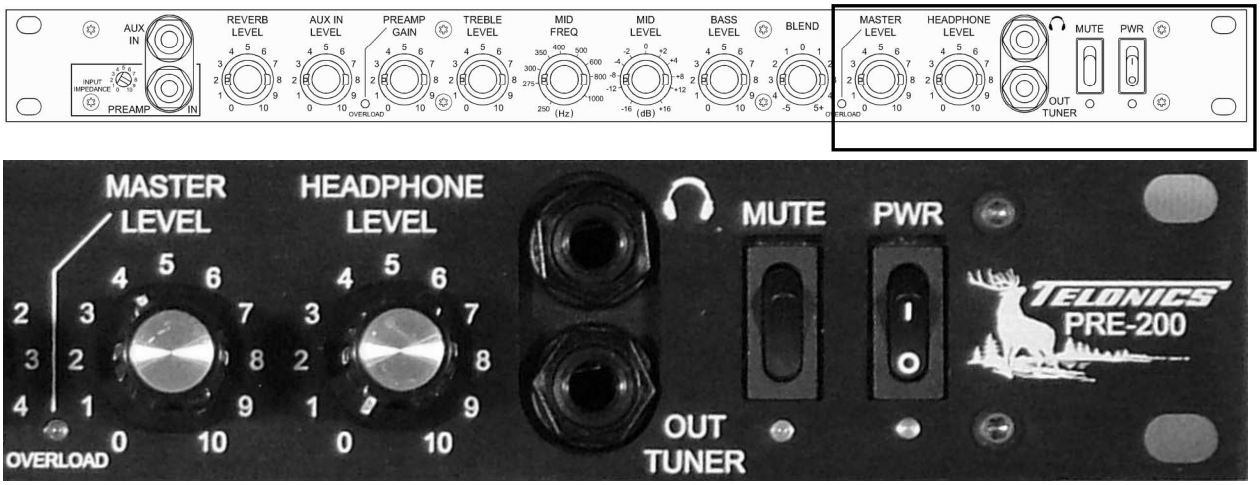




Treble Level	Adjusts the high frequency level. Clockwise (CW) boosts the level of highs, counterclockwise (CCW) cuts the level of highs. The level is adjustable from -16 dB cut to +16 dB boost. Start at 5 (flat) and adjust to taste.
Mid Frequency	Sets the frequency at which the Mid Level control has an effect. Several frequency intervals between 250 Hz and 1000 Hz are marked.
Mid Level	Sets a boost or cut in the mid range frequencies selected by the Mid Frequency control. Level is adjustable from -20 dB cut to +5 dB boost.
Bass Level	Controls low frequency response. Start at 0 (flat) and adjust to taste. CW is boost, CCW is cut. Level is adjustable from -16 dB cut to +16 dB boost.
Blend	Only set this control after you have set the others. This is to be used as a sonic "shading" control and, like any seasoning, a little goes a long way. Start at 12 o'clock. CW yields a "Mooney" bright aggressive sound; CCW gives you a mellow, darker tone.

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

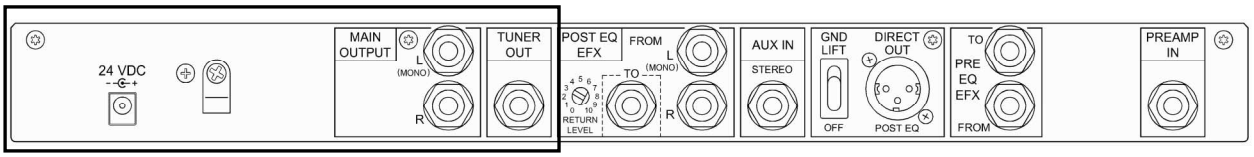
FRONT PANEL (CONTINUED)

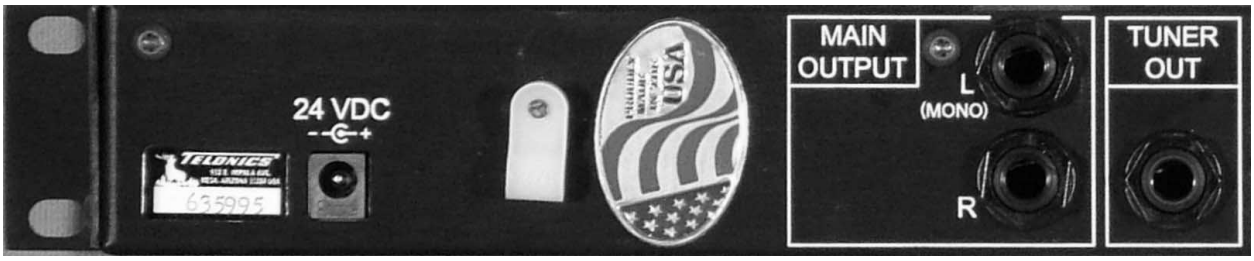


Master Level	Sets the overall output level of the preamp. Typically used between 5 and 8.
Overload indicators	Red LED indicators only turn on in a rare instance when peaks are hit. Indication of soft clipping may occur, but you'll probably never hear it. There is a separate overload indicator for Preamp and Master levels.
Headphone Level	Adjusts headphone output level. <u>Turn down when not in use.</u>
Headphone Jack	1/4" stereo jack for headphones. This unit puts out up to half a watt per channel into 8 ohms – more than enough for any player at home. We recommend quality headphones such as Sony MDR 7505.
Tuner Out	Buffered output so it will not load down the pickup or the rest of the signal chain, nor will it allow noise from the tuner to get back into the system. May be used simultaneously with the Tuner Out jack on the rear panel. Output impedance is approximately 500 ohms.
Mute	Yellow LED comes on when muted. Tuner, Effects and Headphones remain on to allow for string replacement, practice licks, tuning, and effects adjustment. Power Amp outs and XLR feeds are disabled in mute mode.
Power	Turns the unit on and off and is indicated by a blue LED. A time delay is built into the audio circuits to minimize "pop" when turning on or off.

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

REAR PANEL

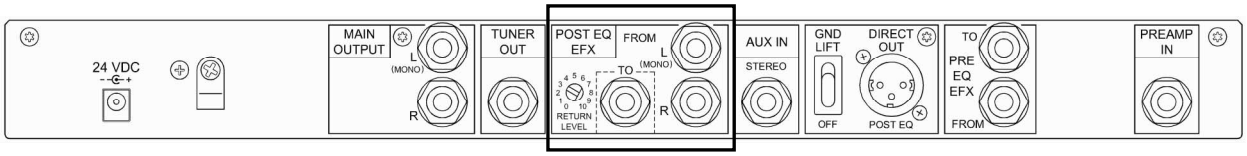


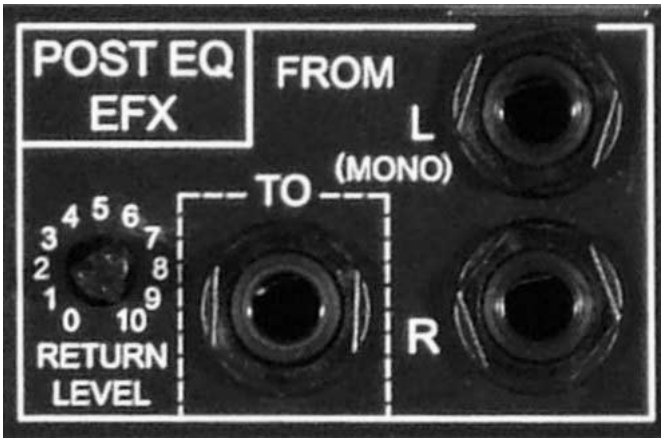


24 VDC	Power input. Use only the factory supplied power supply or power from companion PA-4100/PA100 or PA4200/PA-200 power amplifiers! European voltage version of the power supply is available at a slight added cost.
Main Outputs L (mono), R	Use to feed power amp input. Use left output for mono feed. The output impedance is approximately 100 ohms. Outputs have effects return mixed in. See the section "Built In Automatic Stereo or Mono Switching" on page 12 for more information.
Tuner Out	Same function as Tuner Out on front panel. Use for internal feed to rack mounted tuner. Both Tuner Outs may be used simultaneously. Can also be used as a second effects send. The output impedance is approximately 500 ohms.

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

REAR PANEL (CONTINUED)

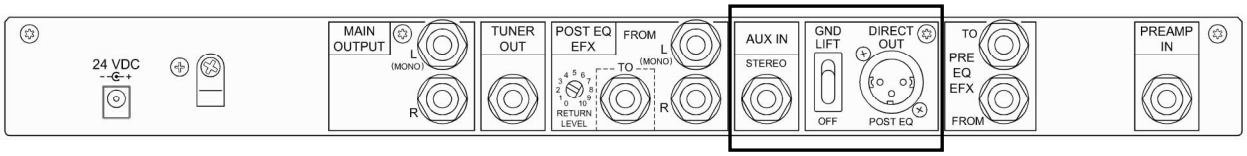


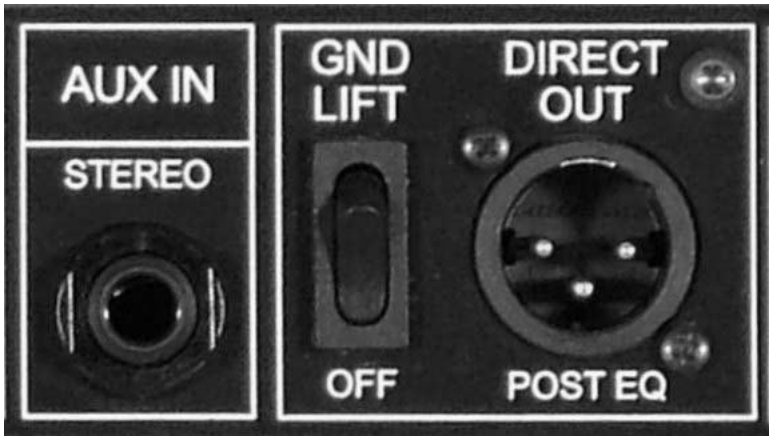


Post EQ EFX--To	Mono send to parallel mode effects unit input.
Return Level	Sets the return input level from the effects unit. Start fully clockwise.
Post EQ EFX From – L (Mono)	Return from left channel of effects unit (or use as mono only return).
Post EQ EFX From – R	Return from right channel of effects unit (if present).

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

REAR PANEL (CONTINUED)

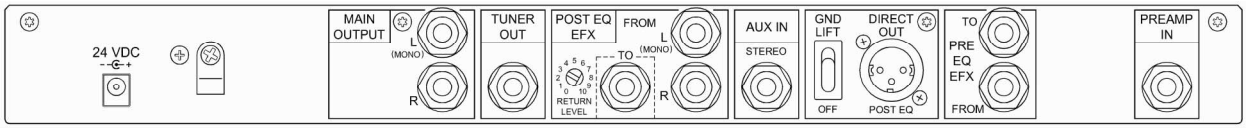


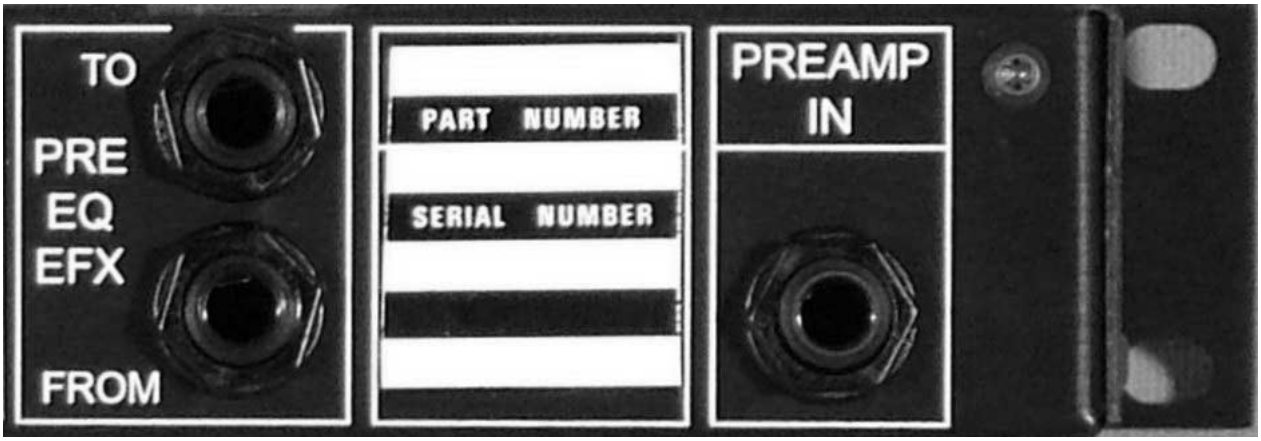


Aux In	Use with 1/4” stereo plug to inject audio from a CD or MP3 player for home practice or live gigs. Can also be used as a second effects return. Use the Aux In level control to set music level. If used as an effects return, the rear tuner out can be used as an effects send. See FAQ sheet.
XLR Balanced Direct Out	Buffered post effects, post EQ signal for studio or stage use. Output impedance = 600 ohms. The output signal is derived from the Left / Mono output. In Stereo mode (both Main Outputs used) the XLR output is the ‘Left’ channel *only*.
Gnd Lift	Ground lift switch for XLR direct out connector.

PRE-200 PREAMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

REAR PANEL (CONTINUED)





PRE EQ EFX --To	This is an insert send that is prior to the effects and equalization. This could be used for a volume pedal. The level is affected by the Preamp Gain setting.
PRE EQ EFX --From	This is an insert return that is prior to the effects and equalization.
Preamp In	Same function as the Preamp In connector on front panel. Front panel connector takes precedence over rear panel connector. Insertion of a plug into the front panel connector auto-disconnects this rear input connector. This reduces or eliminates possible noise sources.

How and when do I use the Input Impedance control?

The input impedance control is used only when a direct connection from the pickup on your instrument to the preamp input is desired ("3-wire hook up"). The volume pedal is then placed in the PRE EQ EFX To/From (insert) on the rear panel for low noise control of the instrument volume.

> NOTE: Always set to maximum (fully rotated clockwise) if you choose NOT to use the PRE EQ EFX To/From feature ("3-wire hook up"). This ensures the input will maintain proper high frequency response.

To adjust the impedance control properly, start with the impedance control fully clockwise, and then adjust all the preamp tone controls for the best sound. Only after adjusting the controls to taste should you make slight adjustments to the impedance control. Rotating it fully counter-clockwise will equal approximately 20 000 ohms (20 k ohms), which is equal to the impedance of many conventional inexpensive pedals made for guitars. This is almost <u>always</u> too low for steel guitars.

Setting the input impedance control to the twelve o'clock position makes the input impedance approximately 150 000 ohms (150 k ohms), which is equivalent to the most popular or generally accepted setting for steel and jazz guitar electronic or "light style" pedals.

A setting of full clockwise will approximate the old AB pot pedals which were 500 000 ohms (500 k ohms).

Some musicians who have played for many years find their high frequency hearing response has degraded. Musicians under these circumstances may feel this control does not appear to do much or anything. In this case, it is recommended to just leave it set between positions 5 and 8 for the benefit of your listeners.

What's a good setting to start with on the Preamp Gain control?

Between "4" and "6" is a good starting point. The Master Gain control delivers plenty of level so be cautious in its use.

What are the frequencies covered by the Mid Freq control? Mid Level?

The "Mid Freq" control has a range from 250 Hz to about 1100 Hz. The range is scaled to values of, 250, 275, 300, 350, 400, 500, 600, 800 and 1000 Hz. The "Mid Level" control adjusts from -16 dB cut at full CCW position to a +16 dB boost at full CW position.

What does the Blend control do?

This control is used as an overall tone control to be used only after setting the other tone controls to your satisfaction. Rotating the knob clockwise yields a brighter more aggressive tone and counterclockwise results in a mellower, warmer tone. Straight up (zero) yields no change.

What's a good setting to start with on the Master Level control?

Five is a good place to start. The Master Level control delivers plenty of level so be cautious in its use.

What kind of headphones should I use?

Use low impedance (35-60 ohms) stereo closed or open style depending on personal preference. Sony MDR 7505 headphones are recommended for best fidelity.

Can I drive speakers with the headphone jack?

It was designed for headphones. The preamp will deliver up to half a watt per channel into eight ohms from its internal stereo headphone amp.

What do the red LED indicators show?

The Preamp Overload LED shows when the preamp input stage enters soft clipping. The Master Level Overload LED shows when the output stage enters soft clipping. Although you might see them light up on rare occasions, you'll probably never hear the difference.

Tell me about the Tuner Out function.

The Tuner Out jacks have a buffer stage and circuitry which isolates both outputs of the tuner from the rest of the circuitry eliminating a common source of noise. This circuit will not load down the pickup or any preamp stage. The front and rear panel jacks can be used at the same time. The Tuner Out can also be used as an effects send.

What does the Mute button do?

When engaged, the mute function allows the tuner, headphone amp, and effects send and return to remain on while the power amp send and XLR direct out feed are disabled. This way you can practice at home or in between songs on stage without your power amp on and still get a stereo feed to your headphones complete with stereo effects. Use it to mute your output while changing a string, tuning up or adjusting the effects unit.

Will pushing the Mute button send a loud "pop" into my speakers, headphones or the XLR Direct Out (the house feed) when I activate it?

No, the preamp employs silent muting circuitry.

How do I use the Aux In feature?

The Aux In may be used to input stereo rhythm tracks or background music from CD or MP3 players. The Aux In feature can also function like a second stereo effects return. It can be used as a way to inject practice music into the main channels and/or headphones or to add a second effects return. The amount of music or effects level is determined by the output level of the music or effects player and the Aux In Level control.

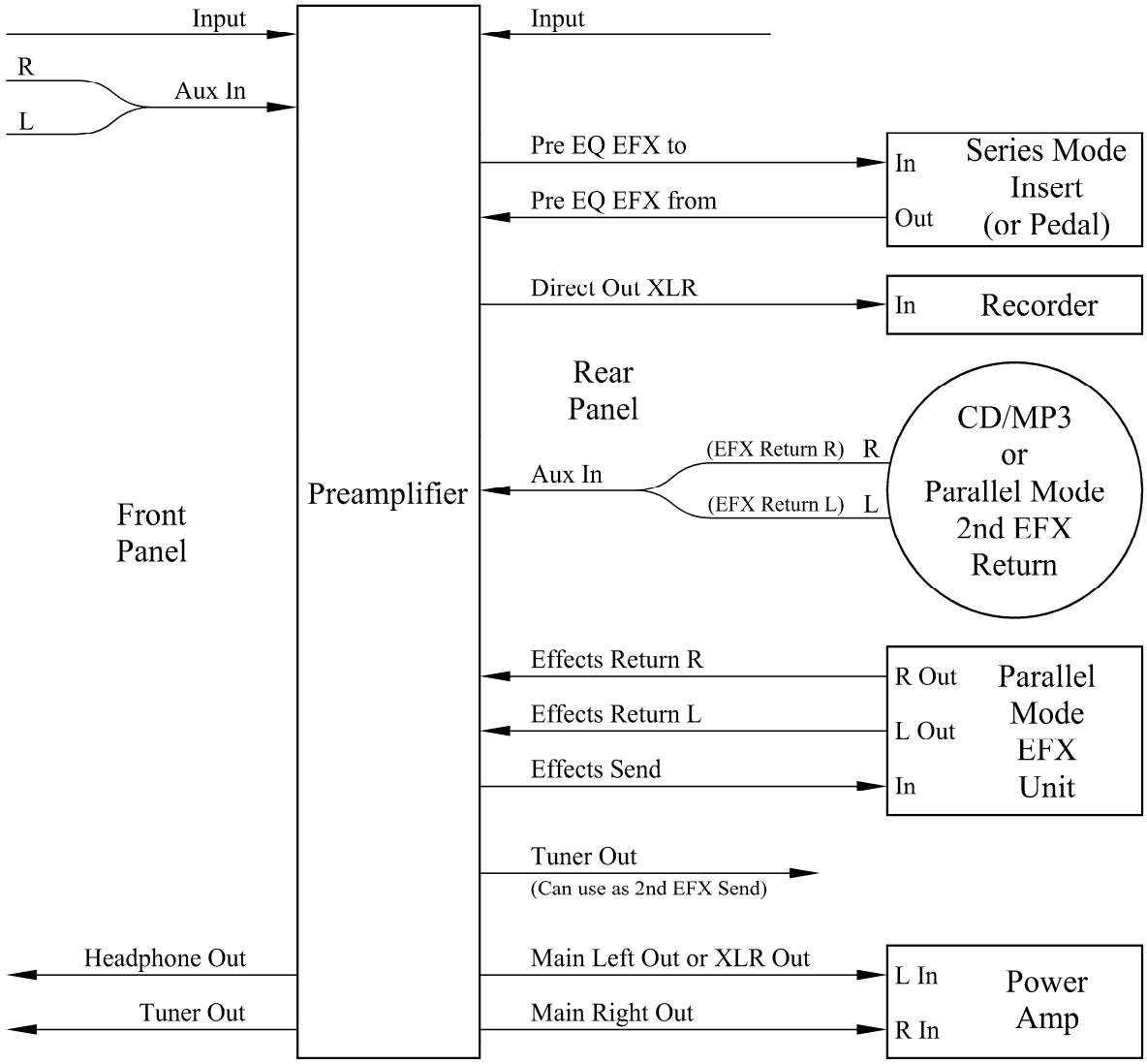
Can I safely run phantom power into my Direct Out circuit?

While it is not necessary (nor a good idea) to run phantom voltage into the Direct Out connector, it is designed to withstand the IEC specified maximum of 10 milliamps without damage.

What output level can I expect to see from the Direct Out connector?

The output is approximately two dB lower than the main outputs, up to 5 volts maximum.

BASIC HOOKUP DIAGRAM



NOTE: Aux In L & R are on a 1/4 in TRS jack: Tip is Left, Ring is Right, Sleeve is Ground

BUILT IN AUTOMATIC STEREO OR MONO OUTPUT SWITCHING

The PRE-200 incorporates a feature which automatically ensures that its internal stereo/monaural signal routing is correct by sensing which output connectors are connected to an external power amplifier.

If only the Left (mono) output jack is used, the PRE-200 mixes all EFX and AUX stereo signals to mono ensuring that all program material will be heard through the mono amplifier.

If both the Left and Right output jacks are employed, the PRE-200 routes EFX and AUX stereo signals appropriately, ensuring that they will be amplified as stereo, by the two power amplifier channels and the headphones.

Note: Direct Out is ‘Left (mono)’ only.

MECHANICAL DATA

Chassis Material	Aluminum
Finish	Hard Anodized
Front & Rear Panel Markings	Laser Etched
Panel	Meets industry standard specifications (EIA-310-D, CEA-310-E, IEC 60297-3-100, and DIN 41494-7).
Panel Thickness	0.13 in. (0.33 cm)
Panel Height	1.70 in.(4.32 cm) typical 1.75 in. (4.45 cm) max
Panel Width	19.0 in. (48.3 cm) max
Internal chassis/cabinet width (including screws)	17.32 in. (44 cm)
Internal chassis/cabinet height	1.73 in (4.39 cm) typical 1.75 in. (4.45 cm) max
Internal chassis/cabinet depth	5.25 in. (13.3 cm)
Total protrusion of jacks beyond rear chassis (max)	0.235 in. (0.597 cm)
Total protrusion of knobs beyond front panel	0.72 in. (1.83 cm) max
Total weight	2.95 lb. (1.338 kg)

ELECTRICAL DATA

Input Voltage	24VDC center pin is positive.
Input Power	11 Watts maximum.
Approved Power sources	115VAC to 24VDC wall wart supplied, International 100VAC-240VAC to 24VDC wall warts available, Telonics PA-4100/PA-100 mono power amp, and Telonics PA-4200/PA-200 stereo power amp
System Audio Gain	59 dB