

Telonics Pro Audio

Telonics PA-4200/PA-200
Stereo Power Amplifier
Users Manual

The Telonics PA-4200

Stereo Power Amplifier



Congratulations on purchasing one of the world's finest professional instrument power amplifiers! The PA-4200 power amplifier is a state of the art audiophile quality unit designed and built with the latest and best sounding technology, while being the most lightweight high-powered amplifier available in a 1U (single) rack space configuration.

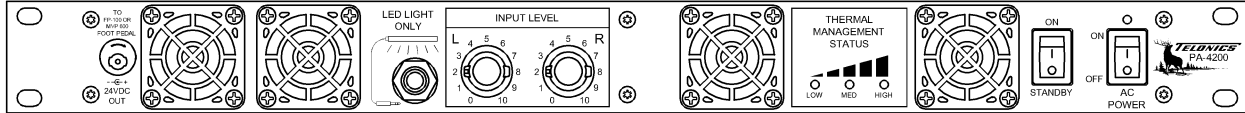
The PA-4200 Power amplifier gives you dramatically better control of your sound. The result is transparent, smooth, clean sound with added sustain, tight bottom end and silky highs. It's just what you've been looking for!

Telonics PA-4200 Stereo Power Amp Features:

- Compact size. Only takes up 1U rack space.
- Light Weight, only 5.2 pounds.
- Digital Thermal Management System.
- Wide frequency response, 20 Hz to 20 kHz +/- 0.5 dB.
- Stereo Amp. Left and Right Level Controls conveniently located on the front panel.
- LED light-bar for lighting up your rack in low light venues.
- Ultra low noise – studio quality.
- Auxiliary AC power outlet for EFX units, switched with main power switch.
- Two 24 volt DC jacks to power up Telonics 24 VDC preamp and Telonics FP-100 foot pedal. (No power strip required in 3U rack applications.)
- Special Power On/Off circuit to minimize “pops” and speaker damage.
- Durable construction throughout. Made for years of trouble free use.
- Proudly made in the U.S.A. by musicians and engineers.

PA-4200 STEREO POWER AMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

FRONT PANEL



AC Power Switch	This is the main power switch for the system. This switch also controls the AC receptacle on the rear panel, the 24 VDC output for the Telonics preamps (rear panel), and the 24 VDC output for FP-100 Foot Pedal (front panel). Eliminates the need for a power strip in 3U rack systems.
Blue LED	The blue LED will indicate that the main power is turned on.
Standby Switch	This switch allows control of the AC power to the power amp alone, independent of the system power. When placed in the Standby mode it allows for quicker cool down of the amplifier if needed. This switch must be on in normal use as it effectively “mutes” the power amplifier section in the off position.
Thermal Management Status	The Thermal Management Status indicates the temperature status of the power amplifier. The LEDs indicate a low (green), medium (yellow), or high (red) temperature range. The LEDs will also indicate a fan speed out of specification condition as described later, in the Thermal Management System; Fan Speed out of Spec Indication paragraph.
Green LED	The green LED will blink; on for a short time then off, once a second while the temperature is below the Low setting. This “wink” (short blink, once per second) lets you know that the Thermal Management System is working. As the temperature increases the green LED will come on solid while the temperature is at or above the low setting.
Yellow LED	The yellow LED will come on solid if the temperature is at or above the medium set point.
Red LED	The red LED will come on solid if the temperature is at or above the high set point.
R Input Level	This is an input attenuator for the right audio channel. Fully clockwise will allow maximum output from the amplifier.
L Input Level	This is an input attenuator for the left audio channel. Fully clockwise will allow maximum output from the amplifier.
LED Light Only	This 1/4” jack powers up the optional LED light bar. CAUTION: NO AUDIO CABLES SHOULD BE PLUGGED INTO THIS JACK.
24VDC Output	This jack provides an isolated 24 volts DC to power up the FP-100 foot pedal. This jack accepts a special twist lock plug for a secure connection of power to the pedal.

PA-4200 STEREO POWER AMP CONTROL FUNCTIONS, JACKS, & INDICATORS:

REAR PANEL



AC Power Input	110-120VAC input*. Standard IEC 60320 C13 receptacle on 18 AWG cord is recommended. The inlet is fused with an 8 amp 250VAC 5x20mm ceramic Slow Blow fuse.
24VDC Out	24 volt DC to power the Telonics preamplifier.
AC Power Outlet	Switched 110-120VAC outlet, fused with 2 amp 250VAC 5x20mm glass Slow Blow fuse. Note: This outlet is not available in the export version.
Input L, R	Dual 1/4" mono tip sleeve (TS) jack for right and left input signals.
Output Left, Right	Speakon combo jack for output to a minimum 4 ohms speaker load. Also accepts 1/4" TS plug.

*NOTE: Standard versions are wired for domestic use only. Export units are available on special order. Export AC Power Input range is 170-250 VAC, 50-60 Hz with a 4A 250VAC fuse.

CAUTION: Voltages outside this range could damage the unit and cause a shock hazard.



Standard IEC 60320 C13 receptacle is required for the Power Amp side.



UK Plug BS1363A
(Supplied with 13A fuse).
Telonics # WI-008667-001



Europe IEC 884/CEE7-VII
Telonics # WI-008669-001



Australia Plug AS 3112
Telonics # WI-008668-001

INTRODUCTION

The cooling system for the PA-4200 Audio Amplifier consists of four variable-speed fans and an intelligent digital controller circuit. The speed of the fans is determined by the temperature at multiple key points within the amplifier. The controller is designed to run the fans at the slowest possible speed sufficient to maintain the amplifier at a safe operating temperature, and thus yield the quietest possible operation. As the temperature of the amplifier increases, the fan speed is increased as necessary.

TEMPERATURE INDICATION

The amplifier's temperature is indicated on the front panel via the status LED's:

- Blue = Thermal Management System power is on
- Green = Temperature is above the Low temperature threshold
- Yellow = Temperature is above the Medium temperature threshold
- Red = Temperature is above the High temperature threshold

The following table shows the state of the Green, Yellow and Red LED's, and the fan speed for the specified temperature ranges:

Temperature		LED Status			Fans	
>=	<	Green	Yellow	Red	No.	Speed
	Low	Wink	off	off	2	Minimum
Low	Medium	ON	off	off	4	Increasing
Medium	High	ON	ON	off	4	Increasing
High		ON	ON	ON	4	Maximum

Notes:
'Wink' = short blink, once per sec.
'ON' = on solid.

FAN SPEED OUT OF SPEC INDICATION

The speed of the fans is measured in order to make sure that the fans are operating properly and to assure adequate cooling for the amplifier. If the speed of any of the fans is out of allowed tolerance for five or more consecutive seconds, then the LEDs defined by the above table (i.e., Green and Yellow for temperature between Medium and High) will blink long flashes twice per second; they will be on for ¼ second, and off for ¼ second. This is a flash that is easily discernible from the 'Wink' condition described above. If the speed of all of the fans returns back to within tolerance, the blinking will stop, and the LEDs will return to the state described in the table above. Should this 'Flashing' persist, this could be indicative of a fan failure, and could lead to the amplifier overheating. In this case, the amplifier should be returned to the factory for repairs.

FAN-WEAR BALANCING

In order to further minimize the noise produced by the fans, and to prolong the life of the fans, the four fans are divided into two pairs. Whenever the temperature of the amplifier is below the Low temperature threshold, one of the pairs is turned off, and one pair continues to run at the minimum speed. In most environments, when the amplifier is idle or played at lower levels, a single set of fans is adequate to maintain a desirable temperature within the amplifier. Whenever the amplifier temperature rises above the Low threshold, the second pair of fans is turned on slowly in addition to the first pair; therefore, all four fans will be running, initially at the minimum speed. Should the temperature of the amplifier continue to rise, the speed of all four fans will be slowly increased accordingly; if the temperature of the amplifier drops, the speed of all four fans is slowly reduced accordingly. If the temperature of the amplifier again drops below the Low threshold, then the second pair of fans is turned back off. The pair of fans which will 'always be on' will be alternated every time that the power is cycled. Thus, in the long run, the wear on the fans will be balanced.

PA-4200 MECHANICAL DATA

Feature	Specification
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	7.63 in. (19.4 cm)
Total protrusion of jacks beyond rear chassis apron (max)	0.425 in. (1.08 cm)
Total protrusion of knobs beyond front panel	0.725 in. (1.842 cm) max
Total weight	5.20 lb. (2.358 kg)

PA-4200 ELECTRICAL SPECIFICATIONS

Parameter	Condition	Value
Mains input voltage	115Vac setting	85Vac to 132Vac
Mains input voltage	230Vac setting	170Vac to 250Vac
Mains fuse	115Vac setting	8 amp 250VAC 5x20mm ceramic Slow Blow fuse.
	230Vac setting	4 amp 250VAC 5x20mm ceramic Slow Blow fuse.
Auxiliary switched AC power outlet	115Vac setting only	2 amp 250VAC 5x20mm glass Slow Blow fuse
Output power @ 1%THD+N	$R_L = 4 \text{ Ohm}$ 20Hz < f > 20kHz, both channels driven 115Vac	190 W typical
Output power @ 10%THD+N	$R_L = 4 \text{ Ohm}$ 20Hz < f > 20kHz, both channels driven 115Vac	240 W typical