Owner's Manual

FURMAN
PURIFY YOUR POWER

the 20 amp
series II
Professional Power Conditioners

P-8 PRO II
PL-8 PRO II

PRO SERIES II 20 AMP POWER CONDITIONERS

P-8 PRO Series II Features

- SMP+ with Extreme Voltage Shutdown
- LiFT (Linear Filtering Technology) with zero ground contamination
- Eight rear panel outlets and one front panel outlet
- BNC connector on the rear panel allows attachment of an optional gooseneck lamp to illuminate the rear of your rack
- 20 amp rating, with circuit breaker
- Three year limited warranty

PL-8 PRO Series II Additional Features

- Two retractable, long-life, low-heat LED light fixtures with dimmer control for rack illumination

INTRODUCTION

Thank you for purchasing a Furman Pro Series II Power Conditioner, and Congratulations on your choice. The Pro Series II power conditioners feature Furman's revolutionary Series Multi-Stage Protection Plus (SMP+) circuit, as well as our exclusive Linear Filtering Technology (LiFT). Together, these technologies comprise what is, without question, the world's most advanced and comprehensive transient voltage surge suppressor / conditioner.

SMP+ (Series Multi-Stage Protection Plus)

Furman's SMP+ surge suppression virtually eliminates service calls. Traditional surge suppression circuits "sacrifice" themselves when exposed to multiple transient voltage spikes, requiring the dismantling of your system, and repair of your surge suppressor. Not so with SMP+. With Furman's SMP+, damaging transient voltages are safely absorbed, clamped, and dissipated. No sacrificed parts, no service calls, no down time.

Unique to Furman's SMP+ is its unparalleled clamping voltage. While other designs offer clamping voltages that are well above 330 Vpk, Furman's SMP+ clamps at 188 Vpk, (133 VAC RMS). This unprecedented level of protection is only available with Furman's SMP+ technology. Additionally, Furman's trusted over-voltage circuitry protects against all too frequent accidental connections to 208 or 240 VAC, by shutting off the incoming power until the over voltage condition is corrected.

LiFT (Linear Filtering Technology)

Unfortunately, traditional AC filter - conditioners have been designed for unrealistic laboratory conditions. Prior technologies, whether multiple pole filter or conventional series mode, could actually harm audio and video performance more than they help, due to the resonant peaking of their antiquated, non-linear designs. Under certain conditions, these designs can actually add more than 10 dB of noise to the incoming AC line! Worse still, lost digital data, the need to re-boot digital pre-sets, or destroyed digital converters are frequently caused by excessive voltage spikes and AC noise contaminating the equipment ground. Furman's SMP+ with LiFT takes another approach, ensuring optimal performance through linear filtering and no leakage to ground.

SAFETY INFORMATION

To obtain best results from your Furman Series II Power Conditioner, please read this manual carefully before using.

WA R N I N G

To reduce the risk of electrical shock, do not expose this equipment to rain or moisture. Dangerous high voltages are present inside the enclosure. Do not remove the covers. Refer servicing to qualified personnel only. The lightning flash with an arrowhead symbol, is intended to alert the user to the presence of un-insulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

IMPORTANT SAFETY INSTRUCTIONS

(Please read prior to installation)

1. Please read and observe all safety and operating instructions before installing your Series II unit. Retain these instructions for future reference.

2. The unit should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, etc.

3. Do not place your unit near heat sources such as radiators, heat registers, stoves, or other appliances that produce heat.

4. The units should only be connected to a 120 VAC, 60Hz, 20 amp grounded electrical outlet. Do not defeat the ground or change polarization of the power plug.

5. Route the power cord and other cables so that they are not likely to be walked on, tripped over, or stressed. Pay particular attention to the condition of the cords and cables at the plugs, and the point where they exit your Pro Series II unit. To prevent risk of fire or injury, damaged cords and cables should be replaced immediately.

6. Clean your Series II unit with a damp cloth only. Do not use solvents or abrasive cleaners. Never pour liquid on or into the unit.

7. Your Pro Series II unit should be serviced by qualified service personnel when:

- The power supply cord or the plug has been frayed, kinked, or cut.
- Objects have fallen or liquid has spilled into the unit.
- The unit has been exposed to rain or other moisture.
- The unit does not appear to operate normally.
- The "Protection OK" indicator is not lit.
- The unit has been dropped, or the enclosure has been damaged.
- The retractable LED lights have failed. *(not applicable to the P8-PRO II)*

8. Your Pro Series II unit requires that a safety ground be present for proper operation. Any attempt to operate the unit without a safety ground is considered improper operation and could invalidate the warranty.

9. Do not attempt to service your Pro Series II unit beyond what is described in this manual. All other servicing should be referred to qualified service personnel.

ADDITIONAL F E A T U R E S

PL-8 Pro Series II

The PL-8 PRO II features LED rack lights which produce virtually no heat and provide an extremely long life span. A dimmer control for the rack lights allows the user to adjust the level of illumination or simply switch the lights off. A rear mounted BNC jack accepts any standard (12VAC 0.5 amp) gooseneck lamp for rear rack illumination.

OPERATION

Retractable Rack Lights, Rear Panel Lamp and Dimmer Control:
The PL-8 Pro II utilizes a dimmer control for the two retractable front panel light tubes. The dimmer knob controls the brightness of both light fixtures. Turn it clockwise to increase brightness; turn it counterclockwise to decrease brightness. When the lights are not in use, we recommend turning the dimmer fully counterclockwise to maximize the life of the LED's, however, this is not absolutely necessary. Whether the light tubes are retracted or flush with the front panel, there will be no appreciable heat regardless of dimmer setting due to the efficiency of our full light spectrum LED's. The Series II's front panel LED lamps must be replaced by qualified Furman service personnel.

Both units feature a rear rack BNC socket which will accept any 12 VAC (0.5A) gooseneck lamp assembly, (such as the Furman GN-LED or GN-I). Simply slide the BNC plug over the socket and rotate clockwise until the connector snaps into the locked position. The rear rack lamp can be powered on or off with the rear light power switch located on the far left of the front panel.

On/Off Circuit Breaker:
This 20 amp capacity magnetic circuit breaker switch is specifically designed to stand up to the enormous high inrush current demands of many Power Amplifiers. Additionally, the switch is shielded from accidental power disconnection with a hinged cover.

Extreme Voltage Shutdown (EVS) Indicator:
This LED is normally off. It monitors a hazard common in the entertainment industry: wiring faults – for example, accidental connection to 220VAC where 120VAC is expected, or an open neutral from a 208 or 240VAC feed. The Series II SMP+ circuit senses voltages that are so high that operation would be impossible and shuts the power down before damage can occur. Upon initially applying power to these units, the Extreme Voltage indicator LED will light if the input voltage is above the extreme voltage cutoff, and power will not be applied to the unit's outlets. If the unit has been operating with an acceptable input voltage and subsequently that voltage exceeds 135V, it will shut off power to the outlet and the Extreme Voltage LED will light.

NOTE: The P8-Pro II and PL-8 Pro II do not compensate for extremely high or low line voltage. If you frequently move your rack to different locations, derive power from generators, use long extension cords, travel internationally, or are in an area prone to brownouts, you should use of one of Furman's AC Line Voltage Regulators.

Protection OK Indicator:
Although the Furman SMP+ circuit assures virtually protection from transient voltage spikes and surges, nature has a way of occasionally creating electrical forces that are beyond the capabilities of *any* TVSS device to absorb without some degree of damage. In the rare instance that this occurs, the green "Protection OK" LED indicator located on your front panel will dim. If this happens some level of protection from voltage surges will remain, but the Furman's clamping voltage rating will be compromised. The unit must be returned to Furman Sound, or an authorized Furman Service center for repair.

NOTE: If the mains power is above the high cutoff voltage and has caused the unit to remove power from its outlets, it cannot restore power without the operator manually turning the unit off, then on again. Avoid turning the unit back on, without first checking the source of the problem, and perhaps changing the AC source.

TROUBLE SHOOTING GUIDE

1.) Symptom: No power to the AC outlets.

Possible Cause: Circuit breaker switch has tripped to the off position, due to excessive load.

Action Needed: Remove one piece of equipment from the Series II unit, open the hinged switch / breaker cover, and reset the switch to the on position.

2.) Symptom: No power to the AC outlets, "Protection OK" indicator is not lit.

Possible Cause: Either the AC outlet to which your Series II device is connected has no AC voltage present, or the unit has been subjected to a *sustained* voltage in excess of 400 Volts.

Action Needed: Plug the Series II unit into an AC receptacle where AC voltage is present. If the problem persists, the protection circuit may be damaged, and require factory service.

3.) Symptom: Extreme Voltage indicator lit.

Possible Cause: Input voltage is above 135-140 volts *(270 – 280 volts E version),* causing power to the unit's outlets to be shut down. Additionally, if the voltage is below 85 - 90 volts at turn on, the unit will not allow AC voltage to reach the outlets.

Action Needed: Correct the line voltage, then; turn the unit on. Consider installing a Furman voltage regulator.

DEFINITIONS

SPIKE: This is a pulse of energy on the power line. Spikes can have voltages as high as 6000 volts. Though they are usually of very short duration, the energy they contain can be considerable, enough to damage sensitive solid-state components in audio and computer equipment. Spikes can also foul switch contacts and degrade wiring insulation. They are an unavoidable component of electric power. They are caused unpredictably by electric motors switching on or off (on the premises or outside), utility company maintenance operations, lightning strikes and other factors. Spikes (also called surges or transients) are absorbed by special components in the series II Series Multi-Stage Protection Plus circuitry to provide safe voltage levels to protect your equipment.

RFI/EMI INTERFERENCE: Noise from RFI (Radio Frequency Interference) or EMI (Electro Magnetic Interference) involves lower voltages and less energy than is found in spikes, but it is continuous rather than transient in nature. It is not likely to cause damage, but it can certainly be annoying, producing static in audio circuits, "snow" on video screens, or garbled data in computers. Noise can be introduced into AC lines by nearby radio transmitters, certain kinds of lighting, electric motors, and other sources. Because noise occurs at higher frequencies than the 50 or 60 Hz AC line, it can be effectively reduced through use of low-pass filtering.

THREE YEAR LIMITED WARRANTY

Furman Sound, Inc., having its principal place of business at 1997 South McDowell Blvd., Petaluma, CA 94954 ("Manufacturer") warrants its P8-Pro and PL-8 Pro Series II Power Conditioners (the "Product") as follows:

Manufacturer warrants to the original Purchaser of the Product that the Product sold hereunder will be free from defects in material and workmanship for a period of three years from the date of purchase. The Purchaser

of the product is allowed fifteen days from the date of purchase to complete warranty registration by mail or on-line at the Furman website. If the Product does not conform to this Limited Warranty during the warranty period (as herein above specified), Purchaser shall notify Manufacturer in writing of the claimed defects. If the defects are of such type and nature as to be covered by this warranty, Manufacturer shall authorize Purchaser to return the Product to the Furman factory or to an authorized Furman repair location. Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date; this is not necessary if the Warranty Registration was completed either via the mailed in warranty card or on-line website registration. Shipping charges to the Furman factory or to an authorized repair location must be prepaid by the Purchaser of the product. Manufacturer shall, at its own expense, furnish a replacement Product or, at Manufacturer's option, repair the defective Product. Return shipping charges back to Purchaser will be paid by Manufacturer.

THE FOREGOING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Manufacturer does not warrant against damages or defects arising out of improper or abnormal use of handling of the Product; against defects or damages arising from improper installation, against defects in products or components not manufactured by Manufacturer, or against damages resulting from such non-Manufacturer made products or components. This warranty shall be cancelable by Manufacturer at its sole discretion if the product is modified in any way without written authorization from Furman Sound. This warranty also does not apply to Products upon which repairs have been affected or attempted by persons other than pursuant to written authorization by Manufacturer.

THIS WARRANTY IS EXCLUSIVE. The sole and exclusive obligation of Manufacturer shall be to repair or replace the defective Product in the manner and for the period provided above. Manufacturer shall not have any other obligation with respect to the Products or any part thereof, whether based on contract, tort, strict liability or otherwise. Under no circumstances, whether based on this Limited Warranty or otherwise, shall Manufacturer be liable for incidental, special, or consequential damages. Manufacturer's employees or representatives' ORAL OR OTHER WRITTEN STATEMENTS DO NOT CONSTITUTE WARRANTIES, shall not be relied upon by Purchaser, and are not a part of the contract for sale or this limited warranty. This Limited Warranty states the entire obligation of Manufacturer with respect to the Product. If any part of this Limited Warranty is determined to be void or illegal, the remainder shall remain in full force and effect.

SERVICE

Before returning any equipment for repair, please be sure that it is adequately packed and cushioned against damage in shipment, and that it is insured. We suggest that you save the original packaging and use it to ship the product for servicing. Also, please enclose a note giving your name, address, phone number and a description of the problem. NOTE: All equipment being returned for repair must have a Return Authorization (RA) Number. To get an RA Number, please call the Furman Service Department: (707) 763-1010, ext. 121. Please display your RA Number prominently on the front of all packages.

PRO SERIES II 20 AMP POWER CONDITIONERS

P-8 Pro

Rear light switch

Protection OK & Extreme Voltage LED's

Switched Outlet

Power Switch

PL-8 Pro

Dimmer control for front rack lights

Rear light switch

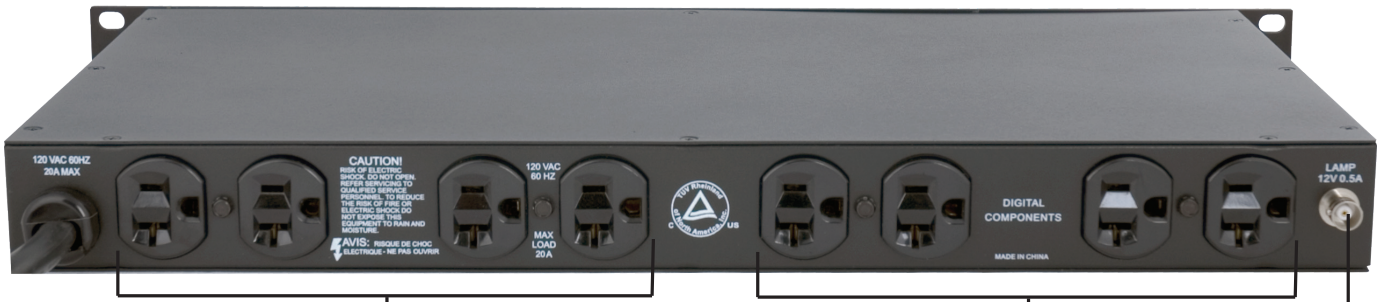
Protection OK & Extreme Voltage LED's

LED Rack Lights

Switched Outlet

Power Switch

Rear of both



Analog Outlets

Digital Outlets

BNC connector for optional gooseneck light

Make sure to pick up one of Furman's goosneck lights - the perfect accesory for your Series II unit.

GN-LED

GN-I

SPECIFICATIONS

Current rating:
20 amps

Operating Voltage:
90 to 140 VAC

Over Voltage Shutdown:
140 VAC typically

Spike Protection Modes:
Line to neutral, zero ground leakage

Spike Clamping Voltage:
188 Vpk @ 3,000 amps, (133 VAC RMS)

Response time:
1 nanosecond

Maximum surge current:
6,500 amps

Noise attenuation:
10 dB @ 10 kHz

40 dB @ 100 kHz

100 dB @ 10 MHz

Linear attenuation curve from 0.05 - 100 ohms line impedance

Mechanical:
Dimensions: 1.75" H x 19" W x 10.5" D.
Weight: 11 lbs (5 kg).
Construction: Steel chassis, .125" brushed and black anodized aluminum front panel; glass epoxy printed circuit boards

Power Consumption:
12 watts

Safety Agency Listings:
CE, NRTL-C

FURMAN

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