

The Need For Power Management

Today's microprocessor-based circuits are more sensitive and vulnerable than ever. Though basic protection from catastrophic AC line surges and reduction of radio frequency noise from interfering with the signal have always been prudent, we must strive to eliminate far more from our AC power source if we expect to meet professional standards in the digital age.

In prior decades we primarily worked with circuits that were based on valve and solid-state (transistor) topologies. These circuits were robust, and capable of absorbing the daily onslaught of modest power spikes generated by the utilities' sub-stations and local appliances. Fast forward to the era of the first integrated circuit chips, and the circuits were still capable of handling all but the poorest of AC sources.

Unfortunately, today's miniature surface-mount, high-speed processing chips can be destroyed with an arc of as little as 3 volts to the wrong junctions. Long before that occurs, small voltage spikes can cause circuits to pit and fissure. This can increase distortion, promote lock-ups, and decrease signal resolution over time.

Advanced transient voltage surge protection has never been more necessary.

In environments where failure is not an option and time is money, it is not acceptable to replace an inferior surge strip that has sacrificed its protection devices, or lose a rack of critical components connected to a surge device that has lost its ability to protect beyond a single large surge event. Though a simple surge strip or bar may work once, many will allow unsafe power to pass long after they have lost their ability to protect. Employing a simple AC surge strip or power bar is simply not the professional choice.



Furman 220V-240V
Prestige Family

Fortunately, Furman's Prestige range of AC power management products have been manufactured and designed to a higher standard. With technologies such as our non-sacrificial SMP surge suppression, the equipment rack will be protected - as well as the Furman itself. No service call. No down time.

Stabilizing Incoming Voltage With The P-6900 AR E

Another critical consideration for today's audio / video professional is the need for stable voltage. A common misconception is that modern switching power supplies are virtually immune to AC voltage swings. This has some basis in truth when they are compared to simple devices from 40 years ago, where circuit bias, noise, and distortion characteristics were literally determined in part by the incoming AC voltage. Modern switch mode power supplies are immune to this – up to a point.

The problem is that once the limits of the switch mode circuit have been reached, you will instantly lose operation of the device! No signal...no warning...no show!

The traditional linear (transformer based) power supplies were far more robust, and as they were pushed to voltage input levels excessively high or low, they would still function (albeit with noticeably increased distortion, but this at least gave the operator valuable minutes

to effect a change). Whether we are using with vintage or cutting-edge technology, professional A/V and sound reinforcement requires stable AC voltage.

However, this can be challenging when venues are unknown, and peak current requirements are high. Further, many touring companies will, by necessity, rely on petroleum or diesel AC power generators for supplementary power, or in some cases, to power an entire event. These generators are far from stable. Most are designed to feed a specific AC voltage for a fixed VA (volt – amp or wattage) rating. Because your power amplifiers, back line instrument amplifiers, and lighting will never represent a constant current load, the voltage from the generator will swing up and down, in rhythm (literally) with the audio dynamics and lighting cues.

This creates an unacceptable maze of distortion and unreliable operation. At its worst, you could lose all or part of the show. This is why professionals employ technology that can take output from an unstable AC source and regulate it to provide stable voltage to their equipment racks, computers, and consoles.

The solution: an AC voltage regulator. For A/V professionals, a regulator must be rack mountable for easy transportation, it must be stable even when subjected to distorted AC signals from poor generators, and it must be able to handle the high current demand of large power amplifiers while protecting all connected equipment with non-sacrificial transient surge suppression. The Furman Prestige Series P-6900 ARE is just such a device!

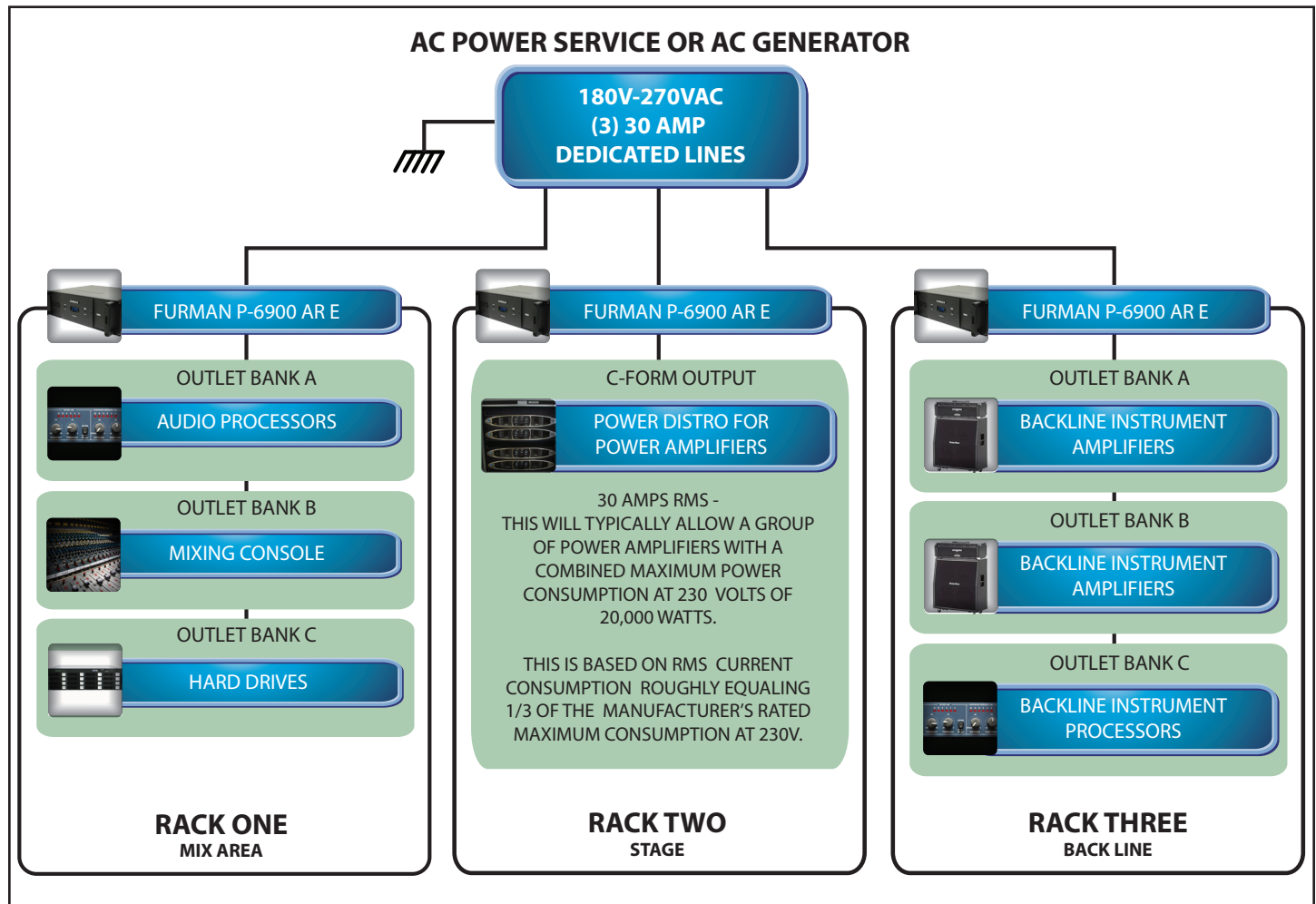
With features such as:

- * SMP – Non-Sacrificial Protection - over a 1/3 of a million manufactured – zero lost!
- * True RMS AC Voltage Regulation
- * Linear Filtering Technology
- * 30 amp capacity (30 amp C-Form output or multiple 16 or 10 amp IEC outlets)
- * 3 Rack space – 19" rack mount chassis

This is the AC power distribution center that can transform your A/V equipment racks to a higher standard of reliable, clean operation by eliminating the threat of unstable voltage.

Road-proof your system! Trust the P-6900 ARE to protect your equipment... and your reputation.

SAMPLE CONNECTION DIAGRAM - PRO A/V SOUND REINFORCEMENT APPLICATIONS





The 30 Amp P-6900 AR E delivers a stable 230 volts of AC power to protect equipment from problems caused by AC line voltage irregularities such as sags, brownouts, or overvoltages - all of which can cause sensitive electronic equipment to malfunction or sustain damage. The P-6900 AR E accepts any input voltage from 188V to 270V and transforms it to a constant output of 230V or 240V (switchable), $\pm 10V$. Voltages beyond that range may also be converted to usable levels, depending on the range variance.

Additionally, the P-6900 AR E is a full-featured power conditioner that filters and purifies AC power, reducing line noise and ensuring optimum performance. Not only will your equipment perform better with Furman's Linear Filtering Technology (LiFT), but it will also be fully protected by our exclusive Series Multi-Stage Protection (SMP), and Extreme Voltage Shutdown (EVS). This circuitry provides the highest level of power protection available.



Furman's exclusive SMP Technology provides the highest level of surge & spike protection available



LiFT offers linear AC power filtering to ensure clean power for unequaled audio & video clarity



Advanced EVS circuitry detects dangerous voltage irregularities and safely powers down itself and connected equipment in unsafe conditions



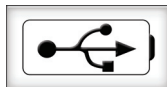
True RMS Voltage Regulation delivers a stable 230 volts of AC power to protect equipment from problems caused by AC line voltage irregularities



Large LED voltmeter/ammeter displays incoming voltage and input current draw



Protection OK, Extreme Voltage and color-coded voltage range indicators provide information on power quality and operational status of unit



Front panel USB convenience outlet allows you to charge most media devices or power a USB lamp



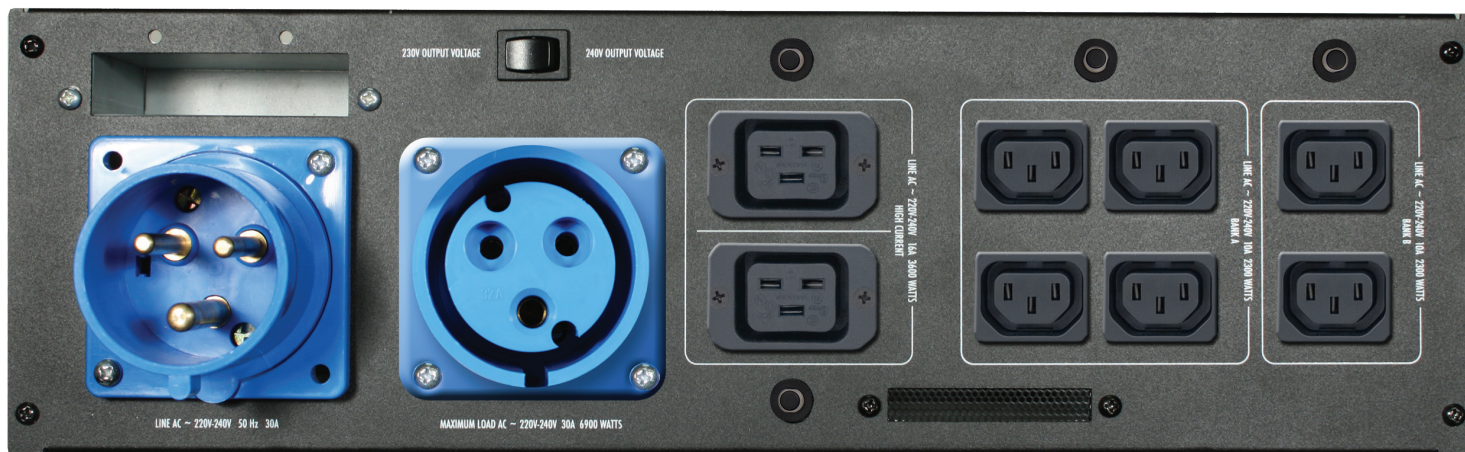
Isolated outlet banks minimize inter-component interference and noise contamination



30 amp rating featuring a high inrush thermal circuit breaker for added protection



Eleven total outlets (9 rear panel outlets and two front panel convenience outlets)



SMP (Series Multi-Stage Protection)

Audio/Video professionals can never accept down time, corrupted data, or unreliability. It is for this reason that a virtually non-sacrificial transient voltage surge suppression systems, such as SMP, is the best choice for critical applications. With Furman's SMP, there is zero downtime. In fact, these circuits can typically handle multiple 6000 volts or 3000 amp pulses without sustaining any damage.



LiFT (Linear Filtering Technology)

With Furman's LiFT, differential AC noise is reduced linearly, across a very wide bandwidth, even extending into the video frequencies. This results in a lower noise floor for your audio system, improved picture on your video display, and protection from possible data corruption and losses caused by low-level differential AC noise fed into digital systems.



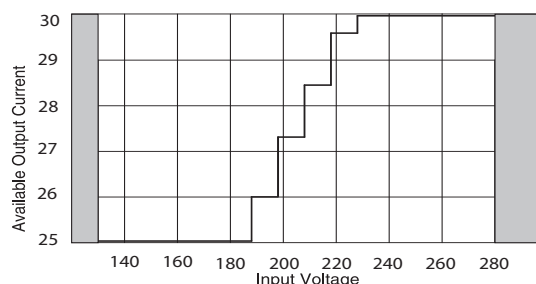
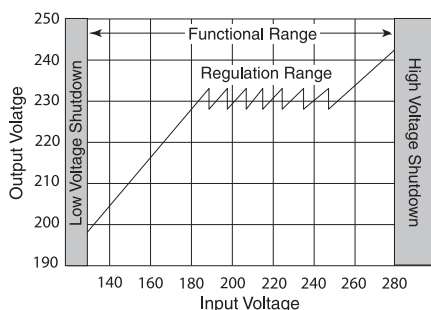
EVS (Extreme Voltage Shutdown)

Furman's EVS constantly monitors incoming voltage, and once any overvoltage condition over 275 volts AC is detected, a relay opens which immediately shuts down the unit and all connected equipment. An indicator light informs the user there is a problem, and once the condition has been corrected, the unit may be reset and will operate normally.



True RMS Voltage Regulation

Designed specifically for A/V equipment, True RMS Voltage Regulation provides stable output voltage by utilizing a microprocessor controlled, ultra-low noise toroidal autoformer. Unlike most commercial regulators, Furman's True RMS Voltage Regulation utilizes solid-state switching for virtually silent regulation without injecting noise onto the AC line.



SPECIFICATIONS

MAXIMUM CURRENT:

30 AMPS

LINE CORD:

30A C-FORM CONNECTOR WITH FEMALE MATING CONNECTOR FOR TERMINATION OF CUSTOM LINE CORD

OPERATING VOLTAGE:

174 TO 264 VAC, 50Hz

OVER VOLTAGE SHUTDOWN:

275 VAC NOMINAL

APPROXIMATE INPUT VOLTAGE CAPTURE RANGE:

174 TO 264VAC, 50 Hz

SPIKE PROTECTION MODES:

LINE TO NEUTRAL, ZERO GROUND LEAKAGE

SPIKE CLAMPING VOLTAGE:

375 V PEAK @ 3,000 AMPS

RESPONSE TIME:

1 NANOSECOND

MAXIMUM SURGE CURRENT:

6,500 AMPS

NOISE ATTENUATION:

10 dB @ 10 KHz, 30 dB @ 100 KHz, 50 dB @ 500KHz

DIMENSIONS:

482.6MM W X 597MM D X 133.35MM H (WITH LINE CORD CONNECTOR)

RECEPTACLES:

TWO C-19 RECEPTACLES, EIGHT C-13 RECEPTACLES, AND ONE FEMALE C-FORM 30A RECEPTACLE

WEIGHT:

26 KG

POWER CONSUMPTION (NO LOAD):

17 WATTS TYPICAL

