FURMAN®
Power Conditioning

# A.C. LINE VOLTAGE REGULATOR, 30 AMP

## MODEL AR-2330


### AR-2330 FEATURES

- Output voltage may be switched to either 220, 230 or 240
- Regulation to ±10 VAC as long as input voltage is: In 220V mode, from 174-264V; in 230V mode, from 181-276V; in 240V mode, from 190-288V
- Output capacity 30 amps
- Six outlets on the back panel, one more on the front
- Eight-tap toroidal autoformer
- 10-LED bar-graph Input Voltage meter
- 10-LED bar-graph Output Current meter
- Extreme overvoltage/undervoltage causes instant shutdown, protecting equipment
- Extreme Voltage Shutdown indicator LED
- Output In Regulation indicator
- Low stray magnetic field leakage

### DESCRIPTION

The 30 amp **AR-2330 AC Line Voltage Regulator** is intended to protect audio, video, computer and other electronic equipment from problems caused by AC line voltage irregularities—sags, brownouts, or overvoltages that can cause sensitive digital equipment to malfunction, or, in extreme cases, to sustain damage.

The AR-2330 is designed for use in areas with AC mains of 220 to 240V. It converts input voltages over about a 90 volt span to either 220, 230 or 240 ±10V, with the actual range depending on the setting of the rear panel Output Voltage switch. The AR-2330 can handle loads totaling up to 30 amps as long as the input voltage is above the selected output voltage. For voltages below that level, its capacity must be derated at approximately .11 ampere per volt.

The AR-2330 has been designed specifically with the unique needs of audio and video in mind. Their technology differs from that of computer-oriented voltage regulators in many important ways. For example:

The AR-2330 does not use a ferro-resonant transformer, which would be heavy and bulky, radiate a large magnetic field, and be too frequency-sensitive to be usable with generators. Instead, it uses a use a design based on an eight-tap toroidal autoformer. The toroidal design assures minimal leakage of stray magnetic fields.

The AR-2330 circuitry monitors the incoming line voltage with each cycle, comparing it to an extremely precise voltage reference. If a voltage fluctuation requires that a different tap be selected, the new tap is electronically switched exactly at the zero-crossing, to avoid distorting the AC voltage waveform. (Some commercial voltage regulators using multiple-tapped transformers switch taps at uncontrolled times, thereby creating voltage spikes, and often creating audible clicks in the audio.) Hysteresis of 1.5V in the switching circuits avoids “chatter.” The design is not sensitive to small errors in line frequency, making them ideal for use with generators.

The AR-2330 also features power conditioning that is truly in a class by itself, thanks to the quantity, quality and configuration of the overvoltage suppression devices used. These include MOV’s, high voltage inductors and capacitors,

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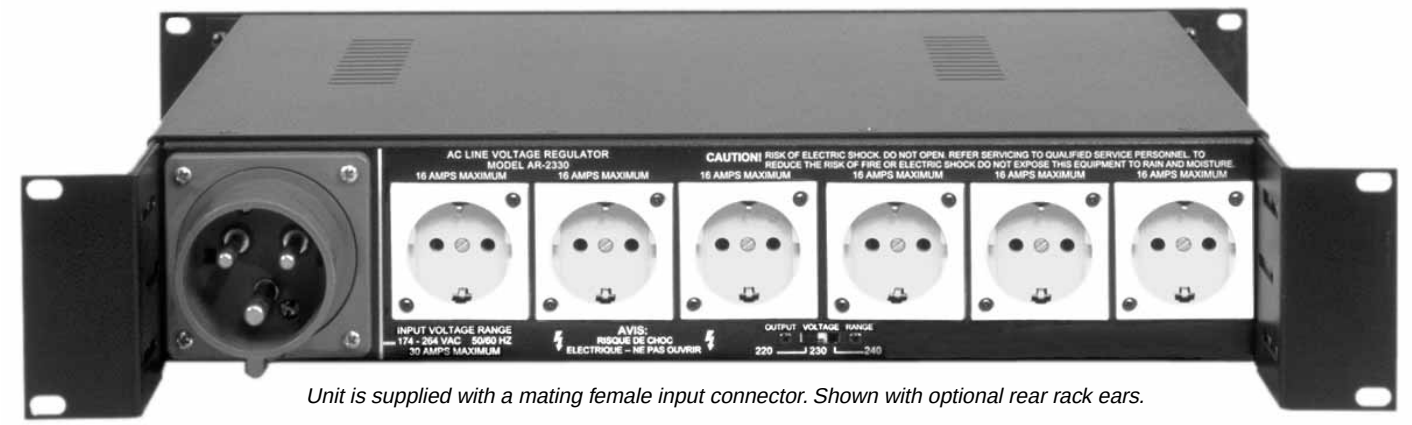
# AR-2330 Rear View




*Unit is supplied with a mating female input connector. Shown with optional rear rack ears.*

and precise high-inrush magnetic circuit breakers. This unique combination can safely divert large spikes as well as filter audible high frequency noise.

An additional feature, Extreme Voltage Shutdown, senses dangerously high or low voltages and shuts down the output before any damage is done. The output remains off until the overvoltage or undervoltage is removed, with an LED indicating the shutdown condition. This invaluable feature provides positive protection to your equipment from accidental connection to incorrect line voltages—a not uncommon hazard in the entertainment industries.

The AR-2330 has six outlets (Schuko or equivalent) on the back panel, and one outlet on the front. All outlets are regulated, spike-suppressed, and filtered against RFI with a 3-pole filter. There are no controls on either unit except the circuit breaker/on-off switch, and the Output Voltage switch. A bar-graph meter comprised of 10 LED's indicates input voltage, while another LED indicates "In Regulation" status (i.e., that the output voltage is within ±10V of the selected value.) Also provided is a 10-LED bar graph meter to indicate output current. The unit is housed in a compact, two-space rackmount chassis, 3.5" high and 17" deep (8.9 x 43.2 cm) and weighs only 48 lbs. (22 kg).

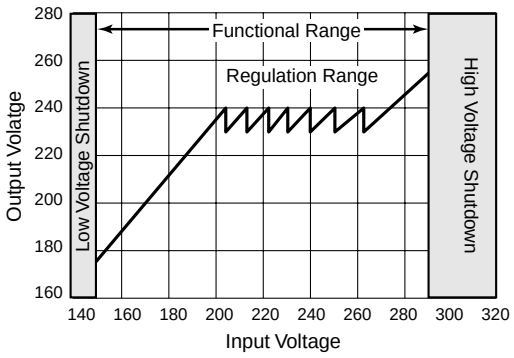
## OPTIONAL ACCESSORY

- **RRM-2 Rear Rack Mount Ears:** Adjustable rear rack ears so the AR-2330 can be securely attached both in front and in back.

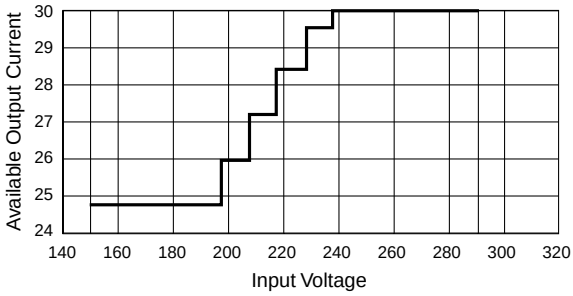
## Three Year Limited Warranty

The Furman AR-2330 is protected by a three-year limited warranty covering defects in materials and workmanship.

***Output Voltage vs. Input Voltage (230V Setting)***




***Available Output Current vs. Input Voltage (230V Setting)***




## *AR-2330 SPECIFICATIONS*

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|---|---|
| Current Rating: | 30 amperes for input voltages of 228/238/248* or higher; derate at 108 mA per volt to a minimum of 24.8A |
| "In Regulation" Ranges: | Provides regulation ±10 VAC in the following ranges: 220V mode,174-264V; 230V mode, 181-276V; 240V mode, 190-288V. |
| Shutdown Range: | 220V mode, below 146V or above 279V; 230V mode, below 152V or above 287V; 240V mode, below 158V or above 300 V. |
| Voltmeter Accuracy: | ±10 VAC |
| Spike Protection Modes: | Line to neutral, neutral to ground, line to ground |
| Spike Clamping Voltage: | Initial turn-on at 390 volts peak L-N; 680 volts peak N-G, L-G |
| Response Time: | 1 nanosecond |
| Maximum Surge Current: | 6,500 amps (8 x 20 ms pulse) |
| Maximum Spike Energy: | 130 joules L-N, 160 joules N-G, L-G, 450 joules total |
| Noise Attenuation: | Differential mode: Greater than 40 dB |
| | Transverse and common modes: Greater than 60 dB, 1-200 MHz |
| Dimensions: | 3.5" H x 19" W x 17" D (8.9 x 48.3 x 43.2 cm) |
| Weight: | 48 lbs. (22 kg) |

* Depending on Output Voltage switch setting



*The AR-2330 is manufactured in the United States of America.*