



OPERATION MANUAL

Congratulations on your purchase of a UNIKAAR-3000 AC Line Voltage Regulator. The AR-3000 is the perfect accessory to any audio, video, or computer and peripherals rack-mount system requiring clean, filtered, and regulated AC power for optimum operation.

FEATURES

- AR-3000 provides 3 PowerCon, 4 North America type totally 7 regulated, conditioned AC outlets on the rear panel, and one North America type outlet on the front panel.
- AR-3000 Input capacity is 25 A; output capacity is 20 A to 25 A.
- Built-in advanced 2 stages of power filter.
- Regulation input voltage range is an extra +/-10% out of the standard stable output voltage.
- Extreme over-voltage and under-voltage will instantly shutdown, safeguard connected equipment.
- Extreme Voltage Shutdown indicator LED.
- Output-Regulation indicator LED.
- Large 7 segments LED indicators for input and output voltage display.
- Easy and fast user-operable circuit breaker prevents overload or short circuit.
- Very low stray magnetic field leakage.
- Main power ON/OFF switch.
- 5V/2A and 5V/1A two USB charger sockets are provided.
- Professional small size fan for internal heat ventilation.
- Compact, lightweight device weighing only 17.6 pounds (8 kg) , 1U chassis height.

SAFETY PRECAUTIONS

To obtain best results from the AR-3000, please do not use too thin and unqualified power cord.

To reduce the risk of electrical shock, do not expose your AR3000 to rain or moisture.

Hazardous voltages are present inside the enclosure. Please do not remove the cover for any reason. There are no user serviceable parts inside. Refer servicing to qualified service personnel.

STANDARD OUTPUT VOLTAGE VS. INPUT VOLTAGE WITHIN THE REGULATION LIMIT

- Regulated output voltage: AC-110V
- Output voltage accuracy: Less than $\pm 5V$
- Input voltage regulation limit range: 95Vac ~ 125Vac

Regulators are designed to protect sensitive electronic equipment from problems caused by AC line voltage irregularities, It may cause audio tonal changes, malfunctions of digital equipment (such as loss of MIDI programs or other data), or in extreme cases it can cause permanent damage.

The regulator accept an input voltage over a wide AC voltage range and convert it to the required standard stable output voltage (110Vac $\pm 5V$); voltages outside this range of approximately $\pm 10\%$ can be converted to usable levels, depending on considered usable devices.

The AR-3000 has 7 outlets on the rear panel, and one on the front panel, all are functionally interchangeable.

All the outlets are regulated, spike-suppressed, and filtered against 2 stages of EMI filter, making the AR-3000 a full-function power conditioner.

The AR-3000 has no external controls other than a power on-off switch.

Note: The AR-3000 is designed for use with AC voltage only and DC voltages should never be applied.

Also, the AR-3000 does not change or regulate the line frequency in any way.

The output frequency will always be the same as the incoming line frequency.

MAXIMUM AND MINIMUM LOAD

The AR-3000 can handle loads totaling up to 25 amperes as long as the input voltage is greater than or equal to 110 Volts.

For voltages below 110 Volts, the nominal 25 Amp current handling capacity must be de-rated at approximately 115 milliamps per volt below 110 VAC.

To successfully handle worst-case brownout conditions, you should plan your total load so that it does not exceed 25 amps, or 3000 watts under brownout conditions.

Please note that the total load refers to the combined current demand of all devices plugged into the AR-3000, not just each individual outlet, or each single load.

EXTREME VOLTAGE PROTECTION

The AR-3000 includes special circuitry to sense over and under voltage conditions and cut off the output power before damage can be done to connected equipment.

When the input voltage does not exceed 135V, the overvoltage shutdown can be eliminated. The Red LED marked as EXTREME VOLTAGE SHUTDOWN indicates a shutdown condition.

For very low input voltages of 75V, the output will also be cut off.

To prevent catastrophic errors in the AC input power cord, dangerous high voltages can cause internal fuses to blow, but the device plugged into the regulator will not be damaged.

DESIGN

The AR-3000 design is based on an 11-taps Toroidal autotransformer. The Toroidal design assures minimal leakage of stray magnetic fields, and, because of its high efficiency, a very compact size for its rating. The Voltage Regulator's circuitry monitors the incoming line voltage with each cycle, and compares this to a precise voltage reference (Accuracy is $\pm 0.15\%$).

If a voltage fluctuation requires that a different tap be selected, the new tap is electronically switched at a precise moment, so as to minimize distortion of the AC waveform. If necessary, the AR-3000 can switch taps as often as once each cycle.

Most commercial voltage regulators using multiple-tapped transformers switch taps at random times, thereby creating voltage spikes and clicks that can leak into the audio! Hysteresis in the tap switching points prevents "chatter" or unnecessary switching back and forth between adjacent taps. Unlike voltage regulators that employ Ferro-resonant transformers, the AR-3000 is not sensitive to small errors in line frequency, making it ideal for use with generators.

Because its Toroidal transformer design minimizes stray magnetic fields, the AR-3000 may be positioned near most other equipment without concern that the neighboring equipment will be influenced by magnetic leakage from the transformer. It is suggested that the AR-3000 be located either at the top or bottom of the rack.

SPECIFICATION	AR-3000/110V
Nominal input voltage	95VAC ~ 125VAC
Nominal output voltage	110VAC / $\pm 5V$
Over extreme voltage	$\geq 135VAC$
Under extreme voltage	$\leq 75VAC$
AC Frequency	60Hz
Input power capacity	3000W/25A
Output power capacity	3000W/20~25A totally
AC outlet	1 US type on front, 4 US type & 3 Power Con on rear
USB charger	1 type A-5V/2A, 1 type A-5V/1A
Power supply	11 taps cooper toroidal transformer with low of stray magnetic field leakage
Circuit breaker	Resettable breaker on rear panel
Filtering	Built-in advanced 2 stages of power filter
Protection circuit	Surge , Spike, Lightning
Thermal dispersion	Fan & large format heat sink
Voltage indicator	2 of 7 segment LED display
Status indicator	Extreme voltage shutdown, Output-Regulation
Dimension (H x W x D)	44 x 483 x 284 mm
Weight	8kg/17.6lb
Rack space	1U

SERVICES

Please be sure that the equipment being returned for repair must be adequately packed and cushioned against damage in shipment.

We suggest that you retain and use the original packaging to ship the equipment being returned for servicing.

Beside it is necessary to provide the Model and Serial Number of the product, your name, address, phone number, and a brief description of the problem, an email address, if available.