AETECHRON

8500 Series

The First Wide-Bandwidth, High-Power Digital Amplifiers

AE Techron's 8500 Series amplifiers are the first wide-bandwidth, high-power digital amplifiers available from any manufacturer. They are fast enough for DC automotive dropout testing and capable of AC voltages required for ISO 61000 and Aviation testing. Plus, they have low enough noise and distortion specifications to be the reference power source in power quality measurements.

Wide Bandwidth and Flexible

The 8500 Series of amplifiers are capable of reproducing AC, DC and AC+DC waveforms into loads from a dead short to high impedance. They can be used to simulate a battery at 13.5 VDC or be an AC source with a L-N potential of up to 250 VAC. Rated current, for a given voltage, is available for all waveform types (AC, DC or AC+DC) at frequencies from DC to 50 kHz. Voltages from 0 to 250 V_{RMS} are available with no changes in configuration.

Reuses Energy from Reactive Loads

The 8500 Series excels when it comes to driving reactive loads. As frequencies increase, the effective-impedance of the load becomes a much larger part of the total load to be driven (especially with inductive loads like coils). However, when driving reactive loads, the 8500 Series is capable of receiving, reprocessing and returning to the load up to 5X its rated power. The result is a bench top system capable of 20 kVA+ output while drawing less than 4 kW of AC mains power!

Scalable

The 8500 Series is scalable, available in sizes from a 3U, single-phase, bench top model to mini rack systems that can deliver up to 125 kVA of power into reactive loads at currents of up to 500 A_{RMS}.

Bandwidth	**DC to 50 kHz**
Voltage	**0 to 250 V_{RMS}** **0 to 350 VDC**
Current	**100 to 500 A_{RMS}**
Distortion	**0.1%**
Power	**4 kVA to 20 kVA**

Power levels up to 5X rated power when driving reactive loads

High power efficiency and density

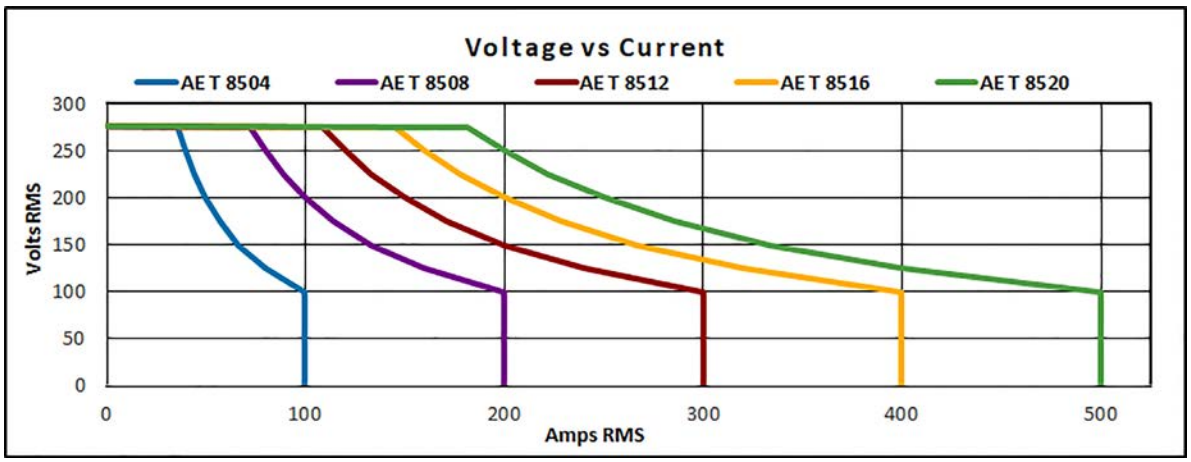
Configurable

A key to everyday product usability is quick and easy product (re)configuration. The 8500 Series provides all key configuration controls on either the front or back panels of the unit. Configuration options available include:

Gain	Fixed or variable gain (0 to 40)
Current Limit	From 5% to rated limit (to protect fragile DUTs or where specified in the Standard)
DC Control	DC enabled or DC blocked and DC Servo (for driving transformer-coupled loads, coils)
Input	Balanced and/or unbalanced
Mode	Voltage source or current source
Output Imp	Variable from 0 to 1 ohm (Voltage mode)
Sense	Sense line with correction of up to 4 volts

	Continuous Output Current *				
	8504	8508	8512	8516	8520
13.5 VDC	100A	200A	300A	400A	500A
28 VDC	100A	200A	300A	400A	500A
42 VDC	85A	170A	255A	340A	425A
120 VAC	30A	60A	90A	120A	150A
230 VAC	15A	30A	45A	60A	75A
250 VAC	13A	26A	39A	52A	65A

*Higher voltages possible with optional step-up transformer.



Common Data (all models)

Operating Modes: AC, DC and AC + DC
Frequency, AC Mode Output (-3 dB): DC – 50 kHz
Max Voltage Ranges (no load),
AC: 0 – 277 V_{RMS}
AC + DC: 0 – ±400 V_P
Load Regulation (full scale): <0.025%, DC to 100 Hz; <0.05%, 100 Hz to 10 kHz
Line Regulation (full scale): <0.1% for 10% line change
External Sense: Voltage-drop compensation (up to ±4 V_P)
Harmonic Distortion (80 kHz, low-passed): Less than 0.3% from 10 Hz to 30 kHz; 0.5% up to 50 kHz
Harmonic Distortion (30 kHz, low-passed): Less than 0.1% from 10 Hz to 50 kHz
DC Offset: <10 mV
Distortion: <1.0%
Voltage Slew Rate: 10 µs to 30 µs for 10% to 90% of full-scale change, depending on load and power
Efficiency: 85%, typical
Power Factor: .72, typical
Surge Rating: 2X power or up to 400 V_P, 150A (8504); up to 300A (8508); up to 450A (8512); up to 600A (8516); up to 750A (8520)
Source Impedance: 3 mΩ + 3 µH
Apparent Power Rating: Up to 5X continuous power rating or up to 400 V_P, 150A (8504); up to 300A (8508); up to 450A (8512); up to 600A (8516); up to 750A (8520)
Cooling: Internal forced-air fans
Protection: Over/under voltage, over current, over temperature
Input, Signal In: BNC connector (unbalanced); terminal strip (balanced)
Output: High current connectors
Operating Environment,
Temperature: 10°C to 50°C (50°F to 122°F); Maximum output power de-rated above 30°C (86°F)
Humidity: 70% or less, non-condensing
Atmospheric Pressure: 86 kPa (860 mbar) to 106 kPa (1,060 mbar)
Dimensions (HxWxD),
8504: 5.25 x 19.00 x 25.26 inches (13.34 x 48.26 x 64.16 cm)
8508: 36.5 x 21.0 x 30.75 inches (92.7 x 53.3 x 78.1 cm)
8512: 36.5 x 21.0 x 30.75 inches (92.7 x 53.3 x 78.1 cm)
8516: 36.5 x 21.0 x 30.75 inches (92.7 x 53.3 x 78.1 cm)
8520: 36.5 x 21.0 x 30.75 inches (92.7 x 53.3 x 78.1 cm)
Weight:
8504: 84 lbs. (38.1 kg)
8508: Appx. 290 lbs. (131.5 kg)
8512: Appx. 370 lbs. (167.8 kg)
8516: Appx. 460 lbs. (208.7 kg)
8520: Appx. 540 lbs. (244.9 kg)