8500 Series

Wide-Bandwidth, High-Power Switch-Mode Amplifiers

AE Techron's 8500 Series amplifiers are 400Vp, low-noise, DC-to-50 kHz switch-mode amplifiers. The 8500 series provides a unique combination of switch-mode and linear amplifiers. Switch-mode efficiency is combined with a low noise floor and THD, while also benefitting from high slew rates and wide bandwidth. The 8500 series is also able to safely drive both reactive and resistive loads of varying impedances with no loss in rated output power.

8500 series amplifiers pack a lot of power into a small package. They are able to produce surge power ratings at up to 2.5X continuous and process apparent power at levels up to 5X the continuous power ratings. This makes an 8500 series amplifier an ideal choice for many difficult-to-drive reactive loads.

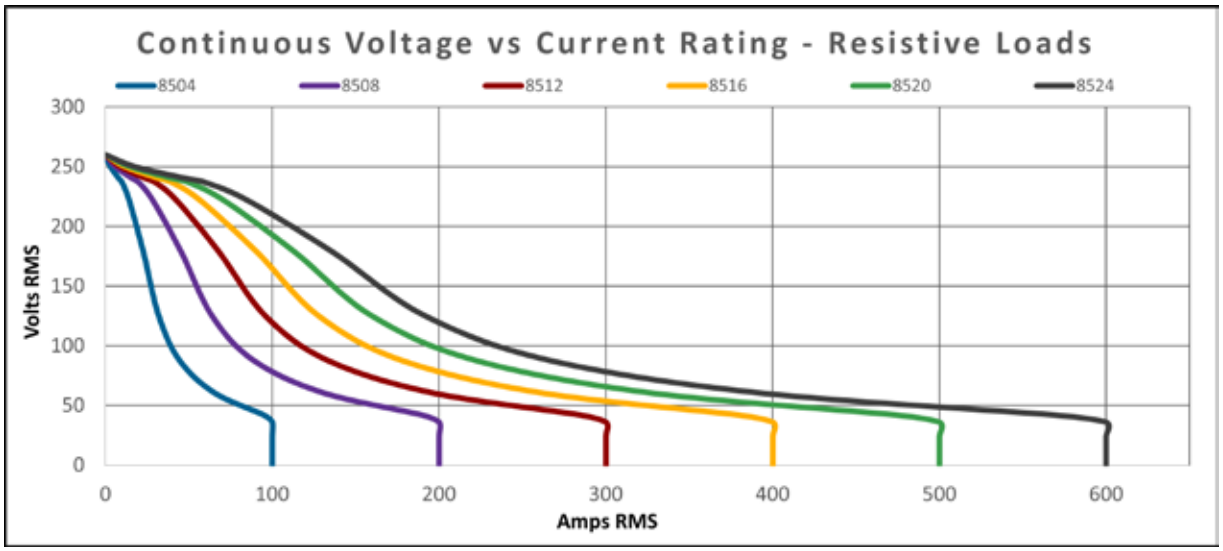
This combination of features makes the 8500 series an ideal solution for a wide range of high-current, low-voltage applications that require both DC power and quick surges or drop-outs, like those found in conducted immunity testing of DC-powered systems in the automotive and aviation markets.

Bandwidth	**DC to 50 kHz**
Slew rate	**Up to 80V/µs**
Voltage	**0 to 250 V_{RMS}** **0 to 350 VDC**
Current	**Up to 80 to 480 A_{RMS}***
Distortion	**<0.2%**
Power	**4 kW to 24 kW***

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

Drives loads PF 0 to 1

**Models available with output power from 4 kW to 24 kW (capable of up to 120 kVA).*



Specifications

8504
Maximum Continuous Output Current: $80A_{RMS}$
Surge Rating: 2X power at up to 400 V_P or 150A
Apparent Power Rating: Up to 5X continuous power rating at up to 400 V_P or 150A
Supply Voltage: Single-phase, 208V ±10%, 30A, 50/60 Hz; 230V/240V ±10%, 30A version available
Source Impedance: 3 mΩ + 3 µH
Dimensions (HxWxD): 5.25 x 19.0 x 25.26 in. (13.34 x 48.26 x 64.16 cm)
Weight: Approximately 84 lbs. (38.1 kg)

8508
Maximum Continuous Output Current: $160A_{RMS}$
Surge Rating: 2X power at up to 400 V_P or 300A
Apparent Power Rating: Up to 5X continuous power rating at up to 400 V_P or 300A
Supply Voltage: Three-phase 208V ±10%, 30A, 50/60 Hz; 400V ±10%, 30A version available
Source Impedance: less than 70 mΩ + less than 10 µH
Dimensions (HxWxD): 35.05 x 22.56 x 31.56 in. (89.03 x 57.3 x 80.16 cm)
Weight: Approximately 290 lbs. (131.5 kg)

8512
Maximum Continuous Output Current: $240A_{RMS}$
Surge Rating: 2X power at up to 400 V_P or 450A
Apparent Power Rating: Up to 5X continuous power rating at up to 400 V_P or 450A
Supply Voltage: Three-phase 208V ±10%, 30A, 50/60 Hz; 400V ±10%, 30A version available
Source Impedance: less than 60 mΩ + less than 10 µH
Dimensions (HxWxD): 35.05 x 22.56 x 31.56 in. (89.03 x 57.3 x 80.16 cm)
Weight: Approximately 370 lbs. (167.8 kg)

8516
Maximum Continuous Output Current: $320A_{RMS}$
Surge Rating: 2X power at up to 400 V_P or 600A
Apparent Power Rating: Up to 5X continuous power rating at up to 400 V_P or 600A
Supply Voltage: Three-phase 208V ±10%, 60A, 50/60 Hz; 400V ±10%, 60A version available
Source Impedance: less than 50 mΩ + less than 10 µH
Dimensions (HxWxD): 48.55 x 22.56 x 31.56 inches (123.32 x 57.3 x 80.16 cm)
Weight: Approximately 460 lbs. (208.7 kg)

8520
Maximum Continuous Output Current: $400A_{RMS}$
Surge Rating: 2X power at up to 400 V_P or 750A
Apparent Power Rating: Up to 5X continuous power rating at up to 400 V_P or 750A
Supply Voltage: Three-phase 208V ±10%, 60A, 50/60 Hz; 400V ±10%, 60A version available
Source Impedance: less than 40 mΩ + less than 10 µH
Dimensions (HxWxD): 48.55 x 22.56 x 31.56 inches (123.32 x 57.3 x 80.16 cm)
Weight: Approximately 540 lbs. (244.9 kg)

8524
Maximum Continuous Output Current: $480A_{RMS}$
Surge Rating: 2X power at up to 400 V_P or 900A
Apparent Power Rating: Up to 5X continuous power rating at up to 400 V_P or 900A
Supply Voltage: Three-phase 208V ±10%, 60A, 50/60 Hz; 400V ±10%, 60A version available
Source Impedance: less than 30 mΩ + less than 10 µH
Dimensions (HxWxD): 48.55 x 22.56 x 31.56 inches (123.32 x 57.3 x 80.16 cm)
Weight: Approximately 620 lbs. (281.2 kg)

Note: 8508, 8512, 8516, 8520 and 8524 model dimensions and weights are subject to change.

	Continuous Output Current					
	8504	8508	8512	8516	8520	8524
13.5 VDC	80A	160A	240A	320A	400A	480A
24 VDC	80A	160A	240A	320A	400A	480A
48 VDC	75A	150A	225A	300A	375A	425A
60 VAC	60A	120A	180A	240A	300A	360A
120 VAC	32A	64A	96A	128A	160A	192A
230 VAC	10A	20A	30A	40A	50A	60A

8504 power ratings shown are for 240V units. At output voltages above 90VAC, units confirgured for 120VAC mains input may be breaker-limited. Contact AE Techron for 120VAC performance ratings. Performance data is for a purely resistive load; performance will be improved into loads that are partially or completely reactive.

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 – 260 V_{RMS}
AC + DC: 0 – ±400 V_P
Load Regulation (full scale): <0.025%, DC to 100 Hz; <0.05%, 10 Hz to 10 kHz
Line Regulation (full scale): <0.1% for 10% line change
External Sense: Voltage-drop compensation sense line
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: <0.2%
Voltage Slew Rate: Load dependent; up to 80V per µs, typically 10 µs to 30 µs for 10% to 90% of full-scale change, depending on load and power
Propagation Delay: 8 µsec

Efficiency: 85%, typical
Power Factor: .72, typical
Cooling: Internal forced-air fans
Protection: Over/under voltage, over current, over temperature
Input, Signal In: BNC connector (unbalanced); terminal strip (balanced)
Output: 3/8-inch high-current post connectors
Operating Environment,
Temperature: 5 °C to 50 °C (41 °F to 122 °F); Maximum output power de-rated above 30 °C (86 °F)
Humidity: Maximum relative humidity 80% for temperatures up to 31 °C decreasing linearly to 50% relative humidity at 40 °C
Altitude: 3000 m Maximum
Environment: Indoor Use Only, Pollution degree 2
Equipment Class: Group 1 Class A
Transient Overvoltage: Overvoltage Category II