



9100 Series

Wide-Bandwidth, High-Power Switch-Mode Amplifiers

AETechron's 9100 Series amplifiers are 200Vp, DC-to-250 kHz capable amplifiers that offer a unique combination of switch-mode efficiency and linear-amplifier-like fidelity in a single, compact package. They are able to drive virtually any type of load without a reduction in rated power, with low distortion and low DC drift. They are also fast enough to meet 5µs surge and dropout requirements.

The 9100 series is a powerful and flexible partner when the environment is difficult or existing AC Mains options are limited. It is able to be powered from any normal single-phase AC mains voltage (100VAC – 250VAC). It is power-efficient, producing up to 2,000 watts output from a 20A, 120V AC mains supply, and up to 5 kW from 230V or 240V sources.

This combination of features makes the 9100 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.

Features

- Stable when driving highly capacitive loads.
- Four-quadrant operation.
- Fixed or variable gain.
- User-selectable current limit to protect fragile DUTs or where specified in the Standard.
- DC enabled or DC blocked and DC Servo (for driving transformer-coupled loads or coils).
- Balanced and/or unbalanced input.
- Operate as a voltage-controlled voltage source or voltage-controlled current source.
- Variable output impedance from 0 to 1 ohm (Voltage mode).

Performance Overview:

Bandwidth:	DC to 250 kHz
Minimum Drop/Rise Time:	5µs
Slew rate:	Up to 300 V/µs
Max Voltage:	0 to 200 V _p
Max Current:	Up to 50 to 150 A _p
Distortion:	<0.8%
Max Long-Term Power:	5 kW to 30 kW*

*Models available with output power from 5 kW to 30 kW (capable of up to 60 kVA).

Continuous Output Current

	9105	9110	9115
13.5 VDC	30A	60A	90A
24 VDC	30A	60A	90A
48 VDC	30A	60A	90A
60 VAC	30A	60A	80A
120 VAC	16A	40A	40A

Performance data is for a purely resistive load; performance will be improved into loads that are partially or completely reactive.

Specifications

9105

Maximum Continuous Output Current: 30A_{RMS} AC or DC

Power: 2 kW

Supply Voltage: Universal power supply with PFC, single-phase, 100V to 240V AC $\pm 10\%$, 30A, 50/60 Hz

Dimensions (HxWxD): 3.47 x 17.3 x 22.8 in. (8.81 x 43.94 x 57.91 cm)

Weight: Approximately 40 lbs. (18.14 kg)

9110

Maximum Continuous Output Current: 60A_{RMS} AC or DC

Power: 5 kW

Supply Voltage: Universal power supply with PFC, single-phase, 100V to 240V AC $\pm 10\%$, 30A, 50/60 Hz

Dimensions (HxWxD): 3.47 x 17.3 x 22.8 in. (8.81 x 43.94 x 57.91 cm)

Weight: Approximately 45 lbs. (20.41 kg)

9115

Maximum Continuous Output Current: 90A_{RMS} AC or DC

Power: 5 kW

Supply Voltage: Universal power supply with PFC, single-phase, 100V to 240V AC $\pm 10\%$, 30A, 50/60 Hz

Dimensions (HxWxD): 3.47 x 17.3 x 22.8 in. (8.81 x 43.94 x 57.91 cm)

Weight: Approximately 50 lbs. (22.68 kg)

Common Data (all models)

Operating Modes: AC, DC and AC + DC

Frequency, AC Mode Output (-3 dB): DC - 250 kHz

Max Voltage Ranges (no load),

AC: 0 - 130 V_{RMS}

AC + DC: 0 - ± 200 V_p

Load Regulation (ref to full scale): <0.05%, DC to 100 Hz; <0.1%, 10 Hz to 10 kHz

Line Regulation (full scale): <0.1% for 10% line change

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 200V per μ s, typically 3 μ s to 10 μ s for 10% to 90% of full-scale change, depending on load and power

Efficiency: 85%, typical

Power Factor: .98, typical

Source Impedance: 3 m Ω + 3 μ H

Cooling: Internal forced-air fans

Protection: Over/under voltage, over current, over temperature

Input, Signal In: BNC connector (unbalanced)

Output: High-current barrier strip

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

9100 Series Default DIP Switch Settings Standard Input Module

Red = Default

DIP SWITCH SETTINGS

1	DC SERVO	ON	OFF
2	OPERATION MODE	CV	CC
3	COMPENSATION NETWORK 2	ON	OFF
4	COMPENSATION NETWORK 1	ON	OFF
5	CONTROL CONFIGURATION	MASTER	FOLLOWER
6	COUPLING	DC	AC
7	GAIN BIT 3 (MSB)	10	OFF
8	GAIN BIT 2	5	OFF
9	GAIN BIT 1 (LSB)	2.5	OFF
10	ELECTRONIC GAIN MATCHING	ON	OFF
11	CURRENT LIMIT BIT 2 (MSB)	+30A	OFF
12	CURRENT LIMIT BIT 1 (LSB)	+15A	OFF

NOTE: ALL BIT SWITCHES ARE ADDITIVE. UP = ON.



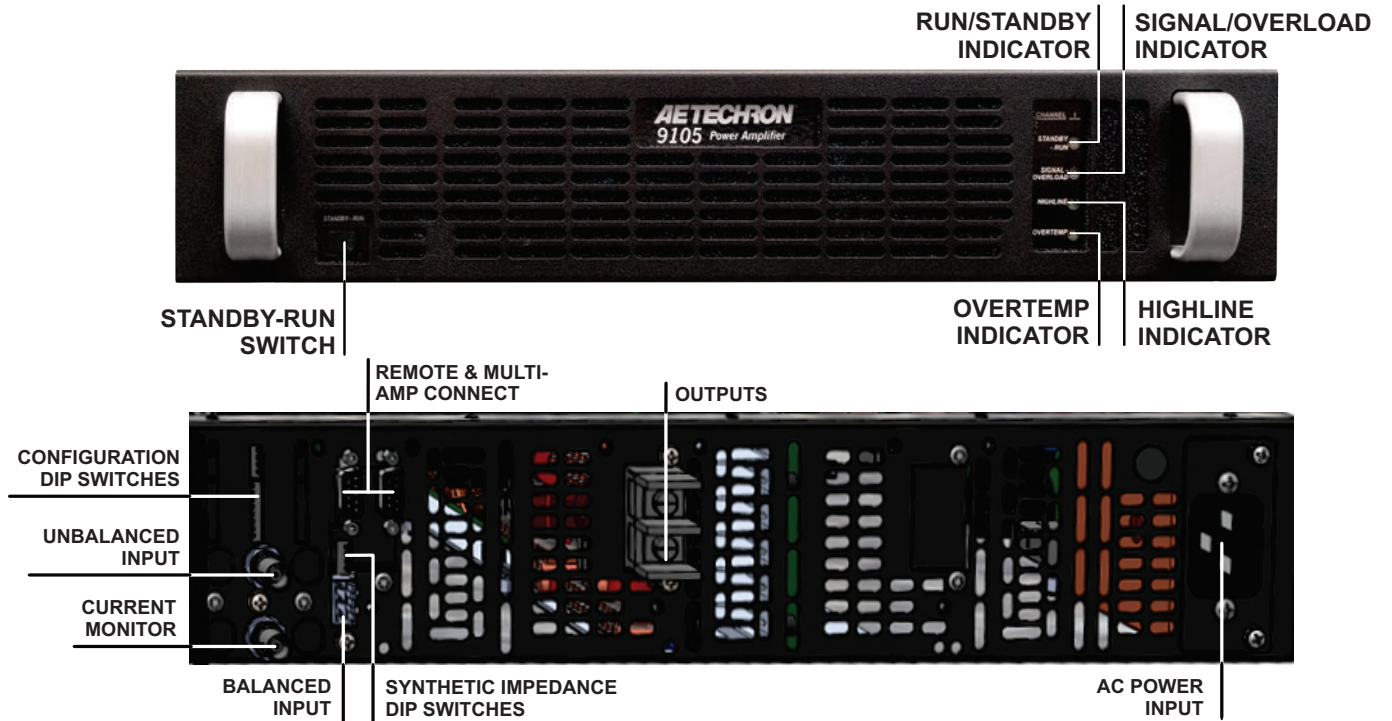
9100 Series Default DIP Switch Settings Add-On Module

Red = Default

1	SYNTHETIC IMPEDANCE BIT 3 (MSB)	0.5 Ω	OFF
2	SYNTHETIC IMPEDANCE BIT 2	0.25 Ω	OFF
3	SYNTHETIC IMPEDANCE BIT 1 (LSB)	0.125 Ω	OFF
4	UNUSED	-----	OFF

NOTE: ALL BIT SWITCHES ARE ADDITIVE. UP = ON.





CURRENT MONITOR: 50A = 5V

AE Techron Sales Representative