

The AE Techron **8101** power supply amplifier features an advanced switch-mode design that results in low noise and distortion, and high power density. It is configured as a dual-channel, AC-coupled, controlled voltage amplifier ideal for reactive loads. The 8101 can provide up to 16 Arms or 235 Vrms continuous output (bridge-mono mode). It offers a continuous, full-power frequency bandwidth of 10 Hz to 20 kHz.

The 8101 also features an integrated switching power supply that reduces weight and allows the unit to fit a standard 2U rack space. The 8101 operates from single-phase, 120-volt AC mains (230 VAC version available).

The 8101 amplifier is built and tested to the most stringent quality standards for long life and outstanding performance. The AE Techron brand is known throughout the world for its robust precision amplifiers as well as its product service and support.

Performance

Specifications are for units in Dual mode driving both channels into 8-ohm loads, (20 times voltage gain) and operating from 120 VAC, unless otherwise specified.

"Standard 1 kHz Power" refers to maximum average power in watts at 1 kHz with 0.1% THD.

Frequency Response:

± 0.25 dB from 10 Hz to 20 kHz at 1 watt.

Signal to Noise Ratio:

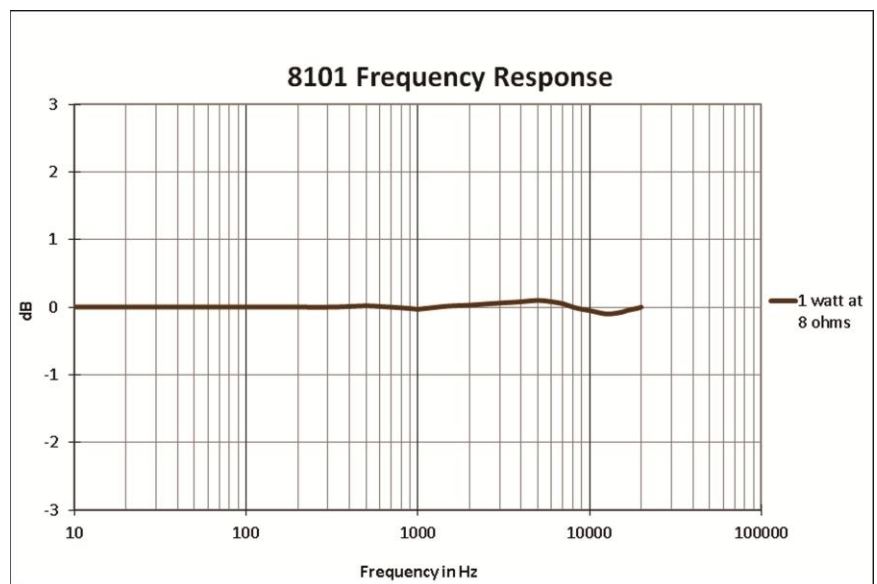
< 105 dB (ref. rated power, 10 Hz to 20 kHz, A-weighted).

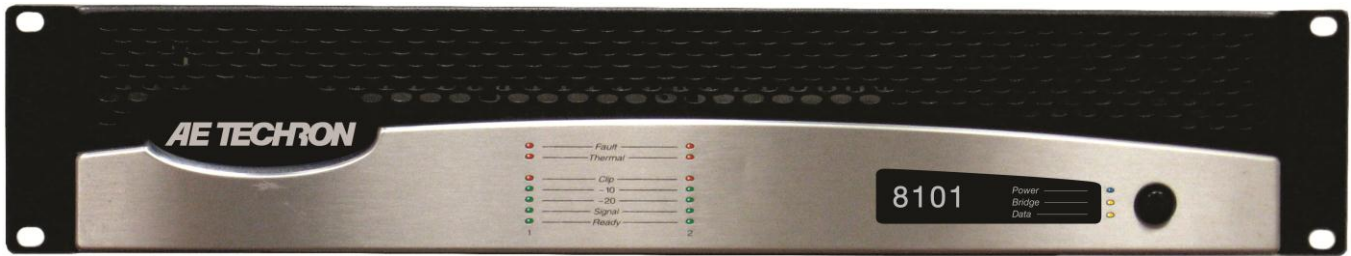


8101 SPECIFICATION SHEET

Features

- Up to 16 Arms or 235 Vrms continuous output (bridge-mono mode).
- Frequency bandwidth at full power of 10 Hz – 20 kHz.
- Compact design; only 2U of rack space and 27 lbs.
- Switching power supply for reduced weight.
- Installs easily into a standard 19-inch rack or stands alone for bench top operation.
- Built-in protection circuitry safely provides for sustained high-power output, with protection against input overloads, improper output connection (including shorts and improper loads), and excessive temperature, voltage or current.
- Operates from single-phase, 120-volt AC mains, (230 VAC version available).





Total Harmonic Distortion (THD):

<0.35% at full rated power, from 10 Hz to 20 kHz.

I.M. Distortion:

<0.35% at 60 Hz and 7 kHz at 4:1, from -40 dB to full rated power.

Crosstalk:

>80 dB (below rated power) 20 Hz to 1 kHz.

DC Output Offset:

<2 mV

Input Impedance (nominally balanced, nominally unbalanced):

10 k ohms, 5 k ohms.

Maximum Input Voltage:

± 10 V balanced or unbalanced

Common Mode Rejection (CMR)

(20Hz to 1kHz, typical):
50 dB

Load Impedance:

Dual: 2, 4, 8, 16 Ohm

Bridge Mono: 4, 8, 16 Ohm

Gain Control (when enabled, switch selectable):

Voltage gain adjustable from 20 to 0 or from 63 to 0

Front Panel Controls and Indicators
Fault Indicator:

Red LED, one per channel, flashes when the amplifier output channel has stopped operating. Usually this means that the amplifier must be serviced.

Thermal Indicator:

Red LED, one per channel, illuminates when the channel has shut down, or is very near shutting down, due to thermal stress or overload.

Ready Indicator:

Green LED, one per channel, illuminates when the channel is initialized and ready to produce output. Indicator is off when the channel is set to standby mode via the System Architect or IQ Control Software packages.

Input Signal Indicator:

Green LED, one per channel, illuminates when the channel's input signal is above -40 dBu (8 mVrms).

Output Signal Indicator, -20 dB:

Green LED, one per channel, illuminates when the channel's output signal is within 20 dB of clipping.

Output Signal Indicator, -10 dB:

Green LED, one per channel, illuminates when the channel's output signal is within 10 dB of clipping.

Clip Indicator:

Red LED, one per channel, illuminates when the channel's output signal reaches the onset of audible clipping. The Clip Indicator also will illuminate during Thermal Level Control (TLC) limiting or when the input compressor/limiter is protecting the amplifier from input overload.

Cooling Vents:

Front-to-rear forced airflow.

Power Indicator:

Blue LED indicates AC power has been applied and is within the safe operating range of the power supply. The LED will flash when the AC line voltage is approximately 15% above or 25% below the nominal rated value.

Data Indicator:

Feature not implemented.

Bridge Mode Indicator:

Yellow LED illuminates when the rear panel Mode Switch is set to the "Bridge" Position.

Power Switch:

Push-on / push-off switch.



Back Panel Controls and Connectors

Power Cord Connector:

Standard 15 amp IEC inlet. A circuit breaker located near the IEC power inlet protects the amplifier from excessive AC current draw.

Reset Switch:

Resets the circuit breaker that protects the power supply.

Ventilation Grille:

Air flow is front to back. Do not block the ventilation grilles.

Input Panel:

Input module includes two balanced 3-pin removable barrier connectors. Input switch is described below. Behind the input panel are the Input Sensitivity Switches (not shown). One 3-position switch per channel selects various sensitivity settings.

Mode Switch:

This two-position switch is used to select the amplifier's mode of operation: Dual or Bridge Mono. Dual mode is used for 2-8 ohm loads. Bridge mode is used for 4-16 ohm loads.

"Y" Input Switch:

When set to ON, this switch parallels the input signals of the two channels, for use when the input signal is mono. The amplifier's channel outputs are still independent. The "Y" Input Switch also can be used to daisy-chain the signal to another amplifier.

Input Connectors:

Balanced 3-pin terminal block connectors, one per channel.

Channel Level Controls:

One 21-position detented rotary attenuator per channel, ranging from -100 dB to 0 dB gain.

High-Pass Filter:

One 3-position switch per channel selects between OFF (FLAT), 35 Hz and 70 Hz 3rd order filters.

Output Connectors:

One four-pole touch-proof terminal strip. Accepts up to 10 AWG terminal forks.

Output Cover (not shown):

This covers the output connectors, protecting users from the connectors' potentially high voltage. This cover is required for Class 2 wiring installations.

Physical Characteristics

Required AC Mains (+15%, -25%):

120V/60Hz (230V/50Hz version available).

Power Draw at Idle (120 VAC mains):

35W (Standby Mode).

Overall Group Delay:

< 120 usec.

Operating Temperature:

10°C to 50°C (50°F to 122°F), Maximum Output Power derated above 30°C (86°F.)

Humidity:

70% or less, non-condensing.

Cooling:

Front-to-back airflow.

Chassis:

The Amplifier is designed for stand-alone or rack-mounted operation. The Chassis is black aluminum with a powder coat finish. The unit occupies two EIA 19-inch-wide units.

Dimensions:

Width – 19 inches (48.3 cm)
Height – 3.5 inches (8.9 cm)
Depth – 14.25 inches (36.2 cm)

Net Weight:

27.0 lbs. (12.3 kgs.)

Shipping Weight:

32.0 lbs. (14.5 kgs.)

Protection

Fault

The amplifier will light the Fault LED if the amplifier output stage stops operating. If this happens, contact AE TECHRON for servicing information.

Low-Pass Filters

Gaussian-approximation ultrasonic filters prevent ultrasonic feedback and HF burnout of transducers. This type of filter preserves transient response better than a Butterworth filter.

AC Under/Over Voltage Protection

If the AC line voltage drops below 25% or rises above 10% of the nominal operating voltage of the amplifier, the amplifier's blue Power LED flashes. The LED will stop flashing and return to solid ON when the AC line voltage returns to safe operating levels.

Circuit Breaker

A circuit breaker located near the IEC power inlet protects the amplifier from excessive AC current draw.

Inrush Limiting

A soft-start circuit in the power supply minimizes the amplifier's current draw during power-on.

Output Power

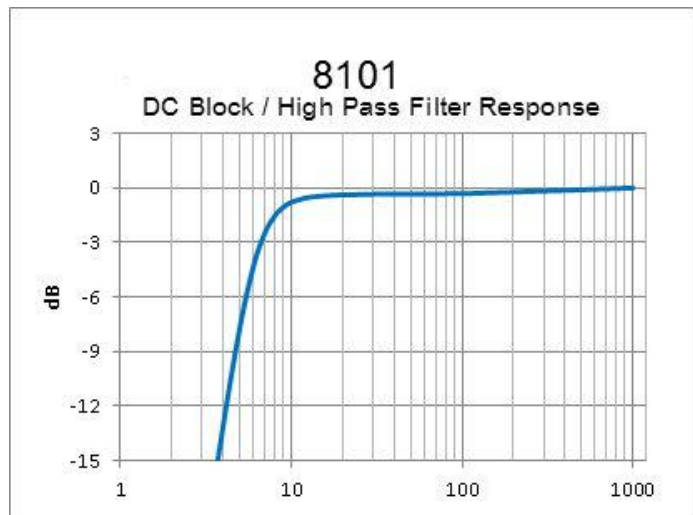
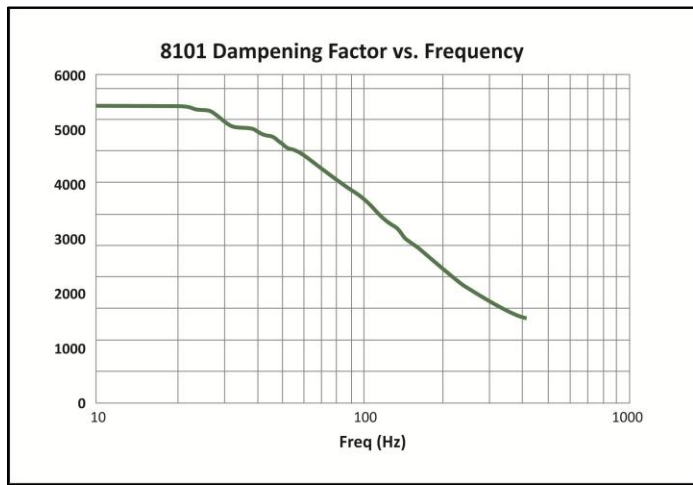
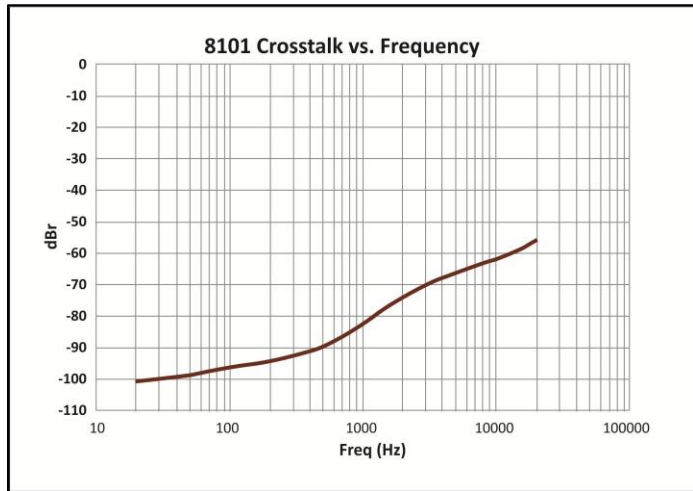
The following are typical output at 1 kHz from units configured for 120 VAC, 60 Hz power.

Dual Channel Mode – Output per Channel, Both Channels Driven

Ohms	PEAK OUTPUT						RMS OUTPUT				
	40mSec Pulse, 20% Duty Cycle		5 Minute, 100% Duty Cycle		1 Hour, 100% Duty Cycle		5 Minute, 100% Duty Cycle		1 Hour, 100% Duty Cycle		
	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Watts
open	167		167		167		118		118		
16.5	142	8.6	143	8.6	138	8	101	6.1	97.5	5.9	575
8	127	16	101	12.6	98	12	71.5	8.9	69.5	8.7	605
4	103	26	71	18	67	17	50	12.5	47.5	11.9	565
2	71	35	49	25	46	23	35	17.5	32.5	16.3	530
1	43	43	30	30	Not recommended		21.5	21.5	Not recommended		

Bridge-Mono Mode

Ohms	PEAK OUTPUT						RMS OUTPUT				
	40mSec Pulse, 20% Duty Cycle		5 Minute, 100% Duty Cycle		1 Hour, 100% Duty Cycle		5 Minute, 100% Duty Cycle		1 Hour, 100% Duty Cycle		
	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Volts	Amps	Watts
open	335		335		335		235		235		
16	255	16	202	13	197	12	144	8.9	139	8.7	1209
8	206	26	141	18	134	17	100	12.5	95	11.9	1130
4	141	35	99	25	92	23	70	17.5	65	16.3	1059
2	86	44	59	30	Not recommended		42	21.0	Not recommended		



AE Techron Sales Representative