AE TECHRON®

Precision Industrial Amplifiers

Application

The DV1.0 is available as a two channel AC-Coupled, controlled voltage amplifier or as a DC-Coupled, single-channel amplifier. The DV1.0 is idea for reactive loads and also has applications in both pulse and continuous duty applications.

DV1.0 PWM Industrial Amplifier

Features

> Output of 12 A_{rms} and 139 V_{rms} for one hour
> Output of 50 A_{pk} and 300 V_{pk} for 40 mSec
> Frequency bandwidth of DC - 19 kHz at full power, (with DC-Coupled option)
> Remote switching to standby mode by contact closure
> External monitoring of voltage and current output
> Equipped with circuitry to protect the amplifier from input overloads, improper output connection (including shorts and improper loads), excessive temperature, voltage or current.
> Shipped ready to operate using single-phase, 120-volt AC mains, (230 VAC version available).
> Installs easily into a standard 19-inch rack or stands alone for bench top operation

Front Panel Controls and Indicators

Fault Indicator: Red LED, one per channel, flashes when the amplifier output channel has stopped operating.

Thermal Indicator: Red LED, one per channel, illuminates when the channel has shut down or is very near shutting down because of thermal stress or overload.
Clip Indicator: Red LED, one per channel, illuminates when the channel's output signal reaches the onset of audible clipping. The Clip Indicator will also illuminate during Thermal Level Control (TLC) limiting or when the input compressor/limiter is protecting the amplifier from input overload.
Signal Indicators: Three green LEDs per channel indicate the amplifier's input and output signal levels.
Signal: input signal is above –40 dBu."–20 dB: amplifier output is 20 dB below clipping."–10 dB: amplifier output is 10 dB below"clipping
Ready Indicator: Green LED, one per channel, illuminates when the channel is initialized and ready to produce audio output.

Power Indicator: Blue LED indicates amplifier has been turned on and AC power is available. The LED will flash when the AC line voltage is 15% above or 25% below the nominal rated value.
Bridge Mode Indicator: Yellow LED illuminates when the rear-panel Mode Switch is set to the "Bridge" position.

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RMS Output per Channel - Both Channels Driven

	40mS			1 Hour		
Ohms	Volts	Amps	Watts	Volts	Amps	Watts
No Load	115			115		
16	101	6	631	98	6	594
8	90	11	1013	70	9	604
4	73	18	1332	48	12	564
2	50	25	1250	33	16	528
1	31	31	930	Not recommended		

RMS Output, Bridge Mono Mode

	40mS			1 Hour		
Ohms	Volts	Amps	Watts	Volts	Amps	Watts
No Load	230			230		
16	180	11	2025	139	9	1208
8	146	18	2665	95	12	1128
4	100	25	2500	65	16	1056
2	61	31	1861	Not Recommended		

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Back Panel Controls and Connectors

Power Switch: Push-on / push-off switch.
Power Cord Connector: Standard 15 amp IEC inlet. Voltage is indicated above IEC inlet.
Reset Switch: Resets the circuit breaker that protects the power supply.
Output Connectors: One four-pole touch-proof terminal strip. Accepts up to 10 AWG terminal forks.
Input Connectors: Balanced 3-pin terminal block connectors, one per channel.
Channel Level Control: One 21-position detented rotary attenuator per channel, ranging from minus infinity (–70 dB) to 0 dB gain.
Mode Switch: Two-position switch is used to select the amplifier's mode of operation: Dual or Bridge-Mono.

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Protection Systems

Thermal Level Control (TLC): If an amplifier channel starts to overheat, the TLC system will engage the input compressor. By compressing the input, the amplifier will not generate as much heat and will have a chance to cool down.
Junction Temperature Simulation (JTS): In the DV1.0, if excess power is demanded, JTS circuitry limits the drive level of the output devices to a safe range, preventing damage.
Fault: The amplifier will light the Fault LED if the amplifier output stage stops operating.
AC Under/Over Voltage Protection: If the AC line voltage drops below 25% or rises above 15% of the nominal operating voltage of the amplifier, the amplifier's power supply turns off and the blue Power LED flashes. The amplifier will turn back on when the AC line voltage returns to safe operating levels.
Circuit Breaker: This breaker 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.

Specifications

Frequency Response (at 1 watt, 20 Hz - 20 kHz): ±0.25 dB.
Signal to Noise Ratio below rated power (20 Hz to 20 kHz): 105 dB A-weighted.
Total Harmonic Distortion (THD) at full rated power, from 20 Hz to 20 kHz: < 0.35%.
Damping Factor: 10 Hz to 100 Hz: > 3000.
Crosstalk (below rated power, 20 Hz to 1 kHz): > 80 dB.
Common Mode Rejection (CMR) (20 Hz to 1 kHz): 50 dB.
DC Output Offset: < 2 mV.
Input Impedance (nominal): 10 kilohms balanced, 5 kilohms unbalanced.
Maximum Input Level: +20 dBu before input compression, +32 dBu absolute maximum.
Load Impedance (Note: Safe with all types of loads):
Dual: 2/4/8/16 ohms, or higher, Bridge Mono: 4/8/16 ohms, or higher.
Voltage Gain (at maximum level setting): 20

Physical Characteristics

Required AC Mains (+15%, –25%)**:** 120V/60 Hz, 230V/50 Hz.
Power Draw at Idle (120VAC mains):
35W (standby mode).
Cooling: Continuously variable speed forced air, front-to-back airflow.
Dimensions: 19 in. (48.3 cm) W x 3.5 in. (8.9 cm) H x 14.25 in. (36.2 cm) D.

Weight: Net, Shipping**:** 27.0 lb (12.2 kg), 32.0 lb (14.5 kg)

SUPPORT

When you purchase an AE Techron amplifier, a full complement of technical and factory support personnel join your team.

AE Techron provides:
> Applications engineering for your technical questions and customized product needs.
> A one year limited warranty to protect your equipment investment.
> A fully equipped service center to keep your amplifier operating at original performance requirements.

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