

# 7300A

## Two-Channel Power Amplifier

- Three-rack-space chassis with back-to-front air flow and low fan noise
- Patented Output-Z™ protection circuitry ensures full protection without audible side effects
- Front-mounted gain controls, clip and protect LEDs, and rack handles for easy access
- Octal sockets accept EV crossover and equalizer modules for easy system expansion

### SPECIFICATIONS

#### Conditions:

1. 0 dBu = 0.775 V rms
2. Dual-mode ratings are for each channel
3. Both channels operating at rated output power unless noted
4. 120-volt ac line input voltage maintained for all tests unless noted

#### Continuous Rated Output Power

(20-20,000 Hz at less than 0.1% THD, both channels driven per EIA RS-490),

**Dual Mode, 4 Ohms:**

300 watts

**Bridge Mode, 8 Ohms:**

600 watts

**Dual Mode, 8 Ohms:**

200 watts

**Bridge Mode, 16 Ohms:**

400 watts

#### Continuous Rated Output Power to

Subwoofer (20-20,000 Hz at less than 0.1% THD, both channels driven per EIA RS-490),

**Dual Mode, 4 Ohms:**

375 watts

**Bridge Mode, 8 Ohms:**

750 watts

**Dual Mode, 8 Ohms:**

225 watts

**Bridge Mode, 16 Ohms:**

450 watts

#### Continuous Rated Output Power

(1 kHz, 1% THD, both channels driven per EIA RS-490),

**120 volts ac Line Voltage,**

**Dual Mode, 4 Ohms:** > 400 watts

**Bridge Mode, 8 Ohms:** > 800 watts

**Dual Mode, 8 Ohms:** > 250 watts

**Bridge Mode, 16 Ohms:** > 500 watts

**108 volts ac (10% sag),**

**Dual Mode, 4 Ohms:** > 325 watts

**Bridge Mode, 8 Ohms:** > 650 watts

**Dual Mode, 8 Ohms:** > 200 watts

**Bridge Mode, 16 Ohms:** > 400 watts

**100 volts ac (17% sag),**

**Dual Mode, 4 Ohms:** > 230 watts

**Bridge Mode, 8 Ohms:** > 460 watts

**Dual Mode, 8 Ohms:** > 175 watts

**Bridge Mode, 16 Ohms:** > 350 watts

**Headroom, Single Channel Mode**

(before clip, at 1 kHz, 1% THD):

≥ 1 dB

**Power Bandwidth (at 1 kHz, +0/-1 dBr, where dBr equals rated output power in any mode):**

20-20,000 Hz

**Frequency Response (at 1 kHz, 1 watt output, +0/-3 dB):**

10-90,000 Hz

**Voltage Gain (at 1 kHz),**

**Dual Mode, 4 Ohms or 8 Ohms:**

33 dB

**Bridge Mode, 8 Ohms or 16 Ohms:**

39 dB

**Input Sensitivity for Rated Output Power**

(at 1 kHz, ±0.15 dB),

**Dual Mode, 4 Ohms:**

+0.1 dBu (0.78 V rms)

**Bridge Mode, 8 Ohms:**

+0.1 dBu (0.78 V rms)

**Dual Mode, 8 Ohms:**

+1.2 dBu (0.89 V rms)

**Bridge Mode, 16 Ohms:**

+1.2 dBu (0.89 V rms)

**Maximum Input Level (reference 1 kHz):**

+20 dBu (7.75 V rms)

**Input Impedance (reference 1 kHz),**

**Balanced:**

> 15 kilohms

**Unbalanced:**

> 15 kilohms

#### Polarity:

Positive-going signal applied to pin 2 of XLR or tip of 1/4-in. TRS jack produces positive-going signal at (+) output terminal

#### Phase Response (any mode),

**at 20 Hz:**

< +25°

**at 20,000 Hz:**

> -15°

**THD (any mode, 30 kHz measurement bandwidth):**

< 0.5% (Typ. < 0.01%)

**IMD [SMPTE 4:1] (Any mode):**

< 0.5% (Typ. < 0.01%)

**TIM (DIM 100) any mode:**

< 0.05%

**Rise Time, (10% to 90%, any mode):**

< 6µsec

**Slew Rate (at rated output power),**

**Dual Mode, 4 or 8 Ohms:**

> 30 V/µsec

**Bridge Mode, 8 or 16 Ohms:**

> 60 V/µsec

**Damping Factor, Dual Mode, 8 Ohms,**

**20-1,000 Hz:**

> 200

**20,000 Hz:**

> 75

**Crosstalk (reference 1 kHz, 0 dBr = rated output power into 8 ohms, single channel operating):**

< 75 dBr

**Noise (below rated output power, A-weighting filter, 8-ohm dual mode, 50/60-Hz ac line frequency):**

> 100 dB

**Amplifier Protection:**

Shortened output terminals

Over temperature

rf interference

7300A SPECIFICATION GRAPHICS

FIGURE 1 — Dimensions

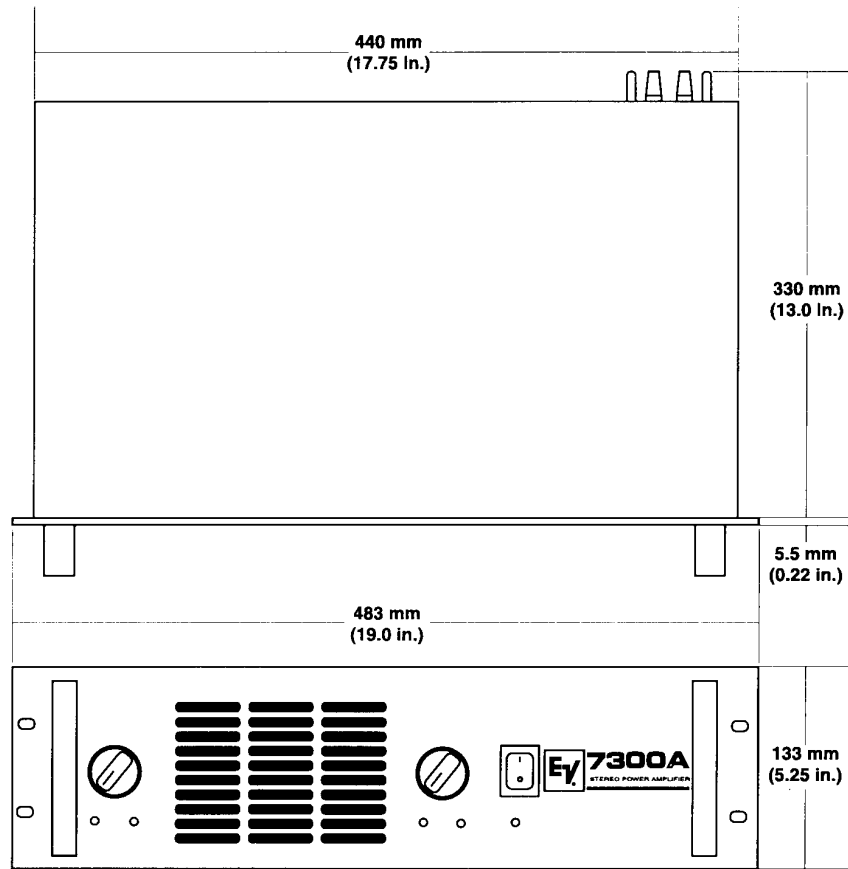


FIGURE 2 — Front and Back Panel

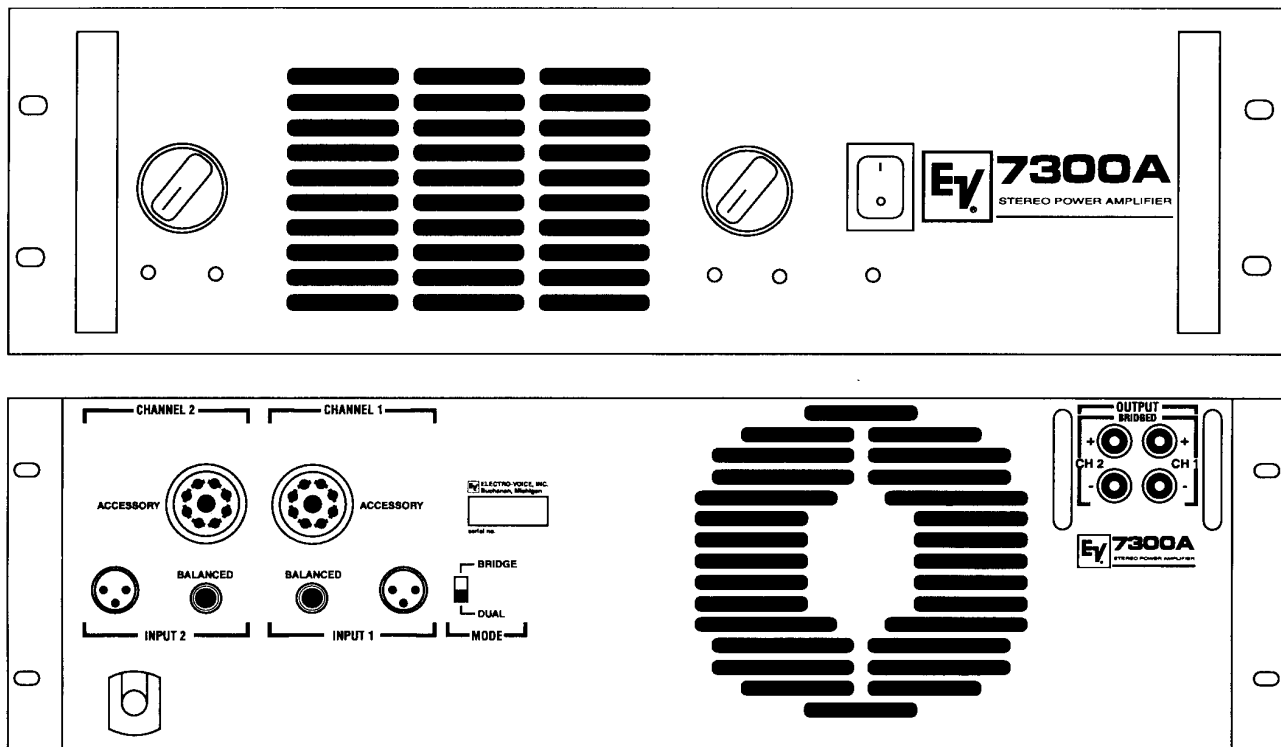


FIGURE 3 — Headroom LEVEL (dBu) vs Frequency (Hz)

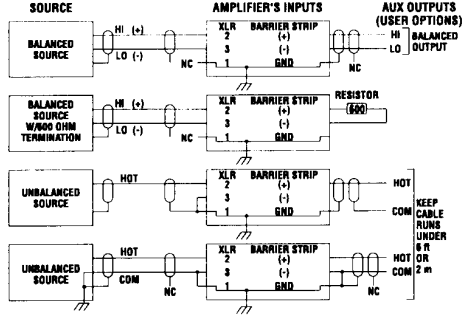


FIGURE 4 — A-weighted Noise (dBr) vs Frequency (Hz)

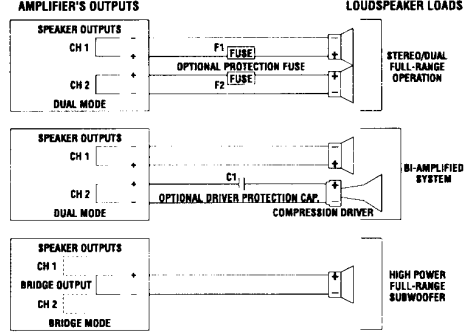


FIGURE 5 — Headroom Level (dBu) vs Frequency(Hz)

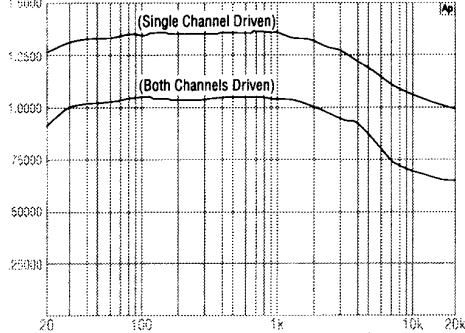


FIGURE 6 — A-weighted Noise (dBr) vs Frequency(Hz)

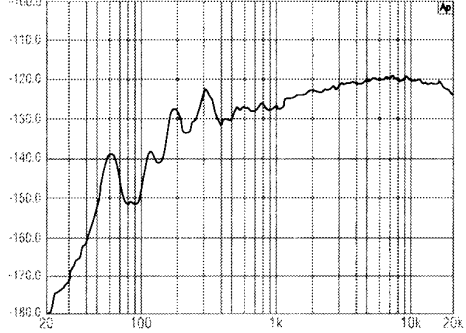


FIGURE 7 — 20 Hz (THD + N) (%) vs Output Power (W)

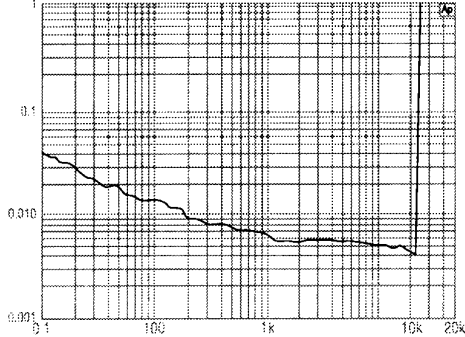
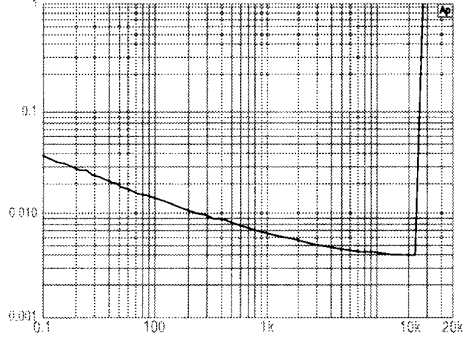


FIGURE 8 — 1 kHz (THD + N) (%) vs Output Power (W)



**Load Protection:**

- Startup/shutdown transients
- DC faults
- Infrasonic signals

**Cooling,**

**Heatsink:**

Thermally equalized 3/16-in. black anodized aluminum

**Fan:**

Thermostatically controlled dual speed, approximately 50 CFM at low speed and 100 CFM at high speed; ball-bearing fan has minimum life rating of 50,000 hours at 25 °C ambient temperature

**Output Topology:**

True complementary symmetry with grounded collectors (no mica insulators means better heat transfer)

**Output Type,**

- Dual Mode:** Unbalanced, each channel
- Bridge Mode:** Balanced

**Output Devices (16 devices),**

- $P_{d\max}$ : 250 watts
- $I_c$ : 16 A dc
- $V_{ce0}$ : 250 V dc
- $T_{j\max}$ : 200 °C

**Controls and Switches,**

**Rear:**

Mode switch

**Front:**

- Input level controls (two)
- Power-switch

**Front-Panel Indicators:**

- Power LED
- Clip LEDs (two)
- Protect LEDs (two)

**Connections,**

**Input:**

- 1/4-inch phone (two);
- Female XLR-type connectors (two);
- Octal accessory sockets (two)
- (powered with  $\pm 15$  volts dc at 25 mA)

**Output:**

Five-way binding posts (two)

**Power:**

3-terminal IEC ac line receptacle

**Power Requirements:**

120 V ac, 50/60 Hz, 1,000 watts (configurable to 240 V ac)

100 V ac, 50/60 Hz model available

**Power Consumption/Heat Produced (both channels operating, dual mode, with 1 kHz sinewave input signal at stated output power into 4 ohm loads),**

**Idle:**

72 watts/0.245 kBTU/hr

**One-Eighth Maximum Midband Power:**

720 watts/2.100 kBTU/hr

**One-Third Maximum Midband Power:**

1,068 watts/2.702 kBTU/hr

**Rated Output Power:**

1,464 watts/2.938 kBTU/hr

**Maximum Midband Power:**

1,680 watts/2.873 kBTU/hr

**Maximum Ambient Operating Temperature:**

60 °C (140 °F)

**Dimensions,****Height:**

133 mm (5.25 in.)

**Width:**

483 mm (19.0 in.)

**Depth (behind rack ears):**

330 mm (13 in.)

**Color:**

Black

**Enclosure:**

16-GA steel rack-mount chassis

<sup>3</sup>/<sub>16</sub>-inch 5052 aluminum alloy front panel**Shipping Weight:**

19.1 kg (42 lb)

**Net Weight:**

15.5 kg (34 lb)

**Supplied Items:**

Operating instructions and service manual; four "U" jumper plugs for octal sockets; one 5-A/250-V fuse for 220/240-V ac use; one detachable power cord

**Optional Plug-In Accessory Modules:**

APX 24-dB-per-octave Linkwitz-Riley crossover, switch selectable on ISO one-third-octave center frequencies from 50-10,000 Hz; APX-2 crossover, as APX but with external high-pass output for other amplifiers; APX-200 dual-channel equalizer for FR200 speaker system.

**DESCRIPTION**

The EV 7300A utilizes proven design concepts in conjunction with a new protection circuit to provide the musician an ultra-reliable amplifier with unmatched performance characteristics. It achieves this without increased complexity or cost, making it a real value.

Each channel delivers 250 watts of continuous average power at 1 kHz into 8 ohms, or 400 watts into 4 ohms. In the bridge mode, the amplifier can deliver more than 800 watts at 8 ohms.

Sixteen 250-watt, 250-volt metal output transistors are utilized for a total device power dissipation of 4,000 watts. A very quiet dual-speed fan is incorporated as an added reliability measure for the most demanding conditions. The massive <sup>3</sup>/<sub>16</sub>-inch heatsinks specially engineered to minimize thermal gradients, meaning that all of the output devices will operate at approximately the same temperature. As a result, the amplifier runs cooler than most, enabling it to operate under the most adverse conditions without failure.

Each channel is independently protected against:

- Over temperature
- Excessive output voltage
- Excessive phase shift
- Radio-frequency interference
- Shorted loads

The load is also protected from startup/shutdown transients, infrasonic signals, low ac line voltage and dc.

The proprietary "Output Z protection" circuit guards against premature current limiting and flyback pulses and assures the amplifier is

stable with any load regardless of its reactance.

The 7300A has electronically balanced inputs (both XLR and <sup>1</sup>/<sub>4</sub>-inch TRS) and unbalanced <sup>1</sup>/<sub>4</sub>-inch inputs. It also has octal accessory sockets for Electro-Voice modules. The output connectors are five-way binding posts. The transformer allows operation at 120 V ac and is configurable to 220/240 V ac, 50/60 Hz. A dedicated 100-V-ac model is available. The power cable is removable and utilizes an IEC connector.

Typical performance characteristics are shown in Figures 1 to 8 and each amplifier is measured for power and distortion before shipment. The EV 7300A is usable in any situation that demands high power levels and superior sonic performance.

**ARCHITECTS' AND ENGINEERS' SPECIFICATIONS**

The power amplifier shall be a dual-channel model of solid-state design employing true complementary-symmetry output circuitry with grounded collectors and capable of operating from a 120/240-volts-ac, 50/60-Hz line. The amplifier shall contain sensing circuitry to provide protection against over temperature, shorted output terminals, and radio frequency interference. The load shall be protected against infrasonic signals, startup/shutdown transients, and dc faults.

On the rear panel shall be a two-position mode switch for selecting between the dual-channel mode or the bridged monophonic mode. Input connections for each channel shall include a powered octal accessory socket for use with optional plug-in accessory modules, a three-pin female XLR connector and a <sup>1</sup>/<sub>4</sub>-in. TRS connector. Output terminals shall be binding posts.

Front panel indicators shall include an illuminated power on/off indicator, individually illuminating clipping ("CLIP") indicators, and individually illuminated protection-circuit-activation ("PROTECT") indicators. The front panel controls shall include two detented rotary potentiometers and the power on/off switch.

The power amplifier shall meet the following performance criteria. Maximum input voltage: 7.75 V rms. Input sensitivity for rated output power into 4 ohms: 0.784 V rms. Rated power: 300 watts per channel into 4 ohms from 20 Hz to 20 kHz at less than 0.05% THD; 200 watts per channel into 8 ohms from 20 Hz to 20 kHz at less than 0.05% THD; 400 watts into a 16-ohm bridged load from 20 Hz to 20 kHz at less than 0.05% THD; and 600 watts into an 8-ohm bridged load from 20 Hz to 20 kHz at less than 0.05% THD. Voltage gain in dual mode shall be 33 dB. Hum and noise: at least 100 dB (A weighted) below rated output power. Frequency response: 20 Hz to 20 kHz, +0/-1 dB at any power up to rated output power. Damping factor: greater than 200 at any frequency up to 1 kHz in dual mode with 8 ohm loads. Intermodulation distortion (SMPTE 4:1): less than 0.05%.

Transient intermodulation distortion (DIM 100): less than 0.05%. Crosstalk: less than 75 dB below rated output power. Operating temperature range: up to 60 °C (140 °F) ambient. Dimensions(H x W x D): 5.25 in. x 19.0 in. x 13.0 in. Net weight: 34 pounds. Color: black. Enclosure: rack-mounted chassis, 16 GA steel, <sup>3</sup>/<sub>16</sub>-inch 5052 aluminum alloy front panel.

The power amplifier shall be the Electro-Voice 7300A

**UNIFORM LIMITED WARRANTY**

Electro-Voice products are guaranteed against malfunction due to defects in materials or workmanship for a specified period, as noted in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual, beginning with the date of original purchase. If such malfunction occurs during the specified period, the product will be repaired or replaced (at our option) without charge. The product will be returned to the customer prepaid. **Exclusions and Limitations:** The Limited Warranty does not apply to: (a) exterior finish or appearance; (b) certain specific items described in the individual product-line statement(s) below, or in the individual product data sheet or owner's manual; (c) malfunction resulting from use or operation of the product other than as specified in the product data sheet or owner's manual; (d) malfunction resulting from misuse or abuse of the product; or (e) malfunction occurring at any time after repairs have been made to the product by anyone other than Electro-Voice or any of its authorized service representatives. **Obtaining Warranty Service:** To obtain warranty service, a customer must deliver the product, prepaid, to Electro-Voice or any of its authorized service representatives together with proof of purchase of the product in the form of a bill of sale or receipted invoice. A list of authorized service representatives is available from Electro-Voice at 600 Cecil Street, Buchanan, MI 49107 (616/695-6831 or 800/234-6831). **Incidental and Consequential Damages Excluded:** Product repair or replacement and return to the customer are the only remedies provided to the customer. Electro-Voice shall not be liable for any incidental or consequential damages including, without limitation, injury to persons or property or loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **Other Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**Electro-Voice Electronics** are guaranteed against malfunction due to defects in materials or workmanship for a period of three (3) years from the date of original purchase. Additional details are included in the Uniform Limited Warranty statement.

Service and repair address for this product: Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (616/695-6831 or 800/234-6831).

Specifications subject to change without notice.