# HDA100 and HDA100-BAT

## STEREO HEADPHONE AMPLIFIER

OPERATING AND MAINTENANCE MANUAL


*Model HDA100-BAT*

*Model HDA100*

## Description

The HDA100 is a rugged, battery or AC powered headphone amplifier that will provide excellent performance driving a wide range of typical stereo headphones. It will drive the usual 32 to 600 ohm high efficiency stereo headphones to teeth rattling levels around 120dB SPL with a combination of high output voltage swing (16Vp-p) for high impedance phones and a protected high current capability (0.2Ap-p) for low impedance phones. It will do the above at distortion levels below .10% and response flat to -.25dB measured over the full frequency range of 20Hz to 20kHz.

The HDA100 will bridge (40Kohms) both balanced and unbalanced input lines with individual left and right XLR input jacks. Connect balanced inputs HI to XLR pin 2, or TRS-TIP and LO to XLR pin3 or TRS-RING, Shields go to XLR pin 1 or TRS-TIP and with the cable shield to XLR pin 1 or TRS-SHLD. Be careful to observe HI-LO input polarity to avoid monaural or center stage cancellation effects. The unused TRS or XLR connector pair may be used to loop through the input signal to additional HDA100 units. The wiring to the rear panel TRS connectors is not the same as the wiring for the stereo headphone jack/plug on the front panel.

The HDA100 is shipped setup for +4dBu nominal input level (+24dBu peak). An internal jumper plug P1 may be moved for additional input gain to accommodate RCA jack levels at –10dBu (.25V) nominal (+12dBu peak). To change P1, remove the top cover by removing the four upper Phillips head screws (two on each side). P1 is located on the PC board directly behind the volume control and has two positions. For –10dBu inputs move the plug toward the front. For +4dBu inputs move the plug toward the rear. Ensure that no internal wiring is caught or pinched, and replace the cover and screws.

The HDA100 will provide a comfortable listening level of 1mW at around 12 o’clock on the volume control for most headsets. The amplifier is capable of driving many headsets to dangerous levels over 120dB SPL. If you can hear distortion, it’s TOO LOUD! Levels near 120dB SPL can easily cause PERMANENT HEARING DAMAGE.

The HDA100 is powered by 24VDC from an external power module such as the WA100-1. The DC power connector is center pin negative, sleeve position with a 2.1 mm center pin and a 5.5mm outer sleeve. Two HDA100 can share one WA100-1 with accessory DC loop-thru cable 20602-1.

Model HDA100-BAT requires the use of two 9V Alkaline or Lithium batteries which are inserted in the unit’s top cover.

## SPECIFICATIONS

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| **OUTPUT** | 120dB SPL driving typical 32 to 600 ohm headphones; provides 16V p-p for high impedance headphones and up to 0.2A p-p to low impedance headphones |
| **INPUT** | +4 or -10dBu nominal level (internal jumper plug selection) for 1mW output; +24dBu maximum input level, 40Kohm balanced input impedance |
| **DISTORTION** | .1% maximum THD, 20Hz to 20kHz, below clipping |
| **RESPONSE** | +0/-.25dB 20Hz to 20kHz |
| **NOISE** | -94dBm E.I.N., 20kHz measurement bandwidth |
| **CONNECTORS** | Input: ¼-inch TRS jacks and XLR connectors<br>Output: ¼-inch TRS stereo jack<br>Power: Cylindrical 5.5mm OD, 2.1mm 1D, pin negative. |
| **POWER** | 24VDC nominal at up to .2A from 115VAC external power supply, WA100-1 (included). Specify WA100-2-EXCH for operation from 230VAC. Model HDA100-BAT can be powered by two 9V batteries installed in top cover. |
| **SIZE** | 1.72” (4.4cm) H X 5.75” (14.6cm) W X 6.0” (15.2cm) D |
| **NET WEIGHT** | 1.5 lbs. (0.7kg) |
| **POWER SUPPLIES** | |
| WA100-1 | Wall mount power supply (UL, CSA), 24VDC @ .4 Amp, 115 VAC/60 Hz supplied as standard |
| WA100-2-EXCH | Table top power supply with IEC 320 AC connector, 24VDC @ .4 amp, 230VAC/50 Hz (optional exchange for WA100-1 |
| **WARRANTY** | Limited, One Year Warranty |