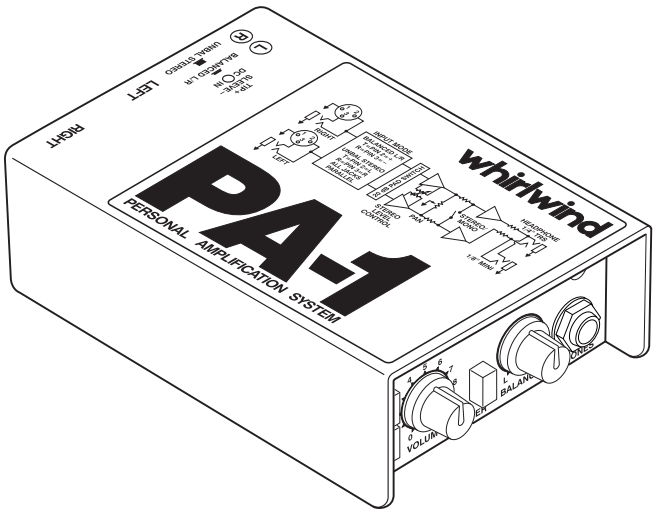
PA-1

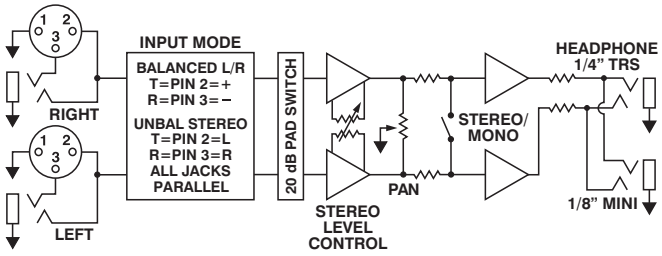
PERSONAL AMPLIFICATION SYSTEM



The whirlwind PA-1 is a high quality, portable stereo headphone amplifier designed to deliver superior sonic accuracy in any audio monitoring application. High output level combined with very low distortion make the PA-1 suitable for critically listening to all professional audio sources in any environment. The PA-1 accepts both balanced and unbalanced stereo line level signals through paralleled XLR and 1/4" TRS inputs. A switch changes the input configuration from separate balanced stereo inputs to unbalanced TRS (ring-right/tip-left) for sources such as headphone jack outputs. Power is supplied by two nine volt batteries that load into easy access drawers or an external AC supply which is included.

whirlwind®

CIRCUIT DESCRIPTION



The PA-1 accepts line level inputs and will monitor both separate balanced left and right feeds and unbalanced stereo signals on a single connector. Each channel has a female XLR and a 1/4" TRS jack that are parallel wired with pin 2 wired to tip, pin 3 wired to ring and pin 1 connected to shield. This feature allows for loop through operation with commonly available adapter cables. The input mode select switch changes the input wiring from balanced left and right to unbalanced stereo. The XLR and 1/4" jacks are all paralleled together in unbalanced stereo mode. After the input hardware the audio can be attenuated by 20 dB by applying the pad. Signals are then routed to balanced buffers and the stereo gain circuit. Volume is controlled by a dual gang potentiometer, which provides a gain range of -60 to +15 dBm of gain. The volume control has an audio type taper from the 9 o'clock to 3 o'clock positions with larger amounts of gain and cut at the extremes (above 3 o'clock and below 9 o'clock). The stereo signals then go through a standard audio taper pan potentiometer, for balancing the signal in the two earpieces. The stereo/mono switch, when in mono, allows the PA-1 to be used as a two mix monitor. In mono mode, the pan pot serves as a mix control adjusting the blend of the two input sources in both ears. The output drivers of the PA-1 are capable of delivering high sound pressure levels with low impedance headphones. Turn the volume control down before putting on headphones to prevent accidental ear damage. Both 1/4" and 1/8" jacks are available on the PA-1 for use with all types of headphones. The PA-1 is powered by 2 nine volt batteries or the supplied PS-24 wall power supply. When using the PS-24, the batteries are automatically disconnected.

WARRANTY

This product is guaranteed to be free from defects in materials and workmanship to the original purchaser for a period of (2) years from the date of purchase. Should service be required, return the unit postage prepaid along with the original sales receipt to:

whirlwind
Attention - Repair
99 Ling Road
Rochester, New York 14612

The warranty on this product shall not apply to defects or damage resulting from abuse, abnormal use or from repairs or modifications performed by anyone other than whirlwind. If it is determined a manufacturing defect has occurred, whirlwind will repair or replace the unit at our option and pay the postage back to you.

⚠ WARNING

THIS UNIT IS CAPABLE OF DELIVERING HIGH SOUND PRESSURE LEVELS. PERMANENT HEARING LOSS CAN RESULT FROM EXPOSURE TO VERY LOUD SIGNALS. MAKE SURE TO TURN THE VOLUME DOWN BEFORE CONNECTING HEADPHONES.

SPECIFICATIONS

Frequency Response	-2.5 dBm at 20 Hz -.4 dBm at 20K Hz ±3 dBm 17-61K Hz
Input Impedance	20K ohm with PAD off 200K ohm with PAD on
Maximum Input Level	+20 dBm with PAD off +40 dBm with PAD on
Output Impedance	10 ohms (headphone)
Maximum Output Level	+10 dBm into 30 ohm headphones +18 dBm into 10K load
Rise Time	5.6 u S
Headphone Impedance	30 ohm minimum
Noise	Battery power -84 dBm full up -100 dBm full down PS24 power -88 dBm full down -83 dBm full up
Stereo Separation	68 dBm at 1K Hz / 45 dBm at 20K Hz
Range of Gain Controls	-60 to +15 dBm
T.H.D. +N	.006% at 1K Hz <.055% 20-20K Hz
Power Consumption AC Adapter	35 mADC idle, 105 mA full clean in 30 ohms, 148 mA full clip
Power Consumption Batteries	25 mADC idle / 60 mA full clean in 30 ohms, 80 mA full clip
Stereo Tracking	1 dBm from 9 o'clock position to full CW
C.M.R.R. of Inputs	74 dBm at 60 Hz
Weight	1.22 lbs. with batteries
Size	6" x 3 7/8" x 2 1/8"

CONTROLS AND FUNCTIONS

1. MONO/STEREO SWITCH allows selection of either stereo or mono operation. In mono mode two separate inputs can be mixed in conjunction with the balance control.

2. PAD SWITCH attenuates the input -20dB when applied to the circuit.

3. VOLUME controls the amount of signal that is delivered to the headphones.

4. POWER LED when lit, indicates that the unit is functioning and has enough power.

5. POWER SWITCH when activated, illuminates the LED, indicating that the unit is receiving power from either two nine volt batteries or the included AC power adapter.

6. BALANCE adjusts the relative levels of the right and left channels in stereo mode or two separate channels in mono.

7. PHONES provides connection for headphones with 1/4" or 1/8" plugs. Both jacks can be used simultaneously, but total minimum headphone impedance is 30 ohms.

8. TRS INPUTS are left and right 1/4" jacks parallel wired to the XLRs for looping, pin 2=tip, pin 3=ring.

9. DC IN applies DC current from the included wall supply or other 18-24v DC power supplies that are wired tip positive and sleeve negative.

10. INPUT MODE SELECT SWITCH allows the choice of balanced left and right inputs or unbalanced stereo inputs. In unbalanced stereo mode all four input jacks are paralleled together.

11. XLR INPUTS for balanced left and right signals or the input of two separate sources when used in mono mode.

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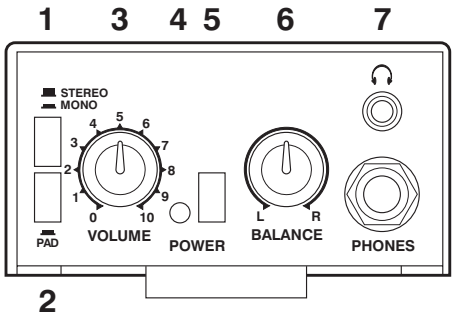

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