
acūrus
Accuracy from the U.S.
Passive Control Section
VOLUME
BALANCE
acūrus
Direct Input Amplifier
DIA 100

■ **The Acurus DIA100 MK II revolutionizes lower cost amplification. It improves sound quality through simplification, thereby reducing the cost of high end audio. Reviews from Europe and Asia unanimously acclaim these U.S. made components for their price, performance and construction. The following will help you to understand the radical concept behind the DIA100 and explain its design philosophy.**

What is a DIA 100?

DIA stands for Direct Input Amplifier™. The 100 signifies 100 watts per channel into 8 ohms. A Direct Input Amplifier™ does exactly what its name implies. It allows the audio sources such as CD, Tape and Tuner, to be connected directly to the power amplifier without the need of a preamplifier.

Is a preamplifier built into the DIA 100?

No. In the DIA100 concept, there is no preamplifier circuit used or required. By eliminating the need to pass the source's signal through a preamplifier's gain stages, we maintain the integrity of the original signal, while eliminating the cost of additional circuitry. A DIA100 is therefore a power amplifier with volume and balance controls, and switches for selecting the source.

What is High Sensitivity Amplification™?

Most power amplifiers need between one and two volts input to be driven to full power. Although a CD player with a special test disc is capable of 2 volts output, the typical CD allows for only a fraction of this voltage. To allow the DIA100 to be driven to full power with a typical CD, the amplifier was made 6 to 10 times more sensitive. Hence the name High Sensitivity Amplification™.

What is in the Passive Control Section?

The Passive Control Section contains the following components:

- 2 precision laser trimmed potentiometers for volume and balance controls. The same as found in preamplifiers costing thousands of dollars.
- 2 switches, one for listen functions and one for recording. The contacts are "silver to silver", for excellent conductivity and durability.
- Gold plated, direct-to-circuit-mount input connectors, for superior connections to the sources.
- A dual sided glass-epoxy circuit board, to which all the above components are soldered.

How is a Passive Control Section applied to High Sensitivity Amplification™?

A tremendous amount of engineering research was required to bring this concept to reality. The amplifier's input is carefully tuned to the Passive Control Section, and the internal wiring between them. In addition, a separate internal chassis encloses the Passive Control Section, thereby protecting the inputs from noise generated by the amplifier's power supply. This feature is important because, as sensitivity is increased, so is noise and distortion.

Why can't the Passive Control Section be placed in a separate chassis, so it can be connected to any power amplifier?

Because it won't work. You would run into the same problems as you would with a passive preamp attached to a normal power amplifier. Impedance mismatches would occur that will significantly alter the frequency response. In addition, phase shifts will affect imaging and sound stage. The low sensitivity of the power amplifier will also restrict dynamic range.

Why the lack of tone controls?

For the same reasons that every state of the art preamplifier has no tone controls. First, the tone controls cannot compensate for problems with the listening room or in the recordings. These problems occur at very specific frequencies, and tone controls affect the entire spectrum of frequencies. This causes a broad imbalance of the music, in addition to severe phase shifts which deteriorate the sound stage, and localization of the instruments. Finally, it completely negates the idea of passing the source signal through the least amount of active circuitry. If there is a switch to bypass the tone controls, the source signal must pass through an additional two contacts in the switch, which are subject to degradation. That is why the DIA100 has only one switch between the source and the loudspeakers.

How good an amplifier is the DIA 100?

It is superior to any amp/preamp combination in its price range. With the DIA100 we have succeeded in reducing the amount of active circuitry necessary in the audio chain. The transistors are all bipolar in design for high current capability, and the massive toroidal transformer enables the DIA100 to effortlessly drive low impedance loudspeakers. High Sensitivity Amplification™ requires only a single gain-block between the source and the speakers. This gain stage utilizes the same circuit topology as the highly regarded Acurus A250 power amplifier. It is closer to the Holy Grail of audio, " a straight wire with gain", than anything else available .

DIA100 MARK II

Direct Input Amplifier™

SPECIFICATIONS

Rated Power:
100 watts per channel continuous, both channels driven into 8 Ohms, 20 Hz – 20,000 Hz at no more than 0.09% THD.
150 watts per channel continuous, both channels driven into 4 Ohms, 20 Hz – 20,000 Hz.

Frequency Response:
20 Hz – 20,000 Hz ± 0.25 dB

Signal to Noise Ratio:
100 dB, A weighted

Input Impedance: 10k Ohms

Input Sensitivity:
200 millivolts for full output

Voltage Gain at Full Volume: 43dB

Damping Factor: > 300

Tape Outputs: 2

Source Inputs: 6

Dimensions:
17" Wide
5" High
14" deep

Weight: 35 lbs.

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