

Accuphase

STEREO POWER AMPLIFIER

P-20



The most important factor in evaluating a power amplifier is the quality of sound energy that it can deliver. This normally is dependent to a great extent on high power output, but since many of today's high-efficiency floor-type speakers can be fully driven with moderate power, the quality of sound energy a power amplifier can deliver becomes the major decisive factor.

The Accuphase P-20 is a medium power amplifier which was designed and produced after years of uncompromising research and planning. It assures "perfection" in musical reproduction when used with such high efficiency speakers of top quality. It has a power output of 70W/channel (into 8 ohms, both channels simultaneously driven, 20-20,000 Hz, distortion less than 0.1%).

The P-20 is a very versatile amplifier with built in power supplies for each left and right channels. It can eliminate inter-channel interference and with its extra heavy-duty capability, it can deliver stabilized energy even at amplification applications which require top grade amplifier performance. Musical reproduction of the highest quality can be expected from such multi-amplifier installations which use the P-20.

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*Two Monophonic Amplifiers in Stereo Construction

The P-20, each channel with its own independent power supply, can be considered consisting of two separate monophonic amplifiers, and assures practically an ideal condition to minimize inter-channel interference, which may be caused by layouts of parts and wiring in a stereophonic amplifier.

*Push-pull Circuits Throughout Assure High Stability, Good Linearity and Wide Dynamic Range

Accuphase's original innovation, the utilization of push-pull amp circuits in every stage, is also adopted in the P-20. This minimizes phase distortion and also ensures outstanding linearity over a wide dynamic range, as well as good stability against temperature changes and line voltage fluctuations.

*High S/N, Low Residual Noise

Residual noise is that which is created within a power amplifier itself. It has no connection with the strength of the external signal. If an amplifier's residual noise characteristic is high, its S/N ratio and PPP characteristics will be poor. Residual noise is also a source of annoying interference during no signal conditions. It becomes more pronounced when high efficiency speakers are used.

Residual noise, however is practically non-existent in the P-20 due to the most discriminating choice of parts and painstaking circuit design. It is almost unnoticeable even when the P-20 is connected directly to a horn driver in a multi-amplification application.

*Damping Factor Selector Enhances Speaker Performance

The Damping Factor (DF) of solid state amplifiers is normally very high and is ideal for damping speakers. Increasing the damping factor, however, does not always improve speaker performance, especially with large floor-type speakers operated under certain acoustic environments. This is especially true with speaker systems developed during the vacuum tube era.

The P-20 is built to work well with all types of speaker systems and enhance their performance. It is equipped with a Damping Factor Selector Switch which can control balance and richness of sounds in reproduction to get the best sound that any speaker system is capable of producing. Power is not lost when the damping factor is changed, as it is done by varying Current Feedback.

*Perfect Overload Measures

According to a test conducted by the U.S. Magazine Stereo Review concerning perceptibility of clipping distortion, it is reported that up to 3dB clipping could not be detected for string instruments in which such distortion is most noticeable. In the case of piano music, clipping distortion only become apparent after clipping of 5dB. In other words, one can not notice distortion of sound when a 150 watt string instrument peak signal is reproduced through a 75W amplifier at its maximum power output, or when piano music is reproduced through a 42W amplifier. However this is subject to a condition that such amplifiers must have adequate power supplies that assure stabilized energy at their rated maximum power outputs.

For this reason it is important particularly for low and medium power amplifiers to have some means to handle such peak input signal surges without tripping the Protection Circuit and cutting off the program source.

The P-20 is equipped with just such Protection Circuit. It can handle any input signal, no matter how large as long as it is alternating, i.e. music waveform, without cutting off the program source. At the same time, it provides sure protection against short circuits and overloads in the output and speaker circuits.

*Subsonic Filter Eliminates Noise

Subsonic vibrations can cause intermodulation problems of interference and damage the speaker system. The P-20 is equipped with a 17Hz 18dB/Oct. Subsonic Filter which completely eliminates such problems.

*1 dB Step Attenuator

An independent power amplifier should have its own Level Control so that it can be adjusted in accordance with speaker efficiency, or the volume level of sound reproduction. The P-20 is equipped with a detent type attenuator with which volume level can be adjusted down to -20dB in 1dB steps.

*Guaranty Specifications

Performance Guaranty: Products of Accuphase guarantee specifications stated.

POWER OUTPUT: (both channels driven from 20Hz to 20,000Hz with no more than 0.1% total harmonic distortion):

100 watts per channel, min. RMS, at 4 ohms
70 watts per channel, min. RMS, at 8 ohms
35 watts per channel, min. RMS, at 16 ohms

TOTAL HARMONIC DISTORTION: (from 20Hz to 20,000Hz at any power output from 1/4 watt to rated power):

4 ohms; 0.1% max.
8 ohms; 0.1% max.
16 ohms; 0.1% max.

INTERMODULATION DISTORTION:

will not exceed 0.1% at rated power output for any combination of frequencies between 20Hz and 20,000Hz

FREQUENCY RESPONSE:

20Hz to 20,000Hz; +0, -0.2dB at rated power output
5Hz to 90,000Hz; +0, -3.0dB at rated power output

SLEWING RATE: 15V/ μ S

DAMPING FACTOR: (8 ohms load at 40Hz) changeable for 50, 5, 1

INPUT SENSITIVITY AND IMPEDANCE: 1.0 Volt, 100 kohms, for rated power output at the maximum level control

HUM AND NOISE: 100dB below rated output

OUTPUT LOAD IMPEDANCE: 4, 8 and 16 ohms

SUBSONIC FILTER: cutoff frequency: 17Hz, 18dB/oct.

ATTENUATOR: precision, 1dB stepping type

POWER REQUIREMENT:

Voltage Selector for 100V, 117V, 220V, 240V 50/60Hz operation

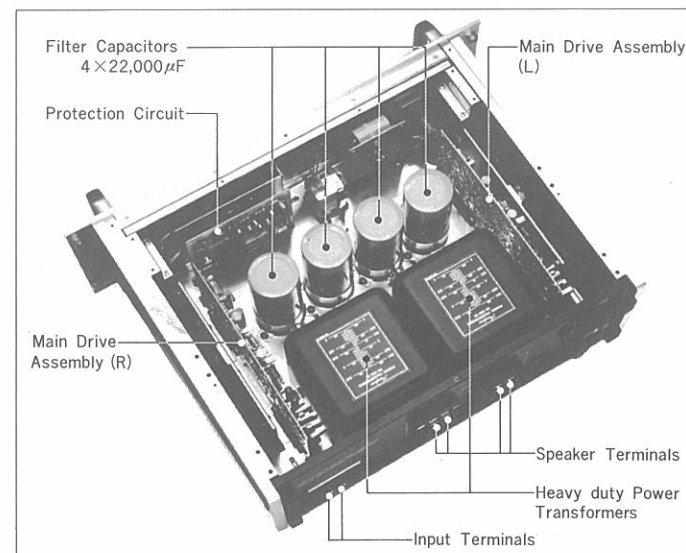
Consumption: 45 watts at zero signal output
290 watts at rated power output into 8 ohms load
530 watts at rated power output into 4 ohms load

SEMICONDUCTOR COMPLEMENT: 60 Transistors, 44 diodes, 1 IC

DIMENSIONS: 482mm (19 inches) wide, 150mm (6 inches) high, 353mm (13-7/8 inches) deep

*mountable on 19" standard rack, rack mount pitch; 100mm (4") rack inside horizontal measurement; 430mm (16-15/16")

WEIGHT: 23.5 kgs (51.7 lbs) net, 28.1 kgs (61.8 lbs) in shipping carton



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