The 230 V AC and 120 V AC versions of the PS-530 differ regarding meter voltage indication, AC output connector shape, supplied power cord, etc. Make sure that you have the correct version.

The photograph shows the 230 V version.

The photograph shows the 230 V version.
Amazingly pure energy source with momentary 40 A (80 A) current capability — Clean AC power supply with revolutionary waveform shaping technology delivers up to 510 VA

Every audio component draws all of its energy from the power supply which in turn is connected to the AC power grid. The Clean Power Supply components from Accuphase are products that remove noise and impurities from the AC power line through a groundbreaking new approach, resulting in a drastic improvement of the sound and picture quality of connected audio and video equipment. Without relying on an oscillator, the reference waveform is created with further improved accuracy and is linked to the power section by a balanced connection to ensure incredibly low distortion in the output waveform. The PS-530 can deliver as much as 510 VA, covering the requirements of most standard audio components.

### Innovative Technology

#### Low-distortion reference waveform generator

To generate the 230 V (120 V) sine wave reference signal, the zero-cross point at the secondary winding of a measurement circuit transformer is detected by a comparator and used by the high-precision power supply to generate a square waveform. The square wave then is routed through a newly developed 50/60 Hz band pass filter and a six-stage band elimination filter (BEF). The filter frequency is switched in sync with the input frequency, for automatic 50 Hz and 60 Hz support. By routing the signal through another band pass filter, a low-distortion sine wave (reference signal) is created that is not dependent on the input voltage.

#### Outstanding waveform compensation power

Figure (a) shows a severely distorted waveform such as commonly encountered in ordinary AC outlets at home. Simple filtering will never be able to bring this waveform back to the intended shape. Figure (b) shows the condition where noise is affecting the AC power. Filtering will be able to remove some of the higher frequency noise components but low frequency components are very difficult to remove. The PS-530 incorporates power waveform shaping technology that uses a clean reference waveform and works in real time to provide exactly the required compensation and remove any unwanted components. Distortion is reliably eliminated and the result is a perfectly clean source of energy.

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Operational Block Diagram of PS-530

![PS-530 Operation Block Diagram](image)

Reference waveform assembly

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Waveform shaping principle of PS-530

![Waveform shaping principle](image)

The figures in brackets apply to the 120 V version.
Almost electrical devices used in a household convert the AC supplied by the outlet into a DC current for powering internal circuits. This task is performed by a rectifier. As shown in photograph ①, the rectifier load current has a pulse waveform with a large current flowing momentarily in the vicinity of the voltage peak. This causes a voltage drop, resulting in clipping of the voltage waveform, as shown in photograph ②. A clipped waveform with a high amount of distortion contains many unwanted frequency components, or harmonics, as shown in the left-side graph below. When entering the audio circuitry of an amplifier through the power supply, such harmonic components can interfere with the audio signal and cause intermodulation distortion which greatly affects sound quality.

When passing through the PS-530, harmonics within the audible range are largely removed (frequency spectrum in the right-side graph below), and the result is a clean sine waveform as shown in photograph ③.

Clean and Powerful Energy Supply

Power supply waveform and clean PS-530 output waveform

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When passing through the PS-530, harmonics within the audible range are largely removed (frequency spectrum in the right-side graph below), and the result is a clean sine waveform as shown in photograph ③.

Optimized heat sink construction for ideal thermal dissipation

The power amplifier section (with heat sink) is designed to ensure maximum thermal dissipation efficiency while maintaining a suitable weight balance.

Advanced Features

Three-step interference rejection

The input side of the PS-530 is equipped with a line filter for removing any high-frequency noise components present in the power line, such as generated for example by digital equipment. The primary and secondary windings of the power transformer are kept totally separate, and the fully shielded design shuts out any externally induced noise. Since the amplifier uses the feedback principle, output impedance is extremely low. This prevents any possibility of mutual interference between components connected to the outputs of the PS-530. The graph above shows the frequency spectrum of the power line and of the PS-530 output. It can be clearly seen that harmonic components in the audible frequency range are almost completely removed when power passes through the PS-530.

Exceptional current capability

The power amplifier which performs the waveform adding/subtraction action is designed for ample waveform compensation performance and complete operation stability. The final stage employs bipolar power transistors rated for a maximum current of 15 amperes. These devices are connected in a 10-parallel complementary push-pull arrangement which boasts a rated output current of 2.22 A (4.25 A) and an instantaneous peak current (inrush current) rating of 40 A (80 A). This demonstrates the excellent current capability of the PS-530.

Built-in meter allows easy monitoring of output power (VA), input/output voltage (V), and input/output distortion (%)

Overload indicated by flashing LEDs

The power consumption of audio components such as integrated amplifiers or power amplifiers differ considerably depending on the volume. Being able to check while actually playing music is therefore highly useful. The meter of the PS-530 lets the user see at a glance how much power the connected equipment is consuming at any given time. If the maximum rated output power of 510 VA is exceeded, the meter function selector LEDs flash as a warning indication.

Reliable protection functions

If any kind of problem should occur during operation, the circuit protector immediately is triggered to protect the unit and any connected components from possible damage.
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