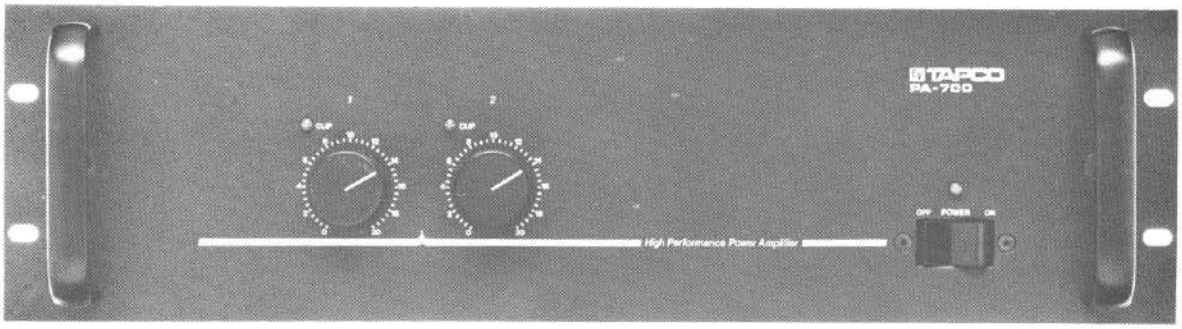
POWER AMPLIFIERS

Introduction:

TAPCO Power Amplifiers are built to meet the reliability standards demanded of sound reinforcement equipment and yet provide exceptional sonic quality required in recording applications. With TAPCO amplifiers, you get the kind of stability and sound quality you would expect from a product specially designed for a special job.

PA-700

STEREO HIGH PERFORMANCE POWER AMPLIFIER



Description:

The new PA-700 is a rugged, high performance amplifier offering 355 watts/channel into 4 ohms, 210 watts/channel into 8 ohms and 710 watts/mono-bridged into 8 ohms. Built for reliability, it has just the features you need. Advanced circuitry reduces distortion and noise to inaudible levels. The high damping factor assures clean, solid bass response. The welded steel chassis means solid roadability, while the modular construction provides ease of service. The exceptional thermal capacity does not allow the amplifier to overheat, thereby lengthening its life, while the two-speed fan lets the unit run much quieter under most operating conditions. High input sensitivity allows the amplifier to handle almost any pre-amplified audio signal, and sophisticated Loss of Feedback clipping indicators (LEDs) warn you when clipping occurs on either channel.

Mono Operation

Where higher power capability is required, or when balanced line operation is needed, the PA-700 may be switched to the mono mode. Conversion to mono operation is accomplished with the rear panel switch. In this mono-bridged mode, the output of the PA-700 will drive 625 watts into 70 volt lines, a requirement for installations with long distances between the amp and speakers.

Conservative Thermal Design

Heat dissipation in the TAPCO PA-700 is accomplished by the use of massive heat sinks (mounted directly to the circuit boards) and forced air cooling provided by a two-speed fan. The heat sink areas have been calculated to provide generous margins of dissipation capabilities, so the output devices operate significantly below maximum recommended temperatures. This assures maximum amplifier life and reliability.

Protection

The circuit breaker on-off switch removes the need to carry spare fuses, and assures the proper "trip" point, as apposed to a fuse (which can be replaced by a wrong value, or can vary with temperature.)

The output circuitry is fully protected by voltage-current limiting. This protection circuit protects the amplifier under gross fault conditions such as short circuits, very low load impedances, or overly reactive loads. When the amplifier is overdriven, the protection circuit is activated, so the amplifier is always positively protected from output faults.

An additional Fail-Safe is provided by the PA-700's load relay system. It eliminates "spikes" and "thumps" to the speakers during turn-on and turn-off, and automatically disconnects the speakers should it sense DC voltage on the output terminals. This system completely eliminates the possibility of speaker failure from DC exposure.

FEATURES:

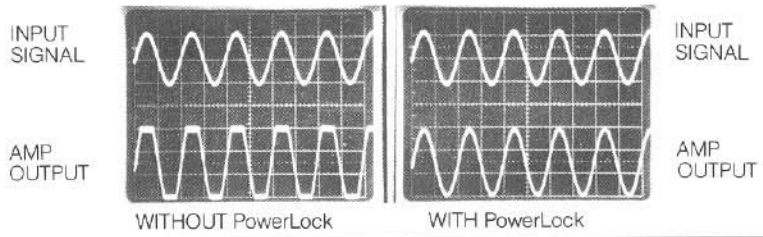
- Modular Design
- Steel Construction
- Two-Speed Fan
- Power Turn on/off Relay
- DC Protection Relay
- High Speed 15mHz Op-Amp Front End
- 70-Volt Line-Driving Capability (in Mono-Bridged Mode)
- Power (on-off) Circuit Breaker Switch
- LED Power Indicator
- Independent Channel 1 & 2 Level Controls (Detented)
- LED Clipping Indictor per channel
- Mono/Stereo Switch (Rear Panel)

PowerLock[PAT.]

A very common source of distortion in amplified sound is clipping. This harsh sound, which results from asking more of an amplifier than it's able to deliver, not only destroys the clean tonal quality of music, but is often responsible for destroying expensive horn drivers and speaker diaphragms. For this reason the CP-120 and CP-501 incorporate PowerLock, a unique clipping prevention circuit which, when activated, eliminates any chance of amplifier clipping.

Figure 1 shows PowerLock in action. The left scope photo shows the amplifier output when overdriven 3dB. Square waves like these not only sound terrible, but can destroy loudspeaker drivers in an instant. The right scope photo shows the output signal with PowerLock switched to the full power setting. The amp no longer clips, sounds cleaner, and your loudspeakers are safe. PowerLock time constants were selected to allow normal musical transients to pass unaltered, but any signals that can cause clipping over 1 millisecond in duration will be reduced as much as 30dB. PowerLock can be switched off, or set for full power, −3dB, or −6dB levels.

FIGURE 1



SUMMARY OF FEATURES:	PA-700	CP-501	CP-120
Modular Design	Yes	—	—
Fan Cooling	Yes (Two Speed)	Yes	No (Not Required)
Power Turn On/Off Relay	Yes	Yes	Yes
DC Protection Relay	Yes	Yes	Yes
Independent Channel Level Controls	Yes (Dentented)	Yes	Yes
LED Power Indicator	Yes	Yes	Yes
Individual Channel LED Clipping Indicator	Yes	Yes (with PowerLock[PAT.] Circuit)	Yes (with PowerLock[PAT.] Circuit)
PowerLock[PAT.] Circuit	—	Yes	Yes
Stereo Headphone Jack	—	—	Yes
Mono Bridge Switch	Yes (Rear Panel)	Yes (Rear Panel)	Yes (Rear Panel)
Internal Protection	Circuit Breaker (Power on-off Switch)	Line Fuse (Rear Panel)	Line Fuse (Rear-Panel)
Paralleled Input Connectors	¼" Phone	¼" Phone	¼" Phone
Output Connectors	5-Way Binding Posts	5-Way Binding Posts	5-Way Binding Posts

SPECIFICATIONS:	PA-700	CP-501	CP-120
Power Output:			
Stereo — 4 ohms:	*355 Watts/ Channel	255 Watts/ Channel	61 Watts/ Channel
Stereo — 8 ohms:	210 Watts/ Channel	150 Watts/ Channel	50 Watts/ Channel
Mono Bridged — 8 ohms:	*710 Watts	510 Watts	122 Watts
Frequency Response: 20Hz to 20kHz	±1dB	+0-.4dB	+0-2dB
Noise and Hum	95dB Below rated output	95dB Below rated output	95dB Below rated output
Total Harmonic Distortion (T.H.D.):	.02%, 20Hz to 1kHz (.15% max.)	Less than .05%	Less than .05%
Intermodulation Distortion (I.M.):	Less than .03%	Less than .05%	Less than .05%
Input Sensitivity:	1.23V rms	1.23V rms	1.23V rms
Input Impedance:	10K ohms (Unbalanced)	20K ohms (Unbalanced)	20K ohms (Unbalanced)
Damping Factor:	Approx. 200 at 8 ohms	—	—
Dimensions — H-W-D:	5¼"x19"x12½"	5¼"x19"x17"	3½"x19"x16½"
Shipping Weight:	Approx. 40 lbs.	35 lbs.	20 lbs.

*(IHF Dynamic Headroom Waveform / All other power ratings per FTC Specifications).

(All product specifications subject to change without notice)

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