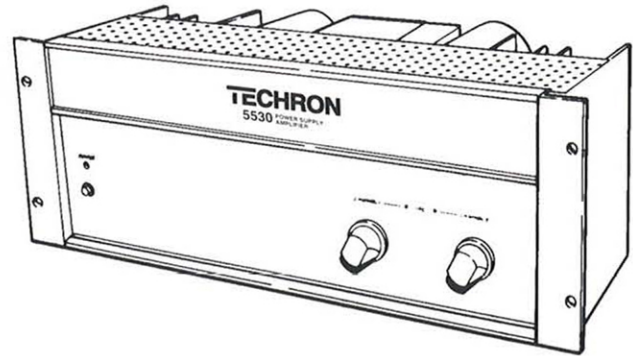


## 5530 Dual-Channel Power Amplifier

This dual-channel, variable-gain, controlled-voltage, power amplifier delivers accurate, high-power levels with complete self-protection for dependable operation. It provides up to 260 watts rms output per channel (for short duration into 4 ohms). It can be switched to mono mode for increased voltage on a single channel.



---

### Features

The 5530 provides precision amplification of electrical signals with frequencies from dc to over 20 kHz. It accomplishes this with extremely low harmonic and intermodulation distortion and low noise. Other important features include the following:

- ❑ The Input-Output Comparator (IOC) constantly monitors both input and output waveforms, assuring precision accuracy. Should distortion be present at the output, the IOC lights inform the operator while the protection circuitry guards against harm to the amplifier.
- ❑ Protection circuitry prevents damage due to high line voltage, overtemperature, RF burn-outs, input overload, excessive output demand, mismatched loads, shorted loads, and internal malfunction.
- ❑ Independent level controls in both channels allow voltage gain to be varied from 0 to 20.
- ❑ Operates on 50-400 Hz ac with selectable taps for 100, 120, 200, 220, and 240 V  $\pm$  10% operation. Draws 40 watts or less on idle.
- ❑ Selectable dual or mono mode allows independent control of two separate channels, or bridges both channels together to produce a balanced output for increased voltage on a single channel.

---

### Applications

Versatile Techron amplifiers are useful in numerous industrial and commercial power applications. For example, consider how they have been used in these environments:

**Shaker Devices**—Techron amplifiers supply reliable power to numerous shaker devices such as large and small tables and have even been used to resonate a building at low frequency.

**Positioning**—Techron amplifiers are used to drive actuators and servos for numerous applications. From telescopes to laser beams to medical uses, industry depends on the low distortion levels of our amplifiers for precise positioning.

**Auto industry**—In this industry, Techron amplifiers are used in electromagnetic compatibility testing of sophisticated auto electronics.

**Manufacturing**—Need a 50 Hz power supply to simulate European frequency? Want to test fuses, circuit breakers, even power relays? Want to supply clean power for your processes? Need to do some electroplating? Techron amplifiers have been used in these and many other jobs.

**Transducers**—Whether under water or under ground, Techron amplifiers drive transducers, used in such ways as saving fish and finding resources.

And, with a wealth of technical knowledge, our skilled application engineers can show you how to handle new and unusual applications.

---

### Performance\*

**Maximum Output Power:** 260 W rms into 4  $\Omega$  (short duration)

**Maximum Output Voltage:** 32.5 V rms into 4  $\Omega$  (short duration); 6.7 V rms continuous

**Maximum Output Current:** 8 A rms into 4  $\Omega$  (short duration); 1.7 A rms continuous

**Bandwidth:** dc to over 20 kHz

**Slew Rate:** 10 V/ $\mu$ s

**Residual Noise:** 0.11 mV rms @ dc–100 kHz

**Input Impedance:** 25 k $\Omega$   $\pm$  30%

**Output Impedance:** <.007  $\Omega$  in series with 3 $\mu$ H

**Load Impedance for Max. Power Transfer:** 2.7  $\Omega$

**Voltage Gain:** 20.6  $\pm$  2% (26.3 dB  $\pm$  0.2 dB) at maximum gain

**Phase Response:** +0,  $-15^\circ$  dc–20 kHz at 1 W into 8  $\Omega$

(\*Per channel; both channels driven. Tests used 1–kHz sine wave. Specifications depend on load and waveform and are subject to manufacturing change.)

### Physical

**Weight:** 45 pounds (20.25 kg)

**Cooling:** Convection

**Chassis:** Aluminum

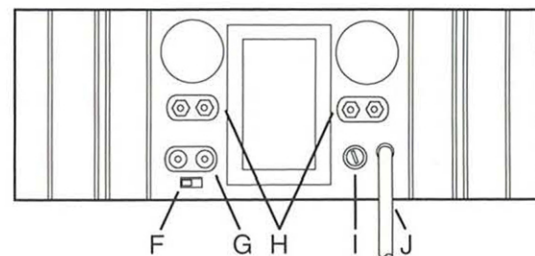
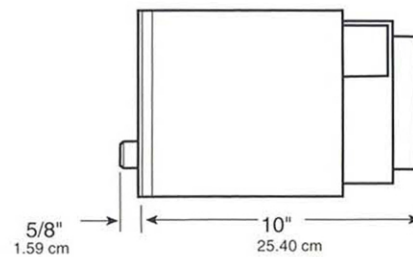
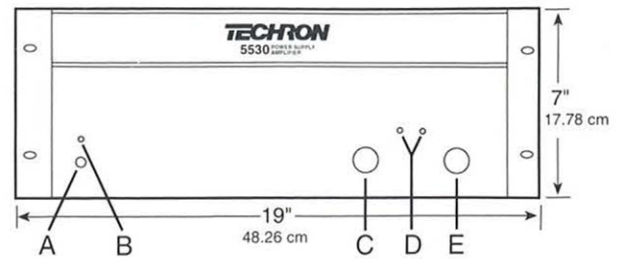
**Finish:** Polyurethane enamel coated aluminum tan and brown

#### Indicators, Controls, and Connectors:

(A) On/off switch

(B) Power Indicator

(C) Channel 1 Input Gain Control



(D) Input-Output Comparator (IOC) Indicators

(E) Channel 2 Input Gain Control

(F) Dual-Mono Slide Switch

(G) Input BNC Jacks

(H) Output Binding Posts

(I) Fuse

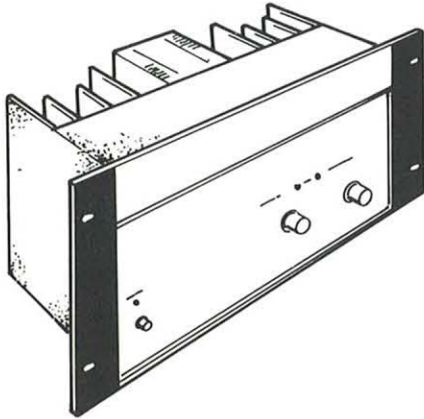
(J) Power Cord

## Support

Every Technron product is supported by our practices and people. Technron provides

- application engineering for your technical questions and customized product needs.
- a 1–year limited warranty.
- comprehensive technical manuals and related product information.
- a fully equipped service facility and experienced service technicians.

# TECHRON®



## MODEL 5530 POWER SUPPLY / AMPLIFIER SPECIFICATIONS

TECHRON's 5530 Power Supply / Amplifier delivers accurate high power levels with complete self-protection for dependable operation. At frequencies from DC to 20KHz, 500 watts continuous average output into 8 ohms is typical, with extremely low distortion and noise.

The SPACE Controller (Signal Programmed Automatic Current Executor) circuit acts as a signal-variable current limiter at most frequencies, and as a Voltage/Current limiter at low frequencies and DC, offering comprehensive protection against amplifier damage, no matter what the input or output demands may be.

The Input-Output Comparator (IOC), through constant monitoring of both input and output waveforms, assures precision accuracy. Should any distortion be present at the output, the IOC lights inform the operator while the protection circuitry guards against harm to the amplifier.

Switchable DUAL/MONO Operation allows independent control of two separate channels, or bridges both channels together to produce a balanced output of even higher power. In either mode, the amplifier fully protects itself while meeting the most stringent demands.

TECHRON engineering supports the 5530 with constant attention to user needs, design assistance for special installations, and a wealth of technical know-how to handle new or unusual applications for the 5530.

The TECHRON 5530 Power Supply / Amplifier is a proven, yet innovative system that's tough enough for industrial environments, dependable enough for medical uses, and accurate to laboratory standards.

	DUAL CHANNEL	SINGLE CHANNEL (Bridged)*
POWER RESPONSE	<p>8 ohm load: DC-20KHz at 155W per channel continuous average output power with no more than .05% THD (Total Harmonic Distortion).</p> <p>4 ohm load: DC-20KHz at 250W per channel continuous average output power with no more than .05% THD (Total Harmonic Distortion).</p>	<p>8 ohm load: DC-35KHz at 500W continuous average output power with no more than 1.0% THD (Total Harmonic Distortion).</p> <p>16 ohm load: DC-20KHz at 310W continuous average output power with no more than .05% THD (Total Harmonic Distortion).</p>
DC OUTPUT	Typically 10A maximum (supply fuse limited) at 50V or 500VA.	Typically 10A maximum (supply fuse limited) at 100V or 1000VA.
FREQUENCY RESPONSE	DC-35KHz: $\pm .1$ dB at 1W into 8 ohms. DC-100KHz: $\pm 1$ dB at 1W into 8 ohms.	DC-20KHz: $\pm .15$ dB at 1W into 16 ohms. DC-60KHz: $\pm 1$ dB at 1W into 16 ohms.
PHASE RESPONSE	+0, $-15^\circ$ DC-20KHz at 1W into 8 ohms.	+0, $-15^\circ$ , DC-20KHz at 1W into 8 ohms.
SLEW RATE	8V/usec.	16V/usec.
I.M. DISTORTION (60Hz-7KHz 4:1)	Less than .01% from .25W to 155W (peak equivalent to a single sinusoid, rms) into 8 ohms.	Less than .01% from .25W to 310W (peak equivalent to a single sinusoid, rms) into 16 ohms.
HARMONIC DISTORTION (True RMS Measure)	Less than .001% from 20Hz-400Hz and increasing linearly to .05% at 20KHz at 155W into 8 ohms.	Less than .001% from 20Hz-400Hz and increasing linearly to .05% at 20KHz, 310W into 16 ohms.
OUTPUT IMPEDANCE	7 mohms in series with 3uH.	15 mohms in series with 6uH.
LOAD IMPEDANCE	Rated for 8 ohm usage; safe with all loads. Normally, 4 ohms or greater; maximum continuous sinusoidal output power at 2.7 ohms. Lower impedance affects only maximum power.	Rated for 16 ohm usage; safe with all loads. Primarily used at 8 ohms or greater; maximum continuous sinusoidal output power at 5 ohms. Lower impedance affects only maximum power.
INPUT GAIN	20.6 $\pm 2\%$ (26.3dB $\pm .2$ dB), input gain control fully CW.	41.2 $\pm 2\%$ (32.3dB $\pm .2$ dB) with input gain control fully CW.

Typical Power Output at Clip Point:  
One Channel Measured, Both Channels Driven

