

# Low Frequency High Power

## ENI's Solid State Design Eliminates Periodic Retuning & Vacuum Tube Replacement.

This group of efficient Class B Solid State Amplifiers provides up to 1100 Watts of output power over a wide frequency range. Frequently used in medical and industrial applications such as ultrasonics, induction heating, and laser modulation, ENI's 1040L, 1140LA, and AP-400B also provide RF power for plasma etching, sputtering, and deposition.

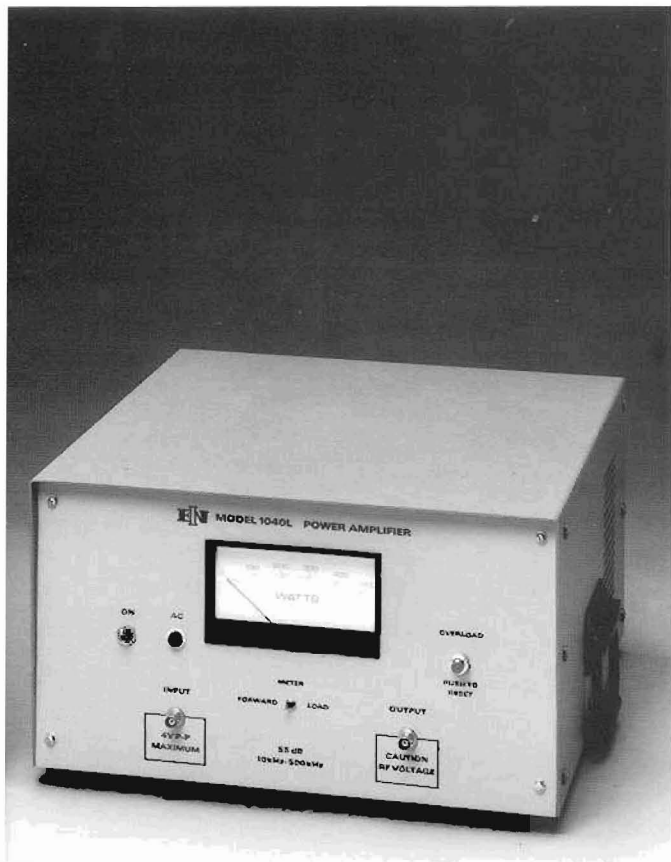
The AP-400B offers a choice of two power modes, leveled or unleveled. In the unleveled mode, the amplifier covers the frequency range of 80kHz-2.7MHz with up to 400 Watts of power. In the leveled mode, the AP-400B offers the same frequency range and power output, with  $\pm 5\%$  automatic forward or load power leveling. Power level adjustment is easily accomplished with either the front panel control or an externally-generated 0-10Vdc signal. A rear-panel accessories connector provides TTL-compatible inputs and outputs for total remote control capability.

RF voltage levels and power output into the load are accurately monitored by the AP-400B's built-in linear power meter. Full-power operation over a wide range of temperatures and AC line conditions is ensured by a multi-tapped AC transformer and a forced-air cooling system.

The 1140LA provides 1100 Watts of output power over the frequency range of 9kHz-250kHz; up to 1600 Watts of power is available from 11-75kHz. Over 400 Watts of power are produced by the Model 1040L from 10kHz to 500kHz; reduced output power is available from 7kHz to 1MHz. The power output is continuously adjustable by varying the amplitude of the low level input.



<b>POWER</b>	<b>400W</b>
Model	AP-400B
Frequency Range	80kHz-2.7MHz
Gain Variation	$\pm 1.5\text{dB}$
Drive Source Requirement	1mW output
Load Mismatch Tolerance	Foldback at 100W reflected power
Forward/Load Power Regulation	$\pm 5\%$ set power within foldback limits
AC Power Line (50-60Hz)	105/120 VAC $\pm 5\%$ at 17 A; 200/230 VAC $\pm 5\%$ at 9 A
Forward/Load Power Meter	0-500W
Size	7.75 x 11 x 15.25" (19.7 x 27.9 x 38.7 cm)
Weight	58 lbs (26.4 kg)



**GAIN** 55dB (nominal)

**INPUT/OUTPUT IMPEDANCE** 50Ω

**RACK MOUNTING** 19-inch adaptors provided

**COOLING SYSTEM** Forced Air

**TEMPERATURE RANGE** 0 - 45°C.

**INPUT/OUTPUT CONNECTORS** Type BNC

**POWER METER ACCURACY** 4% of full scale.

The "fail-soft" capability of the 1040L and 1140LA is provided by ENI's hybrid combining of power amplifier modules. This design couples the outputs of a number of transistors to produce the total output, and effectively prevents a total loss of power. In the unlikely event that any individual transistor should fail to operate, the generator will continue to operate at reduced power. The 1040L and 1140LA also feature forced-air cooling and provide stable operation into any load or source impedance.

Thermal protection provides automatic shutdown should the transistors overheat due to load mismatch or cooling system failure; both amplifiers will automatically reset upon cooling. Instantaneous shutdown is also provided if the load mismatch exceeds allowable limits.

400W	1100W
1040L	1140LA
10-500kHz	9kHz-250kHz
±1dB	±1dB
Up to 1.5 Volts P-P into 50Ω	Up to 2.0 Volts P-P into 50Ω
Cut out at 70W reflected power	Cut out at 400W reflected power
N/A	N/A
115/230 VAC ±5% at 17 A maximum	115 VAC ±6% at 35 A maximum
0-500W	0-2000W
8.75 x 15 x 19.6" (22.2 x 38.1 x 49.9 cm)	8.75 x 17 x 20.25" (22.2 x 43.2 x 51.4 cm)
56 lbs (25.4 kg)	50 lbs (22.7 kg)