MODELS 1544, 1547

CALIBRATED HIGH VOLTAGE SOURCE

DESIGN FEATURES

- Vacuum tube/semiconductor regulator system prevents voltage overshoot on turn-on or turn-off and eliminates time delay relay circuits.
- Silicon semiconductor amplifier with low noise differential amplifier input stage, and better than 50 microsecond response time.
- *Fast, self-indicating electronic overload and short circuit protection permitting continuous operation into a short circuit with automatic restoration upon fault clearance. Pulsating voltmeter needle signals overload.
- Corona free epoxy encapsulated transformers with multiple electrostatic shielding.
- Prestabilized solid state voltage reference with .001%/°C temperature coefficient and 15 microvolt noise level.
- Precision 4-dial voltage control calibrated to better than 0.25% utilizing low leakage ceramic and delrin switches and 5 PPM sealed wirewound resistors. Resettable to 0.1%.
- High resolution voltage output vernier potentiometer with precious metal wiper arm and resistance card with soldered end contacts.
- Glow discharge tubes protect transistors and precision divider resistors against high voltage transients.
- Lifetime silicon high voltage rectifier employing one ampere diodes in a multiple series configuration with built-in switching transient suppression. Voltage derated to 50% of maximum operating potentials.
- Electronic current limiter holds output to 125% of rating protecting loads such as sensitive photomultiplier tubes and permitting use as a capacitor charging source.
- BNC "safety" high voltage output receptacles safeguard against accidental insertion of low voltage coaxial leads and connectors.
- Dual volt-ammeter for output voltage or current monitoring.
- Low leakage plastic dielectric output and feedback capacitors in high voltage circuits. Computer grade electrolytic capacitors in low voltage circuits.
- Polarity reversing switch permits supply operation with either positive or negative output terminal at ground potential.
- Line and load circuits separately fused. Accessible at front panel. Separate HV on-off switch.
- Front and rear handle/rail construction provides ease in bench handling or relay rack installation.
- Fifty hour pre-aging of power supply prior to final test insures field service reliability.

*ROBOTEC® Patent No. 3,083,330

ELECTRICAL SPECIFICATIONS

OUTPUT: 1 Volt to 3012 Volts D-C, continuously adjustable.
Model 1544: 0-20 milliamperes maximum.
Model 1547: 0-40 milliamperes maximum.

INPUT: 105-125 Volts, 47-440 Hz.
Model 1544: *110 Watts.
Model 1547: *231 Watts.

REGULATION: 0.001% plus 2 millivolts for line or load variations over the operating range.

RIPPLE: 1 millivolt peak to peak, maximum.

RESPONSE TIME: Less than 50 microseconds to return to within regulation limits for 100% step change in rated load.

STABILITY: Less than .005% drift in output voltage per hour; less than 0.02% drift per 24 hour period at constant ambient temperature after warm-up.

*At nominal line voltage.

VOLTAGE CONTROLS: Precision calibrated voltage divider:
0 to 2500 Volts in five 500 Volt steps
0 to 400 Volts in four 100 Volt steps
0 to 100 Volts in ten 10 Volt steps
1 to 12 Volts fine adjustment potentiometer

CALIBRATION ACCURACY: 0.25% of the voltage control dial readings from 250-3012 Volts; 1.0% or 100 millivolts (whichever is greater) from 1-250 Volts.

RESOLUTION: 10 millivolts (fine adjustment potentiometer).

RESETTABILITY: 0.1% or 100 millivolts.

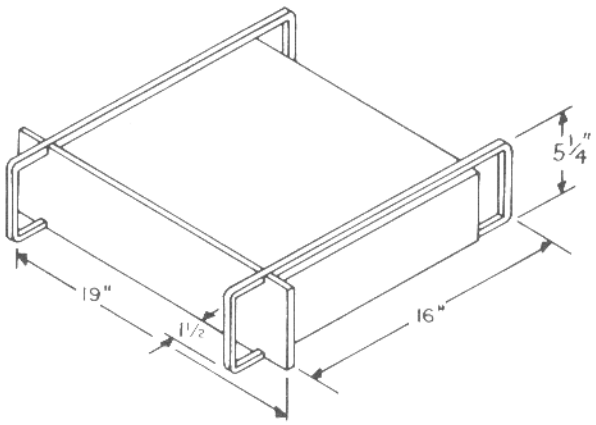
TEMPERATURE COEFFICIENT: 25 parts per million per °C change in ambient after warm-up.

OPERATING TEMPERATURE: Continuous duty at full load from 0-50°C ambient.

OUTPUT TERMINALS: Two BNC "safety" high voltage receptacles on rear chassis surface.

POLARITY REVERSING SWITCH: Panel reversing switch permits operation with either positive or negative output terminal at ground potential.

MECHANICAL SPECIFICATIONS



WEIGHT: Model 1544: 27 lbs.
Model 1547: 33 lbs.

FINISH: Smooth light grey vinyl synthetic enamel panel with black nomenclature. Golden alodine chassis. Grey epoxy enamel perforated metal dust covers. Brushed anodized natural aluminum handles and rails.

Model 1544 ..... $520.00 F.O.B. Westbury
Model 1547 ..... $575.00 F.O.B. Westbury

For 210-250V, 47-440 Hz operation
Model 1544K ..... $545.00 F.O.B. Westbury
Model 1547K ..... $600.00 F.O.B. Westbury

POWER DESIGNS

POWER DESIGNS INC.
1700 SHAMES DRIVE ■ WESTBURY, N.Y. 11590
Tel: 516-333-6200 ■ TWX 510-222-6561

POWER DESIGNS PACIFIC INC.
3381 MIRANDA AVENUE ■ PALO ALTO, CALIF. 94304
Tel: 415-321-6111 ■ TWX 910-373-1251