

TABLE 1. Keithley Model 246 Specifications.

**OUTPUT:****Voltage:** 0 to 3100 volts dc in 10-volt steps.**Current:** 10 milliamperes dc maximum.**Polarity:** Positive or negative with respect to chassis.**ACCURACY:**  $\pm 1\%$  of dial setting.**RESOLUTION:** A potentiometer permits interpolation between steps with a resolution better than 50 millivolts.**STABILITY:**  $\pm 0.01\%$   $\pm 2$  millivolts the first hour or in subsequent 8-hour periods, after a 1-hour warm-up.**LINE REGULATION:** 0.001% plus 2 millivolts for 10% change in line voltage.**LOAD REGULATION:** 0.002% plus 2 millivolts from no load to full load.**RIPPLE AND NOISE:** Less than 1 millivolt rms above 5 cps.**OVERLOAD:** Electronic current limiting to less than 13 milliamperes. Automatic recovery from overload within 1 second.**METER:** Provides check on output and polarity.**CONNECTORS:** Output (front and rear panel): MHV series (UG-931/U).**POWER:** 105-125 or 210-250 volts (switch selected), 50-60 cps, 105 watts.**DIMENSIONS, WEIGHT:** 5¼" high x 19" wide x 10" deep; net weight, 25 pounds.**ACCESSORIES SUPPLIED:** Mating connector.

## SECTION 1. GENERAL DESCRIPTION

1-1. GENERAL. The Keithley Model 246 is a high voltage supply which provides accurate, stable outputs from 0 to 3100 volts dc. Accuracy is  $\pm 1\%$  of the dial setting for all outputs. Stability is  $\pm 0.01\% \pm 2$  millivolts the first hour or in subsequent 8-hour periods, after a 1-hour warm-up. Line regulation is 0.001% plus 2 millivolts for a 10% change in line voltage, and load regulation is 0.002% plus 2 millivolts from no load to full load.

### 1-2. FEATURES.

a. Three in-line calibrated dials set the output voltage in 10-volt steps. The fourth dial is a potentiometer that permits interpolation between steps with 50-millivolt resolution. Output can be selected positive or negative with respect to ground.

b. Repeated overloading or operation in an overload condition for long periods will not damage the Model 246. Overload protection limits the output current to less than 13 milliamperes and, when the overload is removed, automatically returns the Supply to its set value.

c. The circuit for the Model 246 takes advantage of the reliability and stability of a solid-state comparator amplifier, and the high voltage capability of two stacked series regulator tubes to provide a high performance circuit. Metal-film range resistors and a selected zener diode contribute to its overall accuracy and stability.

### 1-3. APPLICATIONS.

a. The Model 246 is an ideal high voltage biasing supply for photomultiplier tubes, ion chambers, photocells and other current detectors. It is also suited for use in applications such as voltage gradient studies, surface and volume resistivity measurements and capacitor leakage measurements.

b. The output of the Voltage Supply may be remotely controlled or programmed by adding connectors to the rear panel. Mounting holes are provided to easily modify the Model 246.

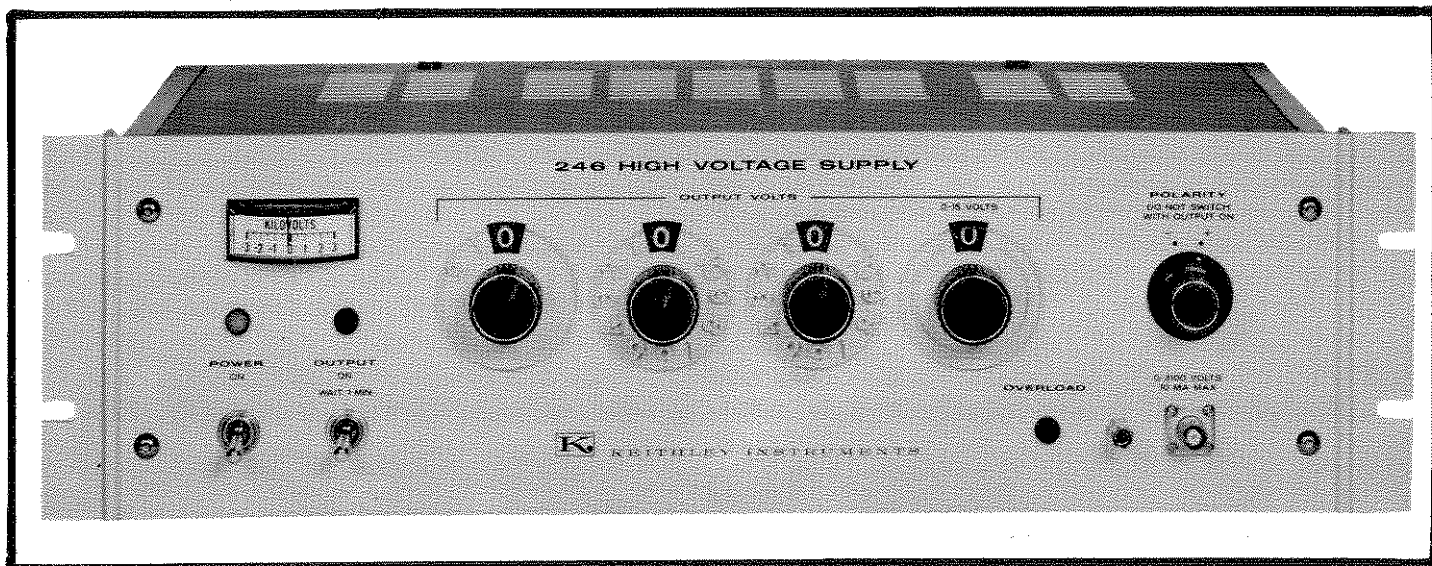


FIGURE 1. Keithley Model 246 High Voltage Supply.