

**SPECIFICATIONS**

**NOTE:** This unit is not a regulated power supply. It was designed as a low voltage power source with good filtering and variable output voltage. Since the output resistance is quite low, small changes in load current do not significantly affect power supply voltage.

Output Voltage. . . . .	0 to 25 volts at maximum current (see Figures 2 and 3). 0 to 35 volts with no current output.
Output Resistance. . . . .	Less than 50 ohms.
Ripple. . . . .	Less than .1% at full load.
Semiconductors. . . . .	1 - R265A transistor. 2 - Silicon diodes.
Circuit Type. . . . .	Full-wave rectifier.
Controls. . . . .	VOLTAGE ON-OFF slide switch.
Power Requirements. . . . .	105-125 volts AC, 50/60 cps, 9 watts.
Dimensions. . . . .	4-3/4" high x 4-3/4" wide x 4-1/4" deep.
Net Weight. . . . .	1-3/4 lbs.
Shipping Weight. . . . .	3 lbs.

All prices are subject to change without notice. The Heath Company reserves the right to discontinue instruments and to change specifications at

any time without incurring any obligation to incorporate new features in instruments previously sold.

## CIRCUIT DESCRIPTION

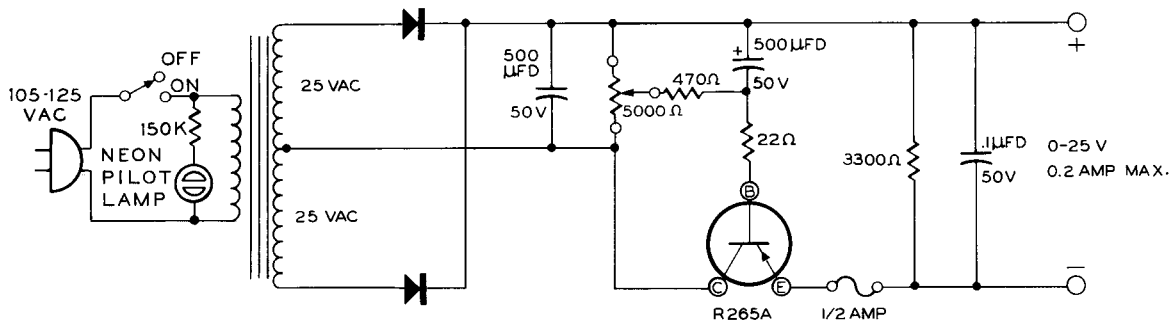
Refer to the Schematic Diagram while reading this description.

The AC output voltage from the power transformer is rectified by a full-wave rectifier that consists of two silicon diodes. The rectified voltage is then filtered by a 500  $\mu\text{fd}$  capacitor and applied to an electronic filter circuit.

The electronic filter circuit consists of the transistor, the remaining 500  $\mu\text{fd}$  capacitor, and the biasing and current limiting resistors. In this circuit the filtering action of the 500  $\mu\text{fd}$  capacitor in the base circuit of the transistor is multiplied by the gain of the transistor. In this

case, where the gain of the transistor is about 50X, the 500  $\mu\text{fd}$  capacitor in the base circuit has the same effect that a 25,000  $\mu\text{fd}$  (50X500  $\mu\text{fd}$ ) capacitor would have at the output terminals.

The 5000  $\Omega$  control varies the bias of the transistor which changes the emitter to collector resistance of the transistor. Increasing and decreasing this transistor resistance increases or decreases the amount of voltage available at the output terminals. The 3300  $\Omega$  resistor acts as a bleeder and also applies operating current to the transistor under no-load conditions. The .1  $\mu\text{fd}$  capacitor filters out any noise pulses present in the power supply.



SCHEMATIC OF THE  
HEATH SCIENCE SERIES  
TRANSISTOR POWER SUPPLY  
MODEL EUW-17