

## TYPE 1261-A POWER SUPPLY

*An a-c operated power supply for instruments which use the Signal Corps BA48 Battery Block (Burgess Type 6TA60)*

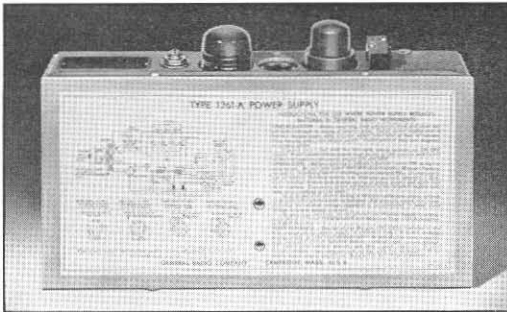


FIGURE 1. View of the TYPE 1261-A Power Supply.

● **BATTERY OPERATION** of a measuring instrument is necessary if the instrument is to be truly portable and easily used in any location. Many instruments designed primarily for portable use can be and are used in production test set-ups where they are in continuous use. A-c operation for such instruments would eliminate the need for frequent battery replacement, but would limit portability.

The TYPE 759-B Sound-Level Meter is a good example of a portable battery-operated instrument which is often used in production testing. Early in 1942\* the TYPE 759-P50 power supply was brought out as an a-c operated power source which was interchangeable both electrically and mechanically with the battery block in the sound-level meter. Thus, the sound-level meter became readily adaptable for either production work or for field use. This power supply could also be used in the older TYPE 759-A Sound-Level Meter.

Other instruments intended for portable use, and hence battery operated,

\*See "An A-C Operated Power Supply for the Sound-Level Meter," by H. H. Scott, *General Radio Experimenter*, January 1942, Vol. XVI, No. 8.

have been developed and manufactured since the TYPE 759-P50 Power Supply became available. A number of these instruments use the same battery block as the TYPE 759-B Sound-Level Meter, but differences in plate or filament supply loads and other small details prevented the use of the TYPE 759-P50 Power Supply in these later instruments. For all these instruments, a new power supply, the TYPE 1261-A, has been developed which incorporates the changes required to make a more complete replacement for the BA-48 battery block.

This new supply, by means of suitable selector plugs, can be used in the following General Radio instruments: TYPE 759-A and TYPE 759-B Sound-Level Meters, TYPE 720-A Heterodyne-Frequency Meter, and TYPE 1231-A Audio Amplifier and Null Detector. Octal selector plugs inserted into a socket on the top of the power supply are used to select either a 1.5- or 3.0-volt filament supply and, in cases where the current drain of the instrument to be supplied is less than required for normal operation of the power supply, the plug is used to add load resistors which insure normal operation.

The TYPE 1261-A Power Supply is not limited to use in General Radio instruments. An unwired selector plug, which can be wired by the customer, is available so that the power supply can be used in any battery operated instrument which has plate and filament requirements within its scope. Intended as a general purpose replacement for the BA48 battery block, the power supply is a light and compact unit that fits in the battery compartment, and has a four-



terminal output socket which fits the plug on the battery cable of instruments using the BA48 battery.

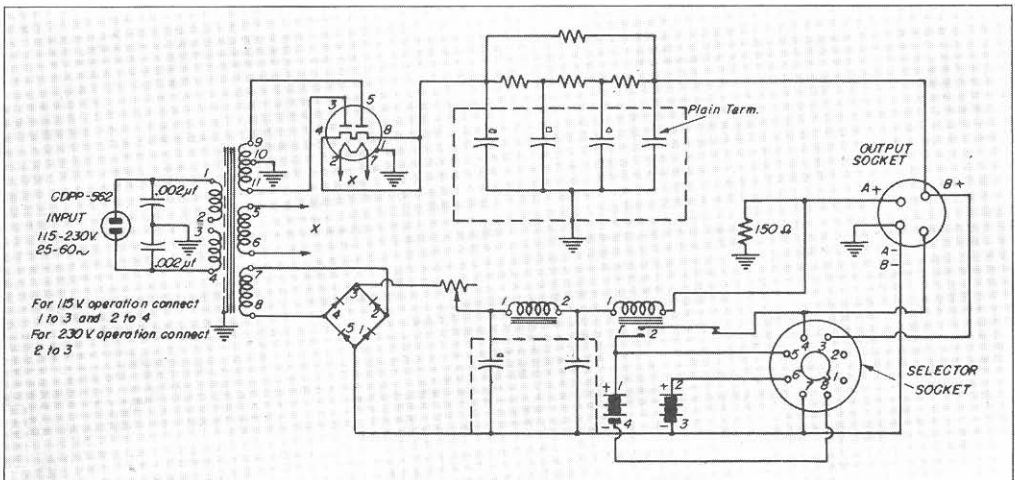
The filament supply, which consists of a selenium rectifier with an L-C filter, has two small flashlight cells connected across the output. These cells are connected in series for 3.0-volt output, and in parallel for 1.5-volt output by means of the selector plug. The cells act as a regulator for the filament supply and also provide an extremely low a-c output impedance. Hum and low-frequency changes in output caused by a-c power line fluctuations are reduced to the point where satisfactory operation of the high-gain amplifiers used in the sound-level meters and in the TYPE 1231-A Audio Amplifier and Null Detector is obtained.

A small push button switch, located on top of the power supply, makes it possible to disconnect the cells at any time and to set the output voltage equal to the cell voltage. Under operating conditions, normal line voltage variations cause the cells either to charge or to discharge slightly, and when the instrument is turned off a small relay

opens the circuit so that the cells will not be damaged. These flashlight batteries cost only ten cents apiece and, as used, their life is extremely long. A conventional vacuum-tube rectifier is used to obtain the d-c output voltage for the plate supply. A four section R-C filter attenuates the hum or a-c ripple voltage to an exceptionally low value. The plate supply is not regulated.

The TYPE 1261-A Power Supply replaces the older TYPE 759-P50 for use in the TYPE 759-A and TYPE 759-B Sound-Level Meters, but is not directly interchangeable with it. A modification incorporated in the new power supply to protect the small flashlight cells, used in the filament circuit, requires a simple wiring change in the battery cable of older instruments. This change does not affect battery operation of the instrument and has been made standard wiring for current and future lots of instruments. Complete instructions are furnished with the power supply so that the customer can make the required change in older instruments, and once the change is made the TYPE 1261-A Power Supply is directly interchangeable

FIGURE 2. Schematic circuit diagram of the power supply.





with the BA48 battery block. Similar changes must be made in existing models of the TYPE 720-A Heterodyne Fre-

quency Meter. For instruments shipped in the future, no changes are necessary.

— E. E. GROSS

### SPECIFICATIONS

#### OUTPUT:

**Filament Supply:** 1.5 volts or 3.0 volts up to 350 ma. Normal current through filter choke to operate relay = 300 ma. Bleeder resistor in selector plug needed for lower current requirements.

#### Plate Supply:

133 volts open circuit  
107 volts at 3 ma  
89 volts at 5 ma  
72 volts at 7 ma

{ For 115-volt 60-cycle power line with normal filament current of 300 ma.

Maximum output current = 8 ma

**Selector Plugs:** One of the following is furnished. Please specify type wanted.

**Selector Plug 1261-P1** — Provides proper voltages for TYPE 759-A Sound-Level Meter. Battery Plate of Sound-Level Meter must be replaced by four-terminal plug to fit output socket of TYPE 1261-A Power Supply. Full sensitivity of instrument cannot be used. Attenuator settings below 50 db on B and C weighting networks and below 40 db on the A weighting network are not recommended.

**Selector Plug 1261-P2** — Provides proper voltages for TYPE 759-B Sound-Level Meter.

**Selector Plug 1261-P3** — Provides proper voltages for TYPE 720-A Heterodyne-Frequency Meter.

**Selector Plug 1261-P4** — Provides proper voltages for TYPE 1231-A Audio Amplifier and Null Detector. On Null Detector use, the plate supply regulation causes the meter to overshoot somewhat upon rapidly approaching a null.

**Selector Plug 1261-P5** — To be wired by customer to meet his own requirements.

**Hum and Noise Level** — Sufficiently low, when operated from 60-cycle supply line, to assure satisfactory operation of instruments listed under conditions specified.

**Input Voltage:** 105–125, or 210–250, volts, 40 to 60 cycles.

**Input Power:** Less than 10 watts at 115 volts, 60 cycles.

**Tube:** One TYPE 6H6 is supplied.

**Batteries:** Two Burgess No. 2 uni-cells which are floated across the output of the Filament Supply are furnished.

**Terminals:** A four-terminal output socket fits the plug on the battery cable of the TYPE 759-B, TYPE 720-A, and TYPE 1231-A.

**Dimensions:** (Length) 10 x (width) 2¼ x (depth) 5 inches.

**Net Weight:** 7¼ pounds.

Type		Code Word	Price
1261-A	Power Supply . . . . .	NUTTY	\$55.00

When ordering, specify type of selector plug desired. See list above in specifications. Also mention type number and serial number of instrument with which it is to be used.

## TYPE 1260-A VARIAC RECTIFIER

● DURING THE PAST FEW YEARS selenium rectifiers have come into wide use as a means for obtaining d-c output voltage from a-c supply lines. They are extremely simple, rugged, compact, and efficient, and they have practically unlimited life. Being conservatively rated, they will carry heavy overloads without damage. In most of its applications the selenium rectifier is chosen to do a particular job, wired permanently

into a circuit, and then forgotten. However, there are many cases, especially in standardizing laboratories and in development work, when a continuously variable source of d-c voltage is very useful. Storage batteries are not too convenient and usually require charging just when they are needed. Furthermore, the output voltage of a storage battery is not easily adjustable. The development engineer often needs varied d-c voltage