

### Type 1231-P4 Adjustable Attenuator

For increasing the range and accuracy of standing-wave measurements with the TYPE 1231-B Amplifier. Is a high-impedance, resistance-type attenuator for use between the output of the slotted-line crystal detector and the input of the amplifier. Has three 20-db steps and a 20-db potentiometer to cover the range between steps.

**Source Impedance:** 30 k $\Omega$  — approximately equal to output impedance of crystal detector in slotted line at low voltage levels.

**Initial Insertion Loss:** Approximately 3 db.

**Attenuation Range:** 80 db; dial can be read to nearest tenth db.

**Accuracy of Attenuation Increments:**  $\pm 0.3$  db or better when operated between rated source and load impedances. Additional errors caused by source impedance between 15 k $\Omega$  and 60 k $\Omega$  are less than  $\pm 0.3$  db.

**Frequency Error:** Negligible below 2 kc.

**Maximum Input Power:**  $\frac{1}{2}$  watt.

**Terminals:** Input, TYPE 938-W Binding Posts; Output, shielded cable with TYPE 274-ND Shielded Plug to fit amplifier input terminals.

**Circuit:** Modified voltage divider.

**Mounting:** Metal cabinet.

**Over-all Dimensions:** 5 $\frac{1}{2}$  x 5 $\frac{1}{2}$  x 4 $\frac{1}{2}$  inches, overall.

**Net Weight:** 2 pounds, 11 ounces.

Type

Code Word

Price

1231-B  
1231-P2  
1231-P4

Amplifier . . . . .  
Tuned Circuit . . . . .  
Adjustable Attenuator . . . . .

VALID  
AMBLE  
ANNEX

\$210.00  
20.00  
52.50

Connections between the crystal output connector of the TYPE 874-LB Slotted Line and the input of the TYPE 1231-B Amplifier or TYPE

1231-P4 Adjustable Attenuator can be made by the TYPE 874-R32 Patch Cord described on page 11.

## 2. EQUIPMENT FOR POWER MEASUREMENTS

### Type 1651-A Bolometer Bridge

For conveniently measuring h-f power by either d-c substitution or direct-reading method with the three bolometer units described below. This new instrument will be described more fully in a forthcoming issue of the *Experimenter*, since specifications are not yet available.

### Type 874-H25 Thermistor Unit (25 mw.)

Consists of a thermistor mounted in a coaxial holder with a disc-type by-pass capacitor. Binding posts are provided for connections to

bolometer bridge. Can be used for power measurements over the frequency range from 5 Mc to several thousand megacycles. A d-c path is required in the r-f source. Complete with thermistor.

**By-Pass Capacitance:** Approximately 2000  $\mu\text{mf}$ .

**Physical Length Overall:** 3 $\frac{5}{8}$  inches.

**Maximum Total Power:** 25 mw.

### Type 874-H100 Thermistor Unit (100 mw.)

Similar to TYPE 874-H25, with maximum power rating of 100 mw. Complete with thermistor.

**Physical Length Overall:** 3 $\frac{3}{4}$  inches.

### Type 874-HF Fuse Bolometer Holder

A coaxial holder for fuse bolometers 1 inch long by  $\frac{1}{4}$  inch diameter (SAG size). Otherwise similar to the thermistor units described above. Supplied with one TYPE 874-HF-P1 Fuse Assortment.

**By-Pass Capacitance:** Approximately 2000  $\mu\text{mf}$ .

**Physical Length Overall:** 4 inches.

Typical assembly of equipment for power measurements, consisting of the Bolometer Bridge, with Thermistor Unit and Lamp Termination in the foreground. Patch cord is Type 274-NC.

