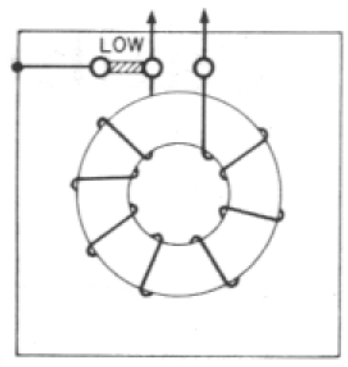
Series 1482 Standard Inductor

METHOD OF MEASUREMENT

Inductors with Three Terminals — For an inductor with three binding posts, the first measurement is made with the bridge connected to the pair of insulated terminals (Figure 1). The LOW terminal is connected both to the bridge ground terminal and to the adjacent ground terminal of the inductor with the link provided. The second measurement is made either with a shorting link applied to the same two connection terminals or with the connecting leads moved to the pair of terminals that are shorted by the link. The difference between the two measured values is the calibrated effective inductance.

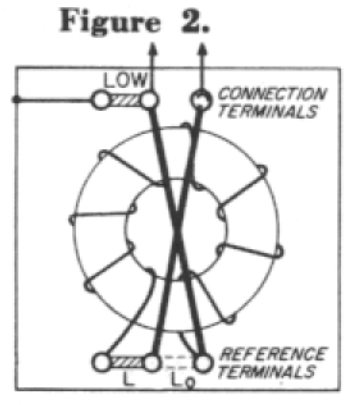
Figure 1.



For values greater than 200 μH this measured inductance is practically independent of the inductance of external connections when the same connections are used for both measurements. Capacitance of the connecting wires can cause the measured inductance to be greater than the calibrated value unless the measuring frequency is considerably less than the resonant frequency.

Inductors with Six Terminals — For an inductor with six binding posts, the bridge is connected to the pair of insulated connection terminals at the top of the panel, (see Figure 2). The LOW terminal is connected both to the adjacent ground terminal of the inductor and to the ground terminal of the bridge. The reference terminals at the bottom of the panel (see Figure 2), connected by internal leads to the coil and to the connection terminals, are used to switch either the coil or a short across the connection terminals.

Figure 2.



The first measurement is made with the shorting link at the reference terminals in the L position (coil connected). The second measurement is made with the shorting link at the reference terminals in the L_o position (leads shorted). The difference between the two values is the calibrated effective inductance. When the same connections are used in both measurements, the inductance value is independent of external-lead inductance even for values much less than 200 μH.

If the inductor is measured with the link at the reference terminals in the L position and with the connection terminals open and then shorted, the inductance change will be greater than the calibrated inductance value by an amount equal to the inductance of the internal leads and the reference terminals (0.11 $\pm$0.01 μH) and will depend upon the nature and position of external leads and the resistance of the shorting link.

For a more complete discussion refer to the *General Radio Experimenter*, Volume 34, No. 10, October, 1960.

The Type 1482 Standard Inductor is wound on a ceramic non-magnetic toroidal core. It is highly stable and astatic, and has a definite and low-valued temperature coefficient of inductance. The inductor is resiliently supported in a mixture of ground cork and silica gel to prevent localized strain. The whole assembly is sealed with a potting compound in a cubical aluminum case to eliminate variation in inductance due to changes in ambient humidity.

These stable and accurately calibrated inductors can be used with complete confidence for the calibration of all types of inductors and bridges.