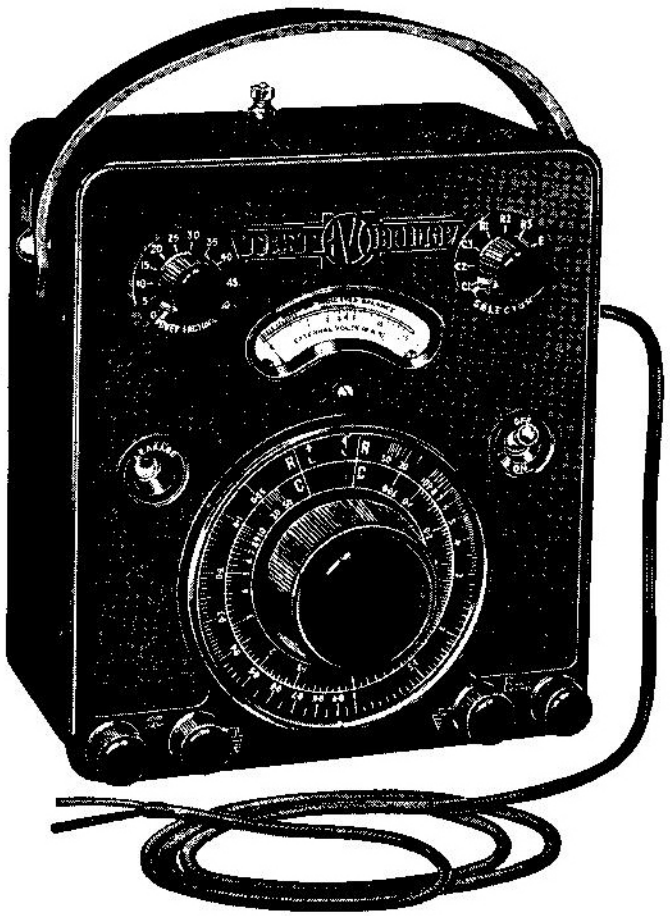
The 'AVO'

Regd. Trade Mark

TEST BRIDGE



BRITISH MADE

M.18

2,000-6-44

The 'AVO' Regd. Trade Mark TEST BRIDGE

THE 'AVO' Test Bridge is a portable, self-contained 50~ measuring bridge, suitable for the direct measurement of all sizes of condensers and resistances normally met with in radio and electrical engineering. Its simplicity of operation, combined with the wide range of measurements available, makes it eminently suitable for the service engineer.

The instrument is of small size and good appearance. It is completely assembled on a moulded bakelite panel, the face of which carries all the operating controls, the function of each control being clearly engraved on the panel. This fits into an attractively finished aluminium case which serves the dual purpose of screening the instrument and protecting it from dust and damage. The instrument is self contained, the full range of capacity and resistance measurements being covered by internal standards. At the same time a range is provided allowing measurements to be made against external standards. The instrument can also be used as a sensitive wide-range valve voltmeter for external measurements. A leather carrying handle is provided for portability.

RANGES

Three ranges of capacity and three ranges of resistance measurements are provided, the accurately calibrated internal resistance and condenser standards being automatically switched into circuit when the range is selected.

The ranges of measurements are as follows:—

CAPACITY: Range C.1—From .000005 μ F to .005 μ F.
Range C.2—From .0005 μ F to .5 μ F.
Range C.3—From .05 μ F to 50. μ F.

RESISTANCE: Range R.1—From 5 ohms to 5,000 ohms.
Range R.2—From 500 ohms to 500,000 ohms.
Range R.3—From 50,000 ohms to 50 megohms.

POWER FACTOR MEASUREMENTS

On range C.3, condenser power factor measurements may be made, the power factor control being directly calibrated 0-50%.

MEASUREMENTS AGAINST EXTERNAL STANDARDS

A special range is provided for taking measurements against external standards, the range of measurement provided being from 0.05 to 50 times the value of the external standard used.

Besides its normal use for the measurement of condensers and resistances, this range may be utilised for the measurement of inductances from 0.1 Henry upwards, provided that the inductance to be measured has a reasonably low resistance compared with its reactance at 50 cycles.

ACCURACY

Except at the extreme ends of the range, the accuracy of measurement is better than 5%, the logarithmic nature of the scale allowing roughly constant percentage discrimination at all values. The calibrated scale has a length of about 6 inches for the two main decades of measurement, giving the equivalent of 20 inches of calibrated scale for the full range of either resistance or capacity measurements.

LEAKAGE

Condensers of all capacities may be tested for leakage by the flashing neon method. A simple switching device is incorporated, by means of which a condenser which has been tested for capacity can automatically be tested for leakage without removing it from its capacity test terminals.

THE VALVE VOLTMETER INDICATOR

The simple A.C. bridge is often considered to be less satisfactory to operate than the common D.C. resistance bridge because of the methods used to denote balance. In the D.C. bridge, definite indication of balance is given by a galvanometer which can be easily and accurately read.

With inexpensive A.C. bridges, there are two common methods of balance indication—the aural method using 'phones, or a visual method employing a cathode ray indicator. Both of these devices are liable to give rise to inaccuracy when rapid measurements are being made.

The difficulty has been overcome in the 'AVO' Bridge by using an amplifier-valve voltmeter, balance being indicated by a meter on the panel of the instrument. Besides providing great sensitivity and accuracy of indication, an ingenious circuit arrangement has been devised so that the indicator exhibits maximum sensitivity at, or near, balance, and gets progressively less sensitive as the bridge is unbalanced.

This obviates damage to the sensitive meter, as full scale deflection is only just reached, even if the bridge is fully unbalanced. The sensitivity near balance is actually about twenty times the sensitivity at full unbalance.

USE OF THE INDICATOR AS AN EXTERNAL VALVE VOLTMETER

Switching is provided to enable the indicator to be used as a sensitive valve voltmeter for the measurement of external audio and low radio frequency voltages. For this purpose, the scale plate is directly calibrated from 0-15 volts. The logarithmic nature of the scale enables about $\frac{1}{8}$th. inch deflection to be obtained for 0.25 volt.

A.C. MAINS MODEL to operate from 100-120 and 200-240 volts, 50-60 cycles. All models are supplied adjusted for operation on the 200-240 voltage range, unless otherwise specified.

The 'AVO' TEST BRIDGE

(Patent No. 525690)

Size : $7\frac{3}{4}$" x 7" x $4\frac{3}{4}$"

Nett Weight : 4 lbs. 12 ozs.

A Leather Carrying Case can be supplied.

The word 'AVO' is our Registered Trade Mark

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