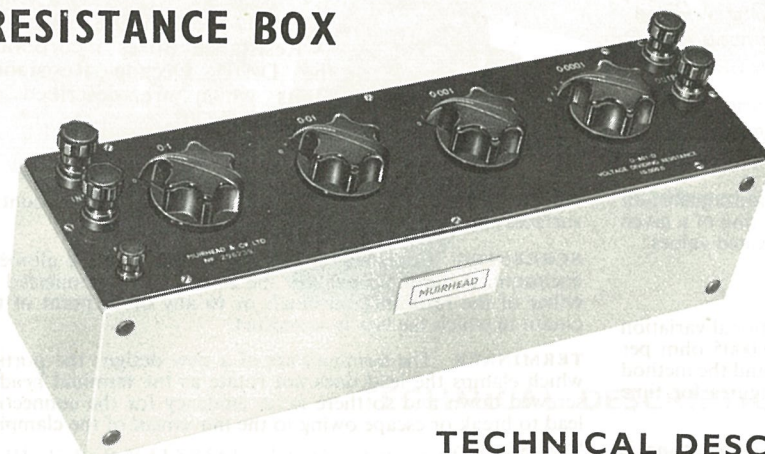


# TIME CONSTANT OF D-825-L RESISTANCE BOX AT 1 kc/s (N.P.L. TEST)

(Measured with screen connected to adjacent terminal)

SWITCH POSITIONS				TOTAL RESISTANCE (ohms)	TIME CONSTANT ( $\mu\text{H}/\text{ohm}$ )
$10 \times 1 \text{ ohm}$	$10 \times 10 \text{ ohms}$	$10 \times 100 \text{ ohms}$	$10 \times 1000 \text{ ohms}$		
0	10	0	0	100	+0.013
0	0	1	0	100	+0.006
0	0	5	0	500	-0.014
0	0	10	0	1000	-0.027
0	0	0	1	1000	+0.005
0	0	1	1	1100	+0.002
0	0	0	5	5000	-0.059
0	0	5	5	5500	-0.068
0	0	0	10	10 000	-0.121
10	10	10	10	11 110	-0.139

## D-801-D VOLTAGE-DIVIDING RESISTANCE BOX



THIS instrument operates as a potential divider of the Rayleigh type in which the total resistance presented to the input is kept constant, the switches being so designed that as resistance is added to one side of the dividing point, an equal resistance is removed from the other side.

The instrument can also be used as a decade resistance box.

## TECHNICAL DESCRIPTION

**RANGE (VOLTAGE RATIO)** 1:0.0001 to unity in steps of 0.0001.

**INPUT RESISTANCE** 10 000 ohms

**ACCURACY** The accuracy of adjustment of resistance on direct current is  $\pm 0.1\%$ . The a.c. accuracy is a function of frequency and the method of connexion, but it may be estimated from the figures for time constant given in Publication 201.

**TEMPERATURE COEFFICIENT** Within  $\pm 0.004\%$  per  $^{\circ}\text{C}$ .

**VOLTAGE** The maximum permissible input voltage is 250V r.m.s.

**SWITCHES** Dual decade switches of a special design are used in which the two elements are arranged symmetrically on a circular mounting disk, the brushes being rotated by a common shaft. The use of resiliently-mounted silver-graphite pads on the rotating element operating over silver contact surfaces, ensures very low and constant contact resistance. The switches require no lubrication of the contact surfaces and are designed to operate without attention, for very long periods.

**SCREENING** Complete electrostatic screening is provided by the all-metal enclosure. A terminal enables the screen to be connected to the low-potential (common) end of the potential divider or to any point in the circuit in which the box is included.

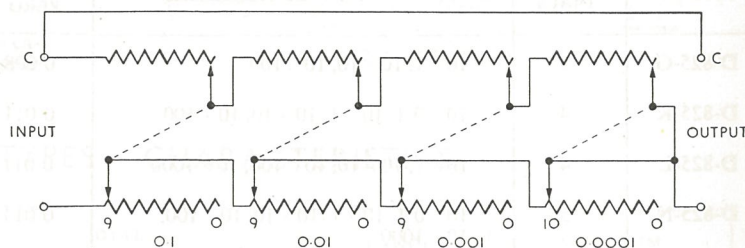
**TERMINALS** The terminals are of a new design; the portion that clamps the lead does not rotate as the terminal head is screwed down and so there is no tendency for the connecting lead to break or escape owing to rotary movement of the clamping surface.

**WINDING** All the resistors have non-reactive windings, and possess a high long-term stability; they are wound on Mycalex cards.

**MOUNTING AND FINISH** The switch assemblies are mounted on the underside of a metal panel which is fitted on the top of a light and strong aluminium alloy box. The metal panel is anodized and dyed black; the panel markings are anographed in white. The box has a grey hammer finish.

**DIMENSIONS**  $14\frac{1}{2}$  in wide  $\times 5\frac{1}{8}$  in high  $\times 4\frac{1}{8}$  in deep overall (36.8 cm  $\times$  12.9 cm  $\times$  10.5 cm)

**WEIGHT** 5 lb (2.27 kg)



BASIC CIRCUIT DIAGRAM OF VOLTAGE DIVIDING-RESISTANCE BOX

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