D-825, D-826 AND D-801 DECADE RESISTANCE AND VOLTAGE-DIVIDING BOXES

D-825 AND D-826 DECADE RESISTANCE BOXES

D-825-L

THE D-825 and D-826 Decade Resistance Boxes incorporate the D-805 Decade Resistance Units which are described in Publication 201.

TECHNICAL DESCRIPTION

ACCURACY OF ADJUSTMENT All resistors are adjusted on d.c. so that increments of resistance from zero setting of a given dial are within the following tolerance of the indicated values:

× 10 ohm dials and above: ±0·05%
× 1 ohm dial: ±0·1%
× 0·1 ohm dial: ±0·5%

The above accuracy figures are subject to an additional variation due to contact resistance of approximately ±0·0005 ohm per dial. The a.c. accuracy is a function of frequency and the method of connexion, but can be estimated from the figures for time constant given in Publication 201.

ZERO RESISTANCE The total resistance at zero setting is approximately 0·003 ohm per dial, and is marked on each box.

TEMPERATURE COEFFICIENT Within ±0·002% per °C.

CURRENT RATING The maximum current which can be passed by a decade resistance box is limited to the current rating of the highest resistance dial in use (see table).

Resistance steps (ohms)	0·1 & 1	10	100	1000	10 000	100 000
Max. current or voltage	0·75A	0·25A	75mA	25mA	7·5mA or 250V	4mA or 500V

SWITCHES The switches have an extremely low, constant contact resistance (1·0 to 1·25 milliohms). They employ resiliently mounted silver-graphite pads moving over silver contact surfaces and require no lubrication.

SCREENING Complete screening is provided by the all-metal enclosure. A terminal enables the screen to be connected to either of the resistance terminals or to any other point of the circuit in which the box is connected.

TERMINALS The terminals are of a new design; the portion which 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 the movement of the clamping surfaces.

WINDING All resistors are non-reactively wound on Mycalex cards that have a temperature coefficient of linear expansion very close to that of the resistance wire.

MOUNTING AND FINISH The decade resistance units (of which there are one to five, according to type) are mounted on the underside of a metal panel which is fitted on the top of a light and strong aluminium alloy case, thus providing complete screening. The metal panel is anodized and dyed black; the panel markings are anographed in white. The case is given a grey hammer finish.

DIMENSIONS AND WEIGHT (See table below.)

For a lower priced range of individual decade units, see Publication 206.

D-825 & D-826 CHARACTERISTICS – STANDARD TYPES

TYPE No.	No. OF DIALS	RESISTANCE STEPS (ohms)	RESISTANCE (ohms) ZERO	RESISTANCE (ohms) TOTAL	*LENGTH	WEIGHT
D-825-G	3	10×1, 10×10, 10×100	0·008	1110	10⅝ in (27·0 cm)	3 lb 6 oz (1·53 kg)
D-825-K	4	10×0·1, 10×1, 10×10, 10×100	0·011	1111	13⅝ in (34·6 cm)	4 lb 8 oz (2·04 kg)
D-825-L	4	10×1, 10×10, 10×100, 10×1000	0·011	11 110	13⅝ in (34·6 cm)	4 lb 8 oz (2·04 kg)
D-825-N	5	10×0·1, 10×1, 10×10, 10×100, 10×1000	0·014	11 111	16⅝ in (42·2 cm)	5 lb 10 oz (2·55 kg)
D-825-P	5	10×1, 10×10, 10×100, 10×1000, 10×10 000	0·014	111 110	16⅝ in (42·2 cm)	5 lb 10 oz (2·55 kg)
D-825-U	5	10×10, 10×100, 10×1000 10×10 000, 10×100 000	0·014	1 111 100	16⅝ in (42·2 cm)	5 lb 10 oz (2·55 kg)
D-826-G/1	1	10×100 000	0·003	1 000 000	4⅝ in (11·8 cm)	1 lb 6 oz (0·62 kg)

*The following dimensions are the same for all types: Width 4⅛ in (10·5 cm); Depth 4 in (10·2 cm); Overall Depth 5 3/16 in (13·2 cm).