

# Decade Resistance Boxes

*Sold throughout the world to governments, educational authorities and industry*



## RD Series FEATURES

- > *Wide range of values*
- > *Direct reading*
- > *Wide range of applications*
- > *Range 10m to 10M ohms*
- > *Accuracy 0.1%*

**G**uildline RD Series Decade Resistance Boxes have been designed for use in development laboratories and technical colleges where medium accuracy is required, and where low cost, robustness and convenience are important considerations.

The RD series are direct reading and suitable for platinum resistance thermometer simulation. It is not required to add the switch zero position resistance to the dial setting in order to maintain the specified accuracy.

Of very modest cost compared with other units, the RD series are a welcome addition as development tools, whereby the resistance required in a particular circuit can be determined in a matter of seconds. Also its accuracy and construction is such that with a few other resistors, it can be easily used as the variable in a variety of bridge networks up to audio frequencies.

A useful feature of these boxes is the inclusion of tapping points between the decades. The taps are brought out to the front panel and this enables the unit to be used as a voltage divider with a ratio which can be decided by the user. A further application would be formation of 'pi' or 'delta' networks by feeding in at the tapping points and connecting the 'H' and 'I' binding posts together.

***The RD Series provides a cost effective variable resistance design for a wide range of applications.***

## Resistors

The resistors are non-inductive with a low temperature coefficient wire. The maximum continuous currents are shown on each decade, but these values may be exceeded by 50% for short periods. In general the adjustment on DC at 20 °C is better than 0.1% and is shown in detail over leaf for each unit.

## Switches

Well tried conventional switches with multiple contacts having a maximum contact resistance of approximately 6 milli-ohms per switch are used, and these will give an extremely long life providing that the Decade Box is used with non-reactive circuitry.

## Construction

The instruments are rigidly constructed with an anodized front panel. The control knobs have been chosen for ease of manipulation and are marked in a manner to permit in line readout of resistance value.

# RD Decade Resistance Boxes

## RD Specifications

Decade	Accuracy (%)	Continuous Current or Maximum Voltage	Time constant (microseconds)
x 0.01	5	1 A	--
x 0.1	5	1 A	+1
1	0.5	700 mA	+1
10	0.1	200 mA	+1.2
100	0.1	70 mA	+1.4
1000	0.1	20 mA	+0.5
10,000	0.1	7 mA	-1
100,000	0.1	500 V	+0.5
1,000,000	0.1	500 V	+0.2

**Note:** Resistance value at terminals is direct reading of dial settings, with a specified minimum setting of 1 ohm or less, depending on the resistance range and number of decades.

TYPE	MAXIMUM VALUE (OHMS)	MINIMUM STEP (OHMS)	MINIMUM BOX RESISTANCE SETTING (OHMS)	NUMBER OF DECADES	DIMENSIONS and WEIGHT (See code below)
RD1	1,111	0.1	0.1	4	A
RD2	11,110	1	1.0	4	A
RD3	111,100	10	10	4	A
RD4	11,111	0.1	0.1	5	A
RD5	111,110	1.0	1.0	5	A
RD6	1	0.1	0	1	B
RD7	10,000	1000	0	1	B
RD8	100,000	10,000	0	1	B
RD9	1,000,000	100,000	0	1	B
RD10	1,111,000	100	0	4	A
RD11	11,110,000	1000	0	4	A
RD12	1,111,100	10	10	5	A
RD13	10	1	0	1	B
RD14	100	10	0	1	B
RD15	1000	100	0	1	B
RD16	1,111,110	1	1.0	6	C
RD17	111,111	0.1	0.1	6	C
RD18	111.1	0.01	0.1	4	A
RD19	1,111.1	0.01	0.1	5	A
RD20	1,111,111	0.1	0.1	7	C
RD21	11,111,110	1.0	1.0	7	C
RD22	11,111,111	0.1	0.1	8	C
RD23	1,111,111.1	0.01	0.1	8	C

Continuous development may result in minor changes in internal and external design.

## RD Series Ordering Information

RD/Type      Decade Resistance Boxes  
 Certificate of Conformance (included)  
 Report of Calibration (extra charge)

## General Specifications

**Dimensions**

- A 112 H x 90 W x 324 L mm (4.4 H x 3.5 W x 12.8 L in.)
- B 112 H x 90 W x 116 L mm (4.4 H x 3.5 W x 4.6 L in.)
- C 112 H x 180 W x 324 L mm (4.4 H x 7 W x 12.8 L in.)

**Weight**

- A 1.1 Kg (2.4 lbs)
- B 0.5 KG (1.1 lbs)
- C 1.7 KG (3.8 lbs)

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