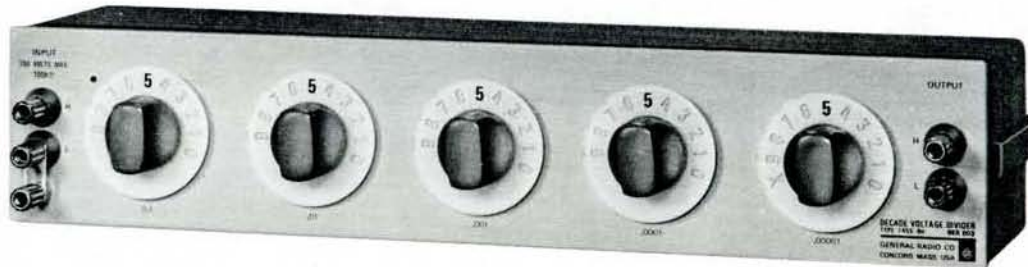




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1455 Decade Voltage Divider

- **linearity better than 20 ppm (5-dial model)**
- **input impedance: 10 or 100 kΩ**

The GR 1455 Decade Voltage Dividers provide accurately known voltage ratios from 0.00001 to 1.00000 for use in many common measurements:

- voltage gain or attenuation
- linearity of potentiometers and other controls
- frequency response of audio and rf networks
- transformer turns ratio
- voltmeter calibration

A resistive divider of the Kelvin-Varley type, the 1455 has precision resistors throughout (rather than in selected positions only) for over-all high accuracy. Linearity is as low as 0.02 ppm of input.

Match your needs exactly. Select input impedance, voltage rating, frequency range, 4- or 5-dial resolution, bench or rack mounting.

SPECIFICATIONS

Frequency Characteristic: Acts like simple RC circuit below f_o so that

$$\frac{E_o}{E_{in}} \approx \frac{\text{reading}}{\sqrt{1 + \left(\frac{f}{f_o}\right)^2}}$$

Tabulated value of f_o is at setting that gives max output resistance so that f_o at all other settings is higher. At 0.044 f_o , response is down <0.1%.

Temperature Coefficient: <20 ppm for each resistor. Since voltage ratios are determined by resistors of similar construction, net ambient temperature effects are very small.

Mechanical: Lab-bench cabinet. DIMENSIONS (wxhxd): Bench, 4-dial model, 14.75x3.5x6 in. (375x89x153 mm); 5-dial models, 17.31x3.5x6 in. (440x89x153 mm); rack, 19x3.5x4.63 in. (483x89x117 mm). WEIGHT: Bench, 4-dial model, 6.75 lb (3.1 kg) net, 8 lb (3.7 kg) shipping; 5-dial models, 7.75 lb (3.6 kg) net, 9 lb (4.1 kg) shipping; rack models are each 1 lb (0.5 kg) heavier than corresponding bench models.

National stock numbers are listed at the back of the catalog.

Type	1455-A	-BH	-B
Number of Dials:	4	5	5
Input Resistance:	10 kΩ	100 kΩ	10 kΩ
Accuracy of Input R: (ppm)	+150	+150	+150
Input Voltage Rating¹:	230 V	700 V	230 V
Frequency Response² f_o:	850 kHz	69 kHz	690 kHz
Resolution: (ppm of input)	100	10	10
Linearity (sum of A & B)			
A, Absolute Linearity³			
— Ratio —			
0.00001 to 0.00010	—	±0.02	±0.03
0.00010 to 0.00100	±0.3	±0.2	±0.3
0.00100 to 0.01000	±2	±2	±3
0.01000 to 0.10000	±15	±10	±10
0.10000 to 1.00000	±30	±20	±20
B, Terminal Linearity			
(in ppm of input).			
FOUR-TERMINAL (output with respect to low output terminal):	±0.04	±0.004	±0.04
THREE-TERMINAL⁴	±0.2	±0.02	±0.2
Max Output Resistance (input shorted):	2.79 kΩ	28.8 kΩ	2.88 kΩ
Effective Output Capacitance (typ, unloaded):	67 pF	80 pF	80 pF

¹ Safe operating limit, will not cause damage.

² Output resistance change due to increasing frequency, with no load, with output resistance set to max, up to the tabulated frequency: <3 dB.

³ Measured in ppm of input. Output is taken with respect to reference output measured when the indicated ratio is zero, with frequency in the low audio range, with input <0.5 of Input Voltage Rating. Note: Linearity change due to internal heating, for full rated input voltage, for ratios 0.1 to 1.0: <20 ppm; for ratios <0.1: negligible.

⁴ Output measured with respect to low input terminal. Low output terminal may be floating or connected to the low input terminal.

Description	Catalog Number
1455 Decade Voltage Divider	
Bench Models	
1455-A, 4-dial, 10-kΩ	1455-9700
1455-B, 5-dial, 10-kΩ	1455-9706
1455-BH, 5-dial, 100-kΩ	1455-9708
Rack Models	
1455-A, 4-dial, 10-kΩ	1455-9701
1455-B, 5-dial, 10-kΩ	1455-9707
1455-BH, 5-dial, 100-kΩ	1455-9709