2793
Decade Resistance Boxes

Test Equipment Depot

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279301

110 x 491 x 140 mm 4.8 kg
(4-3/8 x 19-3/8 x 5-1/2'' 10.6 lbs)

Model 2793 is a high-accuracy, stable DC variable resistor with 6 dials and is available in two styles: 279301 for medium resistance from 0.1 to 1,111.210 Ω in 1 mΩ steps (best suited for calibration of resistance thermometers or bridges); 279303 for high resistance from 0 to 111.1110 MΩ in 100 Ω steps (suitable for calibration of insulation resistance testers or bridges).

279301

- **High accuracy and stability**
- **High reproducibility**
  Excellent reproducibility is obtainable because dial switches with low contact resistance are used. For example, changes in contact resistance is within ±1.1 mΩ at 0.1 Ω setting.
- **1 mΩ resolution**
- **Simple, quick dial operation**
- **In-line display for easy reading**
- **Ideal for calibration of resistance thermometers and bridges**
  Due to its high accuracy and a dial system, various types of resistance thermometers and bridges can be calibrated accurately and promptly.
- **Excellent anti-shock and -vibration properties**

279303

- **Up to 100 MΩ in 100 Ω step**
- **Low voltage coefficient**
  Variation of the resistance value is less than ±0.1% at 1 MΩ and 10 MΩ steps against 100 V application, and less than ±0.04% at 100 Ω, 1 kΩ, 10 kΩ, and 100 kΩ steps against 10 V application.
- **Shock- and vibration-proof construction**
- **Easy-to-read in-line indication**
- **Best suited for calibration of insulation resistance testers and bridges**

SPECIFICATIONS

279301

Resistance Range: 0.100 to 1,111.210 Ω (Minimum resistance is 0.100 Ω).
Dial Composition: $0.001 Ω \times 10 + 0.01 Ω \times 10 + 0.1 Ω \times 11 + 1 Ω \times 10 + 10 Ω \times 10 + 100 Ω \times 10$
Resolution: 0.001 Ω
Accuracy: ±(0.01% + 2 mΩ) at temperature 23 ±2°C, humidity 45 to 75%, and 0.1 W power application
Max. Allowable Input Power: 0.25 W/step. Within 1 W

for overall instrument.
Max. Allowable Input Current:
50 mA (100 Ω steps), 150 mA (10 Ω steps), 500 mA (1 Ω steps), and 1.5 A (0.1 Ω steps).
Insulation Resistance: More than 500 MΩ at 500 V DC between panel and circuit.
Dielectric Strength: 1,000 V AC for one minute between panel and circuit.
Temperature Coefficient:

Temperature coefficient	Dial	100 Ω step	10 Ω step	1 Ω step	0.1 Ω step
α_{20} (x 10^{-6}/°C)		−5 to +10	−5 to +20	Approx. 20 to 90	Approx. 90 to 900
β (x 10^{-6}/°C²)		−0.3 to −0.7		—	—

Variation of resistance with temperature change is given by the following equation:
$$R_t = R_{20} [1 + \alpha_{20}(t - 20) + \beta (t - 20)^2]$$
where, R_t : Resistance value at t°C
R_{20} : Resistance value at 20°C

279303

Resistance Range: 0 to 111.1110 MΩ.
Dial Composition: $100 Ω \times 10 + 1 kΩ \times 10 + 10 kΩ \times 10 + 100 kΩ \times 10 + 1 MΩ \times 10 + 10 MΩ \times 10$.
Accuracy: 100 Ω, 1 kΩ, 10 kΩ and 100 kΩ steps . . . ±(0.05% + 0.05 Ω)
1 MΩ and 10 MΩ steps . . . ±0.2%
(At temperature 23 ±2°C, humidity below 75%, including residual resistance of approx. 0.05 Ω).
Max. Allowable Input:
100 Ω step . . . . . 100 mA
1 kΩ step . . . . . 30 mA
10 kΩ step . . . . . 10 mA
100 kΩ step . . . . . 3 mA (100 to 600 kΩ)
2,000 V (700 kΩ to 1 MΩ)
1 MΩ step . . . . . 2,000 V
10 MΩ step . . . . . 2,000 V
Temperature Coefficient:
100 Ω, 1 kΩ step . . . . . α_{20} = (−2 to +20) x 10^{-6}/°C
β = −(0.3 to 0.7) x 10^{-6}/°C²
10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ step ±30 x 10^{-6}/°C
Variation of resistance with temperature change is given by the following equation:
$$R_t = R_{20} [1 + \alpha_{20}(t - 20) + \beta (t - 20)^2]$$
where, R_t : Resistance value at t°C
R_{20} : Resistance value at 20°C
Insulation Resistance: More than $10^{11} Ω$ at 1,000 V DC between panel and circuit.
Dielectric Strength: 2,500 V AC for one minute between panel and circuit.