2793
Decade Resistance Boxes

279301

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

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 1mΩ steps (best suited for calibration of resistance thermometers or bridges); 279303 for high resistance from 0 to 111.1110 MΩ in 100Ω 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 ±1.1mΩ at 0.1Ω setting.
■ **1mΩ 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 100MΩ in 100Ω step**
■ **Low voltage coefficient**
   Variation of the resistance value is less than ±0.1% at 1MΩ and 10MΩ steps against 100V application, and less than ±0.04% at 100Ω, 1kΩ, 10kΩ, and 100kΩ steps against 10V 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 0.100Ω).
Dial Composition: 0.001Ω × 10 + 0.01Ω × 10 + 0.1Ω × 11 + 1Ω × 10 + 10Ω × 10 + 100Ω × 10
Resolution: 0.001Ω
Accuracy: ±(0.01% + 2mΩ) at temperature 23 ±2°C, humidity 45 to 75%, and 0.1 W power application
Max. Allowable Input Power: 0.25W/step. Within 1W for overall instrument.
Max. Allowable Input Current:
   50mA (100Ω steps), 150mA (10Ω steps), 500mA (1Ω steps), and 1.5 A (0.1Ω steps).
Insulation Resistance: More than 500MΩ at 500V 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} (× 10⁻⁶/°C)	−5 to +10	−5 to +20	Approx. 20 to 90	Approx. 90 to 900
β (× 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: 100Ω × 10 + 1kΩ × 10 + 10kΩ × 10 + 100kΩ × 10 + 1MΩ × 10 + 10MΩ × 10.
Accuracy: 100Ω, 1kΩ, 10kΩ and 100kΩ steps . . . ±(0.05% + 0.05Ω)
   1MΩ and 10MΩ steps . . . ±0.2%
   (At temperature 23 ±2°C, humidity below 75%, including residual resistance of approx. 0.05Ω).
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, 1kΩ step . . . . . α_{20} = (−2 to +20) × 10⁻⁶/°C
   β = −(0.3 to 0.7) × 10⁻⁶/°C²
   10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ step ±30 × 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 10¹¹Ω at 1,000 V DC between panel and circuit.
Dielectric Strength: 2,500 V AC for one minute between panel and circuit.