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1310B 1310B-T

AccuRes Resistance Standard
Developed for Automated
Calibration of DVM
and Calibrators



1310B

The 1310B was designed to meet the requirements of automated DVM and calibrator calibration. Built around a low-thermal scanner, and temperature controlled enclosure the 1310B provides 11 high stability standard reference resistors ranging from 0.1 Ω to 1 G Ω , covering the full range of resistance standards required for precision calibration. The 0.1 Ω and 1 Ω standards are also capable of handling the majority of current levels needed for verifying current input and output on units under test (UUTs). Additionally, the system includes two external channels that function as a connection hub for auxiliary AC and DC calibration equipment.

1310B-T

The 1310B-T family was designed to meet the requirements of automated DVM and calibrator calibration. Built around a low-thermal scanner, and temperature controlled enclosure the 1310B-T provides 11 high-stability standard reference resistors 10 Ω , 25 Ω , 100 Ω , 200 Ω , 400 Ω and 1000 Ω Internal Standards, covering the full range of resistance standards required for precision calibration. Additionally, the system includes two external channels that function as a connection hub for external standard connections. The 1310B-T from Measurements International provides temperature laboratories with the ultimate reference standards.

1310B-X

The 1310B-X was designed to meet the requirements of automated DVM and calibrator calibration. Built around a low-thermal scanner, and temperature controlled enclosure the 1310B-X provides 11 highstability standard reference resistors ranging from 0.1 Ω to 1 G Ω , covering the full range of resistance standards required for precision calibration. The 1310B-X also allows users to select any additional resistor values (up to 6) to be added to the unit. Additionally, the system includes two external channels that function as a connection hub for auxiliary AC and DC calibration equipment.

Featuring

- ▶ Combines Primary Level Resistors with Scanner and Temperature Controlled Chamber
- ▶ Touch screen controller shows cal value and drift information
- ▶ Designed for use as DC Calibration HUB for automated Calibrator and DMM stations
- ▶ 0.1 Ω to 1 G Ω
- ▶ 0.1 Ω capable of 3 A

Featuring

- ▶ Combines Primary Level Resistors with Scanner and Temperature Controlled Chamber
- ▶ Touch screen controller shows cal value and drift information
- ▶ Designed for use as temperature reference standards
- ▶ 10 Ω , 25 Ω , 100 Ω , 200 Ω , 400 Ω and 1000 Ω Internal

Featuring

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Feature	Benefit	
1310B	11 resistors values ranging from 0.1 Ω up to 1 G Ω	Complete line of decade value standards in one
1310B-X		
1310B-T	10 Ω , 25 Ω , 100 Ω , 200 Ω , 400 Ω and 1000 Ω Internal Standards	Temperature-controlled enclosure
	User Friendly Touch Screen Interface	Resistor Tracking and history graph
	Internal resistance elements in a temperaturecontrolled chamber	Excellent stability and extremely lowtemperature coefficients
	Single output cable for direct plug-in	Easy operation without the requirement for changing wires
	Built for calibration of calibrators and DVMs	Best stability < 2.5 $\mu\Omega/\Omega/\text{Year}$
	Built-in 4-terminal scanner	Combining multiple instruments into one simple to use instrument (resistors, air bath, scanner)
	Two external extra channels	Connect to the resistance value of your choice
	Front panel or GPIB controlled	Simplifies operation for the user
	Internally mounted temperature sensor PT100	Users can connect to the front panel and monitor internal oven

Specifications: Rev 0

	Nominal Resistance (Ohms)	Tolerance ($\pm \mu\Omega/\Omega$) ($\pm \text{ppm}$)	24-Hour Stability ($\pm \mu\Omega/\Omega$) ($\pm \text{ppm}$)	12-Month Stability ($\pm \mu\Omega/\Omega$) ($\pm \text{ppm}$)	Temperature Coefficient ($\pm \mu\Omega/\Omega/^{\circ}\text{C}$) ($\pm \text{ppm}/^{\circ}\text{C}$)	Max. Voltage (V)
1310B 1310B-X	1 G Ω	100	0.8	40	0.06	200
	100 M Ω	50	0.4	10	0.025	200
	10 M Ω	35	0.25	10	0.025	200
	1 M Ω	25	0.03	2.5	0.02	200
	100 k Ω	15	0.02	2.5	0.01	100
	10 k Ω	10	0.01	2.5	0.005	32
	1 k Ω	10	0.01	2.5	0.005	10
	100 Ω	10	0.01	2.5	0.005	3.2
	10 Ω	10	0.01	2.5	0.005	1.0
	1 Ω	10	0.01	2.5	0.005	0.32
	0.1 Ω	100	0.1	10*	0.0125	0.3
1310B-T	10	10	0.01	2.5	0.005	1.0
	25	10	0.01	2.5	0.005	1.58
	100	10	0.01	2.5	0.005	3.16
	200	10	0.01	2.5	0.005	4.47
	400	10	0.01	2.5	0.005	6.32
	1000	10	0.01	2.5	0.005	10.0
Internal Temperature Stability			$\pm 0.1^{\circ}\text{C}$ Over a 1-Year Period			
Ambient Temperature Range			23 $^{\circ}\text{C} \pm 5^{\circ}\text{C}$			
Ambient Humidity Range			20 to 70 % RH			
Warranty (only 1310B-T)			Standard 2-Year Parts & Labour			

Scanner Specifications

Operation	Four-Terminal
Error Contribution	< 20 Nanovolts
Contact Configuration	Relay - Two Coil Latching
Max Carrying/Switching Current	4/2 Amps @ < 30 Volt (DC)
Maximum Working/Switching Voltage	1000/220 Volts @ < 100 mA (DC)
Contact Resistance	< 0.05 Ω
Expected Relay Life	10 ⁸ Operations
Insulation Resistance	> 10 ¹² Ω

Dimensions (L × W × H):
572 × 445 × 203 (mm)

Weight:
9 kg

Shipping Weight:
13 kg

Mains Power:
85 to 264 Vac - 47 to 440 Hz