

Model SR1050

RESISTANCE STANDARDS & INSTRUMENTS

- Resistance transfers from 100 k Ω to 110 M Ω
- Eleven equal-value precision resistors
- Two models, decade steps 1 M Ω to 10 M Ω
- Complete control of insulation resistance in resistance transfers

High-Resistance Transfer Standards

Precise transfer measurements up to 110 M Ω relative to a single 100 k Ω resistance standard can be obtained with the Model SR1050 High-Resistance Transfer Standards. The unit is available in two models: 1 M Ω and 10 M Ω resistance sections.

Based on a unique method for establishing known ratios, the Model SR1050 standard utilizes a transfer technique that consists of switching resistance sections in parallel, series or series-parallel sections. An outstanding design feature is a structure in which the only insulation leakage paths (other than those within each resistance section) are from the external terminals to ground. This eliminates insulation leakage errors in the transfer of calibration from one resistance level to another using three-terminal measurement techniques.

A specially designed lever switch provides a convenient means of switching into parallel and series-parallel configuration without introducing insulation leakage errors. External shorting or paralleling bars are not necessary. Each resistance section consists of precision wire-wound resistors connected in series. The reduced heat concentration of the series connection improves the thermal characteristics of a resistance element with an already low temperature coefficient.



Model SR1050

HIGH RESISTANCE TRANSFER STANDARDS

Specifications

Standard Values	1 and 10 M Ω /step
Accuracy	
Transfer	Limited only by short-term repeatability of resistance values. Typical repeatability ± 2 ppm
Initial	± 25 ppm of nominal value, matched within 10 ppm, for 1 M Ω ± 30 ppm of nominal value, matched within 10 ppm, for 10 M Ω
Long-Term	± 50 ppm of nominal value
Calibration	± 10 ppm for 1 M Ω ; 15 ppm for 10 M Ω
Calibration Conditions	23 °C, low power, three-terminal measurement
Temperature Coefficient	± 5 ppm/°C, matched within 5 ppm/°C
Power Coefficient	± 0.05 ppm/mW per resistor
Maximum Power Rating	1W/step or 5W distributed over 10 steps, or maximum voltage of 2.5 kV where this value does not result in power excess of 1W per resistor
Breakdown Voltage	3.5 kV peak between active terminals and case
Leakage Resistance	Greater than 10^{13} Ω from terminals to case
Calibration Data	Initial calibration readings are affixed to instrument
Dimensions	
Height	16.25 cm (6.4 in)
Width	43.2 cm (17 in)
Depth	14.2 cm (5.6 in)
Weight	3.9 kg (8.5 lb)
Included Accessories	
Manual	P/N 6853
Z540 Compliant Calibration	
with Certificate and Data for S1050	P/N OPT-Z540
Optional Accessories	
Series Parallel Compensation Network	P/N SPC102

Initial Accuracy:

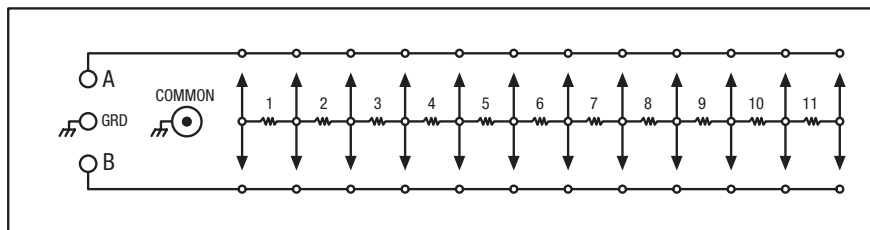
The specifications stated in the TEGAM instrument catalogs and data sheets are intended as acceptance specifications and are guaranteed for 60 days from the date of shipment. They are typically maintained for a much longer period of time.

Long-Term Accuracy:

These specifications are guaranteed for the standard warranty period, and are typically maintained for the life of the instrument. Long-term accuracy is implied when not otherwise stated.

Calibration Accuracy:

Calibration accuracy is the accuracy of TEGAM calibration data relative to the legal units maintained by the U.S. National Institute of Standards and Technology.



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