

Description

"VAISESHIKA" 4½ Digits Digital Thermocouple Test Set and Calibrator Type 7709 is a versatile equipment in the area of thermal engineering. The instrument is ideal to calibrate potentiometric recorders, platinum resistance thermometers, temperature controllers and recorders. The instrument can be used as a thermocouple simulator with an accuracy of $\pm 0.02\%$

A calibrated stable potential source, continuously variable from 0 to ± 100 mV, is provided with the test set. The potential variation can be done with a resolution of $10\mu\text{V}$. Similarly, thermo-e.m.f., generated across a thermocouple, in a furnace can be recorded with DIGITAL READOUT DISPLAY in this instrument with an accuracy of $\pm 0.02\%$

Provisions for current measurement and current simulation for the calibration of current transducers, current loops and process control instruments are

additionally provided in the instruments Type : 7709C

A standard Wheatstone Bridge is also provided with the test set. The resistance ranging from 0.1 ohm to 100.0 ohm can be measured and simulated with an accuracy of $\pm 0.1\%$. The additional facility is provided to use the bridge as Standard Decade Resistance Substitution Box of accuracy $\pm 0.1\%$. The Wheatstone Bridge and the Decade Resistance Box section can be used for the calibration of Platinum Resistance Thermometer and measurement of thermocouple resistance.

"VAISESHIKA" 4½ Digits Digital Thermocouple Test Set and Calibrator Type 7709 is a very good substitute for the traditional bridge type thermocouple test set which is cumbersome, complicated and time consuming. This instrument is convenient and provides direct reading facility in terms of LED display of bright red colour.

SPECIFICATIONS

Range of Temperature (measurable in terms of thermo-e.m.f.)	: -250° to 2500° C
DC volts measurement	: 0 mV to ± 100.00 mV
Calibrated potential source	: 0 mV to ± 100.00 mV continuously variable through vernier and linear system.
Resolution	: $10\mu\text{V}$ [equivalent to 0.2° C (for J, E, T type of thermocouple) equivalent to 0.3° C (for K type of thermocouple) equivalent to 2.0° C (for R & S type of thermocouple) equivalent to 24° C (for B type of thermocouple)]
Accuracy DC Volt	: $\pm 0.02\%$ of f.s.d.* ± 1 digit.
Input Impedance	: More than 1000 megohms
Reading rate	: 4 reading per second
Polarity	: Bipolar with the facility of negative polarity indication
Overload	: All digits flashing and continuously blinking on overload

WHEATSTONE BRIDGE

(a) Measurement range	: 0.1 ohm to 111 ohm
(b) Ratio arm	: 200 ohm each fixed
(c) Variable arm	: 10 x 10, 10 x 1 and 10 x 0.1 ohm
(d) Accuracy	: $\pm 0.1\%$
(e) Switch configuration	: Silver plated contact switches
(f) Resolution	: 0.1 ohm

CALIBRATION ENVIRONMENTS

(a) Operating temperature	: 27° C
(b) Storage temperature	: 40° to 60° C
(c) Relative Humidity	: 45% RH.
(d) Warm up period	: 30 minutes

DIMENSIONS

(a) Size (in cm.)	: 45 (L) x 26 (D) x 11 (H)
(b) Weight (in kg.)	: 4 kg. (approx.)

POWER SOURCE	: 230 V $\pm 10\%$ AC, 50 Hz, Perfectly stable and transients free AC Mains are required for stable digital read-out display.
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* f.s.d. stands for full scale Division. In this instrument f.s.d. is 100 mV.

This instrument provides simulation facility for resistance from 0.1 ohm to 1.0K Ohm which is extremely useful for the calibration of entire range of RTDs (Resistance Temperature Dependent Detectors)

Versatile Wheatstone Bridge Facility upto 1.0 K. ohm

The specifications of 4½ Digits Digital Thermocouple Test Set and Calibrator Type 7709 A are similar to Type 7709. In this Model the Wheatstone Bridge has the following specifications :

SPECIFICATIONS :

(a)	Measurement range	:	0.1 ohm to 1.0 K ohm
(b)	Ratio arm	:	200 ohm each fixed
(c)	Variable arm	:	0.1 x 10, 1.0 x 10, 10 x 10, 100 x 10 ohm
(d)	Accuracy	:	± 0.1%
(e)	Switch configuration	:	Silver plated contact switches
(f)	Resolution	:	0.1 ohm

All the other specifications are similar to Type 7709

**Whenever you think of
Standards
Think of Vaiseshika
Calibration Standards**

Type 7709 B

Multi Channel Facility

The specifications of 4½ digits Multi -Channel Digital Thermocouple Test Set and Calibrator Type 7709 B are similar to Type 7709. In this MULTI-CHANNEL Calibrator TEN thermocouples can be connected directly on the instrument and the thermo-e.m.f. generated, across each individual thermocouple, can be monitored in DIGITAL DISPLAY one by one at a central point. You may connect ten similar or different thermocouple.

Similarly TEN pyrometers, temperature indicators or

potentiometric recorders can be connected for the purpose of thermo-e.m.f. simulation. These ten instruments can be calibrated one by one from a centrally operated electronic control.

"Vaiseshika " 4½ Digits Multi Channel Digital Thermocouple Test Set and Calibrator Type 7709 B can be ideally used for evaluation of thermocouples derating, calibrations, comparative performance monitoring and efficiency of ten thermocouples at a time. This instrument can also be used to check the calibration stabilities of ten pyrometers or temperature indicators at a time.

SPECIFICATIONS :

(a)	Total number of channels available for thermo-e.m.f. measurement	:	Ten
(b)	Total number of channels available for pyrometer calibrations (e.m.f. simulation)	:	Ten
(c)	Calibrated potential measurement and simulation	:	0 to ±100 mV
(d)	Resistance measurement and simulation	:	0.1 ohm to 1. K ohm

All the other specifications are similar to Type 7709