

TC-100

Thermocouple Calibrator

Description

The TC-100 Thermocouple Calibrator provides high accuracy source and measurement of ten common thermocouples, as well as mV. The TC-100's accuracy of $\pm 0.3^{\circ}\text{C}$ for Type J T/Cs includes all errors, at resolutions of $\pm 0.01^{\circ}\text{C}$ or $^{\circ}\text{F}$ in measure mode and $\pm 0.1^{\circ}\text{C}$ or $^{\circ}\text{F}$ in source mode. Features including MIN/MAX recall in measure mode, three setpoints per thermocouple range, a large knob for decade control of the output in source mode, and the ability to accept bare T/C wires in addition to mini-plug inputs, makes the TC-100 an accurate, easy-to-use instrument for all your thermocouple calibration needs.

Features

- High accuracy – $\pm 0.3^{\circ}\text{C}$ (Type J T/C – all errors combined)
- Ten (10) common T/C types plus mV
- Accepts both T/C mini-plug and bare T/C wires
- Simple decade control of output
- Three (3) setpoints for each T/C type
- MIN/MAX recall in measure mode
- Input protection to 240 VAC
- Supplied in full rubber boot



The TC-100 accepts both mini-plug
AND bare thermocouple wires!

TC-100 Specifications (1 year at 23 °C ±5 °C; % of reading unless otherwise noted)

Output Voltage	
Range	-10 to +75.000 mV
Resolution	1 μ V
Accuracy	± 0.007 % of rdg, ± 10 μ V
Output Impedance	≤ 1 Ohm
Input Voltage	
Range	-10 to +75.000 mV
Resolution	1 μ V
Accuracy	± 0.007 % of rdg, ± 10 μ V
Input Impedance	> 1 MegOhm
Thermocouple Source/Measure	
Types	J, K, T, E, R, S, B, L, U, C
Range	mV
Resolution	
Source	± 0.1 °C or °F
Measure	± 0.01 °C or °F
Accuracy	
J	± 0.5 °C; -210 °C to -100 °C
	± 0.3 °C; -100 °C to +1,200 °C
K	± 0.6 °C; -200 °C to -100 °C
	± 0.35 °C; -100 °C to +1,000 °C
	± 0.5 °C; +1,000 °C to +1,372 °C
T	± 0.7 °C; -200 °C to -150 °C
	± 0.3 °C; -150 °C to +400 °C
E	± 0.5 °C; -200 °C to -100 °C
	± 0.3 °C; -100 °C to +1,000 °C
R	± 1.8 °C; 0 °C to 250 °C
	± 1.0 °C; 250 °C to +1,767 °C
S	± 1.8 °C; 0 °C to 250 °C
	± 1.0 °C; 250 °C to +1,767 °C
B	± 1.7 °C; 600 °C to 1,000 °C
	± 1.2 °C; 1,000 °C to 1,820 °C
L	± 0.5 °C; -200 °C to -100 °C
	± 0.4 °C; -100 °C to +900 °C
U	± 0.7 °C; -200 °C to 0 °C
	± 0.3 °C; 0 °C to +600 °C
C	± 0.4 °C; 0 to °C 1,000 °C
	± 0.7 °C; 1,000 °C to +1,800 °C
	± 1.2 °C; +1,800 °C to +2,316 °C
CJC Temp. Offset	± 0.05 °C/°C outside of 23 ± 5 °C
Warm-up Time	1 minute to specification
Environmental	
Operating Temperature	-10 °C to +55 °C
Storage Temperature	-20 °C to 70 °C
Power Requirements	
Battery	9 VDC 9 V alkaline; 006P/ IEC 6F22/ NEDA1604 Optional NiCad Optional AC adapter/charger
Mechanical	
Dimensions	5.7" H x 3.15" W x 1.43" D (144.7 x 80.0 x 36.3 mm)

Weight	12 ounces (340 grams)
Optional Accessories	Carrying Case; Model LCA-05A

Notes:

1. Temperature standard ITS-90.

Temperature Probes & Kit
A variety of temperature probe configurations are available. All are Type-K, and feature ± 2.2 °C/ ± 0.75 % or ± 3.9 °F/ ± 0.75 % accuracy.



TP Kit includes probes:
TP-K01 through TP-K06

- TP-K01 — Bead Probe
-50 °C to 200 °C; -58 °F to +392 °F
- TP-K02 — Immersion Probe
-50 °C to 700 °C; -58 °F to +1,292 °F
- TP-K03 — Surface Probe
-50 °C to 400 °C; -58 °F to +752 °F
- TP-K04 — Piercing Probe
-50 °C to 600 °C; -58 °F to +1,122 °F
- TP-K05 — Surface Probe
-50 °C to 400 °C; -58 °F to +752 °F
- TP-K06 — Air & Gas Probe
-50 °C to 800 °C; -58 °F to +1,504 °F

Need a high performance loop calibrator?

Consider the LC-100.

With accuracy of ± 0.015 % of reading and 0.001 mA resolution, the LC-100 furnishes significantly extended performance over any competitive calibrator. A % Error function eliminates manual error calculations. The LC-100 simulates, powers and measures two-wire transmitters, and can remotely calibrate 4-20 mA devices.



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