
MAINTENANCE

Generally, with normal usage, this calibrator should hold its rated specifications for at least 12 months. Beyond this, it should remain within 1.5X of its specification over its useful life, provided it is not abused or tampered with. If after the stated warranty period, the device falls out of calibration, it can be returned to Martel for re-calibration. Please call 1-800-821-0023 for pricing and return information.

WARRANTY

Martel warrants all products against material defects and workmanship for a period of twelve (12) months after the date of shipment. Problems or defects that arise from misuse or abuse of the instrument are not covered. If any product is to be returned, a "Return Material Authorization" number must be obtained by calling our Customer Service Department at 1-800-821-0023.



Tuff Tools Model T120 Hand-held Thermocouple Calibrator

OPERATING INSTRUCTIONS



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02C1971 Rev B 02/04

GENERAL DESCRIPTION

The T120 is designed to be a simple to use, high accuracy thermocouple calibrator capable of either simulating or reading J, K, T, or E thermocouple types. A standard thermocouple mini-connector makes connections easy while providing direct contact with the internal cold junction compensation circuitry.

When used as a thermocouple simulator, the T120 provides 2 sets of output control keys which allow the user to either "step" in 100° increments or scroll in smaller increments.

INSTALLATION

UNPACKING

Remove the Packing List and verify that all equipment has been received. If there are any questions about the shipment, please call Martel at 1-800-821-0023.

When you receive the shipment, inspect the container and equipment for any signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor any claims unless all shipping material is saved for their examination. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

SET-UP

Before beginning, become familiar with the keypad layout and the configuration of the input/output jacks. Remember, these jacks are used in multiple configurations so pay careful attention to how the test leads are connected for the specific application.

OPERATING PROCEDURE

1. Turn on power and select the desired thermocouple type by depressing the T/C SELECT key. Once the desired T/C is selected, it will remain in memory until a new T/C type is selected.
2. Select either Input or Output mode depending on whether you want to read a thermocouple or simulate a thermocouple signal.
3. Connect the appropriate thermocouple to the mini-connector on the top of the T120.
4. If you are using the T120 in the output mode use the STEP or SCROLL keys to set the output. The STEP key will step in 100° increments and the SCROLL key allows single degree increments which will increase in speed if the switch is depressed for several seconds.

OPERATING MODES

1. When operating in the thermocouple output mode, the T120 has the ability to simulate up to 4 T/C types (J, K, T, E) into devices which measure thermocouples:

Note: If the T120 is improperly connected to a low impedance load (either a short or near short) the display will flash "ERROR".

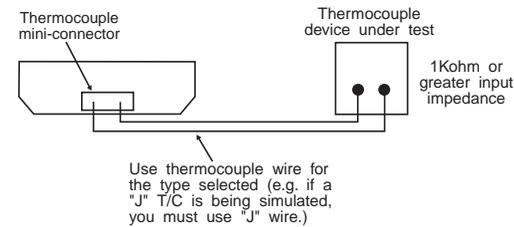


FIGURE 1
SIMULATING A THERMOCOUPLE OUTPUT

2. When operating in the thermocouple Read Mode the T120 can be used to read the temperature of a thermocouple probe.

In this mode, the T120 will detect an open circuit should the thermocouple junction malfunction. In this case, the display will flash "OPEN". It will also flash "OPEN" if no probe is connected in the Input Mode.

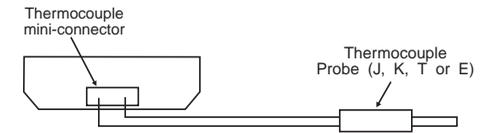


FIGURE 2
READING A THERMOCOUPLE PROBE

SPECIFICATIONS

Ranges	J -100 to 1000°C	} All ranges can be read in °C or °F
	K -100 to 1200°C	
	T -100 to 400°C	
	E -100 to 950°C	

Resolution 1°C or 1°F

Accuracy ±1°C above 0°C;
±1.5°C below 0°C¹

Operating Temp. 0 to 50°C

Storage Temp. -20 to 60°C

Temperature Coef. .01% F.S./°C

Power² 9V alkaline battery (Yields approx. 25 hrs. of operation)

Case Size 1.43" x 3.15" x 5.7"

Weight 12 oz.

Notes: ¹ Accuracy is at 23°C ±2°C and includes CJC error.

² A low battery indication is given at 5.5 volts.