



The Practical Instrument Electronics' Model 522 is a complete source/read thermocouple calibrator providing direct temperature input to all types of instruments such as transmitters, recorders, controllers, alarms, data acquisition and computer systems. The Model 522 also reads thermocouple outputs and displays temperature, eliminating the need for cumbersome books of conversion tables.

The Model 522 is equipped with a miniature T/C connector and slotted screws to connect to common thermocouple equipment or bare extension wire. Select from 8 T/C types to source/read in °C or °F with 0.1° resolution. Or, select mV for direct millivolt source/read capability. The Model 522 is internally cold-junction compensated for accuracy in any operating environment.

Use the EZ-Check™ Switch to quickly switch between three stored temperature/mV outputs. It's easy to customise these values to your application. In read mode the EZ-Check™ Switch recalls minimum and maximum readings. Store or clear the memory with a press of the EZ-Check™ Knob.

The Practical Instrument Electronics' Model 522 offers the highest performance and functions in its class by exceeding the accuracy and functions of many higher priced thermocouple calibrators. It is a low cost solution for the checking and calibration of all thermocouple instruments in the field or laboratory.

# MODEL 522

## THERMOCOUPLE CALIBRATOR

### Features

- **Direct Temperature Input/Output**  
 Read or Source in °C or °F for your T/C type
- **8 Standard T/C Types available**  
 Types J, K, E, T, R, S, B, N and mV  
 Custom types and ranges are available  
 Cold-junction compensated
- **High Accuracy**  
 $\pm (0.008\% \text{ of mV} + 0.006 \text{ mV})$
- **EZ-Dial™ Knob**  
 Easily adjust output by 0.1°  
 Pressing down and turning will select a faster dialling speed
- **EZ-Check™ Switch**  
 User selectable EZ Check™ for 0% and 100% span adjustment  
 Store new EZ Check™ values by pressing the EZ Dial™ knob  
 Recall stored minimum and maximum readings
- **Uses a standard 9V Alkaline Battery**  
 Superior battery life of 45 hours under typical continuous usage  
 Easy access to battery compartment  
 Lightweight and rugged with a solid feel  
 Small, tough and protected to 60V



**Haven Automation Limited**

## General Specifications

(Unless otherwise indicated all specifications are rated from a nominal 23°C, 70% rh for 1 year from calibration)

<b>Operating Temperature Range</b>	-25 to 60°C (-10 to 140°F)
<b>Storage Temperature Range</b>	-25 to 60°C (-10 to 140°F)
<b>Relative Humidity Range</b>	10% ≤rh ≤90% (0 to 35°C), Non-condensing 10% ≤rh ≤ 70% (35 to 60°C), Non-condensing
<b>Overall Size</b>	125.5 x 80 x 46.2mm (4.9 x 3.15 x 1.82 inches)
<b>Overall Weight (inc. 9V battery)</b>	204 grams (7.2oz)
<b>Battery</b>	9V Alkaline provides 45 hours of continuous use
<b>Miscellaneous</b>	Low battery indication with nominal 1 hour of operation left Overload protected to 60 volts for 30 seconds or less High-contrast graphic liquid crystal display with 9.07mm (0.357") high digits
<b>Accuracy:</b>	
<b>Millivolt Accuracy</b>	± (0.008% of mV setting + 0.006 mV)
<b>Temperature Coefficient of mV Source</b>	50ppm/°C of output range
<b>Cold Junction Calibration Accuracy</b>	± 0.1°C (0.2°F)
<b>Cold Junction Sensor Temperature Coefficient</b>	± 0.025% in ambient temperature (°C or °F)
<b>General Temperature Accuracy</b>	± (0.008% of mV setting + 0.006 mV) ± 0.1°C (0.2°F)
<b>Resolution</b>	± 0.1°C or 0.1°F

## Source Thermocouple Specifications

<b>Output Range</b>	-13.000 to +80.000 mV
<b>Output Noise</b>	± 5 µV pp from 0.1Hz to 10Hz
<b>Output Impedance</b>	0.2 Ω (200 nV/uA)
<b>Source Current</b>	< 8 mA

## Read Thermocouple Specifications

<b>Input Noise</b>	< ± 1 LSD from 0.1Hz to 10Hz
<b>Input Impedance</b>	> 1 M Ω
<b>Open T/C Test Pulse</b>	< 1 µA for 300ms
<b>Open T/C Response Time</b>	< 3 seconds
<b>Open T/C Threshold</b>	10 k Ω nominal

## Available Options

<b>Option:</b>	<b>Part Number:</b>
Carrying Case	020-0201
UKAS Calibration Certificate	

Authorised Representative:



### Warranty

Practical Instrument Electronics (PIE) equipment is guaranteed against defective material and workmanship (excluding batteries) for a period of three years from the date of shipment. Claims under guarantee can be made by returning the equipment prepaid to Haven Automation Ltd. The equipment will be repaired, replaced or adjusted at our option. The liability of Practical Instrument Electronics (PIE) is restricted to that given under their guarantee. No responsibility is accepted for damage, loss or other expense incurred through sale or use of our equipment. Under no condition shall Practical Instrument Electronics, Inc. or Haven Automation Ltd. be liable for any special, incidental or consequential damage.



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