



# Automated Thermocouple Calibrator

## CL541-PLUS



**Source and Read 4 Thermocouple Types J, K, T and E, Plus mV**  
**Easy-to-Read Backlight Display**  
**Easily Change Thermocouple Types and Scale**  
**Calibrate Quickly With Automatic Output Stepping**  
**Comes Protected With a Rugged Rubber Boot**  
**Calibrate Directly in Temperature (°C or °F)**  
**Compatible With All Process Instruments**

With the CL541-PLUS you can check and calibrate all your thermocouple instruments and measure thermocouple sensors. Automatic indication of connections on the display for simple hookups. Take it without worry into the shop, plant or field. It comes protected with a rubber boot and rugged, low profile switch. Easy to operate even in the dark areas of the plant with the backlit display. Stop carrying around a millivolt source and thermocouple tables, you can calibrate directly in temperature (°C and °F). The CL541-PLUS works with the thermocouples you use including types J, K, T and E. Easily set any value quickly to within 0.1° with the adjustable digital potentiometer "DIAL" plus store any three temperatures for instant recall. Calibrate quickly with automatic output stepping. Choose between 2, 3, 5, 11 and 21 steps to automatically increment the output in 100%, 50%, 25%, 10% or 5% of span. Select the step time to match your system from 5, 6, 7, 8, 10, 15, 20, 25, 30 and 60 seconds. Connect directly to the thermocouple inputs of smart

transmitters, PLCs, controllers and multichannel recorders and verify their outputs or displays. Measure and trouble shoot thermocouple sensor connections and find broken wires or high resistance junctions. Connect your sensor and the CL541-PLUS automatically measures the thermocouple in degrees C or F.

### Specifications

(Unless otherwise indicated all specifications are rated from a nominal 3°C, 70% RH)

**Accuracy:**  $\pm(0.008\%$  of Reading + 0.006 mV)

#### Cold Junction

**Compensation:**  $\pm 0.1^{\circ}\text{F}$  ( $\pm 0.06^{\circ}\text{C}$ )

#### Millivolt Range:

-13.000 to 80.000 mV

#### Operating Temperature

**Range:** -25 to 60°C (-10 to 140°F)

#### Relative Humidity Range:

10%  $\leq$  RH  $\leq$  90% (0 to 35°C), non-condensing; 10%  $\leq$  RH  $\leq$  70% (35 to 60°C), non-condensing

#### Dimensions:

143 L x 76.2 W x 40.64 mm H (5.63 x 3.00 x 1.60")

**Weight:** 12.1 oz (including boot and batteries)

**Power:** 4 "AA" Alkaline 1.5V (included)

**Battery Life:** 50 hours

**Low Battery:** Low battery indication with nominal 1 hour of operation left

#### Protection Against Misconnection:

Over-voltage protection to 60 Vdc (rated for 30 seconds)

**Display:** High contrast graphic liquid crystal display; LED backlighting for use in low lit areas

#### Read

**Input Impedance:**  $>10\text{ M}\Omega$

#### Open Thermocouple

**Threshold:** 10,000  $\Omega$  nominal

**Pulse:**  $<10$  microamp pulse for 300 milliseconds

### To Order

Model No.	Description
CL541-PLUS	Automated thermocouple calibrator
SC-530	Replacement soft carrying case

*Comes complete with rubber boot, 1 red and 1 black leads with retractable shield banana plugs and alligator clips, 4 "AA" alkaline batteries, NIST certificate of calibration, carrying case and operator's manual.*



CL541-PLUS.

**Normal Mode Rejection:** 50/60 Hz, 50 dB

**Common Mode Rejection:** 50/60 Hz, 120 dB

#### Source

**Output Impedance:**  $<0.3\ \Omega$

**Source Current:**  $>20\text{ mA}$  (drives 80 mV into 10  $\Omega$ )

**Noise:**  $\leq 4$  microvolts p-p for frequencies of 10 Hz or below