

Thermocouple Simulators

CL540 Series



- Types J, K, E, T, R, S, B, N and mV
- Resolution 0.1°C or °F
- EZ-Dial Knob Easily Adjusts Output

The OMEGA® CL540 Series Thermocouple Simulators simulate a standard thermocouple curve over the entire industrial temperature range. Choose between eight standard T/C types or millivolts.

The CL540 Series sources precise temperatures for inputs to all types of instruments such as transmitters, recorders, controllers, alarms, data acquisition, and computer systems.

The CL540 Series for one thermocouple type calibration comes with a 45 cm (18") thermocouple extension wire of that calibration and are internally cold-junction compensated for changes in ambient temperature. The CL540Z offers an SMP-type connector on the top and connection cables are ordered separately.

The EZ-Check function allows the user to store three output temperatures for real convenience. This will save time for repetitive calibrations by instantly recalling the three stored temperature values. Three output settings can be stored, and all settings are saved, even with the power off.

General Specifications

Unless otherwise indicated all specifications are rated from a nominal 23°C (73°F), 70% RH for 1 year from calibration

T/C Temperature Range

- Type B** 594 to 1820°C (1101 to 3308°F)
- Type E** -260 to 1000°C (-436 to 1832°F)
- Type J** -210 to 1200°C (-346 to 2192°F)
- Type K** -245 to 1372°C (-409 to 2501°F)
- Type N** -229 to 1300°C (-380 to 2372°F)
- Type R** 24 to 1768°C (75 to 3214°F)
- Type S** 21 to 1768°C (69 to 3214°F)
- Type T** -251 to 400°C (-419 to 752°F)

Millivolt Range: -12 to 100 mV

Accuracy

Millivolt Uncertainty: ±(0.0% of mV setting + 0.009 mV)

Temperature Coefficient of mV

Source: ±0.005 mV/°C ambient

Output Noise: ±5µVpp from 0.1 to 10 Hz

Output Impedance: 0.2 Ω

Cold Junction Uncertainty:

Cold Junction Sensor

Temperature Coefficient:

±0.05°/° in ambient temperature (°C or °F)

General Temperature

Accuracy: ±(0.015% of mV

setting + 0.009 mV)

± 0.5°C (0.9°F)

Output Dial Adjustment

Resolution: 0.1°C or 0.1°F

for Model CL540Z,

1°C or 1°F for Model CL540

(single T/C type)

Operating Temperature Range:

-25 to 60°C (-10 to 140°F)

Storage Temperature Range:

-25 to 60°C (-10 to 140°F)

Relative Humidity Range:

10% ≤RH ≤90%

[0 to 35°C (32 to 95°F)]

non-condensing, 10% ≤RH ≤70%

[35 to 60°C (95 to 140°F)]

non-condensing

Battery:

9 V alkaline provides 45 hours of continuous use with low battery indication

Display: High contrast graphic liquid crystal 5-digit display with 9.07 mm (0.357") high digits

Connections:

Thermocouple SMP type on top for CL540Z;

wire 45 cm (18") with stripped end leads of

appropriate type for CL540(*)

Dimensions:

123 L x 79 W x 47 mm H

(4.86 x 3.11 x 1.85")

Weight: 255 g (9 oz)



Model CL540Z shown smaller than actual