

Thermocouple Simulators

CL540 Series



Standard

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

The OMEGA® CL540 Series thermocouple simulators simulate a standard thermocouple curve over the entire industrial temperature range. Choose between 8 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, and data acquisition and computer systems.

The CL540 Series for 1 thermocouple type calibration comes with a 45 cm (18") thermocouple extension wire of that calibration and is 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 easy check function allows the user to store 3 output temperatures for real convenience. This will save time for repetitive calibrations by instantly recalling the 3 stored temperature values. Three output settings can be stored, and all settings are saved, even with the power off.

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:** ±(0.015% of mV setting + 0.009 mV)
- Temperature Coefficient of mV Source:** ±0.005 mV/°C ambient

Output Noise: ±5 μVpp 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) ±0.25°C (0.5°F)

Output Dial Adjustment

Resolution: 0.1°C or 0.1°F for CL540Z, 1°C or 1°F for 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 (included) 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:

125.5 H x 46.2 W x 80 mm L (4.9 x 1.82 x 3.15")

Weight: 255 g (9 oz)

CL540Z.
Cable sold separately.



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.

To Order	
Model No.	Description
CL540Z	J, K, E, T, R, S, B, N, mV simulator
CL540(*)	Thermocouple simulator
SC-800	Soft carrying case

* Insert 1 thermocouple Type J, K, E, T, R, S, B, N or mV.

Cable Options One required for CL540 series.

For Model No.	Standard Cable (2 and 10')	Retractable Cable (2')
CL540Z	CL-300-CABLE-(**)-2 CL-300-CABLE-(**)-10	CL-300-RSC-(*)-2

** Insert one thermocouple type for:

CL-300-CABLE: J, K, T, E, R, S, B, N; CL-300-RSC: J, K, T, E.

Comes complete with NIST certification, operator's manual and 9 V battery.

Ordering Example: CL540Z, J, K, E, T, R, S, B, N, mV thermocouple simulator.
OCW-2, OMEGACARESM extends standard 3-year warranty to a total of 5 years.