

NI-9313 Thermocouple Module

16 Channels | 24-Bit Measurement | Optimized for High-Density Thermal Monitoring

The NI-9313 delivers the same trusted thermocouple measurement accuracy as the popular NI-9213 at a lower cost per channel, with a 1 S/s per channel sample rate. Its 16 thermocouple inputs let engineers scale up temperature channel count in large thermal test systems or add thermocouple measurements to a mixed-signal test setup, using a single chassis slot.

Why Choose the NI-9313?

- **Reduce cost for high-channel-count thermal measurements:** The NI-9313 provides 16 thermocouple channels in a single module, making it well suited for environmental chambers, battery validation, thermal characterization, and other applications where large numbers of temperature measurements are required.
- **Expand mixed-signal systems efficiently:** By combining thermocouple inputs with voltage, current, digital, and other measurements in the same CompactDAQ or CompactRIO chassis, engineers can correlate temperature data with the rest of their test system without adding dedicated thermal hardware.
- **Deploy confidently in industrial environments:** With an operating range of -40°C to 70°C, 50 g shock and 5 g vibration rating, and 250 V_{RMS} channel-to-earth isolation, the module holds up in test cells, chambers, and on the production floor without extra protection.
- **Preserve existing software workflows:** Uses the NI-DAQmx driver and programming model as the rest of the NI thermocouple portfolio, so existing NI-9213 test code, configurations, and engineering expertise carry over without rework.

Technical Specifications

Parameters	NI-9313
Channels	16 Thermocouple Inputs
Sampling Rate	1 S/s per Channel
Resolution	24-Bit
Thermocouple Types	J, K, T, E, N, B, R, S, A, C
Isolation & Safety	Channel-to-Earth Ground Isolation 250 V _{RMS} CAT II
Front Connector	36-position spring-terminal
Operating Temperature	-40°C to +70°C
Develop With	FlexLogger Lite (included) • LabVIEW • DAQmx • Python • C/C++ • C#/ .NET



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