# CompactDAQ Temperature Measurement Bundle

Modular Data Acquisition Bundles For Temperature

## Use NI DAQ temperature bundle for:

- Thermal chamber tests
- Board-level thermal characterization
- System-level validation
- Temperature field tests
- Quick temperature logging systems

## Popular Features

### High-Channel Count

Up to 16 channels per module with 74 S/s sampling rate

### Rugged

-40° to 70° C Temp range 50g shock

### Built-in CJC

Cold-junction compensation improves thermocouple accuracy

# Pre-Configured Hardware Bundle for Temperature Sensors

Spend less time configuring your test system and more time testing your products with NI's temperature measurement bundle based on CompactDAQ hardware.

### Temperature Measurement Bundle with Expansion
Bundle P/N: 868014-01

cDAQ-9174    NI-9213    NI-9213

| Module Compare | Connectivity | Channels | Sample Rate | Module Features |
|---|---|---|---|---|
| NI-9213 | Spring Terminal | 16 | 74 S/s Multiplexed | • Compatible with most thermocouples<br>• Anti-aliasing filters<br>• Open-thermocouple detection<br>• Cold-junction compensation<br>• NIST traceable calibration<br>• Channel-Earth Isolation |

**Chassis Features: cDAQ-9174** (4-Slot)

• USB Bus-Powered
• Compact and Rugged

• -20 to 55 ºC Operating temperature
• $30g/0.3g_{RMS}$ Operational shock and vibration

## Other Pre-Configured Hardware Sensor Bundles

**Voltage and Digital Measurement Bundle**
Bundle P/N: 868015-01

**Multi-Sensor Input Measurement Bundle**
Bundle P/N: 868016-01

**Sound and Vibration Measurement Bundle**
Bundle P/N: 868017-01

**Strain & Load Measurement Bundle**
Bundle P/N: 868019-01

# Replacement and Upgrade Options for Temperature Sensors

Need more channels or a different sample rate? NI offers more Temperature Modules for your temperature test needs.

## Thermocouple Modules

| System Need | Connectivity | Ch | Sample Rate | Isolation | Model/PN |
|---|---|---|---|---|---|
| Lowest module cost | Spring Terminal | 4 | 14 S/s Multiplexed | Channel-Earth | NI-9210 |
| Minijack | Mini Jack | 4 | 14 S/s Multiplexed | Channel-Earth | NI-9210 |
| Lowest cost/channel | Spring terminal | 16 | 74 S/s Multiplexed | Channel-Earth | NI-9213* |
| Ch-Ch Isolated | Screw Terminal (250V) | 8 | 95 S/s/ch Simultaneous | Channel-Channel | NI-9212 |
| Better accuracy | Screw Terminal | 16 | 68 S/s Multiplexed | Channel-Earth | NI-9214 |

*In the Temperature Measurement Bundle with Expansion

## Other Popular Measurement Types

| Measurement | Connectivity | Ch | Sample Rate | Isolation | Model/PN |
|---|---|---|---|---|---|
| Sound and Vibration | Spring Terminal | 4 | 51.2 kS/s/ch Simultaneous | None | NI-9234 |
| Voltage Input | Spring Terminal | 4 | 250 kS/s Multiplexed | Channel-Earth | NI-9205 |
| Load, Pressure, Strain | RJ-50 (accessories sold separately) | 4 | 50 kS/s/ch Simultaneous | Channel-Earth | NI-9237 |
| Voltage, current, strain, thermocouple, RTD, ¼ ½ full bridge | Spring terminal | 4 | 100 S/sec Simultaneous | Channel-Channel | NI-9219 |

## CompactDAQ Chassis

**Need more than four modules or a different connectivity?**

Select the chassis that meets your needs. All hardware use the same software driver.

- Ethernet: 1, 4, and 8-Slot chassis
- USB: 1, 4, 8, 14-Slot chassis
- Wi-Fi: 1-Slot chassis

**Contact your NI product expert to get help solving your test challenges.**

# Improve Test Performance with NI Software

## Build an Automated Test System with LabVIEW

- **Acquire data** from NI hardware, 3rd party instruments, and many industry-standard protocols

- **Create interactive UIs** for test monitoring and control.

- **Process** with standard math, probability, and statistical functions.

- **Integrate code** written in Python, C/C++, .NET, and MathWorks MATLAB® software.

- **Save data** to .csv, .tdms, or any custom-defined binary file.

## Perform Quick Tests with FlexLogger No-Code Software

- **Configure** quick tests with alarms, test properties, and real-time data displays

- Simplify **sensor measurement** with sensor-specific templates

- **Log test results** to .tdms or .csv files

- **Add calculations** for simple math, filtering, Boolean logic, and more

- **Review data** with an included interactive TDMS file viewer

## Develop with Your Preferred Programming Language

- Python

- C, C+, C#

- .NET

- MATLAB® (Contact MathWorks® for the Data Acquisition Toolbox)

*MATLAB is a registered trademark of The MathWorks, Inc.*
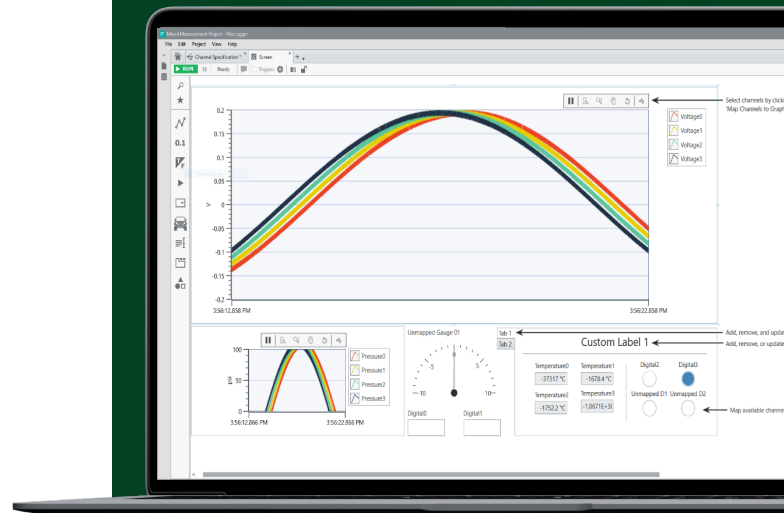
""FlexLogger makes it easier to troubleshoot and verify that the raw data from different sensors are correct before I start my test. This helps shorten test development by saving time typically wasted on redoing configurations."

- Andy Tarman,
Lab Test Engineer
CNH Industrial