

# CompactDAQ Temperature Measurement Bundle

Modular Data Acquisition Bundles For Temperature

## Use NI DAQ temperature systems for:

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



## Popular Features

### Connection Options

Options for minijack or screw terminal thermocouples

### Rugged

-40° to 70° C Temp range  
50g shock







### Built-in CJC

Cold-junction compensation improves thermocouple accuracy



# Hardware Bundle for Temperature Sensors

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

	cDAQ-T1101 P/N: 865662-01	cDAQ-T1102 P/N: 865682-01	cDAQ-T4202 P/N: 868014-01
<b>What's in the Box?</b>			
<b>Chassis</b>	cDAQ-9171 	cDAQ-9171 	cDAQ-9174 
<b>Module(s)</b>	NI 9210 (x1) 	NI 9213 (x1) 	NI 9213 (x2) 
<b>Accessories</b>	<ul style="list-style-type: none"> <li>USB cable (A to B) with captive screw</li> </ul>	<ul style="list-style-type: none"> <li>USB cable (A to B) with captive screw</li> <li>Plastic module shell for strain relief and safety</li> </ul>	<ul style="list-style-type: none"> <li>USB cable (A to B) with captive screw</li> <li>Plastic module shell for strain relief and safety</li> <li>Desktop Mounting Kit</li> <li>AC/DC power supply* <small>*IEC power cord sold separately</small></li> </ul>
<b>Specifications (chassis)</b>			
<b>Slots</b>	1		4
<b>Power Required</b>	USB 2.0 Bus-powered		9-31 VDC
<b>Dimensions (unloaded)</b>	131.4 mm × 88.6 mm × 33.3 mm (5.17 in. × 3.49 in. × 1.31 in.)		159.5 mm × 88.1 mm × 58.9 mm (6.28 in. × 3.47 in. × 2.3 in.)
<b>Operating Temp</b>	-40° to 70° C		
<b>Operating shock/vib</b>	50 g shock and 5 g vibration		
<b>Specifications (module)</b>			
<b>Connectivity</b>	Mini-Thermocouple Jack	Spring terminals (bare wires)	Spring terminals (bare wires)
<b>Channels</b>	4	16	32 (total)
<b>Sample Rate</b>	14 Samples / second	74 Samples / second	74 Samples / second
<b>Supported Thermocouples</b>	J, K, N, T, E, R, S, B, and C		
<b>Isolation</b>	Channel-Earth		
<b>Resolution</b>	24-bit		
<b>Cold-junction compensation (CJC)</b>	✓		
<b>Traceable calibration</b>	✓		
<b>Anti-alias filter</b>	✓		



# 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 one of the Temperature Measurement Bundles

## 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, 3<sup>rd</sup> 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.

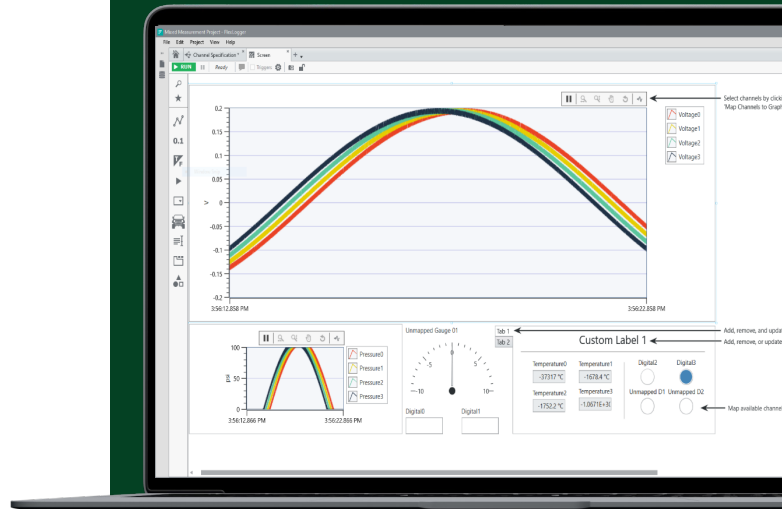
## Perform Quick Tests with FlexLogger No-Code Software

- **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.

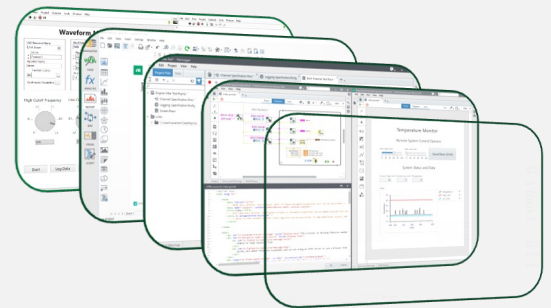


“FlexLogger makes it easier to troubleshoot and verify that the raw data from different sensors are correct before I start my test. This helps shorten test development by saving time typically wasted on redoing configurations.”

- Andy Tarman,  
Lab Test Engineer  
CNH Industrial

## Test Workflow

NI's recommended, and affordable, collection of software for engineers working on research, validation, and production test applications.



Includes: LabVIEW, FlexLogger, DIAdem, and G Web Development Software

