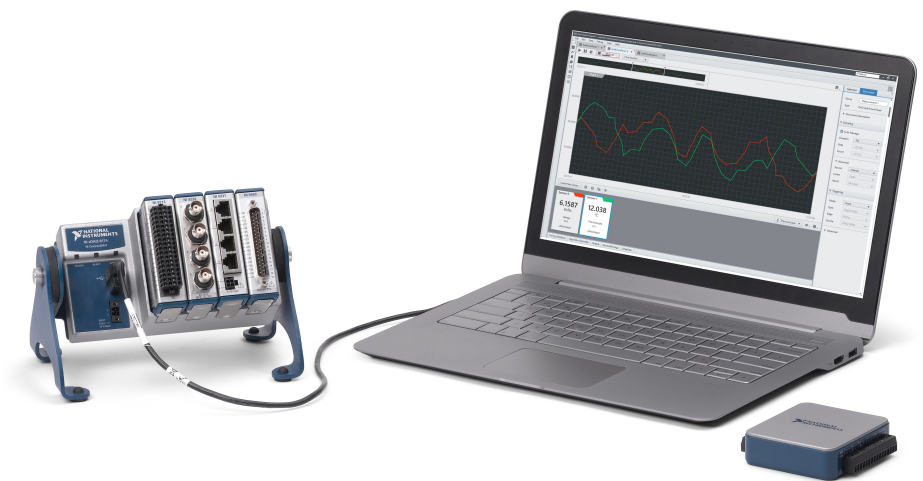# Multifunction Measurement System

A Modular Data Acquisition System For Analog and Digital Signals

Engineers use NI DAQ systems for:

- Benchtop test and measurement
- System-level validation tests that combine sensors and electrical signals
- Field tests that need rugged instrumentation

Popular Features

Complete

Chassis with module designed for measurements

Rugged

-40°-70°C Temp. range
50g shock

Measurements

Signal-Conditioning Pre-Built into Module

Pre-Configured Hardware System for Analog and Digital Signals

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

Multifunction Measurement Bundle with Expansion
System P/N: 868015-01

cDAQ-9174   NI-9205   NI-9263   NI-9401

Module Compare	Connectivity	Channels	Sample Rate	Module Features
NI-9205	Spring Terminal	32 (single) 16 (differential)	250 kS/s/ch	• 250 Vrms, CAT II, channel-to-earth isolation • ±30 V overvoltage protection
NI-9263	Spring Terminal	16	100 kS/s/ch	• 250 Vrms, CAT II, channel-to-earth isolation • ±30 V overvoltage protection
NI-9401	D-Sub	8	N/A	• 60 VDC, CAT I, channel-to-earth isolation • 100 ns Update Rate

Chassis Features: cDAQ-9174 (4-Slot)				
• USB Bus-Powered • Compact and Rugged			• -20 to 55 °C Operating temperature • 30g/0.3g$_{RMS}$ Operational shock and vibration	

Need more than one module or a different connectivity?

Upgrade to an Ethernet or Wi-Fi enabled 1-slot CompactDAQ Chassis or a larger CompactDAQ Chassis to add more modules to your test system.

Replacement and Upgrade Options for cDAQ Systems

NI offers more CompactDAQ Modules for all your test needs.

CompactDAQ Modules

Measurement Type	Module	Connectivity	Channels	Sample Rate	Isolation
Temperature	NI-9213	Spring Terminal	4	14 S/s/ch	Channel-Earth
Sound and Vibration	NI-9234	BNC	4	51.2 kS/s/ch	None
Voltage Input	NI-9205	Spring Terminal	32 (single) 16 (differential)	250 kS/s/ch	Channel-Earth
Voltage Output	NI-9263	Spring Terminal	16	100 kS/s/ch	Channel-Earth
Digital I/O	NI-9401	D-Sub	8	N/A	Channel-Earth
Strain and Load	NI-9237	RJ50	4	50 kS/s/ch	Bank
Analog Input	NI-9219	Spring Terminal	4	100 S/s/ch	Channel-Channel

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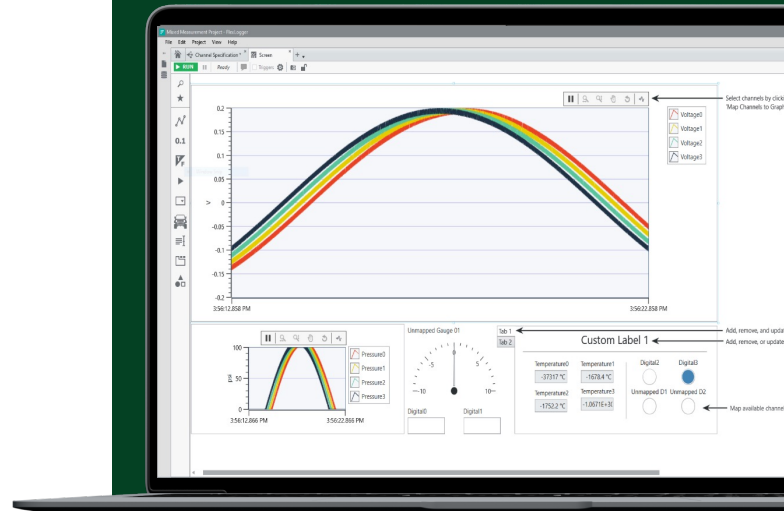
""FlexLogger makes it easier to troubleshoot and verify that the raw data from different sensors are correct before I start my test. This helps shorten test development by saving time typically wasted on redoing configurations."

- Andy Tarman,
Lab Test Engineer
CNH Industrial