NI 9237

4-Channel, ±25 mV/V, 24-Bit Simultaneous Bridge Module

- 24-bit resolution, ±25 mV/V analog inputs with RJ50 connectors
- 4 simultaneously sampled analog inputs; 50 kS/s maximum sampling rate
- Programmable half- and full-bridge completion; up to 10 V internal excitation
- Smart-sensor (TEDS) compatible
- 1,000 Vrms transient isolation
- -40 to 70 °C operating range

Overview

The National Instruments 9237 simultaneous bridge module for use with NI CompactDAQ and CompactRIO contains all the signal conditioning required to power and measure up to four bridge-based sensors simultaneously. The four RJ50 jacks provide direct connectivity to most torque or load cells and offer custom cable solutions with minimal tools. The high sampling rate and bandwidth of the NI 9237 offer a high-quality, high-speed strain or load measurement system with zero interchannel phase delay. With 60 VDC isolation and 1,000 Vrms transient isolation, the NI 9237 has high common-mode noise rejection and increased safety for both the operator and test system.

The NI 9237 can perform offset/null as well as shunt calibration and remote sense, making the module the best choice for strain and bridge measurements.

The NI 9944 and NI 9945 are accessories for use with quarter-bridge sensors. These accessories have a female RJ50 connector on one end and screw terminals on the other end. Purchase these accessories with a kit of RJ50 cables (qty 4).

For screw terminals without the quarter-bridge completion, purchase the NI 9949 and a kit of RJ50 cables (qty 4). This setup exposes all 10 pins for each channel as screw terminals.

Specifications

Specifications Documents
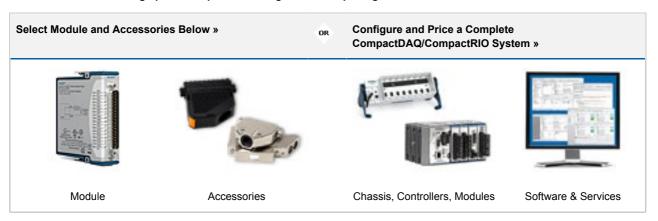
- Specifications
- Data Sheet

Specifications Summary

General	
Product Name	NI 9237
Product Family	Industrial I/O

Form Factor	CompactDAQ , CompactRIO
Part Number	779521-01
Operating System/Target	Windows , Real-Time
Measurement Type	Bridge-based sensor
Isolation Type	Ch-Earth Ground Isolation
RoHS Compliant	Yes
Signal Conditioning	Bridge completion , Voltage excitation , Anti-aliasing filter
Analog Input	
Channels	0 , 4
Single-Ended Channels	0
Differential Channels	4
Resolution	24 bits
Sample Rate	50 kS/s
Max Voltage	25 mV/V
Maximum Voltage Range	-25 mV/V , 25 mV/V
Maximum Voltage Range Accuracy	0.038 mV/V
Simultaneous Sampling	Yes
Excitation Voltage	10 V , 5 V , 3.3 V , 2.5 V
Bridge Configurations	Quarter Bridge , Half Bridge , Full Bridge
Analog Output	
Channels	0
Digital I/O	
Bidirectional Channels	0
Input-Only Channels	0
Output-Only Channels	0
Number of Channels	0 , 0 , 0
Counter/Timers	
Counters	0
Physical Specifications	
Length	9 cm
Width	2.3 cm

I/O Connector	RJ50
Minimum Operating Temperature	-40 °C
Maximum Operating Temperature	70 °C
Minimum Storage Temperature	-40 °C
Maximum Storage Temperature	85 °C

Pricing

Select one of the following options for product configuration and pricing:

Select Module and Accessories Below »	OR	**Configure and Price a Complete CompactDAQ/CompactRIO System »**

Module	Accessories	Chassis, Controllers, Modules	Software & Services

Step 1: Verify Device and Quantity Selection

Part Number	Description	Est Ship Days	US Dollars*	Qty
	NI 9237			
779521-01	RJ50 Connectors NI Recommended	--	For price, select country	
780264-01	D-Sub connector	--	For price, select country	

Each NI 9237 requires:

NI 9237

Each NI 9237 with DSub requires: 1 Connectivity Accessory

NI 9237 with DSub

Connectivity Accessory

Step 2: Select Cable

Part Number	Description	Est Ship Days	US Dollars*	Qty
Shielded				
195950-10	RJ50 Cable - 10-pin modular plug to pigtail wires (10m)	--	For price, select country	
195950-02	RJ50 Cable - 10-pin modular plug to pigtail wires (2m, qty 4)	--	For price, select country	
194612-02	RJ50 Cable for 9944, 9945, and 9949, 2m (qty 4)	--	For price, select country	
194612-10	RJ50 Cable - 10 pin modular plug to 10 pin modular plug (10m)	--	For price, select country	

Step 3: Select Optional Accessories

Part Number	Description	Est Ship Days	US Dollars*	Qty
Screw Terminals				
194611-01	NI 9942 - 4-position connector kit for excitation connector of NI 9237 (qty 2)	--	For price, select country	
194738-01	NI 9944 - Quarter-bridge completion accessory (120 Ohm, qty 4)	--	For price, select country	
194739-01	NI 9945 - Quarter-bridge completion accessory (350 Ohm, qty 4)	--	For price, select country	
196809-01	NI 9949 - RJ50 to screw terminal adaptor (qty 4)	--	For price, select country	

* You have selected the United States as the country where you will use the product(s). Pricing may have changed since you printed this document on 02/22/2011. Please visit *ni.com* to see current pricing.

Step 4: Place Order or Obtain Quote

Step 2: Select Connectivity Accessory

Part Number	Description	Est Ship Days	US Dollars*	Qty
Screw Terminals				
779103-01	NI 9933 37pin D-Sub connector kit NI Recommended	--	For price, select country	

Step 3: Select Optional Accessories

Part Number	Description	Est Ship Days	US Dollars*	Qty
Cable				
778621-01	SH37F-37M-1 37-Pin Female to Male Shielded I/O Cable, 1 m	--	For price,	

			select country

778621-02	SH37F-37M-2 37-Pin Female to Male Shielded I/O Cable, 2 m	--	For price, select country
778620-04	SH37F-P-4 37-Pin Female to Pigtail Shielded I/O Cable, 4 m	--	For price, select country
778673-01	CB-37FH Horizontal DIN Rail Mount	--	For price, select country
778672-01	CB-37FV Vertical DIN Rail Mount	--	For price, select country
779353-01	CB-37F-LP	--	For price, select country
779491-01	CB-37F-HVD	--	For price, select country
199254-10	Tajimi Shielded Cable (10)	--	For price, select country
199254-01	Tajimi Shielded Cable (1m)	--	For price, select country

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Step 4: Place Order or Obtain Quote

Software

Application Need

Data acquisition, analysis, and user interface customization	Data logging
Automated test and test sequencing	Simulation and control design
Industrial monitoring and control	Embedded design, prototyping, and deployment

Graphical Programming

Option 1: Select one of the following NI Developer Suite packages for CompactRIO or Configure Your NI Developer Suite >>

Part Number	Description	Est Ship Days	US Dollars* (change)	Qty
Pre-configured NI Developer Suite Packages				
DS410837	NI Developer Suite Core with Real-Time and FPGA Deployment Options (English) NI Recommended	--	For price, select country	

Option 2: Select any of the following software products for CompactDAQ

Part Number	Description	Est Ship Days	US Dollars*	Qty
LabVIEW Software				
776670-35	NI LabVIEW Full Development System for Windows (English) NI Recommended	--	For price, select country	
776675-35	LabVIEW Application Builder for Windows (English) NI Recommended	--	For price, select country	
778406-35	NI LabVIEW Report Generation Toolkit for Microsoft Office	--	For price, select country	
Specialty Software				
778807-35	DIAdem Advanced Edition (English)	--	For price, select country	

Text-Based Programming

Select any of the following software products for CompactDAQ

Part Number	Description	Est Ship Days	US Dollars*	Qty
Application Software				
776800-35	LabWindows/CVI Full Development System for Windows	--	For price, select country	
778801-35	NI Measurement Studio Professional Edition for Microsoft Visual Studio	--	For price, select country	
Specialty Software				
778807-35	DIAdem Advanced Edition (English)	--	For price, select country	

[!] Other compatible software: (For cDAQ only) ANSI C/C++, C#, Visual Basic .NET, Visual Basic 6.0

* You have selected the United States as the country where you will use the product(s). Pricing may have changed since you printed this document on 02/22/2011. Please visit *ni.com* to see current pricing.

Driver Software

- View Drivers and Updates
- Search All Drivers

Services

System Assurance Programs

Reduce your setup time and total cost of ownership, and get a system you can use out of the box with National Instruments system assurance programs. System assurance programs include:

- Installation and integration test of all individual hardware
- Courtesy installation of system driver sets and application development environments
- Extended warranty and calibration coverage for up to five years
- Custom documentation plus a custom restore and startup utility

This service is only available for PXI, NI CompactRIO, and NI Compact FieldPoint systems.

- Learn More about System Configuration and Deployment Services [http://www.ni.com/services/configuration.htm]
- Customize Your CompactRIO System [http://ohm.ni.com/advisors/crio]
- Customize Your Compact FieldPoint System [http://ohm.ni.com/advisors/cfp]
- Customize Your PXI System [http://ohm.ni.com/advisors/pxi]
- Talk to an Expert about Custom System Configurations [javascript:openCallMeWindowCTA(document.referrer,%20'US')]

Extended Warranties

National Instruments designs and manufactures all products to minimize failures, however unexpected failures can still occur. Extended warranties provide a fixed economical price at the time of system purchase, covering any repair costs for up to three years. In addition, they offer the following benefits:

- Significant cost savings compared to individual repair incidents
- Fault location, diagnostics, and repair by NI any time the system product fails
- All parts and labor costs covered as well as any adjustments needed to restore the hardware to manufacturing specifications

For more information about your warranty options:

- Learn More about Warranty Services [http://www.ni.com/services/warranty.htm]
- Talk to an Expert about Extended Warranties [javascript:openCallMeWindowCTA(document.referrer,%20'US')]
- View Warranty Repair Policies [http://www.ni.com/services/warranty_repair_policies.htm]

Calibration

NI recognizes the need to maintain properly calibrated devices for high-accuracy measurements. NI provides manual calibration procedures, services to recalibrate your products, and automated calibration software to calibrate many NI measurement products.

- Learn More about Calibration Services [http://www.ni.com/services/calibration.htm]

Training

NI training is the fastest, most certain route to productivity with NI tools and successful application development.

- Learn More about NI Training and Certification [http://www.ni.com/training/]
- Find a Course Near You and View Schedules [http://sine.ni.com/apps/utf8/nisv.custed]

Repair Services

Return your registered product under warranty at no additional labor and parts cost. NI offers fault location, diagnostics, and repair any time the system fails as well as any adjustments needed to restore the hardware to manufacturing specifications.

- Learn More about Repair Services [http://www.ni.com/services/warranty.htm]
- Contact NI to Obtain a Return Material Authorization (RMA) Form and Shipping Instructions [http://sine.ni.com/apps/utf8/nicc.call_me]
- View Your RMA Support Request Status Online [http://www.ni.com/support/servicereq/]
- Register Your Product [http://www.ni.com/register]

Technical Support

ni.com/support [http://www.ni.com/support/]

Resources

Additional Product Information

- Manuals (10)
- Dimensional Drawings
- Product Certifications

Related Information

- Learn More about NI CompactRIO
- Configure Your Complete CompactRIO System
- Learn More about NI CompactDAQ
- Configure Your Complete NI CompactDAQ System