

PCI-9114 Series

32-CH 16-Bit Up to 250 kS/s Multi-Function DAQ Cards



General-Purpose Timer/Counter

- Number of channels: 1
- Resolution: 16 Bit
- Compatibility: 5 V/TTL
- Base clock available: 2 MHz, external clock to 2 MHz

General Specifications

- I/O connector
 - 37-pin D-sub female
 - 20-pin ribbon male x 2
- Operating temperature: 0°C to 55°C (32°F to 131°F)
- Storage temperature: -20°C to 80°C (-4°F to 176°F)
- Relative humidity: 5% to 95%, non-condensing
- Power requirements

+5 V	+12 V
600 mA typical	100 mA typical
- Dimensions (not including connectors)
175 mm x 107 mm (6.82" x 4.17")

Terminal Boards & Cables

DIN-37D-01*

Terminal Board with One 37-pin D-sub Connector and DIN-Rail Mounting

DIN-20P-01*

Terminal Board with One 20-pin Ribbon Connector and DIN-Rail Mounting

ACLD-9137-01

General-Purpose Terminal Board with One 37-pin D-sub Male Connector

* Cables are not included. For information on mating cables, refer to P3-48/49.

Ordering Information

PCI-9114DG

32-CH 16-Bit 100 kS/s Normal-Gain Multi-Function DAQ Card

PCI-9114A-DG

32-CH 16-Bit 250 kS/s Normal-Gain Multi-Function DAQ Card

PCI-9114A-HG

32-CH 16-Bit 250 kS/s High-Gain Multi-Function DAQ Card

Specifications

Analog Input

- Number of channels: 32 single-ended or 16 differential
- Resolution: 16 Bit
- Conversion time:
 - 10 μ s (PCI-9114DG)
 - 4 μ s (PCI-9114A-DG & PCI-9114A-HG)
- Maximum sampling rate

Device	Sampling rate
PCI-9114DG	100 kS/s
PCI-9114A-DG PCI-9114A-HG	250 kS/s

- Input ranges (software programmable)

Device	Gain	Input Range
PCI-9114DG PCI-9114A-DG	1	± 10 V
	2	± 5 V
	4	± 2.5 V
PCI-9114A-HG	8	± 1.25 V
	1	± 10 V
	10	± 1 V
	100	± 0.1 V

- Accuracy

Device	Gain	Input Range
PCI-9114DG PCI-9114A-DG	1	0.01% of FSR ± 1 LSB
	2, 4	0.02% of FSR ± 1 LSB
	8	0.04% of FSR ± 1 LSB
PCI-9114A-HG	1, 10	0.01% of FSR ± 1 LSB
	100	0.02% of FSR ± 1 LSB

- Input coupling: DC
- Overvoltage protection: continuous ± 35 V
- Input impedance: 1 G Ω
- Trigger modes: software, external trigger (5 V/TTL compatible)
- FIFO buffer size: 1 k samples
- Data transfers: polling, interrupt

Isolated Digital Input

- Number of channels: 16
- Maximum input range: 24 V, non-polarity
- Digital logic levels
 - 0 - 24 V, non-polarity
 - Input high voltage: 5 - 24 V
 - Input low voltage: 0 - 1.5 V
- Input resistance: 2.4 K Ω @ 0.5 W
- Isolation voltage: 2500 VRMS
- Data transfers: programmed I/O

Isolated Digital Output

- Number of channels: 16
- Output type: open emitter Darlington transistors
- Sink current
 - 350 mA for one channel @ 100% duty
 - 260 mA for all channels @ 10% duty
- Power dissipation: Max. 1.47 W per chip (8 DO channels)
- Supply voltage: 5-35 V
- Isolation voltage: 2500 VRMS
- Data transfers: programmed I/O

Power Output

- Output voltage: +12 V and -12 V
- Resettable fuse protection: 500 mA

Features

- Supports a 32-Bit 5 V PCI bus
- 16-Bit A/D resolution
- Up to 100 kS/s sampling rate (PCI-9114DG)
- Up to 250 kS/s sampling rate (PCI-9114A-DG and PCI-9114A-HG)
- 32-CH single-ended or 16-CH differential analog inputs
- Bipolar or unipolar analog input ranges
- Onboard 1 k-sample A/D FIFO
- Programmable gains:
 - x1, x2, x4, x8 (PCI-9114DG and PCI-9114A-DG)
 - x1, x10, x100 (PCI-9114A-HG)
- Automatic analog inputs scanning
- 16-CH isolated digital inputs and 16-CH isolated digital outputs
- 2500 VRMS optical isolation for digital inputs and outputs
- 1-CH 16-Bit general-purpose timer/counter
- +12 V and -12 V power available on the 37-pin D-sub connector
- Onboard resettable fuses for power output protection
- Compact, half-size PCB
- Supported Operating System
 - Windows 7/8 x64/x86, Linux
- Driver and SDK
 - LabVIEW, MATLAB, C/C++, Visual Basic, Visual Studio.NET
- Software Utility
 - AD-Logger