



# Daq/216B™

## A/D Card for Notebook PCs



### Features

- Provide complete 100-kHz PC-Card-based data acquisition
- Complies with PC-Card Standard Specification 2.1, PC-Card Type II (5 mm) compatible
- Analog input:
  - 100-kHz A/D, 16-bit converter
  - 100 Kreadings/s sampling and real-time storage-to-disk
  - 8 differential or 16 single-ended inputs
  - 512-location scan sequencer for user-defined channel/gain sequencing at 10  $\mu$ s/channel

### Software

- DaqView™, spreadsheet-style software for *Out-of-the-Box™* setup, acquisition, & real-time display
- eZ-PostView™, for post-acquisition viewing
- Support for Visual Basic®, C/C++, ActiveX/COM, LabVIEW®, and DASyLab®

The Daq/216B™ data acquisition PC-Card for notebook PCs provides 16-bit, 100-kHz data acquisition via 8 differential or 16 single-ended analog inputs.

Each Daq/216B features an on-board 512-location scan sequencer that allows you to select any channel and gain combination. This sequencer scans channels at a fixed 10  $\mu$ s/channel rate and can be programmed to repeat a sequence at intervals from 10  $\mu$ s to 167s.

**Note:** For applications that do not require high speed, Personal Daqs are recommended.

### Analog Inputs

The Daq/216Bs' built-in analog inputs permit it to measure 8 channels in a differential input mode or 16 channels in a single-ended mode (both software selectable). The on-board programmable gain instrumentation amplifier can be sequencer-selected for gains of x1, 2, 4, or 8 on a per-channel basis.



The Daq/216B is shipped with DaqView, a Windows® setup, display, and acquisition application, and eZ-PostView for post-acquisition waveform viewing

### Triggering

The Daq/216B offers a TTL-based trigger, and a software-based trigger. The TTL trigger offers the lowest trigger latency (<10  $\mu$ s) while the software trigger provides the flexibility needed to trigger on an analog level.

### Data Transfer

The Daq/216B transfers data to the host computer via the PC-Card interface. This interface provides access to the PC's data bus, allowing real-time data collection and storage to disk at 100 Kreadings/s.

The Daq/216Bs' built-in 2 Kword FIFO ensures that there is no data loss. The card supports two data transfer modes: programmed I/O and interrupt transfer.

The Programmed I/O Mode allows the host computer to acquire individual data samples or large blocks of data under application control.

The Interrupt Transfer Mode allows the host computer to perform other tasks until the Daq/216B has acquired a pre-programmed amount of data. This mode provides the most efficient use of computer resources and data transfer.

### Specifications

**Operating Temperature:** 0° to 50°C  
**Storage:** -55° to 150°C  
**Humidity:** 5% to 90% RH, non-condensing  
**Size:** 5 mm (PC-Card)  
**Power**  
 Normal Operation: 5V @ 160 mA  
 Power Down Mode: 5V @ 40 mA

### A/D Specifications

**Type:** Successive approximation  
**Resolution:** 16 bit  
**Conversion Time:** 8  $\mu$ s  
**Monotonicity:** No missing codes  
**Linearity:**  $\pm$ 0.9 LSB  
**Zero Drift:**  $\pm$ 2 ppm/°C  
**Gain Drift:**  $\pm$ 7 ppm/°C  
**Sample & Hold Amplifier**  
 Acquisition Time: 2  $\mu$ s max  
 Aperture Delay: 40 ns

### Analog Inputs

**Channels:** 16 single-ended, or 8 differential,  
**Connector:** DB37 male or female connector available (see CA-134)  
**Range:** Gains and ranges are sequencer selectable on a per-channel basis;  $\pm$ 10,  $\pm$ 5,  $\pm$ 2.5,  $\pm$ 1.25  
**Maximum Overvoltage:** 10V  
**Input Current:** 1 nA  
**Input Impedance:** 100M Ohm

### Triggering

**Digital Trigger**  
 Logic Level Range: 0.8V low / 2.2V high  
 Trigger to A/D Latency: 10  $\mu$ s max  
**Software Trigger**  
 Trigger to A/D latency: Dependent on PC

### Channel Sequencer

**Depth:** 512 locations  
**Speed:** 10  $\mu$ s per channel, fixed  
**Internal Between Scans:** 10  $\mu$ s to 167s, software programmable  
**Gains:** Sequencer programmable per channel



# Daq/216B™

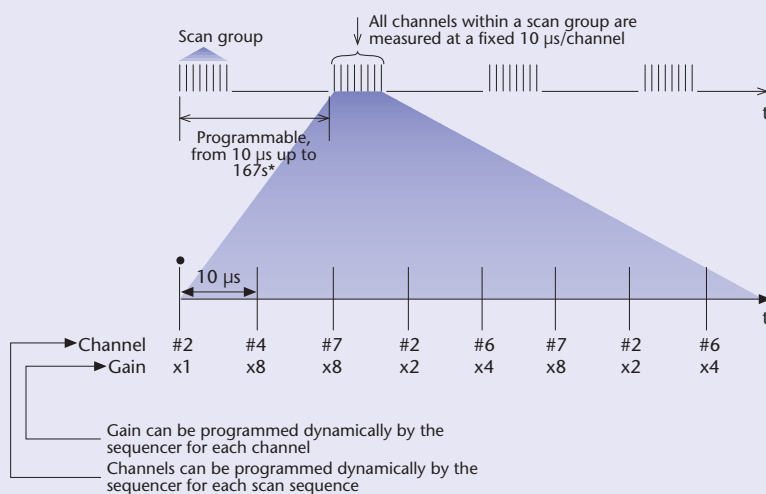
## General Information & Ordering Information

### Channel-Scanning Flexibility

The Daq/216B offers a 512-location scan sequencer that allows you to select each channel and associated input amplifier gain at random. The sequencer circuitry circumvents two major limitations encountered with many other cards—sample rates that are non-deterministic, and a drastic reduction in the scan rate for external expansion channels. All Daq/216B

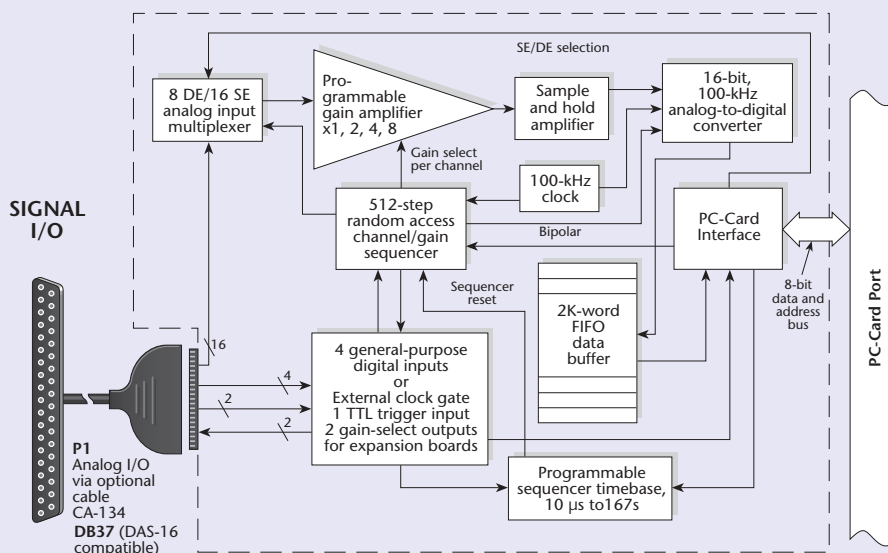
channels, are scanned at 100 kHz (10 μs/channel). In addition, the Daq/216B permits each scan group, which can contain up to 512 channel/gain combinations, to be repeated immediately or at programmable intervals from 0 to 167 seconds. Within each scan group, consecutive channels are measured at a fixed 10 μs/channel rate.

Daq/216B Scanning Example



\* Longer time periods can be achieved using an external clock source

Daq/216B Block Diagram



### Ordering Information

<b>Description</b>	<b>Part No.</b>
16-bit data acquisition PC-Card with LabVIEW®, and Windows® drivers; DaqView™, and eZ-PostView™ software	Daq/216B

### Accessories & Cables

Optional hardcopy programmer's manual	1008-0901
Daq/216B to DBK1, DBK11A, or DBK40; DB37 cable, 2 ft.	CA-134

### Software

Icon-based data acquisition, graphics, control, and analysis with Daq/216B driver	DASYLab
---	---------

For complete information on accessories and cables, visit [www.iotech.com/acc](http://www.iotech.com/acc)

### Related Products

DBK1	p. 116
DBK11A	p. 127
DBK40	p. 145



CA-134, Daq/216B to DB37 (P1) interface for use with DBK1, DBK11A, and DBK40