

PCI-DAS1602-16 & PCI-DAS1602-12

High Speed PCI-Bus Compatible Multifunction Board

\$959
Basic Unit



- ✓ 16 Single Ended/ 8 Differential Analog Inputs
- ✓ Models with 12 and 16-Bit Analog Input Resolution
- ✓ 330 kHz Sample Rate (PCI-DAS1602-12)
- ✓ On Board Sample FIFO
- ✓ Dual High Speed Analog Outputs
- ✓ 24-Bits High Drive I/O (for PCI-DAS1602-16)
- ✓ Fully Plug-and-Play

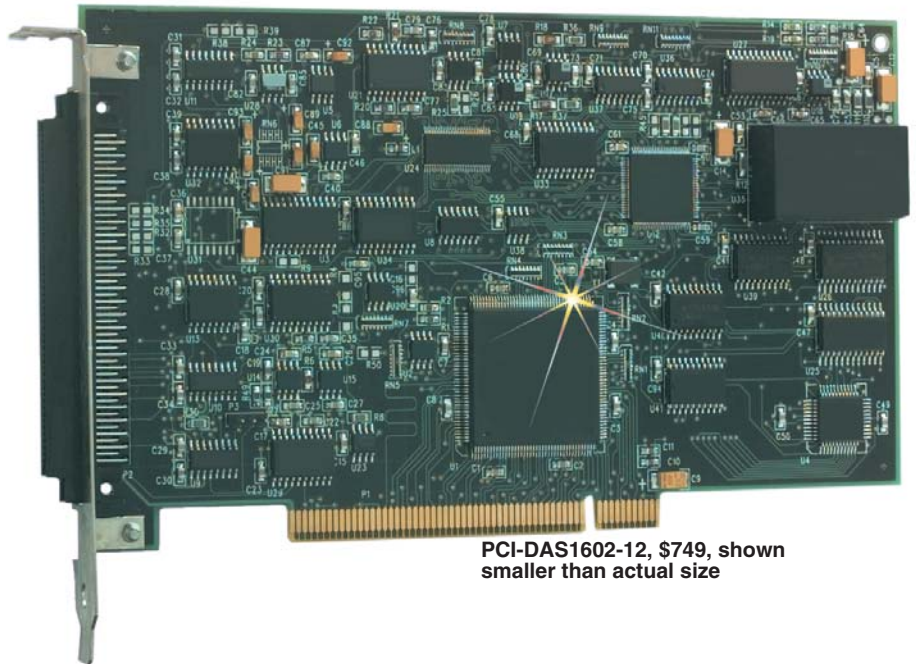
The PCI-DAS1602 multifunction analog and digital I/O boards set the new standard for high speed data acquisition boards on the PCI-bus.

Installed in any PCI-bus compatible personal computer, the PCI-DAS1602 turns your personal computer into a high speed data acquisition and control station suitable for laboratory data collection, instrumentation, production test, or industrial monitoring.

Two versions of the PCI-DAS1602 are available; the PCI-DAS1602-12 and the PCI-DAS1602-16. The PCI-DAS1602-12 features 12-bit analog input and output resolution and 330 kHz sample rate. The PCI-DAS1602-16 features 16-bit analog input and output resolution and 200 kHz sample rate.

FIFO Provides Full Data Rate Under Windows

The on-board FIFO buffer collects the results of A/D conversions and stores them until the computer's CPU is able to transfer the data into PC memory.



PCI-DAS1602-12, \$749, shown smaller than actual size

The FIFO buffer allows the PC to store up the A/D transfer requests, then service the requests in batches. The FIFO is necessary to obtain the full data acquisition rates under multitasking operating systems like Windows.

The PCI-DAS1602-12 has a 1024 sample FIFO and the PCI-DAS1602-16 has a 512 sample FIFO.

Minimizing Channel to Channel Skew

All of the channels on the PCI-DAS1602 are multiplexed into a single A/D converter. Since there is only one A/D converter on the board, a channel to channel skew time (delay) occurs when scanning multiple channels. With many A/D boards, the skew time is equal to the sample rate, so a 1 kHz sample rate would produce a 1 millisecond skew time.

The PCI-DAS1602-12 features an enhanced triggering mode called the burst mode. In the burst mode the A/D converter is run at its maximum rate for the entire multi-channel

scan, thus reducing the channel to channel skew time to the maximum A/D rate which is 5 μ S for the PCI-DAS1602-16 and 3 μ S for the PCI-DAS1602-12.

Connector

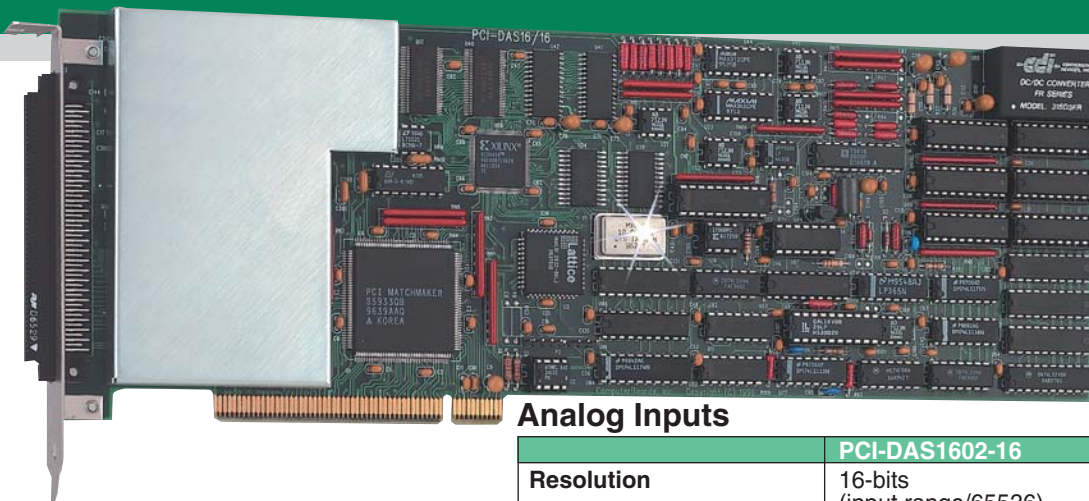
All I/O signals are brought through a 100-pin high-density connector.

Field wiring is greatly simplified by using the optional C100-FF2 cable and CIO-TERM100 screw terminal board.

Software

The PCI-DAS1602 includes a complete test and calibration program. The program provides a step-by-step procedure for installing and configuring the card. It also creates a configuration file used by the optional Universal Library.

The Universal Library is a set of I/O libraries and drivers for those users creating their own custom programs. The Universal Library is compatible with most Windows based languages (32-bit) and supports the entire PCI-DAS and CIO families of boards.



PCI-DAS1602-12, \$959, shown smaller than actual size

The Library includes an extensive set of programming examples written in Visual Basic, C and Pascal. An optional driver for LabVIEW is also available.

Specifications

(Typical for 25°C unless otherwise specified)

DIGITAL I/O

Digital I/O: 24

Logic Low Level:

-0.5 to 0.8 V max

Logic High Level:

2.0 to 5.0 V max

Input Current:

5 mA max (1602-16),

10µA max (1602-12)

Output Low Sink Current:

64 mA @ 0.55V (1602-16),

2.5 mA @ 0.45 V (1602-12)

Output High Source Current:

-15 mA @ 2.0V(1602-16),

-2.5 mA @ 2.4 V(1602-12)

COUNTER/TIMER

Number Available to User:

one 16-bit down counter

Type: 82C54

Logic Low Level: -0.5 to 0.8 V max

Logic High Level: 2.0 to 5.0 V max

Max Input Frequency: 5 MHz

ENVIRONMENTAL

Operating Temperature Range:

0 to 70°C (32 to 158°F)

Storage Temperature Range:

-40 to 100°C (-40 to 212°F)

Humidity:

0 to 90% non-condensing

POWER CONSUMPTION

ICC Operating:

2.1 A max (DAS-1602-16),

1.6 A max (DAS-1602-12)

Analog Inputs

	PCI-DAS1602-16	PCI-DAS1602-12
Resolution	16-bits (input range/65536)	12-bits (input range/4096)
Throughput	200 kHz min	330 kHz min
Input Ranges (Software selectable)	±10 V, ±5 V, ±2.5 V, ±1.25 V, 0 to 10 V, 0 to 5 V, 0 to 2.5 V, 0 to 1.25 V	
Differential Linearity Error	±1 LSB	±0.75 LSB
Integral Linearity Error	±1.5 LSB	±1.5 LSB
Gain Drift (A/D Specs)	±20 ppm/°C, all ranges	±6 ppm/°C, all ranges
Zero Drift (A/D Specs)	±10 ppm/°C, all ranges	±1 ppm/°C, all ranges
Input Impedance	10 MΩ Min	
Absolute Maximum Input	±15 V	
Trigger	Digital and Analog with unlimited pre and post trigger samples.	

Analog Outputs

	PCI-DAS1602-16	PCI-DAS1602-12
Resolution	16-bits	12-bits
Number of Channels	2	
Voltage Ranges	±10 V, ±5 V, 0 to 5 V, 0 to 10 V	
Offset Error	±100 µV max,	±100 µV max,
Gain Error	±30.5 ppm max (calibrated)	±0.02% max (calibrated)
Differential Nonlinearity	±1 LSB max	±1 LSB max
Integral Nonlinearity	±1 LSB max	±0.5 LSB max
Output Impedance	0.1 Ohms max	0.1 Ohms max
Data Transfer Throughput Rate	100 kHz	250 kHz
D/A Trigger Modes	Software or external gate	
Current Drive	±5 mA	
Output Short Circuit Duration	25 mA indefinite	

AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)

Model Number	Price	Description
PCI-DAS1602-16	\$959	16 channel, 16-bit analog I/O board
PCI-DAS1602-12	749	16 channel, 12-bit analog I/O board
C100FF-2	49	100 conductor cable
CIO-TERM100	149	100 terminal screw terminal adapter board
CIO-SCB-50	199	50 conductor, shielded signal connection box
UNIV-DRVR	49	Universal Driver Library
CIO-LABVIEW-DRVR	49	LabVIEW driver

Note: The PCI-DAS1602 comes with a complete operator's manual and test and calibration software.

Ordering Example: PCI-DAS1602-16 board, CIO-TERM100 terminal panel, C100FF-2 cable, UNIV-DRVR Universal Driver Library, and OMEGACARE™ 1-year extended warranty for PCI-DAS-1602-16 (adds 1 year to standard 3-year warranty), \$959 + 149 + 49 + 49 + 95 = \$1301.



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