

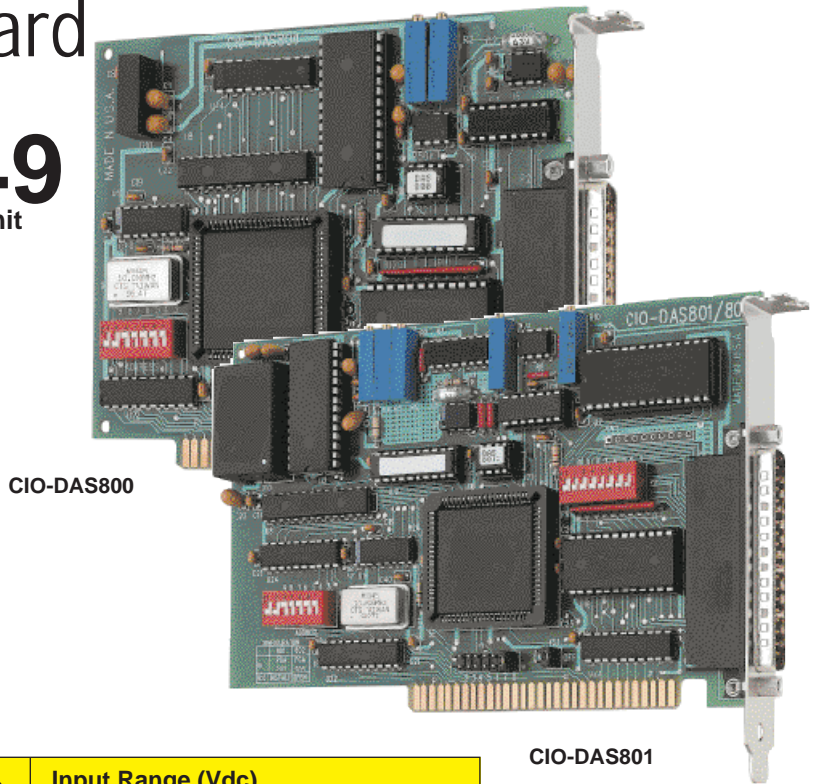


# CIO-DAS800 Series Low-Cost 8-Channel Multifunction Plug-In Board

- ✓ 8 Analog Inputs
- ✓ 7 Digital I/O
- ✓ 3 Counters
- ✓ 256 Sample Buffer

**\$249**  
Basic Unit

The CIO-DAS800 series boards are multifunction analog and digital I/O boards for IBM PC and compatible computers. The boards install into a standard 8- or 16-bit ISA slot of any IBM PC or compatible computer. The CIO-DAS800 is the next generation in the Popular DAS-08 family. The CIO-DAS800 includes a number of enhancements over the traditional DAS-08 including higher sample rates, 256-sample FIFO, enhanced triggering and improved channel sequencer. The four different models in the family are shown in the table below.



## RANGE TABLE

Model No.	Resolution	Speed (Samples/Sec)	Input Range (Vdc)
CIO-DAS800	12 bits	50,000	±5
CIO-DAS801	12 bits	50,000	±10, ±5, ±1, ±0.5, ±0.1, ±0.05 ±0.01, ±0.005
CIO-DAS802	12 bits	50,000	±10, ±5, ±2.5, ±1.25, 0-10, 0-5, 0-2.5, 0-1.25
CIO-DAS802-16	16 bits	100,000	±10, ±5, ±2.5, ±1.25, 0-10, 0-5, 0-2.5, 0-1.25

## ANALOG INPUTS

A standard 37-pin 'D' type connector brings on board the analog signals of the CIO-DAS80x directly into an analog multiplexer. The multiplexer provides 8 channels of differential or single-ended input. For the CIO-DAS-801, CIO-DAS802, and CIO-DAS802-16 the choice of single-ended or differential input is switch selectable on a channel-by-channel basis. The CIO-DAS800 provides single-ended inputs only.

A sample and hold circuit captures the signal that is converted by the A/D converter. The models with a 12-bit A/D converter provide a resolution of 1/4096 parts of full scale. The 16-bit models provide a resolution of 1/65,536 parts of full scale. The CIO-DAS801, CIO-DAS802 and CIO-DAS802-16 also contain a programmable gain amplifier that allows the selection of different input ranges.

## FIFO Provides Full Data Rate Under Windows

All boards in the CIO-DAS800 family include a 512-sample FIFO buffer. The 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. 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.

## Analog Accessories

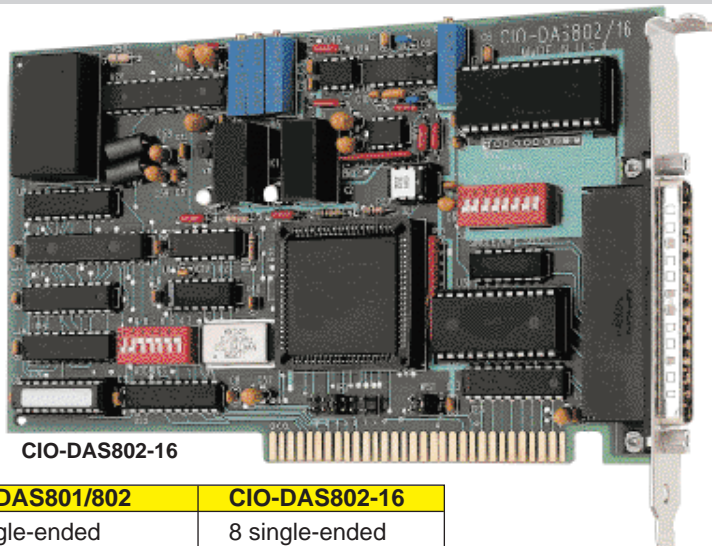
For channel expansion beyond the base 8 channels, two external multiplexers are offered. The CIO-EXP16 and CIO-EXP32 are sixteen and thirty-two channel multiplexers respectively. Besides offering additional channels, these

multiplexers also provide cold junction compensation for use with thermocouple temperature sensors.

## Software

The CIO-DAS800 series 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 DOS and Windows based languages and supports the entire CIO family of boards. The Library includes an extensive set of programming examples written in Visual Basic, C and Pascal for both Windows and DOS languages.



CIO-DAS802-16

## SPECIFICATIONS

### ANALOG INPUTS

	CIO-DAS800	CIO-DAS801/802	CIO-DAS802-16
<b>Channels</b>	8 single-ended	8 single-ended or differential	8 single-ended or differential
<b>Resolution</b>	12 bit	12 bit	16 bit
<b>Accuracy</b>	0.01% of reading ±1 bit	0.01% of reading ±1 bit	0.0015% of reading ±1.5 bit
<b>Conversion Speed</b>	20 µs	20 µs	10 µs
<b>Input Range</b>	See range table	See range table	See range table
<b>Overvoltage</b>	±30 V continuous	±30 V continuous	±30 V continuous
<b>Linearity</b>	±1 bit	±1 bit	±1.5 bit
<b>Impedance</b>	100 MΩ	100 MΩ	100 MΩ
<b>Zero Drift</b>	10 ppm/°C max.	10 ppm/°C max.	2 ppm/°C max.
<b>Gain Drift</b>	50 ppm/°C max.	50 ppm/°C max.	5 ppm/°C max.

An optional driver for LabVIEW is also available. The LabVIEW driver works in conjunction with the Universal Library, so both are needed to use the CIO-DAS80x in LabVIEW.

The CIO-DAS80x is also compatible with many off-the-shelf programs including Labtech, DASyLab and SnapMaster.

### DIGITAL I/O

**Inputs:** 4 bits

**Input Voltage:** Low = 0.8 V max.,  
High = 2.0 V min @20µA

**Outputs:** 4 bits

**Output Voltage:**

Low = 0.5 V max. @ 8.0 mA (sink),  
High = 2.4 V min. @ -0.4 mA (source)

### COUNTER/TIMER

**Counters:**

Three 16 bit down counters

**Type:** 82C54

**Input Frequency:** 10 MHz max.

### ENVIRONMENTAL

**Temperature Range:**

0 to 50°C (operating),  
-20 to 70°C (storage)

### To Order (Specify Model No.)

Model No.	Price	Description
CIO-DAS800	\$249	8-channel 12-bit A/D board with fixed input range
CIO-DAS801	299	8-channel 12-bit A/D board with programmable input ranges, gains of 1, 10, 100 & 1000
CIO-DAS802	299	8-channel 12-bit A/D board with programmable input ranges, gains of 1, 2, 4 & 8
CIO-DAS802-16	399	8-channel 16-bit A/D board with programmable input ranges, gains of 1, 2, 4 & 8

Each board includes a user's manual and test and calibration software.

**Ordering Example:** CIO-DAS802-16 board, CIO-TERMINAL screw terminal panel and C37FF-2 cable, \$399 + 99 + 25 = \$523

### Accessories

Model No.	Price	Description
CIO-TERMINAL	\$ 99	Screw terminal panel, 16"x4" with prototype area, requires cable
CIO-MINI37	49	Screw terminal panel, 4"x4" with prototype area, requires cable
CIO-EXP16	249	16-channel multiplexer (see CIO-EXP page for additional details)
CIO-EXP32	349	32-channel multiplexer (see CIO-EXP page for additional details)
C37FF-2	25	2' ribbon cable, used with screw terminal panels and multiplexers
C37FFS-10	40	10' shielded cable, used with screw terminal panels and multiplexers
UNIV-DRVR	49	Universal Driver Library
CIO-LABVIEW-DRVR	49	LabVIEW driver, requires Universal Driver Library