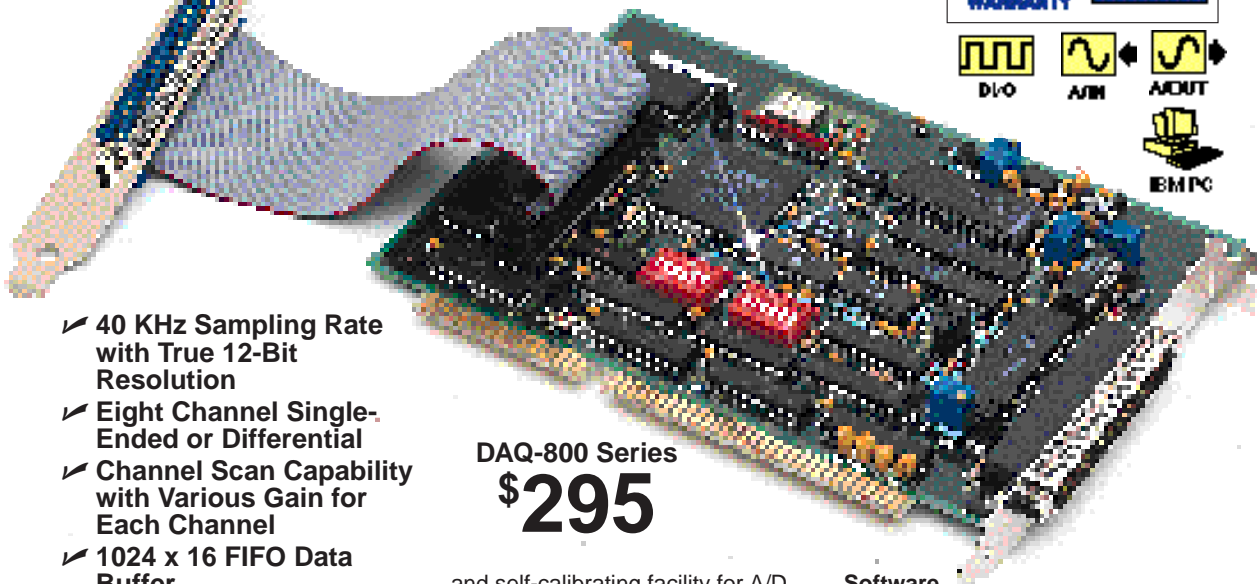




# DAQ-800 Low Cost 12-Bit Data Acquisition System



- ✓ 40 KHz Sampling Rate with True 12-Bit Resolution
- ✓ Eight Channel Single-Ended or Differential
- ✓ Channel Scan Capability with Various Gain for Each Channel
- ✓ 1024 x 16 FIFO Data Buffer
- ✓ Programmable Gain of 1, 10, 100 and 1000 for DAQ-801 and 1, 2, 4, and 8 for DAQ-802
- ✓ Two 12-Bit D/A Channels, One 16-Bit Timer/Counter and 32-Bit Digital I/O
- ✓ Interrupt Handling Capability

DAQ-800 Series  
**\$295**

and self-calibrating facility for A/D conversion. The main D-37 connector on the board accessed through the rear of the PC is for analog I/O, control lines and 8-bit digital I/O. A second auxiliary D-37 connector is provided for the additional 24 digital I/O lines from an 8255 programmable peripheral interface chip.

There is a 1024 sample data FIFO available which provides a cushion for the data stream coming from the output of the A/D converter. This protects data integrity when using an interrupt routine under Windows or other operating systems. SCAN LIST capability is also provided for scanning the input channels with their corresponding gains. Sequential scanning between any two channels can be programmed.

The DAQ-801/802 can be installed in any available I/O base address location without conflict with presently installed devices. The board can be enabled or disabled through software manipulation. The interrupt levels are register selectable through software from IRQ 2-7, 10-12, 14 and 15. The 24 digital I/O lines for the second D-37 connector are directly from an 8255 programmable peripheral interface chip.

### Software

The DAQ-800 is supplied with DaqEZ software. DaqEZ is a Windows application which provides real-time data display and datalogging to disk. Once the data is stored to disk, it may be imported to spread sheet and other data analysis programs. Also supplied are software drivers. The software drivers provide support for various programming languages such as Microsoft C/C++, QuickBasic, and Turbo Pascal. A dynamic link library (DLL) is furnished for programming most languages under Microsoft Windows. As an option, Visual Basic Controls (VBX) are also available. The option includes four controls: analog input, analog output, digital input and digital output.

### UIO-37

Both the main analog I/O connector and the auxiliary digital I/O connector use a standard male 37 pin D-type format. For easy field wiring to these connectors the UIO-37 terminal panel may be used. One UIO-37 is needed for each connector. A CP-DAQ cable is also required to connect each UIO-37 to the DAQ-800.

OMEGA's DAQ-801/802 is a low cost data acquisition system with 12-bit resolution, eight channel analog input, two channel D/A output, 32-bit digital I/O, and one 16-bit programmable timer/counter for ISA bus computers (IBM PC/AT or compatible). The maximum sampling rate is 40 KHz for A/D with internal or external triggering.

The DAQ-801/802 offers software selectable eight channel single-ended or differential analog inputs with 12-bit resolution. The input voltage can be either unipolar or bipolar, and is jumper selectable. DAQ-801 provides programmable gains of 1, 10, 100, and 1000. The DAQ-802 has programmable gains of 1, 2, 4 and 8. Both the DAQ-801 and DAQ-802 have auto zeroing

For Sales and Service U.S.A. and Canada  
**1-800-DAS-1EEE**  
In Mexico, call 95-660-825-6342

D1-21

**ISO9001**  
CERTIFIED CORPORATE QUALITY

## Specifications

### ANALOG INPUT

**Maximum Sampling Rate:** 40 KHz (all gains)

**Channels:** 8 differential

**Input Ranges:**  $\pm 5V$

### ACCURACY

**Gain <1000:** 0.05% FS (typical), 0.25% FS (maximum)

**Gain = 1000:** 0.1% FS (typical), 1.0% FS (maximum)

**Output Data Codes:** Twos complement

### GAIN RANGES

**Mode 801:** 1, 10, 100, 1000

**Mode 802:** 1, 2, 4, 8

**Input Impedance:** 1M  $\Omega$

**Input Bias Current:** 50 pA

**Surge Protection Up To:**  $\pm 20V$

**Resolution:** 12-bit + sign

### CONVERSION TIME

**With Auto Zeroing:** 15.2 ms

**Without Auto Zeroing:** 25.6 ms

**Convert Type:** Successive approximation

**Size of Scan List:** 8 samples

**Zero Error:** Adjustable to 0

**Gain Error:** Adjustable to 0

### ANALOG OUTPUT

**Channels:** 2

**Output Ranges:** 0-5 V, 0-10 V,  $\pm 5V$ ,  $\pm 10V$  (jumper selectable)

**Output Data Coding:** Straight binary

**Resolution:** 12-bits

**DIGITAL I/O (8 BITS ON MAIN D-37 CONNECTOR)**

**Output Bits:** 4

**Low/High Voltage:** 0.4/3.8 V

**Source/Sink Current:** 0.5/2.5 mA

**Input Bits:** 4 TTL compatible

**Timer/Counters**

**Number of Counters:** 1, down

**Type:** 82C54

**DIGITAL I/O (24 BITS ON AUXILIARY CONNECTOR)**

**Type:** CMOS 8255A

**I/O:** 24 bits

### POWER REQUIREMENTS

**+5 Vdc:** 750 mA typ, 900 mA max

**-5 Vdc:** 15 mA typ, 20 mA max

**+12 Vdc:** 60 mA typ, 80 mA max

**-12 Vdc:** 60 mA typ, 80 mA max

### ENVIRONMENTS

**Operating Temperature:** 0 to 70°C

**Interrupt Level:** 3-7, 9-12, 14, 15

**Humidity:** 0 to 95%

**Dimensions:** Long: 7" (18 cm)

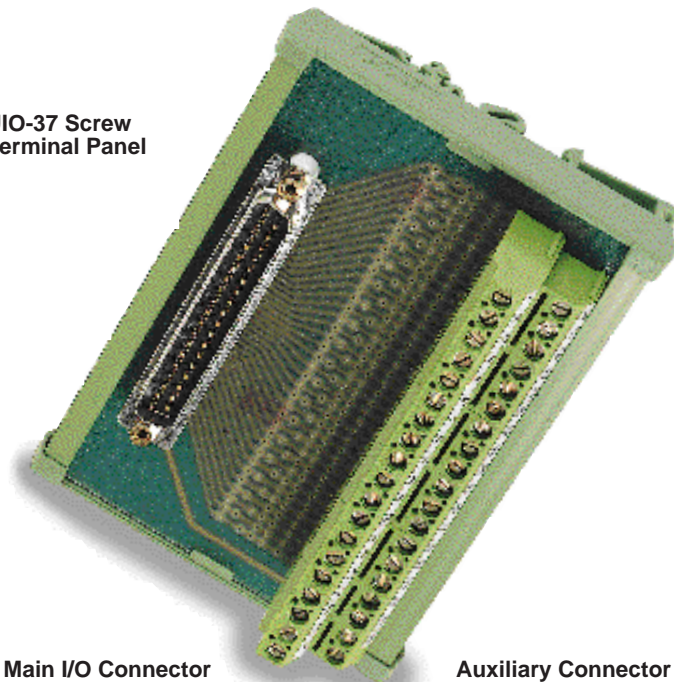
**High:** 4.8" (12 cm)

## Connectors

The analog inputs and eight digital I/O are connected through a male 37-pin D-type connector at the

rear of the computer. An auxiliary male D-37 connector is employed to support additional 24-bit digital I/O.

### UIO-37 Screw Terminal Panel



### Main I/O Connector

Analog GND	19	O	37	+CH0
-CH0	18	O	36	+CH1
-CH1	17	O	35	+CH2
-CH2	16	O	34	+CH3
-CH3	15	O	33	+CH4
-CH4	14	O	32	+CH5
-CH5	13	O	31	+CH6
-CH6	12	O	30	+CH7
-CH7	11	O	29	Analog GND
DAO Ref	10	O	28	Analog GND
DAO Out	9	O	27	DA1 OUT
Vref(-5V) Power	8	O	26	DA1 Ref
GND	7	O	25	IP0/External Trigger
IP1	6	O	24	IP2/CTR0 GATE
IP3	5	O	23	OP0
OP1	4	O	22	OP2
OP3	3	O	21	Counter 0 Clk
Counter 0 Out	2	O	20	Counter 2 Out
+5V	1	O		

### Auxiliary Connector

DIG COM	19	O	37	PA0
+5V	18	O	36	PA1
DIG COM	17	O	35	PA2
	16	O	34	PA3
DIG COM	15	O	33	PA4
	14	O	32	PA5
DIG COM	13	O	31	PA6
	12	O	30	PA7
DIG COM	11	O	29	PC0
PB0	10	O	28	PC1
PB1	9	O	27	PC2
PB2	8	O	26	PC3
PB3	7	O	25	PC4
PB4	6	O	24	PC5
PB5	5	O	23	PC6
PB6	4	O	22	PC7
PB7	3	O	21	DIG COM
	2	O	20	+5V
	1	O		

### To Order (Specify Model Number)

Model No.	Price	Description
DAQ-801	\$295	Data acquisition board with gains of 1, 10, 100 & 1000
DAQ-802	295	Data acquisition board with gains of 1, 2, 4 & 8

Comes with complete operator's manual, DaqEZ and driver software.

**Ordering Example:** DAQ-801 data acquisition board with 2 UIO-37 terminal panels and 2 CP-DAQ cables, \$295 + (2) \$110 + (2) \$30 = \$575.

### Accessories

Model No.	Price	Description
UIO-37	\$110	Terminal strip, can be used for main or auxiliary connector. Requires CP-DAQ cable
CP-DAQ	30	D-37 male to D-37 female shielded cable
VISUALDAQ	195	Visual Basic Controls

