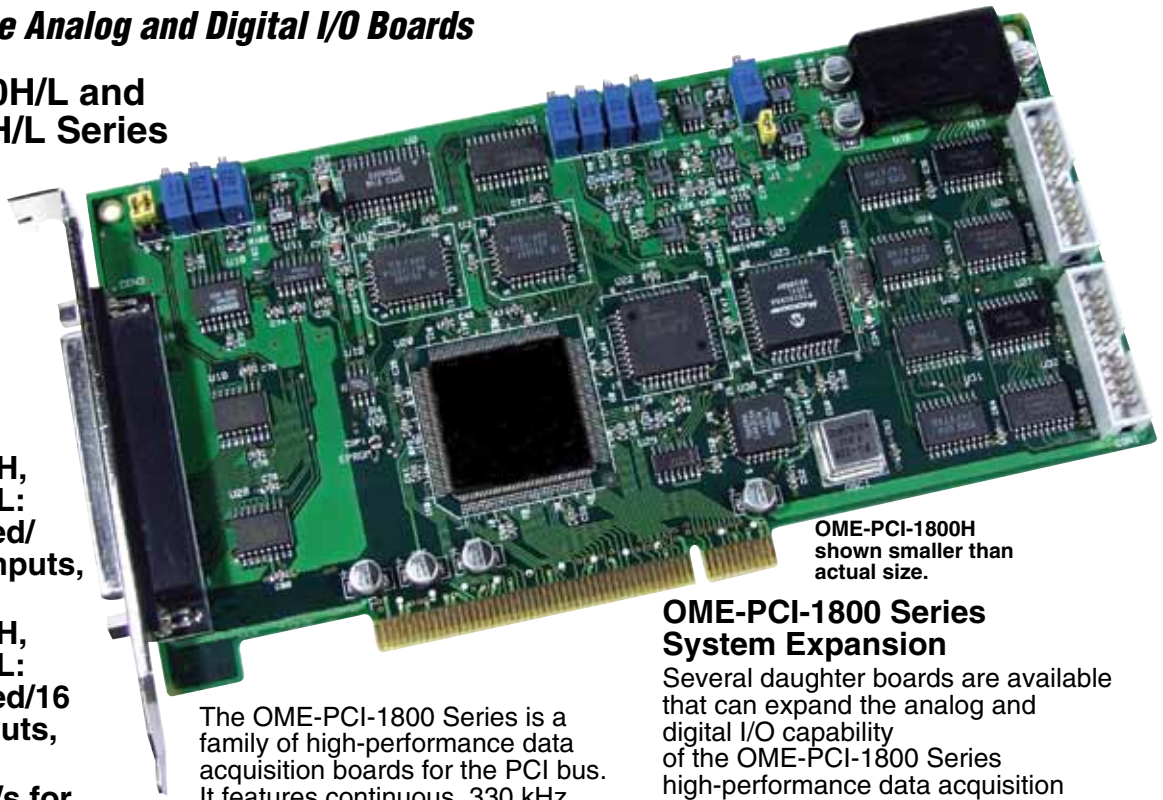
High-Performance Analog and Digital I/O Boards

OME-PCI-1800H/L and OME-PCI-1802H/L Series

1 YEAR WARRANTY



OME-PCI-1800H shown smaller than actual size.

- PCI Bus
- 12-Bit 330 KHz A/D Converter
- OME-PCI-1800H, OME-PCI-1800L: 16 Single-Ended/ 8 Differential Inputs, 2K Word FIFO
- OME-PCI-1802H, OME-PCI-1802L: 32 Single-Ended/16 Differential Inputs, 8K Word FIFO
- 330 KSamples/s for Single Channel or Multiple Channels
- Trigger Methods: Software Trigger, Pacer Trigger, External Trigger
- External Triggers: Post-Trigger, Pre-Trigger, External Pacer Trigger
- OME-PCI-1800L, OME-PCI-1802L Programmable Low-Gain: 0.5, 1, 2, 4, 8
- 16 Digital Input and 16 Digital Output Channels
- OME-PCI-1800H, OME-PCI-1802H Programmable High-Gain: 0.5, 1, 5, 10, 50, 100, 500, 1000
- Two Optional 12-Bit Independent Programmable DACs; 2 MHz Throughput per Channel (Max)
- 2.7M Word/High-Speed Data Transfer Rate
- Includes Software Development Kit
- Half-Size Board

The OME-PCI-1800 Series is a family of high-performance data acquisition boards for the PCI bus. It features continuous, 330 kHz, gap-free data acquisition under DOS and Windows.

The OME-PCI-1800 family has two 12-bit D/A output channels, 16 digital input channels, and 16 digital output channels.

The OME-PCI-1800H and OME-PCI-1800L provide 16 single-ended or 8 differential inputs. The OME-PCI-1802H and OME-PCI-1802L provide 32 single-ended or 16 differential inputs. The suffix “H” denotes a high-gain model and the “L” denotes a low-gain model. The boards feature advanced scanning features. The scanning mechanism not only scans the different input channels at vastly different rates, but also at different gains. Even in multichannel scan mode, the sampling rates can be maintained at 330 KS/s.

The OME-PCI-1800 Series also has some outstanding features, including:

- Data transfer rate of digital I/O is up to 5.4 MB
- Throughput of D/A is up to 2 MHz (maximum)
- Three flexible external trigger modes such as post-trigger, pre-trigger, middle trigger
- True “plug & play” under DOS and Windows
- On-board FIFO

OME-PCI-1800 Series System Expansion

Several daughter boards are available that can expand the analog and digital I/O capability of the OME-PCI-1800 Series high-performance data acquisition boards. These include: OME-DB-1825, OME-DB-8225, OME-DB-8025, OME-DB-889D, OME-DB-16P, OME-DB-16R.

OME-DB-889D 16-Channel Analog Multiplexer Board

The OME DB-889D is an expansion multiplexer/amplifier board for use with OME-PCI-1800H/L boards. Each OME-DB-889D multiplexes 16 differential analog input channels into one analog input of the data acquisition board. The high-grade instrumentation amplifier provides software programmable gains of 0.5, 1, 5, 10, 50, 100, 500, and 1000. Thermocouple measurements are handled easily with the OME-DB-889D. The board includes cold-junction sensing and compensation circuitry that provides a scaling of 24.4 mV/°C. Biasing resistors are included for open thermocouple detection. The OME-DB-889D can be cascaded to a total of 128 channels of voltage measurements or 112 channels of thermocouple measurement.

OME-DB-16P 16-Channel Isolated Digital Input Board

The OME-DB-16P is a 16-channel isolated digital input daughter board for any of the OME-PCI-1802H/1802L/1800H/1800L/1602/1602F/1202H/1202L/1002H/1002L PCI-bus multifunction boards.

The optically isolated inputs of the OME-DB-16P consist of a bi-directional OPTO-coupler with a resistor for current sensing. The OME-DB-16P can be used to sense DC signals from TTL levels up to 24 V and also a wide range of AC signals. The OME-DB-16P can also be used to isolate the computer from large common-mode voltages, ground loops and voltage spikes that often occur in industrial environments.

OME-DB-16R 16-Channel Relay Output Board

The OME-DB-16R 16-channel relay output board consists of 16 Form C relays for efficient switching of loads by programmed control.

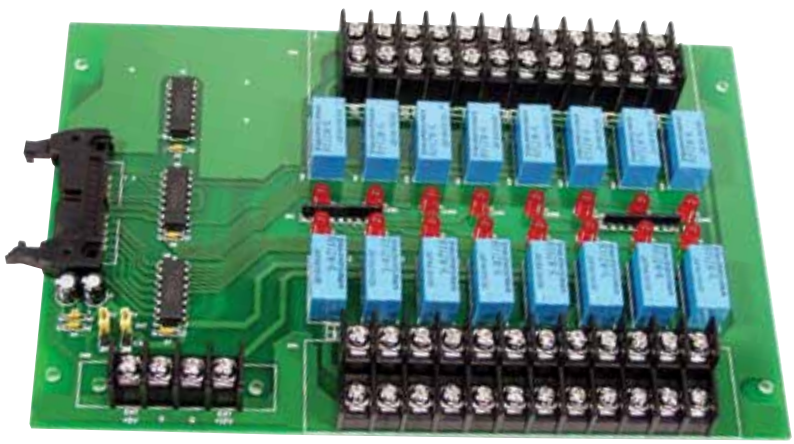
The OME-DB-16R can be used with any of the OME-PCI-1802H/1802L/1800H/1800L/1602/1602F/1202H/1202L/1002H/1002L PCI-bus multifunction boards. The relays are energized by applying a 5 V signal to the appropriate relay channel on the 20-pin flat cable connector. Sixteen annunciator LEDs, one for each relay, light when their associated relay is activated. To avoid overloading the PC's power supply, this board provides a screw terminal connection for a power supply.

Software Development Kit

All data acquisition boards are supplied with a standard software development kit for Windows 98/NT/2000/XP. The software development kit includes DLL files for programming in C, C++, or other high-level languages, and OCX files for Visual Basic or Active X programming. LabVIEW drivers are also included.

OM-PCI-1800L and 1802L Analog Input Ranges			
Gains	Bipolar (V)	Unipolar (V)	Throughput
0.5	±10 V	0 to 10 V	330 KS/s
1	±5 V	0 to 10 V	330 KS/s
2	±2.5 V	0 to 5 V	330 KS/s
4	±1.25 V	0 to 2.5 V	330 KS/s
8	±0.625 V	0 to 1.25 V	330 KS/s

OM-PCI-1800H and 1802H Analog Input Ranges			
Gains	Bipolar (V)	Unipolar (V)	Throughput
0.5	±10V	0 to 10 V	40 KS/s
1	±5V	0 to 10 V	40 KS/s
5	±1V	0 to 1 V	40 KS/s
10	±0.5V	0 to 1 V	40 KS/s
50	±0.1V	0 to 0.1 V	10 KS/s
100	±0.05V	0 to 0.1 V	10 KS/s
500	±0.01V	0 to 0.01 V	1 KS/s
1000	±0.005V	0 to 0.01 V	1 KS/s



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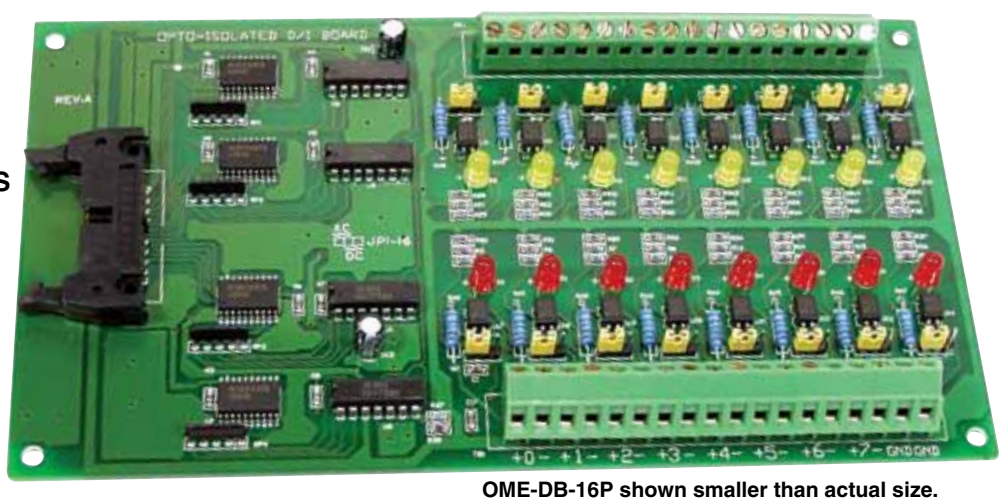

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Specifications

ANALOG INPUT SPECIFICATIONS
Input Channels:
OME-PCI-1802H/L, 32 SE/16 Diff
OME-PCI-1800H/L, 16 SE/8 Diff
Resolution: 12 bits
Conversion Rate: 330 KS/s
Input Impedance:
10,000 MΩ/6 pf
Overvoltage Protection: ±35 V
Accuracy: 0.01% of reading, ±1 bit
On Board FIFO:
OME-PCI-1800 H/L: 2K
OME-PCI-1802 H/L: 8K

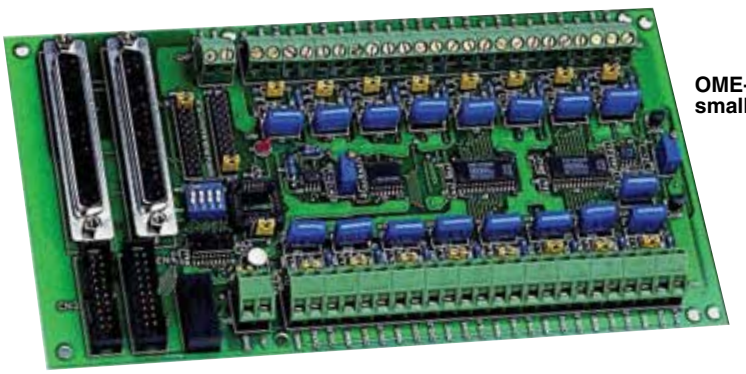
OME-PCI-1800H shown smaller than actual size

D/A OUTPUTS
Channels: 2
Type: 12-bit double buffers
Linearity: 0.06% FS
Settling Time: 0.4 ms
Output Range: ±5 or ±10 V
Output Driving: ±5 mA

DIGITAL I/O
Input: 16 channels; TTL levels
Input Low:
V_{IL} = 0.8 V maximum
I_{IL} = 4 mA
Input High:
V_{IH} = 2 V minimum
I_{IH} = -20 µA maximum
Output: 16 channels; TTL levels
Output Low:
V_{OL} = 0.5 V maximum
I_{OL} = 4 mA maximum
Output High:
V_{OH} = 2.7 V minimum
I_{OH} = -400 µA maximum

TIMER
Internal Pacer Timer:
16-bit, 8 MHz input
External Pacer Timer:
16-bit, 8 MHz input
Machine Independent Timer: 16-bit, 8 MHz input

GENERAL ENVIRONMENTAL
Power Requirements:
5 V @ 350 mA (max)
Operating Temperature:
0 to 50°C (32 to 122°F)
Storage Temperature:
-20 to 70°C (-4 to 158°F)
Humidity: 0 to 90% RH non-condensing
Dimensions: 190 L x 105 mm H (7.5 x 4.1")



OME-DB-889D shown smaller than actual size

To Order

Model Number	Description
OME-PCI-1800H	16-channel, high-gain, 12-bit analog and digital I/O board (2K word FIFO)
OME-PCI-1800L	16-channel, low-gain, 12-bit analog and digital I/O board (2K word FIFO)
OME-PCI-1802H	32-channel, 330 KS/s, high-gain, 12-bit analog and digital I/O board (8K word FIFO)
OME-PCI-1802L	32-channel, 330 KS/s, low-gain, 12-bit analog and digital I/O board (8K word FIFO)
OME-DB-1825/1	Screw terminal board for analog input channels for OM-PCI-1802H/L, with 1 meter cable
OME-DB-1825/2	Screw terminal board for analog input channels for OM-PCI-1802H/L, with 2 meter cable
OME-DB-8225/1	Screw terminal board for analog input channels for OM-PCI-1800H/L, with 1 meter cable
OME-DB-8225/2	Screw terminal board for analog input channels for OM-PCI-1800H/L, with 2 meter cable
OME-DB-8025	Screw terminal board for digital I/O, includes two 1 m cables
OME-DB-889D	16-channel analog multiplexer board, includes 1 m cable
OME-DB-16P	16-channel isolated digital input board, includes 1 m cable
OME-DB-16R	16-channel SPDT relay board, includes 1 m cable
OME-ADP-20/PCI	20-pin extender (extends the dual 20-pin digital I/O flat cable connectors on the board to the PC slot window, includes two 20-pin cables)