

Introduction

The PCL-816 modular DAS card allows you to choose your own customized data acquisition configuration. Its 100-kHz A/D module offers 16-bit resolution with 16 channels of differential analog input measurement.

The A/D module has its own protective cover, ensuring excellent signal shielding and noise immunity. A DB-37 cable connector provides fully-shielded signal connections to the A/D module.

In addition to the standard A/D module, the carrier board has two 64-pin piggyback connectors for additional function expansion modules. Accepting most sub-modules, this modular system makes customizing and upgrading easy.

Applications

- Transducer and sensor measurements
- Waveform acquisition and analysis
- Process control and monitoring
- Vibration and transient analysis

Signal Conditioning Support

The PCL-816 connects to the PCLD-789D and PCLD-779 using the PCLD-774 adapter card, but you can only access 8 differential input channels. We recommend the PCLD-880 for simple wiring connections.

Features

- 16-bit resolution A/D converter
- High-performance 100 kHz sampling rate
- Accepts 16 differential analog inputs with separately programmable gains (x 1, 2, 4 or 8)
- Programmable DMA channel
- Programmable IRQ level
- Metal-shielded A/D module for noise reduction
- Auto channel scanning circuit
- Versatile language drivers for C/C++, Pascal and BASIC
- Optional 16-bit D/A output module

Software and Drivers

- **Windows DLL Driver:** The PCL-816's Windows 98/95/NT dynamic link library (DLL) driver lets you write Microsoft Windows programs using tools such as Visual BASIC, Microsoft Visual C++, Inprise C++, C++ Builder and Delphi
- **ActiveX Control:** Advantech ActiveDAQ provides ActiveX Control for Visual Basic programming.
- **Application Packages:** The PCL-816 is supported by a wide range of data acquisition software packages, including LabVIEW and VisiDAQ

Specifications

Analog Input

- **Channels:** 16, differential
- **Resolution:** 16 bits
- **Conversion time:** 8.5 μ sec.
- **Maximum sampling rate:** 100 kHz
- **Software programmable input range (V):**
Bipolar: ± 10 , ± 5 , ± 2.5 , ± 1.25
Unipolar: 0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25
- **Trigger mode:** Software, pacer or external trigger
- **Data transfer:** Software, interrupt (IRQ 2-7, S/W select) or DMA (channel 1 or 3, S/W select)
- **Accuracy:** 0.003% ± 1 LSB
- **Input impedance:** > 10 M Ω
- **Input overvoltage:** ± 15 V
- **Connector:** Female DB-37

Digital Input

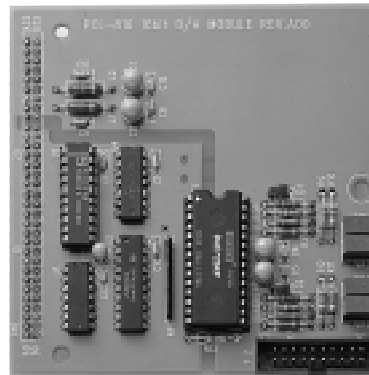
- **Channels:** 16
- **Logic level:** TTL-compatible
Logic level 0: 0.8 V max.
Logic level 1: 2.0 V min.
- **Connector:** 20-pin flat cable

Digital Output

- **Channels:** 16
- **Logic level:** TTL-compatible
Logic level 0: 0.4 V max. @ 16 mA (sink)
Logic level 1: 2.4 V min. @ 800 μ A (source)
- **Connector:** 20-pin flat cable

General

- **Programmable pacer clock:**
Device: Intel 8254 or equivalent
Time base: 10 MHz
Max. rate: 2.5 MHz
Min. rate: 0.00023 Hz
- **I/O ports:**
Each card occupies 16 consecutive I/O addresses
- **Expansion:** The PCL-816 accepts one PCL-816-DA-1 D/A module, providing 2 channels of 16-bit analog output
- **Power consumption:**
+5 V @ 430 mA typical
+5 V @ 500 mA max.
+12 V @ 260 mA typical
+12 V @ 280 mA max.
- **Dimensions:** 337 mm (L) x 112 mm (H) (13.3" x 4.4")



PCL-816-DA-1
2-channel 16-bit D/A Module

PCL-816-DA-1 2-channel 16-bit D/A module

- **Channels:** 2
- **Resolution:** 16 bits, double-buffered
- **Output ranges:** Bipolar ± 10 V
- **Output current:** ± 5 mA max.
- **Settling time:** 5 μ sec.
- **Data transfer:** Software, DMA
- **Accuracy:** $\pm 0.003\%$ full scale range
- **Linearity:** ± 2 LSB typical, ± 4 LSB max.
- **Reset (power-on) status:**
All D/A channels will be at 0 V after reset or power-on
- **Temperature drift:** 15 PPM/ $^{\circ}$ C of full span (0 ~ 50 $^{\circ}$ C)

Ordering Information

- PCL-816:** Modular data acquisition card. Includes on-board 16-bit A/D module, user's manual and utility disk with C/C++, Pascal and BASIC drivers.
- PCLS-OCX:** ActiveX Control for data acquisition and control.
- PCLD-880:** wiring terminal board

Optional Module for the PCL-816

- PCL-816-DA-1:** 2-channel 16-bit D/A module