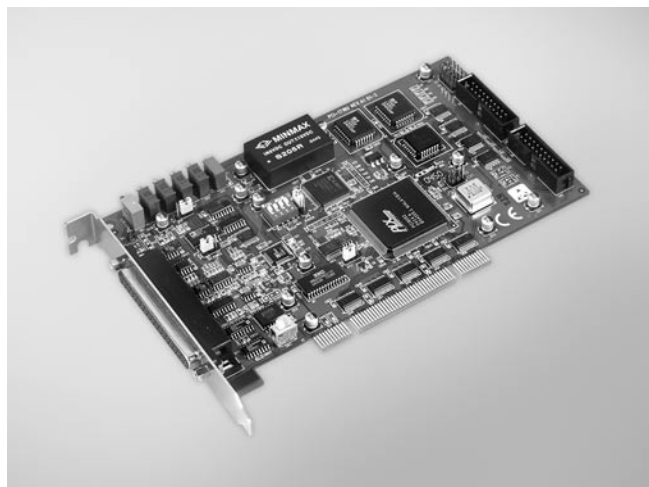


# PCI-1718HDU

100 kS/s, 12-bit, 16-ch Universal PCI Multifunction Card



## Features

- ISA-Compatible with PCL-818HD
- 16-ch single-ended or 8-ch differential analog input
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (1,024 samples)
- One 12-bit analog output channel
- 16-ch digital input and 16-ch digital output
- Universal PCI bus (support 3.3 V or 5 V PCI bus signal)
- BoardID™ switch

## Introduction

The PCI-1718HDU and the PCL-818H series are 100 kS/s multifunction data acquisition cards that offer the five most desired measurement and control functions: 12-bit A/D conversion, 12-bit D/A conversion, digital input, digital output, and counter/timer. With 3-way compatibility, migration is possible from ISA bus to PCI bus.

## Specifications

### Analog Input

- **Channels** 16 single-ended/8 differential (software programmable)
- **Resolution** 12 bits
- **Max. Sampling Rate** 100 kS/s
- **FIFO Size** 1,024 samples
- **Overvoltage Protection** 30 Vp-p
- **Input Impedance** 100 M $\Omega$
- **Sampling Modes** Software, onboard or external programmable pacer
- **Input Range**

| PCI-1718HDU | Unipolar   | N/A      | 0 ~ 10  | 0 ~ 5     | 0 ~ 2.5    | 0 ~ 1.25    |
|-------------|--|----------|---------|-----------|------------|-------------|
|             | Bipolar  | $\pm 10$ | $\pm 5$ | $\pm 2.5$ | $\pm 1.25$ | $\pm 0.625$ |
|             | <b>Accuracy (% of FSR <math>\pm 1</math>LSB)</b> | 0.1      | 0.1     | 0.2       | 0.2        | 0.4         |

### Analog Output

- **Channels** 1
- **Resolution** 12 bits
- **Output Rate** Static update
- **Output Range** (V, software programmable)

| Internal Reference | Unipolar | 0 ~ 5, 0 ~ 10                          |
|--------------------|----------|--|
| External Reference |          | 0 ~ x V @ x V (-10 $\leq$ x $\leq$ 10) |

- **Slew Rate** 10 V/ $\mu$ s
- **Driving Capability** 10 mA
- **Output Impedance** 0.1  $\Omega$  max.
- **Operation Mode** Software polling
- **Accuracy** INLE:  $\pm 1$ LSB

### Digital Input

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Input Voltage** Logic 0: 0.8 V max., Logic 1: 2 V min.

### Digital Output

- **Channels** 16
- **Compatibility** 5 V/TTL
- **Output Voltage** Logic 0: 0.8 V max.  
Logic 1: 2.0 V min.
- **Output Capability** Sink: 8.0 mA @ 0.8 V  
Source: -0.4 mA @ 2.0 V

### Counter/Timer

- **Channels** 1
- **Resolution** 16 bits
- **Compatibility** 5 V/TTL
- **Max. Input Frequency** 10 MHz
- **Reference Clock** Internal: 10 MHz  
External Clock Frequency: 10 MHz

### General

- **Bus Type** Universal PCI 2.2
- **I/O Connector** 1 x DB37 female connector  
2 x 20-pin box header
- **Dimensions** 175 x 100 mm (6.9" x 3.9")
- **Power Consumption** Typical: +5 V @ 850 mA  
Max.: +5 V @ 1 A
- **Operating Temperature** 0 ~ 60  $^{\circ}$ C (32 ~ 140  $^{\circ}$ F)
- **Storage Temperature** -20 ~ 70  $^{\circ}$ C (-4 ~ 158  $^{\circ}$ F)
- **Operating Humidity** 5 ~ 85% RH non-condensing (refer to IEC 68-1, -2, -3)
- **Storage Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-1, -2, -3)
- **Certifications** CE

## Ordering Information

- **PCI-1718HDU** 100 kS/s, 12-bit, 16-ch Univ. PCI Multi. Card
- **PCL-10120-1** 20-pin Flat Cable, 1 m
- **PCL-10120-2** 20-pin Flat Cable, 2 m
- **PCL-10137-1** DB37 Cable, 1 m
- **PCL-10137-2** DB37 Cable, 2 m
- **PCL-10137-3** DB37 Cable, 3 m
- **PCLD-8115** Wiring Board w/ CJC Circuit & One DB37 Cable
- **PCLD-880** Wiring Board w/ Two 20-pin Flat Cables & Adapter

## Pin Assignments

|               |    |    |                |
|---------------|----|----|----------------|
| A/D S0        | 1  | 20 | A/D S8         |
| A/D S1        | 2  | 21 | A/D S9         |
| A/D S2        | 3  | 22 | A/D S10        |
| A/D S3        | 4  | 23 | A/D S11        |
| A/D S4        | 5  | 24 | A/D S12        |
| A/D S5        | 6  | 25 | A/D S13        |
| A/D S6        | 7  | 26 | A/D S14        |
| A/D S7        | 8  | 27 | A/D S15        |
| A.GND         | 9  | 28 | A.GND          |
| A.GND         | 10 | 29 | A.GND          |
| V.REF         | 11 | 30 | DA0.OUT        |
| S0*           | 12 | 31 | DA0.VREF       |
| +12 V         | 13 | 32 | S1*            |
| S2*           | 14 | 33 | S3*            |
| D.GND         | 15 | 34 | D.GND          |
| NC            | 16 | 35 | EXT.TRIG       |
| Counter 0 CLK | 17 | 36 | Counter 0 GATE |
| Counter 0 OUT | 18 | 37 | PACER          |
| +5V           | 19 |    |                |

| CN1    |    |           | CN2    |    |           |
|--------|----|-----------|--------|----|-----------|
| D/O 0  | 1  | 2 D/O 1   | D/I 0  | 1  | 2 D/I 1   |
| D/O 2  | 3  | 4 D/O 3   | D/I 2  | 3  | 4 D/I 3   |
| D/O 4  | 5  | 6 D/O 5   | D/I 4  | 5  | 6 D/I 5   |
| D/O 6  | 7  | 8 D/O 7   | D/I 6  | 7  | 8 D/I 7   |
| D/O 8  | 9  | 10 D/O 9  | D/I 8  | 9  | 10 D/I 9  |
| D/O 10 | 11 | 12 D/O 11 | D/I 10 | 11 | 12 D/I 11 |
| D/O 12 | 13 | 14 D/O 13 | D/I 12 | 13 | 14 D/I 13 |
| D/O 14 | 15 | 16 D/O 15 | D/I 14 | 15 | 16 D/I 15 |
| D.GND  | 17 | 18 D.GND  | D.GND  | 17 | 18 D.GND  |
| +5 V   | 19 | 20 +12 V  | +5 V   | 19 | 20 +12 V  |