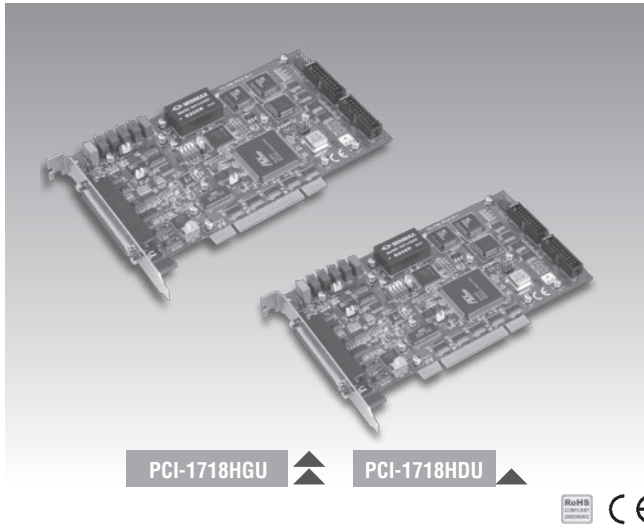


# PCI-1718HDU PCI-1718HGU

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



## Features

- ISA-Compatible with PCL-818HD/818HG
- 16 single-ended or 8 differential analog inputs
- 12-bit A/D converter, with up to 100 kHz sampling rate
- Programmable gain
- Automatic channel/gain scanning
- Onboard FIFO memory (1024 samples)
- One 12-bit analog output channel
- 16 digital inputs and 16 digital outputs
- Universal PCI bus (support 3.3 V or 5 V PCI bus signal)
- BoardID™ switch

## Introduction

The PCI-1718 series 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. The HG cards have the same specifications as the HD cards, but also offer a special high-gain programmable instrument amplifier for reading very low input signals.

## Specifications

### Analog Input

- Channels** 16 single-ended/8 differential (SW programmable)
- Resolution** 12 bits
- Max. Sampling Rate** 100 kS/s
- FIFO Size** 1024 samples
- Overvoltage Protection** 30 Vp-p
- Input Impedance** 100 MΩ
- 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	±10	±5	±2.5	±1.25	±0.625			
	Accuracy (% of FSR ±1LSB)	0.1	0.1	0.2	0.2	0.4			
PCI-1718HGU	Unipolar	N/A	0 ~ 10	N/A	0 ~ 1	N/A	0 ~ 0.01		
	Bipolar	±10	±5	±1	±0.5	±0.1	±0.05	±0.01	±0.005
	Accuracy (% of FSR ±1LSB)	0.1	0.1	0.2	0.2	0.4	0.4	0.8	0.8

### 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	PCI-1718H	0 ~ x V @ x V (-10 ≤ x ≤ 10)

- Slew Rate** 10 V/μs
- Driving Capability** ±10 mA
- Output Impedance** 0.1 Ω max.
- Operation Mode** Software polling
- Accuracy** INLE: ±1/2 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** DB-37P female x 1  
Box header 20P x 2
- 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 °C (32 ~ 158 °F)
- Storing Temperature** -20 ~ 70 °C (-4 ~ 158 °F)
- Operating Humidity** 5 ~ 85% RH non-condensing (refer to IEC 68-1, -2, -3)
- Storing Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-1, -2, -3)
- Certifications** CE

## Ordering Information

- **PCI-1718HDU** 12-bit multi-function card with PCI bus
- **PCI-1718HGU** 12-bit high-gain multi-function card with PCI bus
- **PCL-10120-1** 20-pin flat cable, 1 m
- **PCL-10120-2** 20-pin flat cable, 2 m
- **PCL-10137-1** DB37 cable assembly, 1 m
- **PCL-10137-2** DB37 cable assembly, 2 m
- **PCL-10137-3** DB37 cable assembly, 3 m
- **PCLD-8115** Industrial Wiring Terminal with CJC circuit and DB37 connector
- **PCLD-880** Industrial Wiring Terminal with DB37 connector

## 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