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Singapore	65-6442-1000

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Selangor	60-3-7725-4188
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Toll Free	1800-425-5070
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Toll Free	1300-308-531
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Münich	49-89-12599-0
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Milpitas	1-408-519-3898
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Advantech
Data Acquisition Solutions

Versatile Form Factors to Meet All Your DAQ Needs

- DAQ Software
- PCI & PCI Express Cards
- PC/104 & PCI-104 Modules
- USB DAQ Modules
- Signal Conditioners
- Motion Control

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As a leading supplier of data acquisition products worldwide, Advantech offers a wide range of I/O devices with various interfaces and functions based on PC technology, from legacy ISA to modern USB, from signal-conditioning to graphical software tools. Advantech's industrial I/O products are reliable, accurate, affordable, and suitable for many industrial automation applications, such as T&M (Test & Measurement) and laboratory applications like monitoring, control, machine automation and production testing.

Industrial I/O Product Lines

Signal Conditioning

Signal conditioning circuits improve the quality of signals generated by transducers before they are converted into digital signals by the PC's data acquisition hardware. Examples of signal conditioning are signal scaling, amplification, linearization, cold-junction compensation, filtering, attenuation, excitation, common-mode rejection, and so on. The ADAM-3000 series covers a wide range of signals from DC micro voltage to AC 400 V; and from mini-amp to 5 amp signals.

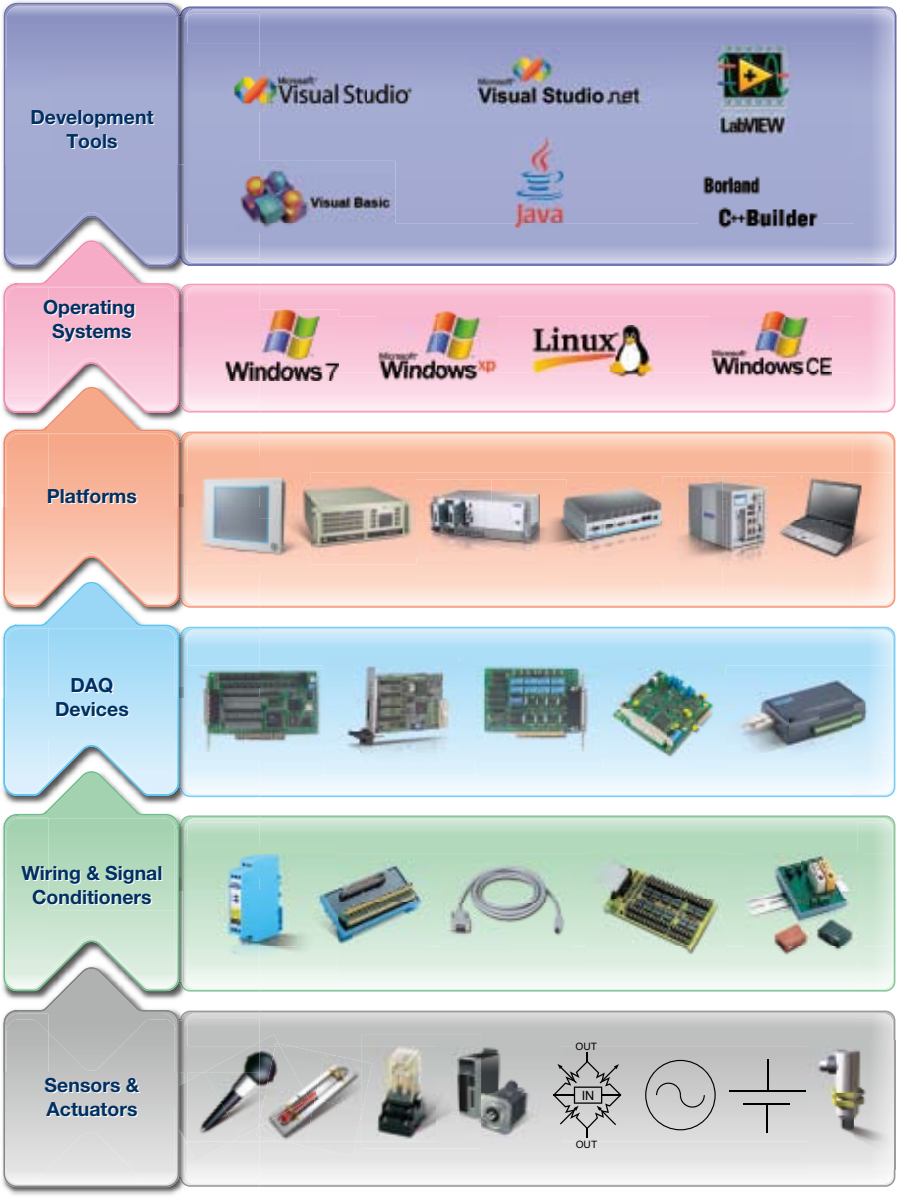
Data Acquisition Hardware

Every item of data acquisition hardware generally performs one or more of the following functions: analog input, analog output, digital input, digital output, counter/timer, and GPIB. Advantech offers dedicated products for each function in different interfaces, including USB, PCI, PCI Express, ISA, CompactPCI, PC/104 and PCI-104, for customers to choose from, regardless if the platform is an IPC, embedded PC, desktop computer or laptop.

Data Acquisition Software

Spanning a broad range of functionality from device drivers for controlling hardware interfaces to application software packages for developing systems, flexible software plays a vital role in developing automation and T&M applications. Not only does Advantech provide support for Windows 7, Windows XP, Windows CE, and Linux, but also offers graphic tools to help users deploy designs in shorter time.

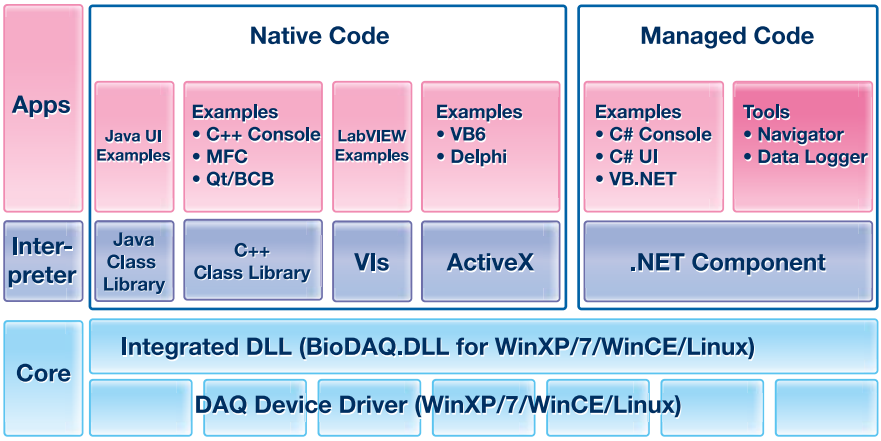
Comprehensive Product Offerings



What is DAQNavi?

DAQNavi is a completed software package, for programmers to develop their application programs using Advantech DAQ boards or devices. This integrated software package includes drivers, SDK, tutorial and utility. With the user-friendly design, even the beginner can quickly get familiar with how to utilize DAQ hardware and write programs through the intuitive "Advantech Navigator" utility environment. Many example codes for different development environment dramatically decrease users' programming time and effort.

DAQNavi Software Architecture



Features

Multiple Operating System Support

For different OS's, API functions will be the same, so users can simply install the driver without modifying the program when migrating between different operating systems. DAQNavi supports Windows 7/Vista/XP/ Server (32 and 64-bit) and the following Linux distributions: Ubuntu, Fedora, Mint, Redhat, and Susi.

* For other Linux distributions, contact Advantech.

LabVIEW Support

For LabVIEW users, DAQNavi offers two programming options: Express VI and Polymorphic VIs. When users drag Express VI onto LabVIEW Block Diagrams, a pop-up intuitive wizard window will appear for configurations, making programming very easy. As for the Polymorphic VI, users can use several VIs and wiring diagrams to build advanced programs.

.NET Support

DAQNavi offers .NET component to benefit from unified platform features of the latest .NET technology. An intuitive window will appear when components are used in the .NET environment, and all configurations can be done by sequence. With Advantech Component-style class library (CSCL) technology, engineers can leverage the same programming tools in native environments such as Visual C++.

C++, Delphi, VB and Java Support

DAQNavi offers a C++ Class Library (for VC++ and BCB) and ActiveX (for VB and Delphi) for native programming environments with same interface as .NET Class Library. With the DAQNavi Java Class Library, users can develop Java programs across different platforms (including Windows and Linux) using the Java engine.

Easy-to-Use Advantech Navigator Utility

DAQNavi provides one easy-to-use utility, called Advantech Navigator, to configure and test data acquisition devices before writing any program. It also offers a lot of tutorials and reference documentation.

Application-oriented Example Scenarios

DAQNavi defines commonly-used measurement and automation applications, named "scenarios". For each scenario, an example program is embedded within Advantech Navigator that you can execute it directly. Corresponding source code is provided, so you don't need to write your code from scratch.

Easy-to-Use Advantech Navigator Utility

SDKs

DAQ User Interface Manual

To shorten the development time, Advantech offer a lot of tutorial and reference documentation. You can find instructions for programming. It not only teaches you how to create an application project, but also how to write the program with a programming chart and example code.

Video Tutorial

If you don't know how to start creating a project, Advantech offers a tutorial video for your reference.

Scenarios Commonly-used for Measurement and Automation Applications

Category	Scenario	Description
Analog Input	Instant AI	Read single AI value once
	Asynchronous One Buffered AI	Read a buffer of AI values once (Don't need to wait the acquisition is done to run other program)
	Synchronous One Buffered AI	Read a buffer of AI values once (Need to wait the acquisition is done to run other program)
	Streaming AI	Continuously read a buffer of AI values
Analog Output	Static AO	Change AO values once
	Asynchronous One Waveform AO	Change AO value based on a pre-defined waveform once (Don't need to wait the generation is done to run other program)
	Synchronous One Waveform AO	Change AO value based on a pre-defined waveform once (Need to wait the generation is done to run other program)
	Streaming AO	Continuously change AO value based on a pre-defined waveform

Devices

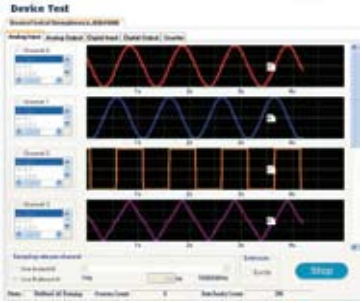
You can see all your installed Advantech DAQ devices here, including the simulated DAQ device called "DemoDevice". In other words, you don't need any hardware installed on your computer to test all operations within DAQNavi. For each device, there are four items you can select.

Device Setting

You can perform all hardware configurations for the selected device.

Device Test

You can test all hardware functionality here, without any programming.

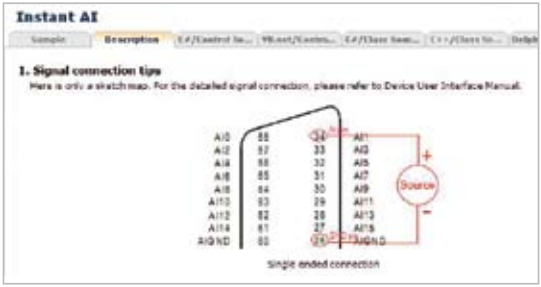


Scenarios

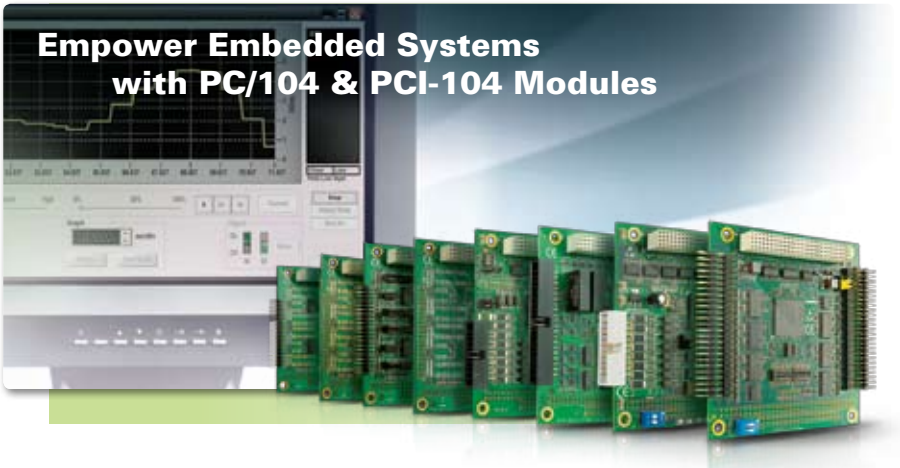
For each scenario, an example program is embedded within Advantech Navigator so that you can execute it directly. Corresponding source code is provided, written in different languages (C#, VB .NET, C++, Delphi, Qt and Java). A wiring diagram for each scenario is available here.

Reference

You can find the detailed user manuals for the selected device.



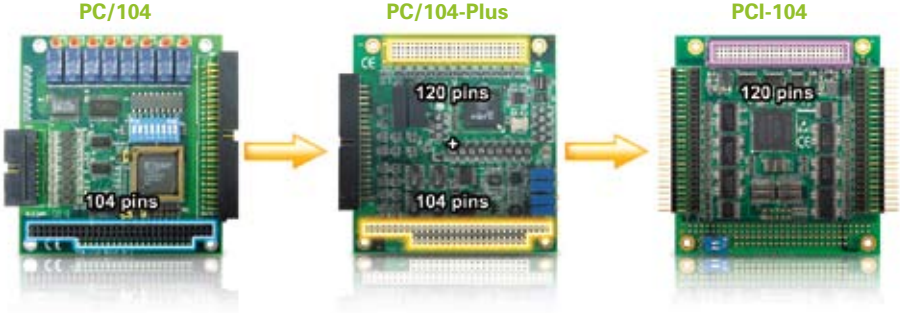
Category	Scenario	Description
Digital Input	Static DI	Read the selected DI port value once
	DI Interrupt	When DI bit meets a pre-defined edge change (rising or falling), an interrupt is generated
	DI Pattern Match Interrupt	When selected DI port meets pre-defined pattern, an interrupt is generated
	DI Status Change Interrupt	When the status of certain selected channel of DI port changes, an interrupt is generated
Digital Output	Static DO	Change DO values once
Timer/ Counter	Delayed Pulse Generation	When a trigger from counter gate is met, a pulse is generated after a specific period
	Pulse Output with Timer Interrupt	Continuously generate a periodic pulse train (using counter internal clock), and an event will be sent out at the same time.
	Event Counter	Continuously count the pulse number of signal from counter input
	Frequency Measurement	Measure frequency of signal from counter input
	Pulse Width Measurement	Measure pulse width of signal from counter input
	PWM Output	Generate PWM (Pulse Width Modulation) signal



Advantech's Complete Line of DAQ and Serial Communication Cards

Embedded computers are at the heart of many industrial, transportation, military, and aerospace applications. PC/104 and PCI-104 are the standard form factors used in embedded computing platforms due to their compact size, expansion capabilities, reliability, anti-vibration, wide operating temperature range and high-speed throughput features. Advantech provides a wide variety of PC/104 and PCI-104 module options, such as isolated digital I/O, analog I/O, relay, counter, and multifunction cards.

Form Factors



Form Factor	PC/104	PC/104-Plus	PCI-104
Release Year	1992	1997	2003
Connector	ISA (AT and XT)	ISA and PCI	PCI
Current Version	2.5	2.0	1.0

Key Features

Anti-vibration

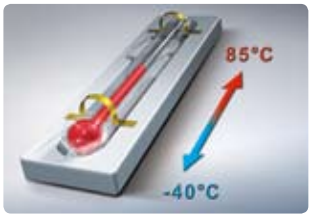
PC/104 and PCI-104 products support 104 pin, 120 pin, or both for signal and data transmission. Each pin can be stacked into its corresponding connector shroud so firmly that could not only ensure no data errors will occur, but also provides excellent anti-vibration capabilities.

Stackable/ Easy to Expand

The PC/104 and PCI-104 family supports standard ISA/PCI interfaces, uses open architectures, and are easy to expand. The consistent form factor allows different modules to be stacked on top of one another, providing users the versatility to easily expand I/O and functionality.

Compact Size

With a standard dimension of 96 x 90 mm (L x H), the design of the PC/104 and PCI-104 saves more space than traditional I/O cards and is also a perfect solution for compact embedded systems.



Wide Operating Temperature Range

Different from traditional IPCs, the PC/104 and PCI-104 form factors are capable of operating in temperatures from -40~85°C (-40~185°F) for reliable operation in harsh environments.

Fast Read / Write Speed

While PCI-104 products use the standard PC/104 form factor, they have dropped the ISA interface, providing more bandwidth for data transmission and allowing faster read/ write speed than traditional ISA cards.

PCI-104 Form Factors

PCM-3730I

32-ch Isolated Digital I/O PCI-104 Module

Features

- High-voltage isolation on input channels (2,500 VDC)
- High output driving capacity
- Interrupt handling capability
- High-voltage isolation on output channels
- Wide operating temperature range (-20 ~ 70°C, -4 ~ 158°F)

Ordering Information

- **PCM-3730I** 32-ch Isolated Digital I/O PCI-104 Module
- **ADAM-3920** 20-pin DIN-rail Wiring Board
- **PCL-10120** 20-pin Flat Cable,1 m/ 2m

Software Support

PCM-3753I

96-ch Digital I/O PCI-104 Module

Features

- Supports dry/wet contact
- Keeps the last output value after system hot reset
- "Pattern match" and "change of state" interrupt functions
- Interrupt output pin for simultaneously triggering external devices
- Output status read-back
- Wide operating temperature range (-20 ~ 70°C, -4 ~ 158°F)

Ordering Information

- **PCM-3753I** 96-ch Digital I/O PCI-104 Module w/50p Cable
- **PCL-10150-1.2** 50-pin Flat Cable, 1.2 m
- **ADAM-3950** 50-pin DIN-rail Flat Cable Wiring Board
- **PCLD-782B** 24-ch IDI Board w/ 20-pin & 50-pin Flat Cables
- **PCLD-785B** 24-ch Relay Board w/ 20-pin & 50-pin Flat Cables

Software Support

PCM-3761I

8-ch Relay and 8-ch Isolated Digital Input PCI-104 Module

Features

- 8 Form C type relay output channels
- Retained relay output values when hot system reset
- High-voltage isolation on input channels (2,500 VDC)
- Wide input range (5 ~ 30 VDC)
- Interrupt handling capability

Ordering Information

- **PCM-3761I** 8-ch Relay/Isolated Digital Input PCI-104 Module
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **ADAM-3950** 50-pin DIN-rail Flat Cable Wiring Board
- **PCL-10150-1.2** 50-pin Flat Cable, 1.2 m
- **PCL-10120** 20-pin Flat Cable, 1 m/ 2 m

Software Support

PCM-3813I

100 kS/s, 12-bit, 32-ch Isolated Analog Input PCI-104 Module

Features

- 32-ch single-ended or 16-ch differential analog input
- Programmable gain for each input channel
- Automatic channel/ gain/ SD scanning
- Isolation protection (2,500 V_{DC})
- Software polling, internal or external pacer sampling modes supported

Ordering Information

- **PCM-3813I** 100 kS/s, 12-bit Isolated AI PCI-104 Module
- **PCL-10141-0.2** IDE#2 40-pin to DB37(F) Flat Cable, 0.2 m
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio | Java

PCM-3810I

250 kS/s, 12-bit, 16-ch Multifunction PCI-104 Module

Features

- 16-ch single-ended or 8-ch differential A/D input, switch selectable
- 12-bit A/D converter, up to 250 kHz sampling rate
- Programmable gain for each input channel
- Onboard ring buffer for analog input/output
- 2-ch analog output
- 16-ch digital input/output (5V/TTL compatible)
- 3-ch counter/timer

Ordering Information

- **PCM-3810I** 250 kS/s, 12-bit Multi. PCI-104 Module
- **PCL-10150-1.2** 50-pin Flat Cable, 1.2 m
- **ADAM-3950** 50-pin DIN-rail Flat Cable Wiring Board

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio | Java

PCM-3614I/3618I

4/8-port RS-232/422/485 PCI-104 Module

Features

- Automatic RS-485 data flow control
- Shared IRQ settings for each port
- LED indicators: TX, RX
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Powerful and easy-to-use utility (ICOM Tools)
- Wide operating temperature range (-40 ~ 85°C, -40 ~ 185°F)

Ordering Information

- **PCM-3614I** 4-port RS-232/422/485 PCI-104 Module
- **PCM-3618I** 8-port RS-232/422/485 PCI-104 Module

Software Support

Windows 7 | Windows xp | Windows CE | Linux

PCM-3641I/3642I

4/8-port RS-232 PCI-104 Module

Features

- Transmission speeds up to 460 kbps
- Shared IRQ settings for each port
- Standard PC ports: COM1, COM2, COM3, COM4 compatible
- Powerful and easy-to-use utility (ICOM Tools)
- Wide operating temperature range (-40 ~ 85°C, -40 ~ 185°F)

Ordering Information

- **PCM-3641I** 4-port RS-232 PCI-104 Module
- **PCM-3642I** 8-port RS-232 PCI-104 Module

Software Support

Windows 7 | Windows xp | Windows CE | Linux

PCM-3680I

2-port CAN-bus PCI-104 Module with Isolation Protection

Features

- Operates two separate CAN networks at the same time
- High speed transmission up to 1 Mbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 2,500 V_{DC} ensures system reliability
- I/O address automatically assigned by PCI PnP
- Wide operating temperature range (-40 ~ 85°C, -40 ~ 185°F)

Ordering Information

- **PCM-3680I** 2-port CAN-bus PCI-104 Module w/ Iso. Protection

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio

PC/104 Form Factors

PCM-3680

2-port CAN-bus PC/104 Module with Isolation Protection

Features

- Operates two separate CAN networks simultaneously
- High speed transmission up to 500 kbps
- 16 MHz CAN controller frequency
- Optical isolation protection of 2,500 V_{DC} ensures system reliability
- LEDs indicate transmit/receive status of each port
- Wide operating temperature range (-40 ~ 85°C, -40 ~ 185°F)

Ordering Information

- **PCM-3680** Dual-port Isolated CAN-bus PC/104 Module

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio

PCM-3718H/HO/HG

100 kS/s, 12-bit, 16-ch PC/104 Multifunction Module

Features

- 16-ch single-ended or 8-ch differential analog input
- 12-bit A/D converter, up to 100 KHz sampling rate with DMA transfer
- 1-ch analog output (PCM-3718HO only)
- 16-ch digital input/output (5V/TTL compatible)

Ordering Information

- **PCM-3718H** 100 kS/s, 12-bit Multi. PC/104 Module
- **PCM-3718HG** 100 kS/s, 12-bit High-gain Multi. PC/104 Module
- **PCM-3718HO** 100 kS/s, 12-bit Multi. PC/104 Module w/AO
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **PCLD-780** Screw Terminal Board w/ Two 20-pin Flat Cables
- **PCL-10120** 20-pin Flat Cable,1 m/ 2 m

Software Support

PCM-3725

8-ch Relay and Isolated Digital Input PC/104 Module

Features

- 8-ch relay output (Form C)
- Opto-isolated 8-ch digital input
- LED indicators to show activated relays
- Onboard relay driver circuits
- Onboard input signal conditioning circuits

Ordering Information

- **PCM-3725** 8-ch Relay/Isolated Digital Input PC/104 Module
- **PCL-10120** 20-pin Flat Cable, 1 m/ 2m
- **PCL-10150-1.2** 50-pin Flat Cable, 1.2 m
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **ADAM-3950** 50-pin DIN-rail Flat Cable Wiring Board
- **PCLD-780** Screw Terminal Board w/ Two 20-pin Flat Cables

Software Support

PCM-3730

16-ch Isolated Digital I/O PC/104 Module

Features

- 5V/TTL compatible DI/O: 16-ch DI and 16-ch DO
- Opto-isolated DI/O: 8-ch DI and 8-ch DO
- Interrupt handling capability
- High output driving capacity

Ordering Information

- **PCM-3730** 16-ch Isolated DI/O PC/104 Module w/ 20p Cable
- **PCL-10120** 20-pin Flat Cable, 1 m/ 2m
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **PCLD-780** Screw Terminal Board w/ Two 20-pin Flat Cables
- **PCLD-785** 16-ch Relay Board w/ One 1m 20-pin Flat Cable
- **PCLD-885** 16-ch Power Relay Board w/ 20p & 50p Flat Cables

Software Support

Portable, Robust & Versatile USB DAQ Modules

Advantech's USB DAQ modules are known for their user-friendly design and ability to replace traditional serial and parallel devices as they eliminate the need for an external power and allow hot swapping. Through the Advantech USB DAQ series, users can easily upgrade their computing platforms with cutting edge technologies and realize cost-effective maintenance while allowing the data acquisition devices to operate as usual. By adding industrial-grade features, including lockable cables, multiple mounting methods and advanced detection functions, Advantech's USB data acquisition devices are a great fit for any industrial need.

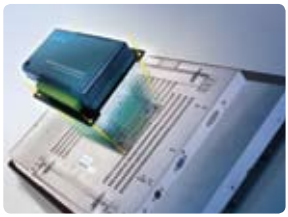
Mounting Schemes

DIN-rail Mount

Advantech's USB DAQ modules come with a bracket that facilitates the DIN-rail mounting onto industry standard streamlined systems.

Wall/Panel Mount

The wallmount kit can help users hang their modules on the wall or other flat surfaces.



VESA Mount

The VESA bracket can mount the USB data acquisition module to the VESA-ready appliances, such as Advantech's touch panel computers (TPC series) and the flat panel monitors (FPM series).

Key Features

Lockable USB Cable

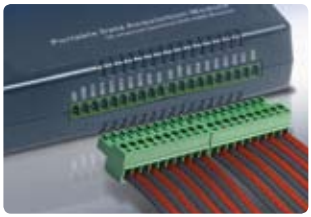
Reliable connections are critical to automation control and online production. While the standard USB cable is designed for convenience, Advantech provides lockable USB cables to prevent the cable from being unplugged accidentally.

480Mbps High Speed Data Transfer

Advanced data acquisition functions can be accomplished. Up to 200 kS/s sampling rate, 16-bit resolution, 16-ch analog input, 48-ch digital I/O specifications, as well as interrupt, event counter, and pulse width modulation (PWM) functions are available on Advantech's USB data acquisition modules.

Bus-powered

No need for external power these devices are highly mobile as they derive power from system USB ports, freeing users from the inconvenience of finding additional power sources.



Detachable Screw Terminal & On-Module Pin Assignment Index

Saving space & money is the main benefit of using detachable screw terminals. Budgets can be saved by not having to buy additional cables and/or wiring boards, and extra space can be saved as well. Furthermore, Advantech's on-module pin assignment simplifies maintenance efforts and reduces incorrect connections that can cause damage to the system.

Device Identification

Easy identification of each Advantech USB DAQ module can be set through a provided utility. This ensures that application programs control the correct modules, even if the computer is changed or the USB DAQ modules are switched or rearranged through the USB hub. With this feature, the development time of each control site can be shortened by reducing duplicate programs.

USB-4711A

150 kS/s, 12-bit, 16-ch Multifunction USB Module

Features

- 16-ch single-ended or 8-ch differential of 12-bit analog input
- 2-ch 12-bit analog output
- 8-ch digital input and 8-ch digital output
- One 32-bit event counter
- Frequency measurement
- One lockable USB cable for secure connection included

Ordering Information

- **USB-4711A** 150 kS/s, 12-bit, 16-ch Multi. USB Module
- **1960004544** Wallmount Bracket
- **1960005788** VESA Mounting Bracket

Software Support

USB-4716

200 kS/s, 16-bit, 16-ch Multifunction USB Module

Features

- 16-ch single-ended or 8-ch differential of 16-bit analog input
- 2-ch 16-bit analog output
- 8-ch digital input and 8-ch digital output
- One 32-bit counter
- Frequency measurement
- One lockable USB cable for secure connection included

Ordering Information

- **USB-4716** 200 kS/s, 16-bit, 16-ch Multi. USB Module
- **1960004544** Wallmount Bracket
- **1960005788** VESA Mounting Bracket

Software Support

USB-4718

8-ch Thermocouple Input USB Module with 8-ch Isolated Digital Input

Features

- 8-ch analog input for voltage, current, and thermocouple
- 2,500 V_{DC} isolation
- Supports 0~20 and 4 ~ 20 mA current input
- 8-ch isolated digital input and 8-ch isolated digital output (5V/TTL compatible)
- One lockable USB cable for secure connection included

Ordering Information

- **USB-4718** 8-ch Thermocouple Input USB Module
- **1960004544** Wallmount Bracket
- **1960005788** VESA Mounting Bracket

Software Support

USB-4750

32-ch Isolated Digital I/O USB Module

Features

- Isolated DIO: 16-ch DI, 16-ch DO
- High sink current on isolated output channels (100 mA/channel)
- Supports 5 ~ 50 V_{DC} isolated input channels
- Interrupt handling capability
- Timer/counter capability
- One lockable USB cable for secure connection included

Ordering Information

• **USB-4750**	32-ch Isolated Digital I/O USB Module
• **1960004544**	Wallmount Bracket
• **1960005788**	VESA Mounting Bracket

Software Support

USB-4751/L

48/24-ch Digital I/O USB Module

Features

- 48/24 TTL digital I/O lines
- Supports both dry and wet contact
- Emulates mode 0 of 8255 PPI
- Buffered circuits for higher driving capacity than the 8255
- Interrupt handling capability
- Timer/Counter interrupt capability
- 50-pin Opto-22 compatible box header
- One lockable USB cable for secure connection included

Ordering Information

• **USB-4751**	48-ch Digital I/O USB Module
• **USB-4751L**	24-ch Digital I/O USB Module
• **1960004544**	Wallmount Bracket
• **1960005788**	VESA Mounting Bracket

Software Support

USB-4761

8-ch Relay and 8-ch Isolated Digital Input USB Module

Features

- LED indicators to show activated relays
- 8 Form C type relay output channels
- Wide input range (5 ~ 30 V_{DC})
- Interrupt handling capability
- High-voltage isolation on input channels (2,500 V_{DC})
- High ESD protection (2,000 V_{DC})
- One lockable USB cable for secure connection included

Ordering Information

• **USB-4761**	8-ch Relay/Isolated Digital Input USB Module
• **1960004544**	Wallmount Bracket
• **1960005788**	VESA Mounting Bracket

Software Support

USB-4702

10 kS/s, 12-bit, 8-ch Multifunction USB Module

Features

- 8-ch analog input
- 12-bit resolution AI
- Sampling rate up to 10 kS/s
- 8-ch DI/8-ch DO, 2-ch AO and 1-ch 32-bit counter

Ordering Information

USB-4702	10 kS/s, 12-bit, 8-ch Multi. USB Module
PCL-10137-1	DB37 Cable, 1m
PCL-10137-2	DB37 Cable, 2m
PCL-10137-3	DB37 Cable, 3m
ADAM-3937	DB37 DIN-rail Wiring Board

Software Support

USB-4704

48 kS/s, 14-bit, 8-ch Multifunction USB Module

Features

- 8 analog input channels
- 14-bit resolution AI
- Sampling rate up to 48 kS/s
- 8-ch DI/8-ch DO, 2-ch AO and one 32-bit counter
- Detachable screw terminal on modules
- Suitable for DIN-rail mounting

Ordering Information

USB-4704	48 kS/s, 14-bit, 8-ch Multi. USB Module
1960004544	Wallmount Bracket
1960005788	VESA Mounting Bracket

Software Support

USB-4671

GPIB USB Module

Features

- Complete IEEE 488.1 & 488.2 compatibility
- Full driver, library, and example support, including VB, VC, BCB and Delphi
- Provides powerful and easy-to-use configuration utility
- No GPIB cable required for instrument connection
- Plug & play installation and configuration

Ordering Information

USB-4671	GPIB USB Module
PCL-10488-2	IEEE-488 Cable, 2 m

Software Support

USB-4620

5-port Full-speed Isolated USB 2.0 Hub

Features

- 5 downstream USB 2.0 ports
- Compatible with USB 2.0 Full-speed, USB 1.1, USB 1.0
- 3,000 V_{DC} voltage isolation for each downstream port
- Suitable for DIN-rail mounting
- One lockable USB cable included
- 10 ~ 30 V_{DC} power input (power adapter not included)

Ordering Information

• **USB-4620**	5-port Full-speed Isolated USB 2.0 Hub
• **PWR-242**	DIN-rail Power Supply
• **1960004544**	Wallmount Bracket
• **1960005788**	VESA Mounting Bracket
• **USB-LOCKCABLE-AE**	1.8 M Lockable USB 2.0 Cable with Screw Kit

USB-4622

5-port USB 2.0 Hub

Features

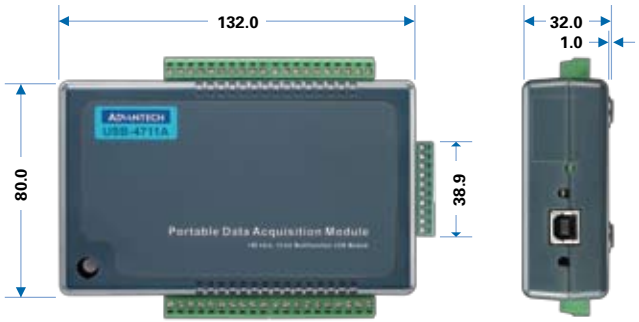
- Compatible with USB 2.0 high speed, USB 2.0 full-speed, USB 1.1, USB 1.0
- 480 Mbps high-speed data transfer
- LED indicator
- 10 ~ 30 V_{DC} power input (power adapter not included)
- Suitable for DIN-rail mounting
- One lockable USB cable included

Ordering Information

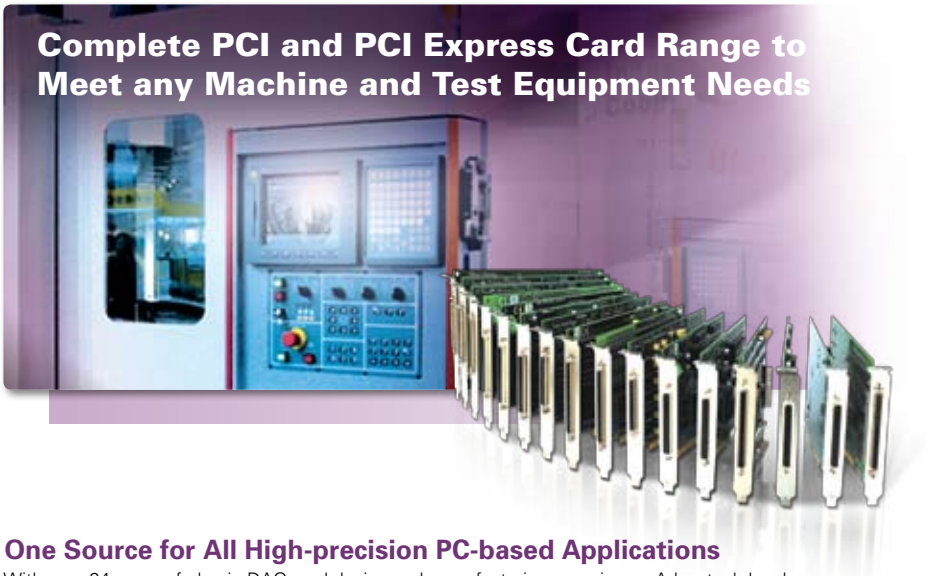
• **USB-4622**	5-port USB 2.0 Hub
• **PWR-242**	DIN-rail Power Supply
• **1960004544**	Wallmount Bracket
• **1960005788**	VESA Mounting Bracket
• **USB-LOCKCABLE-AE**	1.8 M Lockable USB 2.0 Cable with Screw Kit

Dimensions

Unit: mm



Front View **Side View**

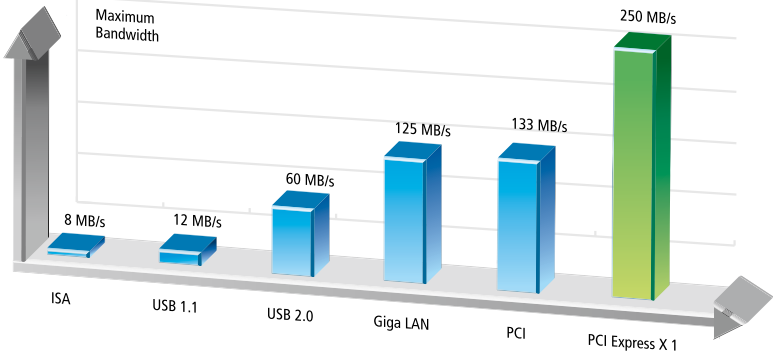


One Source for All High-precision PC-based Applications

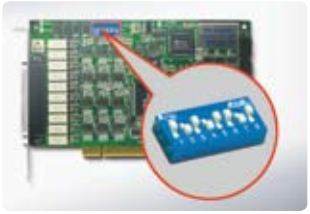
With over 24 years of plug-in DAQ card design and manufacturing experience, Advantech has become a global leader, providing a full range of industrial data acquisition and control products. The most requested features are included for industrial and laboratory applications such as monitoring, control, data acquisition and automated testing.

New Generation Interface for DAQ: PCI Express

PCI Express is a computer expansion bus standard designed to replace the older PCI bus standards. The PCI Special Interest Group (PCI-SIG) preserved and developed PCI specification to become the new standard PCI Express from 2003. PCI Express delivers 30 times the bandwidth of PCI bus, with a per-lane data rate 250 MB/s and a transfer rate of 2.5 GT/s. This new generation interface features high speed point-to-point architecture, high throughput performance, software backward compatibility, I/O simplification, etc. Following this technology trend, Advantech offers a series of PCI Express data acquisition cards with the same development software as PCI card, to satisfy different automation needs.

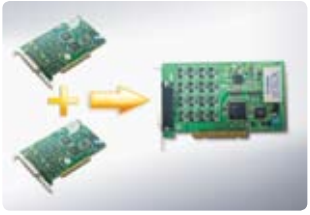


Key Features



BoardID Switch

BoardID DIP switch helps defines each card's unique identity when multiple identical PCI cards have been installed in the same computer. The BoardID switch is very useful when you build your system with multiple identical PCI cards. With the correct BoardID switch settings, you can easily identify and access each card during hardware configuration and software programming.



High Density

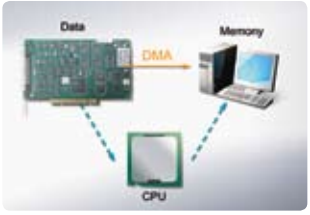
High density means there are many input/output functions in one PCI card. In the past, customers were forced to buy more than one card to fulfill their application, but now just one card can achieve their goals. The biggest advantage of this feature is that it saves space, allowing more efficient installation.

Auto Calibration

The built-in auto-calibration circuitry corrects gain and offset errors in analog input and analog output channels thereby eliminating the need for external equipment and user adjustments.

Keeping the Output Values after System Reset

When the system is hot reset (power is not shut off), Advantech's DAQ cards with this function can either retain the last digital (or analog) output values, or return to its default configuration, depending on jumper setting. This practical function eliminates danger caused by misoperation during unexpected system reset.



DMA - Direct Memory Access

A method of transferring data from or to memory at a high rate without involving the CPU. DMA is the hardware/software technique that allows the highest speed transfer of data, to or from RAM. DMA can provide the means to read or write data at precise times without restricting the microprocessor's tasks.

Selection Guide

Model Name	Analog Input			Analog
	Sampling Rate	Resolution	Channel	Resolution
PCI-1710U	100 kS/s	12-bit	16	12-bit
PCI-1710UL	100 KS/s	12-bit	16	-
PCI-1710HGU*	100 kS/s	12-bit	16	12-bit
PCI-1711U	100 kS/s	12-bit	16 SE	12-bit
PCI-1711UL	100 kS/s	12-bit	16 SE	-
PCI-1712	1 MS/s	12-bit	16	12-bit
PCI-1712L	1 MS/s	12-bit	16	-
PCI-1716	250 kS/s	16-bit	16	16-bit
PCI-1716L	250 kS/s	16-bit	16	-
PCI-1741U	200 kS/s	16-bit	16	16-bit
PCI-1742U	1 MS/s	16-bit	16	16-bit
PCI-1747U	250 kS/s	16-bit	64	-
PCI-1718HDU	100 kS/s	12-bit	16	12-bit
PCI-1713U	100 kS/s	12-bit	32	-
PCI-1715U	500 kS/s	12-bit	32	-
PCI-1714UL	10 MS/s	12-bit	4 SE	-
PCI-1714U/ PCIE-1744	30 MS/s	12-bit	4 SE	-
PCI-1720U	-	-	-	12-bit
PCI-1721	-	-	-	12-bit
PCI-1723	-	-	-	16-bit
PCI-1724U	-	-	-	14-bit
PCI-1727U	-	-	-	14-bit
PCI-1730U /PCIE-1730	-	-	-	-
PCI-1735U	-	-	-	-
PCI-1737U	-	-	-	-
PCI-1757UP	-	-	-	-
PCI-1739U	-	-	-	-
PCI-1751	-	-	-	-
PCI-1753	-	-	-	-
PCI-1755	-	-	-	-
PCI-1750	-	-	-	-
PCI-1733	-	-	-	-
PCI-1734	-	-	-	-
PCI-1752U /PCIE-1752	-	-	-	-
PCI-1754 / PCIE-1754	-	-	-	-
PCI-1756 / PCIE-1756	-	-	-	-
PCI-1758UDI	-	-	-	-
PCI-1758UDO	-	-	-	-
PCI-1758UDIO	-	-	-	-
PCI-1760U /PCIE-1760	-	-	-	-
PCI-1761	-	-	-	-
PCI-1762	-	-	-	-
PCI-1780U	-	-	-	-
PCI-1671UP	-	-	-	-

*Note: PCI-1710HGU offers more gain options than PCI-1710U to increase measurement accuracy.

Output	Digital Input	Digital Output	Timer/Counter	Connector
Channel	Channel	Channel	Channel	
2	16 TTL	16 TTL	1	68-pin SCSI
-	16 TTL	16 TTL	1	68-pin SCSI
2	16 TTL	16 TTL	1	68-pin SCSI
2	16 TTL	16 TTL	1	68-pin SCSI
-	16 TTL	16 TTL	1	68-pin SCSI
2	16 TTL (shared)		3	68-pin SCSI
-	16 TTL (shared)		3	68-pin SCSI
2	16 TTL	16 TTL	1	68-pin SCSI
-	16 TTL	16 TTL	1	68-pin SCSI
1	16 TTL	16 TTL	1	68-pin SCSI
2	16 TTL	16 TTL	1	68-pin SCSI
-	-	-	-	68-pin SCSI
1	16 TTL	16 TTL	1	1 x DB37, 2 x 20-pin
-	-	-	-	DB37
-	-	-	-	DB37
-	-	-	-	4 x BNC
-	-	-	-	4 x BNC
4	-	-	-	DB37
4	16 TTL (shared)		1	68-pin SCSI
8	16 TTL (shared)		-	68-pin SCSI
32	-	-	-	DB62
12	16 TTL	16 TTL	-	1 x DB37, 2 x 20-pin
-	16 TTL, 16 Isolated	16 TTL, 16 Isolated	-	1 x DB37, 4 x 20-pin
-	32 TTL	32 TTL	3	5 x 20-pin
-	24 TTL (shared)		-	1 x 50-pin, 2 x 20-pin
-	24 TTL (shared)		-	DB25
-	48 TTL (shared)		-	2 x 50-pin
-	48 TTL (shared)		3	68-pin SCSI
-	96 TTL (shared)		-	100-pin SCSI
-	32 TTL (shared, high speed)		-	100-pin SCSI
-	16 isolated	16 isolated	1	DB37
-	32 isolated	-	-	DB37
-	-	32 isolated	-	DB37
-	-	64 isolated	-	100-pin SCSI
-	64 isolated	-	-	100-pin SCSI
-	32 isolated	32 isolated	-	100-pin SCSI
-	128 isolated	-	-	dual 100-pin mini-SCSI
-	-	128 isolated	-	dual 100-pin mini-SCSI
-	64 isolated	64 isolated	-	dual 100-pin mini-SCSI
-	8 isolated	6 x Form A, 2 x Form C	10 (PCI), 2 (PCIE)	DB37
-	8 isolated	4 x Form A, 4 x Form C	-	DB37
-	16 isolated	16 Relay	-	DB62
-	8 TTL	8 TTL	8	68-pin SCSI
-	-	-	-	24-pin IEEE 488

PCI Express

PCIE-1730

32-ch TTL and 32-ch Isolated Digital I/O PCI Express Card

Features

- 16-ch isolated DI & 16-ch isolated DO
- 16-ch TTL DI and 16-ch TTL DO
- High output driving capacity
- Interrupt handling capability
- High-voltage isolation on output channels (2,500 V_{DC})

Ordering Information

- **PCIE-1730** 32-ch Isolated Digital I/O PCIe Card
- **PCL-10120** 20-pin Flat Cable
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **PCLD-782*** 16-ch Isolated DI Board w/ 1m 20-pin Flat Cable
- **PCLD-885*** 16-ch Power Relay Board w/ 20p & 50p Flat Cables
- **PCLD-785*** 16-ch Relay Board w/ One 1m 20-pin Flat Cable
- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137** DB37 Cable

Software Support

*Note: When you use PCLD-782/785/885 wiring board, remember to connect external power for relay usage.

PCIE-1744

30 MS/s, 12-bit, Simultaneous 4-ch Analog Input PCI Express Card

Features

- 4-ch single-ended analog input
- 12-bit A/D converter, with up to 30 MHz sampling rate
- Programmable gain
- Onboard FIFO memory (32,768 samples each channel)
- 4 A/D converters simultaneously sampling
- Multiple A/D triggering modes
- Programmable pacer/counter

Ordering Information

- **PCIE-1744** 30 MS/s, 12-bit, Simultaneous 4-ch AI PCIe Card
- **ADAM-3909** DB9 DIN-rail Wiring Board
- **PCL-1010B-1** BNC to BNC Wiring Cable, 1 m
- **PCL-10901-1** DB9 to PS/2 Cable, 1 m
- **PCL-10901-3** DB9 to PS/2 Cable, 3 m

Software Support

PCIE-1752

64-ch Isolated Digital Output PCI Express Card

Features

- Wide output range (5 ~ 40 V_{DC})
- High sink current on isolated output channels (500mA max./ch)
- High-voltage isolation (2,500 V_{DC})
- Output status read-back

Ordering Information

- **PCIE-1752** 64-ch Isolated Digital Output PCI Express Card
- **PCL-10250-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **PCL-10250-2** 100-pin SCSI to Two 50-pin SCSI Cable, 2 m
- **ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators
- **PCL-101100M-3** 100-pin SCSI to 100-pin SCSI Cable, 3 m
- **ADAM-39100** 100-pin DIN-rail Wiring Board

Software Support

PCIE-1754

64-ch Isolated Digital Input PCI Express Card

Features

- Wide input range (10 ~ 30 V_{DC})
- High over-voltage protection (70 V_{DC})
- High-voltage isolation (2,500 V_{DC})
- Interrupt handling capacity

Ordering Information

- **PCIE-1754** 64-ch Isolated Digital Input PCI Express Card
- **PCL-10250-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **PCL-10250-2** 100-pin SCSI to Two 50-pin SCSI Cable, 2 m
- **ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators
- **PCL-101100M-3** 100-pin SCSI to 100-pin SCSI Cable, 3 m
- **ADAM-39100** 100-pin DIN-rail Wiring Board

Software Support

PCIE-1756

64-ch Isolated Digital Input/Output PCI Express Card

Features

- Wide input range (10 ~ 30 V_{DC}) and output range (5 ~ 40 V_{DC})
- High sink current on isolated output channels (500mA max./ch)
- 2,000 V_{DC} ESD protection
- Interrupt handling capability
- High over-voltage protection (70 V_{DC})
- High-voltage isolation (2,500 V_{DC})
- Output status read-back

Ordering Information

- **PCIE-1756** 64-ch Isolated Digital I/O PCI Express Card
- **PCL-10250-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **PCL-10250-2** 100-pin SCSI to Two 50-pin SCSI Cable, 2 m
- **ADAM-3951** 50-pin DIN-rail Wiring Board w/LED Indicators
- **PCL-101100M-3** 100-pin SCSI to 100-pin SCSI Cable, 3 m
- **ADAM-39100** 100-pin DIN-rail Wiring Board

Software Support

PCIE-1760

8-ch Relay and 8-ch Isolated Digital Input PCI Express Card with 2-ch Counter/Timer

Features

- 8-ch isolated digital input and 8-ch relay output
- 2-ch counter input and 2-ch PWM output
- Jumper selectable dry or wet contact for DI
- LED indicators to show activated relays
- Programmable DI filter
- Pattern match interrupt for DI
- Change of state interrupt for DI

Ordering Information

- **PCIE-1760** 8-ch Relay/IDI PCIe Card w/ 2-ch Counter/Timer
- **PCL-10137-1** DB37 Cable, 1 m
- **PCL-10137-2** DB37 Cable, 2 m
- **PCL-10137-3** DB37 Cable, 3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

Software Support

Multifunction

PCI-1710U/UL/HGU

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

Features

- Programmable gain
- Two 12-bit analog output channels (PCI-1710U/HGU only)
- 16-ch digital input and 16-ch digital output
- 1-ch programmable counter
- Onboard FIFO memory (4,096 samples)

Ordering Information

- **PCI-1710U** 100 kS/s, 12-bit Multifunction Card
- **PCI-1710UL** 100 kS/s, 12-bit Multifunction Card w/o AO
- **PCI-1710HGU** 100 kS/s, 12-bit High-gain Multifunction Card
- **PCLD-8710** DIN-rail Wiring Board w/ CJC
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

Software Support

PCI-1711U/UL

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

Features

- Programmable gain
- Two 12-bit analog output channels (PCI-1711U only)
- 16-ch digital input and 16-ch digital output
- 1-ch programmable counter
- Onboard FIFO memory (1,024 samples)

Ordering Information

- **PCI-1711U** Entry-level 100 kS/s, 12-bit Multifunction Card
- **PCI-1711UL** Entry-level 100 kS/s, 12-bit Multi. Card w/o AO
- **PCLD-8710** DIN-rail Wiring Board w/ CJC
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

Software Support

PCI-1712/L

1 MS/s, 12-bit, 16-ch PCI Multifunction Card

Features

- Two 12-bit analog output channels with continuous waveform output function (PCI-1712 only)
- Three 16-bit programmable multifunction counter/timers up to 10 MHz
- Pre-, post-, about- and delay-trigger data acquisition modes for analog input channels
- 16-ch digital input and 16-ch digital output

Ordering Information

- **PCI-1712** 1 MS/s, 12-bit High-speed Multifunction PCI Card
- **PCI-1712L** 1 MS/s, 12-bit High-speed Multi. PCI Card w/o AO
- **PCLD-8712** DIN-rail Wiring Board for PCI-1712/L
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

Software Support

PCI-1716/L

250 kS/s, 16-bit, 16-ch PCI Multifunction Card

Features

- 16-ch single-ended or 8-ch differential or a combination of analog input
- Two 16-bit analog output channels (PCI-1716 only)
- 16-ch digital input and 16-ch digital output
- 1-ch programmable counter
- Onboard FIFO memory (1,024 samples)

Ordering Information

- **PCI-1716** 250 kS/s, 16-bit High-resolution Multi. Card
- **PCI-1716L** 250 kS/s, 16-bit High-res. Multi. Card w/o AO
- **PCLD-8710** DIN-rail Wiring Board w/ CJC
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

Software Support

PCI-1718HDU

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

Features

- 16-ch single-ended or 8-ch differential or a combination of analog input
- Programmable gain
- One 12-bit analog output channel
- 16-ch digital input and 16-ch digital output
- Onboard FIFO memory (1,024 samples)

Ordering Information

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

Software Support

PCI-1742U

1 MS/s, 16-bit, 16-ch Universal PCI Multifunction Card

Features

- 16-ch single-ended or 8-ch differential or a combination of analog input
- Two 16-bit analog output channels
- 16-ch digital input and 16-ch digital output
- 1-ch programmable counter
- Onboard FIFO memory (1,024 samples)

Ordering Information

- **PCI-1742U** 1 MS/s, 16-bit, 16-ch Univ. PCI Multi. Card
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **PCLD-8710** DIN-rail Wiring Board w/ CJC

Software Support

Analog Input

PCI-1713U

100 kS/s, 12-bit, 32-ch Isolated Analog Input Universal PCI Card

Features

- 2,500 V_{DC} isolation protection
- Programmable gain
- Onboard FIFO memory (4,096 samples)
- S/W, internal or external pacer sampling modes supported

Ordering Information

- **PCI-1713U** 100 kS/s, 12-bit, 32-ch Isolated AI PCI Card
- **PCLD-881B** Wiring Board for PCI-1713, PCI-1715U & PCL-813B
- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m

Software Support

PCI-1714U/UL

30/10 MS/s, 12-bit, Simultaneous 4-ch Analog Input Universal PCI Card

Features

- 4 A/D converters simultaneously sampling
- Programmable gain
- Multiple A/D triggering modes
- Onboard FIFO memory (PCI-1714U: 32,768 samples per channel; PCI-1714UL: 8,192 samples per channel)

Ordering Information

- **PCI-1714U** 30 MS/s, 12-bit, Simultaneous 4-ch AI PCI Card
- **PCI-1714UL** 10 MS/s, 12-bit, Simultaneous 4-ch AI PCI Card
- **ADAM-3909** DB9 DIN-rail Wiring Board
- **PCL-1010B-1** BNC to BNC Wiring Cable, 1 m
- **PCL-10901** PS/2 to DB9 Cable, 1 m/3 m

Software Support

PCI-1715U

500 kS/s, 12-bit, 32-ch Isolated Analog Input Universal PCI Card

Features

- 2,500 V_{DC} isolation protection
- Programmable gain for each input channel
- Onboard FIFO buffer (1,024 samples)
- S/W, internal or external pacer sampling modes supported

Ordering Information

- **PCI-1715U** 500 kS/s 12-bit, 32-ch Isolated AI PCI Card
- **PCLD-881B** Wiring Board for PCI-1713, PCI-1715U & PCL-813B
- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m

Software Support

Analog Output

PCI-1720U

12-bit, 4-ch Isolated Analog Output Universal PCI Card

Features

- Multiple output ranges
- 2,500 V_{DC} isolation protection
- Keeps the output settings and values after system hot reset
- Universal PCI and BoardID switch

Ordering Information

• **PCI-1720U**	12-bit, 4-ch Isolated AO Universal PCI Card
• **PCL-10137**	DB37 Cable, 1 m/2 m/3 m
• **ADAM-3937**	DB37 DIN-rail Wiring Board

Software Support

PCI-1723

16-bit, 8-ch Analog Output PCI Card with 16-ch Digital I/O

Features

- Synchronized output function
- Auto calibration function
- Keeps the output settings and values after system hot reset
- 2-port (16-channel) user-defined digital input/output channels

Ordering Information

• **PCI-1723**	16-bit, 8-ch Non-isolated Analog Output PCI Card
• **PCL-10168**	68-pin SCSI Shielded Cable, 1 m/2 m
• **ADAM-3968**	68-pin DIN-rail SCSI Wiring Board

Software Support

PCI-1724U

14-bit, 32-ch Isolated Analog Output Universal PCI Card

Features

- Flexible Output Range: +/-10 V, 0 ~ 20 mA and 4 ~ 20 mA
- Synchronized output function
- Keeps the output settings and values after system hot reset
- Universal PCI and BoardID switch

Ordering Information

• **PCI-1724U**	14-bit, 32-ch Isolated AO Universal PCI Card
• **PCL-10162**	DB62 Cable, 1 m/3 m
• **ADAM-3962**	DB62 DIN-rail Wiring Board

Software Support

Digital I/O & Counter

PCI-1730U

32-ch Isolated Digital I/O Universal PCI Card

Features

- High output driving capacity
- Interrupt handling capability
- High-voltage isolation on output channels

Ordering Information

- **PCI-1730U** 32-ch Isolated Digital I/O PCI Card
- **PCL-10120** 20-pin Flat Cable, 1 m/2 m
- **PCLD-782** 16-ch Isolated DI Board w/ 1m 20-pin Flat Cable
- **ADAM-3920** 20-pin DIN-rail Flat Cable Wiring Board
- **PCLD-885** 16-ch Power Relay Board w/ 20p & 50p Flat Cables
- **PCLD-780** Screw Terminal Board w/ Two 20-pin Flat Cables
- **PCLD-785** 16-ch Relay Board w/ One 1m 20-pin Flat Cable
- **PCLD-786** 8-ch SSR I/O Module Board w/ 20-pin Flat Cable
- **PCLD-880** Wiring Board w/ Two 20-pin Flat Cables & Adapter
- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m

Software Support

PCI-1733/1734

32-ch Isolated Digital Input / Digital Output PCI Card

Features

- High output driving capacity
- Interrupt handling capability
- High-voltage isolation on output channels

Ordering Information

- **PCI-1733** 32-ch Isolated Digital Input PCI Card
- **PCI-1734** 32-ch Isolated Digital Output PCI Card
- **ADAM-3937** DB37 DIN-rail Wiring Board
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m

Software Support

PCI-1750

32-ch Isolated Digital I/O and 1-ch Counter PCI Card

Features

- High voltage isolation on all isolated channels (2,500 V_{DC})
- High sink current on isolated output channels (200 mA/channel)
- Supports dry contact or 5 ~ 50 V_{DC} isolated inputs
- Interrupt handling capability
- Timer/counter interrupt capability

Ordering Information

- **PCI-1750** 32-ch Isolated Digital I/O and Counter PCI Card
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

Software Support

PCI-1751

48-ch Digital I/O and 3-ch Counter PCI Card

Features

- Interrupt handling capability
- Timer/counter interrupt capability
- Supports both dry and wet contact
- Emulates mode 0 of 8255 PPI
- Buffered circuits for higher driving capacity than 8255

Ordering Information

- **PCI-1751** 48-ch Digital I/O and Counter PCI Card
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **ADAM-3968/20** 68-pin SCSI to 3 20-pin Box Header Terminal
- **ADAM-3968/50** 68-pin SCSI to 2 50-pin Box Header Terminal
- **PCLD-8751** 48-ch Isolated Digital Input Board
- **PCLD-8761** 24-ch Replay/ Isolated Digital Input Board
- **PCLD-8762** 48-ch Relay Board

Software Support

PCI-1752U

64-ch Isolated Digital Output Universal PCI Card

Features

- High-voltage isolation on output channels (2,500 $_{VDC}$)
- Wide output range (5 ~ 40 V_{DC})
- High-sink current on isolated output channels (200 mA max./channel)
- Output status read-back
- Channel-freeze function

Ordering Information

- **PCI-1752U** 64-ch Isolated Digital Output Universal PCI Card
- **PCL-10250-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators

Software Support

PCI-1753

96-ch Digital I/O PCI Card

Features

- Interrupt output pin for simultaneously triggering external devices with the interrupt
- "Pattern match" and "change of state" interrupt functions for critical I/O monitoring
- Emulates mode 0 of 8255 PPI
- Supports both dry and wet contact

Ordering Information

- **PCI-1753** 96-ch Digital I/O PCI Card
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board
- **ADAM-3968/20** 68-pin SCSI to 3 20-pin Box Header Terminal
- **ADAM-3968/50** 68-pin SCSI to 2 50-pin Box Header Terminal
- **PCLD-8751** 48-ch Isolated Digital Input Board
- **PCLD-8761** 24-ch Replay/ Isolated Digital Input Board
- **PCLD-8762** 48-ch Relay Board
- **PCL-10268** 100-pin to Two 68-pin SCSI Cables, 1 m/2 m

Software Support

PCI-1756

64-ch Isolated Digital I/O PCI Card

Features

- Either +/- voltage input for DI by group
- Output status readback
- High over-voltage protection (70 V_{DC}) for DI
- Interrupt handling capability

Ordering Information

- **PCI-1756** 64-ch Isolated Digital I/O PCI Card
- **PCL-10250-1** 100-pin SCSI to Two 50-pin SCSI Cable, 1 m
- **ADAM-3951** 50-pin DIN-rail Wiring Board w/ LED Indicators

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio | java

PCI-1758UDI

128-ch Isolated Digital Input Universal PCI Card

Features

- High ESD protection (2,000 V_{DC})
- Wide input range (5 ~ 25 V_{DC})
- Digital filter function
- Interrupt handling capability for each channel

Ordering Information

- **PCI-1758UDI** 128-ch Isolated DI Universal PCI Card
- **PCL-101100S** 100-pin SCSI Cable, 1 m/2 m
- **ADAM-39100** 100-pin DIN-rail SCSI Wiring Board

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio | java

PCI-1758UDO

128-ch Isolated Digital Output Universal PCI Card

Features

- High-voltage isolation on output channels (2,500 V_{DC})
- Wide output range (5 ~ 40 V_{DC})
- High-sink current for isolated output channels (90 mA max./Channel)
- Programmable power-up states
- Watchdog timer
- Output status read-back

Ordering Information

- **PCI-1758UDO** 128-ch Isolated DO Universal PCI Card
- **PCL-101100S** 100-pin SCSI Cable, 1 m/2 m
- **ADAM-39100** 100-pin DIN-rail SCSI Wiring Board

Software Support

Windows 7 | Windows xp | Windows CE | Linux | Visual Studio | java

PCI-1760U

8-ch Relay and 8-ch Isolated Digital Input Universal PCI Card with 10-ch Counter/Timer

Features

- 2 x Form C and 6 x Form A relay
- LED indicators to show activated relays
- Jumper selectable dry contact/wet contact input signals
- Up event counters for DI
- Programmable digital filter for DI
- Pattern match/"change of state" interrupt function for DI

Ordering Information

- **PCI-1760U** 8-ch Relay/IDI PCI Card w/ 10-ch Counter/Timer
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

Software Support

PCI-1761

8-ch Relay and 8-ch Isolated Digital Input PCI Card

Features

- 4 Form C and 4 Form A type relay output channels
- LED indicators to show activated relays
- Retained relay output values when hot system reset
- Interrupt handling capability

Ordering Information

- **PCI-1761** 8-ch Relay/Isolated Digital Input PCI Card
- **PCL-10137** DB37 Cable, 1 m/2 m/3 m
- **ADAM-3937** DB37 DIN-rail Wiring Board

Software Support

PCI-1780U

8-ch, 16-bit Counter/Timer Universal PCI Card

Features

- Up to 20 MHz input frequency
- 8-ch digital TTL outputs and 8-ch digital TTL inputs
- Counter gate function
- Flexible interrupt source select
- Multiple counter clock source selectable
- Counter output programmable

Ordering Information

- **PCI-1780** 8-ch, 16-bit Counter/Timer Universal PCI Card
- **PCL-10168** 68-pin SCSI Shielded Cable, 1 m/2 m
- **ADAM-3968** 68-pin DIN-rail SCSI Wiring Board

Software Support

Compatibility Chart

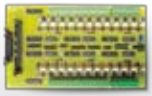
Recommended Cables, I/O Wiring Terminal Boards and Isolated Digital I/O Terminals for Connecting to Data Acquisition Products:

PCI, PCI Express, USB, PCI-104, PC/104 Module	Cable
	
PCI-1710U/1710UL/1710HGU PCI-1711U/1711UL, PCI-1716/1716L PCI-1741U, PCI-1742U	PCL-10168
PCI-1712/1712L	PCL-10168
PCI-1718HDU/HGU	PCL-10137
PCI-1727U, PCI-1730U, PCIE-1730	PCL-10120, PCL-10121 PCL-10137 — ADAM-3937, PCLD-880
PCI-1751, PCIE-1751	PCL-10168
PCI-1753	PCL-10268
PCI-1713U, PCI-1715U	PCL-10137
PCI-1720U, PCI-1733, PCI-1734,PCI-1750, PCI-1760U, PCIE-1760, PCI-1761, USB-4702	PCL-10137
PCI-1784U	PCL-10137
PCI-1752U, PCI-1754, PCI-1756 PCIE-1752, PCIE-1754, PCIE-1756	PCL-10250
PCI-1724U, PCI-1762	PCL-10162
PCI-1737U, PCI-1739U, USB-4751/L	PCL-10150
PCI-1714U/1714UL, PCIE-1744	PCL-10901 PCL-1010B
PCI-1757UP	PCL-10125
PCI-1747U, PCI-1721, PCI-1723, PCI-1780U	PCL-10168
PCI-1735U	PCL-10120, PCL-10121 PCL-10501+, PCL-10137, ADAM-3937
PCI-1755	PCL-101100
PCI-1758UDI/1758UDO/1758UDIO	PCL-101100S
PCI-1671UP, USB-4671	PCL-10488
PCM-3718H/HO/HG, PCM-3730	PCL-10120, PCL-10121
PCM-3724, PCM-3753I	PCL-10150
PCM-3725, PCM-3780, PCM-3761I	PCL-10120, PCL-10121 PCL-10150
PCM-3810I	PCL-10126 PCL-10150
PCM-3813I	PCL-10141
PCM-3730I	PCL-10120, PCL-10121

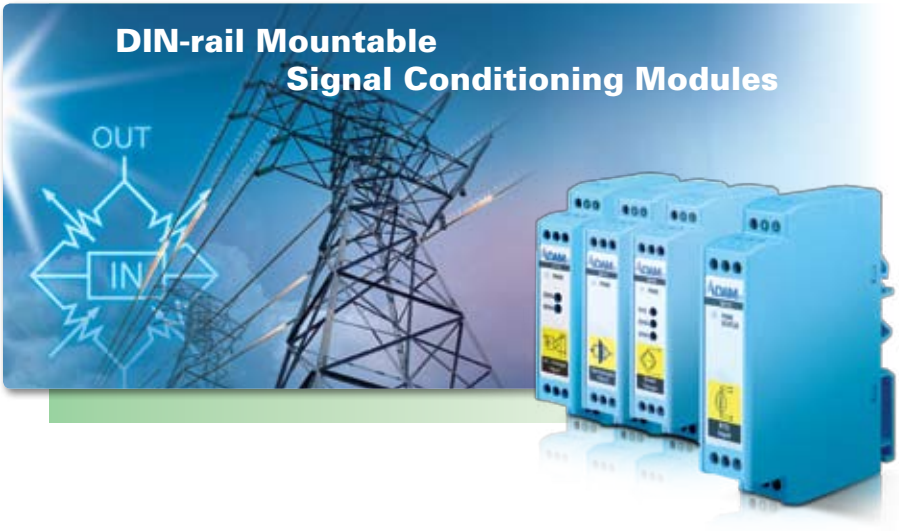
I/O Wiring Terminal Board

Extension Cable

Digital I/O Terminal Board



I/O Wiring Terminal Board	Extension Cable	Digital I/O Terminal Board
PCLD-8710	PCL-10120 PCL-10121	ADAM-3920
ADAM-3968		
PCLD-8712		
ADAM-3937, PCLD-880 PCLD-8115, PCLD-789D		PCLD-782
PCL-10502+, PCL-10120, PCL-10121		
PCL-10503+, PCL-10137, ADAM-3937	PCL-10150+ ADAM-3950 PCLD-782B PCLD-785B PCLD-885 PCLD-7216	PCLD-782B
ADAM-3968		
PCLD-8751, PCLD-8761, PCLD-8762		
ADAM-3968/50		
ADAM-3968/20	PCL-10120	PCLD-785
ADAM-3937, PCLD-880, PCLD-881B		
ADAM-3937		PCLD-785B
ADAM-3951		
ADAM-3962		PCLD-786
ADAM-3950, PCLD-782B, PCLD-785B, PCLD-885, PCLD-7216		
ADAM-3909		PCLD-788
ADAM-3925		
ADAM-3968		PCLD-885
PCL-10502+, PCL-10120, PCL-10121		
PCL-10503+, PCL-10137, ADAM-3937		PCLD-7216
ADAM-39100		
		ADAM-3920
ADAM-3950, PCLD-782B, PCLD-785B PCLD-885, PCLD-7216		PCLD-780
ADAM-3920		PCLD-782
ADAM-3950		PCLD-782B
PCL-10125 — ADAM-3925		PCLD-785
ADAM-3950		PCLD-785B
PCL-10137 — ADAM-3937		PCLD-786
ADAM-3920		PCLD-788
		PCLD-885
		PCLD-7216



Compact Design with 3-way Isolation Protection and Multiple Input Types

The ADAM-3000 Series consist of the most cost-efficient, field configurable, isolation-based, signal conditioners on the market today. The modules are easily installed to protect your instruments and process signals from the harmful effects of ground loops, motor noise, and other electrical interferences.

Products

ADAM-3011

Isolated Thermocouple Input Module

Specifications

- Input Type: J, K, T, E, S, R, B Type Thermocouple
- Output Type: 0~10 V

Ordering Information

- **ADAM-3011** Isolated Thermocouple Input Module

ADAM-3013

Isolated RTD Input Module

Specifications

- Input Type: Pt or Ni Type RTD
- Output Type: 0~5 V, 0~10 V, 0~20 mA

Ordering Information

- **ADAM-3013** Isolated RTD Input Module

ADAM-3014

Isolated DC Input/Output Module

Specifications

- Input Type: ±10 mV, ±50 mV, ±100 mV, ±0.5 V, ±1 V, ±5 V, ±10 V, 0~10 mV, 0~50 mV, 0~100 mV, 0~0.5 V, 0~1 V, 0~5 V, 0~10 V, 0~20mA, ±20mA
- Output Type: ±5 V, ±10 V, 0~10 V, 0~20 mA

Ordering Information

- **ADAM-3014** Isolated DC Input/ Output Module

Key Features

Three-way Signal Isolation

Three-way (input/output/power) 1,000 V_{DC} isolation.

Easy Daisy Chain Power Wiring

Power can be connected conveniently from adjacent modules.

Field Configurable I/O Range

The I/O range can be configured on site with switches inside the module.

Small Dimensions & DIN-rail Mounting

Saves space and can be easily mounted on a DIN-rail.

ADAM-3016

Isolated Strain Gauge Input Module

Specifications

- Input Type:
  Electrical input: ±10, ±20, ±30, ±100 mV
- Excitation voltage: 1~10 V (60 mA max.)
- Output Type:
  ±5 V, ±10 V, 0~10 V, 0~20 mA

Ordering Information

- **ADAM-3016** Isolated Strain Gauge Input Module

ADAM-3112

Isolated AC Voltage Input Module

Specifications

- Input Type:
  0~120, 0~250, 0~400 V_{RMS}
  0~120, 0~250, 0~400 V_{DC}
- Output Type:
  0~5 V_{DC}

Ordering Information

- **ADAM-3112** Isolated AC Voltage Input Module

ADAM-3114

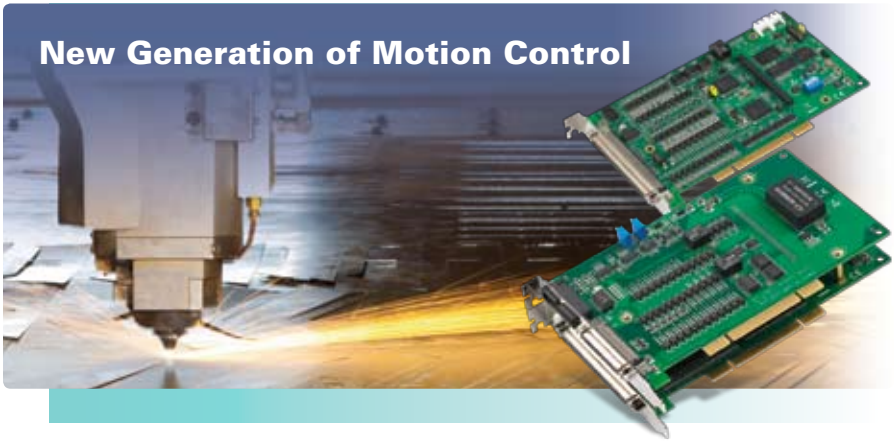
Isolated AC Current Input Module

Specifications

- Input Type:
  0~5 A_{RMS} 0~5 A_{DC}
- Output Type:
  0~5 V_{DC}

Ordering Information

- **ADAM-3114** Isolated AC Current Input Module



Provide Comprehensive and Flexible Motion Control Selection and Functionalities

Since 1990, the Advantech Automation Team has been focusing on machine automation solutions to provide comprehensive system components. These components include: the human machine interface, industrial computers, embedded automation computers, data acquisition cards and motion control cards for various functions. Advantech not only provides a total solution for system integrators and machine builders but is also dedicated to developing critical motion control technology for the electronic machines and traditional machinery.

Selection Guide

Centralized Motion Control Solutions

Category		Motion Control							Encoder	
Bus		PC/104	PCI					ISA	PCI	ISA
Model		PCM-3240	PCI-1220U	PCI-1240U	PCI-1243U	PCI-1245 PCI-1265	PCI-1245E	PCL-839+	PCI-1784U	PCL-833
Axes	Number of Axes	4	2	4	4	4/6/6	4	3	-	-
	Linear Interpolation	V	V	V	-	V	V	-	-	-
	2-axis Circle Interpolation	V	V	V	-	-/V/V	-	-	-	-
Advanced Functions	Encoder Channels	4	2	4	-	4/4/6	4	-	4	3
	Limit Switch Input Channels	8	4	8	8	8/8/12	8	6	-	-
	Home Input Channels	4	2	4	4	4/4/6	4	3	-	-
	Emergency Stop Input Channels	1	1	1	1	1	1	-	-	-
	Position Compare Event	V	V	V	-	V	-	-	-	-
	Position Latch	-	-	-	-	V	-	-	-	-
Dimensions (mm)		96 x 90	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	185 x 100	185 x 100	185 x 100
Connector		2 x 50-pin IDC	50-pin SCSI	100-pin SCSI	DB62	100-pin SCSI 50-pin SCSI 20-pin IDC	100-pin SCSI	1 x DB37 2 x 20-pin	DB37	1 x DB25
Wiring Boards		ADAM-3950 ADAM-3952	ADAM-3952 ADAM-3955		ADAM-3962	ADAM-3952 ADAM-3955		ADAM-3937 ADAM-3920	ADAM-3937	ADAM-3925

AMONet Motion Master Cards


Bus		PCI	PC/104+
Model		PCI-1202U	PCM-3202P
Advanced Functions	General Purpose DI Channels	8	-
	General Purpose DO Channels	4	-
	Remote Motion	V	V
	Remote I/O	V	V
Dimensions (mm)		175 x 100	96 x 90
Connectors		2 x RJ45	4 x RJ45
Digital I/O Slave Modules		AMAX-2752SY, AMAX-2754SY, AMAX-2756SY	
Motion Slave Modules		AMAX-2241/PMA, AMAX-2242/J2S, AMAX-2243/YS2	

AMONet Motion Slave Modules





Model		AMAX-1220	AMAX-1240	AMAX-2241/ PMA	AMAX-2242/J2S	AMAX-2243/ YS2
Axes	Number of Axes	2	4	4	4	4
	Linear Interpolation	V	V	V	V	V
	2-axis Circle Interpolation	V	V	V	V	V
Advanced Functions	Encoder Channels	2	4	4	4	4
	Limit Switch Input Channels	4	8	8	8	8
	Emergency Stop Input Channels	1	1	1	1	1
	Home Input Channels	2	4	4	4	4
	Position Compare Event	-	V	V	V	V
	Position Latch	-	V	V	V	V
	Simultaneously Start/Stop among Modules	V	V	-	-	-
Power Consumption		2 W @ 24 V typical		5W @24V typical		
Dimensions (L x W x H)		141 x 108 x 60 mm		125 x 47.6 x 151 mm		

Isolated Digital I/O Slave Modules






Model	AMAX-1752	AMAX-1754	AMAX-1756	AMAX-2752SY	AMAX-2754SY	AMAX-2756SY
Isolated Digital Input Channels	32	-	16	32	-	16
Isolated Digital Output Channels	-	32	16	-	32	16
Opto-Isolator Response	100 µs (Max)			18 µs (Max)		
Input Resistance	3.2kΩ			1kΩ		
Typical Power Consumption	600mW			1.2W		
Maximum Power Consumption	2W			13W	5W	8W
Dimensions (L x W x H)	141 x 95 x 60 mm			125 x 47.6 x 151 mm		