12 High Speed DAQ Solutions

Advantech Data Acquisition Solutions Overview

As a leading supplier of data acquisition products worldwide, Advantech offers a wide range of I/O devices with various interface and solutions from signal conditioning modules, plug-in PCI/PCIE cards, portable USB modules, DAQ-embedded computers, and modular DAQ systems as well as DAQNavi/SDK software development package and DAQNavi/MCM machine condition monitoring software. Advantech's industrial I/O products are designed for all kinds of industrial automation applications from machine automation control, test measurement, to machine condition monitoring.

Selection Guide

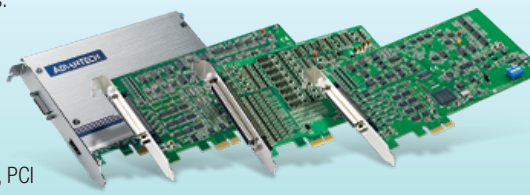
Conditioned Signal

Data Acquisition Hardware

DAQ Edge Embedded Systems

MIC-1800 series units are standalone embedded computers with integrated data acquisition modules and signal conditioning to provide digital I/O, analog I/O, and counter functions. The palm-sized design with built-in terminals is suitable for space-limited applications.

* All-in-one anti-vibration solution



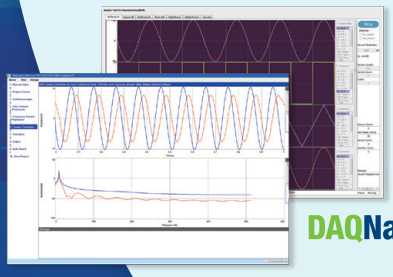
DAQ Cards

Advantech offers dedicated products for USB, PCI, PCI Express, ISA, CompactPCI, PC/104 or PCI-104 interfaces. So regardless if the platform is an IPC, embedded PC, desktop computer or laptop, customer requirements are covered.

* For high channel count measurement

Digital Data

Data Acquisition Software



DAQNavi

Software Development Package

DAQNavi/SDK, Advantech's driver package, delivers higher performance, compatibility, and reliability through a brand new driver and SDK.

* For a flexible system development

Signal Conditioning

Analog Signal

Signal Sensing

Physical Properties

Signal Conditioners

Advantech signal conditioners provide sensor and signal conditioning on a per-module basis for various types of sensors signals.

* For noise filtering

Intelligent Vibration Sensing Gateway

PHM solution-ready, WISE-750 built-in DAQ and AI-based modeling can diagnose any vibrated-equipment without programming.

* Predictive maintenance solution-ready package

USB DAQ Modules

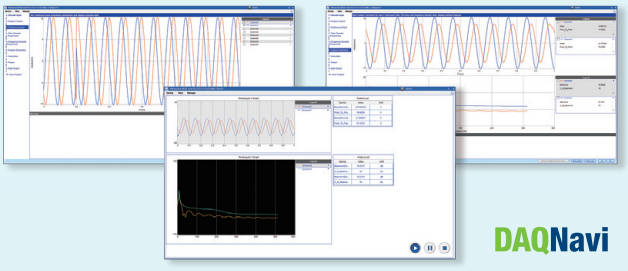
Advantech's USB DAQ modules are famous for user-friendly design and ability to replace traditional serial and parallel devices as they eliminate the need for external power and allow hot swapping.

* For portable and plug-and-play application

Modular DAQ System

iDAQ is a modularized chasssis design that is fast-to-install and easy-to-expand. Modular DAQ systems seamlessly integrate into your equipment.

* Modular and plug-and-play design for flexible expansion, installation, maintainance and suitable for mixed-measurement type application



Application Software

DAQNavi/MCM is an integrated application software based on DAQNavi/SDK. It provides easy sensor signal acquisition, signal analysis, feature extraction, data management and interpretation, and sends alerts. Engineers or system integrators can configure settings to meet the needs of different applications.

* Solution-ready software for various test and measurment, and machine condiction monitoring applications

Modular DAQ Systems





Model			iDAQ-934	iDAQ-964	iDAQ-801	iDAQ-815	iDAQ-817
Chassis	iDAQ Slot		4	4	–	–	–
	Interface		USB 3.0	PCI Express*	–	–	–
	PFP		2	2	–	–	–
	Power Input		10~30VDC	BUS powered*	BUS powered	BUS powered	BUS powered
Analog Input	Resolution		–	–	24-bit	24-bit	16-bit
	Channels		–	–	4	8	8
	Onboard FIFO		–	–	512 Samples	512 Samples	512 Samples
	Sampling Rate		–	–	256 kS/s/ch	600 S/s	200 kS/s
	Input Ranges	Unipolar Inputs	–	–	–	–	–
		Bipolar Inputs	–	–	±12 V, ±6 V, ±3 V, ±1.5 V, ±0.75 V, ±0.375 V, or ±0.1875 V	–	±10 V or ±20 mA
		Configuable Per Channel	–	–	Yes	Yes	Yes
	Trigger Modes	Pacer/ Software/ External Pulse	–	–	Yes***	Yes***	Yes***
		Analog Slope	–	–	Yes	Yes	Yes
		Advanced Trigger	–	–	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop
	Data Transfer Modes	Software	–	–	–	–	–
		DMA	–	–	–	–	–
Analog Output	Resolution		–	–	–	–	–
	Channels		–	–	–	–	–
	Updating Rate		–	–	–	–	–
	Output Ranges	Unipolar Outputs	–	–	–	–	–
		Bipolar Outputs	–	–	–	–	–
Isolated DI/O	Input	channels	–	–	–	–	–
		Isolation Voltage	–	–	–	–	–
		Input Range	–	–	–	–	–
	Output	Channels	–	–	–	–	–
		Isolation Voltage	–	–	–	–	–
		Output Range	–	–	–	–	–
		Max. Sink Current	–	–	–	–	–
Advanced Functions	Output Status Read Back		–	–	–	–	–
	Dry/Wet Contact*		–	–	–	–	–
Dimensions (W x D x H)			178 x 71 x 100 mm (7.01" x 2.80" x 3.93")	139.5 x 84.2 x 100 mm (5.49" x 3.31" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")
Connector			–	–	4 x BNC connectors	2 x 20-pin terminal blocks	2 x 10-pin terminal blocks
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	Linux		✓	✓	✓	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓

* Connect to AMAX-5000 Series Controller (e.g. AMAX-5580). BUS-powered via PCI express.
** Digital I/O direction is software configurable
*** External digital trigger via PFP or trigger sources on other iDAQ modules
✓: supported, – : not supported, △ : optional





Model			iDAQ-841	iDAQ-821	iDAQ-731	iDAQ-751	iDAQ-763D
Chassis	iDAQ Slot		–	–	–	–	–
	Interface		–	–	–	–	–
	PFP		–	–	–	–	–
	Power Input		BUS powered	BUS powered	BUS powered	BUS powered	BUS powered
Analog Input	Resolution		16-bit	–	–	–	–
	Channels		8	–	–	–	–
	Onboard FIFO		512 samples	–	–	–	–
	Sampling Rate		1 MS/s/ch	–	–	–	–
	Input Ranges	Unipolar Inputs	–	–	–	–	–
		Bipolar Inputs	±20 V, ±12.5 V, ±10 V, ±5 V, or ±20 mA	–	–	–	–
		Configuable Per Channel	Yes	–	–	–	–
	Trigger Modes	Pacer/ Software/ External Pulse	Yes***	–	–	–	–
		Analog Slope	Yes	–	–	–	–
		Advanced Trigger	Start/Stop/Delayed Start/Delayed Stop	–	–	–	–
	Data Transfer Modes	Software	–	–	–	–	–
		DMA	–	–	–	–	–
Analog Output	Resolution		–	16-bit	–	–	–
	Channels		–	4	–	–	–
	Updating Rate		–	50 kS/s/ch	–	–	–
	Output Ranges	Unipolar Outputs	–	0~5 V, 0~10 V, 0~20mA, 4~20mA	–	–	–
		Bipolar Outputs	–	±5 V, ±10 V	–	–	–
Isolated DI/O	Input	channels	–	–	16	48**	–
		Isolation Voltage	–	–	600 VRMS	60 V_{DC}	–
		Input Range	–	–	5~30V_{DC}	-0.25 V ~ 5.25 V	–
	Output	Channels	–	–	16	48**	16
		Isolation Voltage	–	–	600 V_{RMS}	60 V_{DC}	600 V_{RMS}
		Output Range	–	–	10 ~ 40V_{DC}	0.3 ~ 5.2 V	0 ~ 60 V_{DC}
		Max. Sink Current	–	–	350 mA	5 mA	1.3A
Advanced Functions	Output Status Read Back		–	–	Yes	Yes	Yes
	Dry/Wet Contact*		–	–	Yes	Yes	
Dimensions (W x D x H)			25 x 80 x 100 mm (0.98" x 3.15" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")	25 x 80 x 100 mm (0.98" x 3.15" x 3.94")
Connector			2 x 10-pin terminal blocks	1 x 10-pin terminal blocks	2 x 20-pin terminal blocks	DB 62 connector (female)	2 x 20-pin terminal blocks
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	Linux		✓	✓	✓	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓

* Connect to AMAX-5000 Series Controller (e.g. AMAX-5580). BUS-powered via PCI express.
** Digital I/O direction is software configurable
*** External digital trigger via PFP or triggers sources on other iDAQ modules
✓: supported, – : not supported, △ : optional

DAQ Edge Embedded Systems

Category			Multifunction Platform					
CPU			Intel Celeron 3955U	Intel Core™ i3-6100U	Intel Celeron 3955U	Intel Core™ i3-6100U	ARM Cortex™-A9 i.MX6	–
Memory			DDR3 4GB				DDR3 2GB	–
Model			☞ MIC-1810-U0A1E	☞ MIC-1810-U3A1E	☞ MIC-1816-U0A1E	☞ MIC-1816-U3A1E	☞ MIC-1816R-AE	☞ WISE-750-02A1E
Analog Input	Resolution		12-bit	12-bit	16-bit	16-bit	16-bit	16-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	16 SE/8 diff.	16 SE/8 diff.	4-ch IEPE and 8-ch general AI (Voltage/Current)	4
	Onboard FIFO		4,096 samples	4,096 samples	4,096 samples	4,096 samples	4,096 samples	4,096 samples
	Sampling Rate		500 kS/s	500 kS/s	1 MS/s	1 MS/s	1 MS/s	200 kS/s/ch
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V, 4~20mA	±10V
		Bipolar Inputs	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	0-20mA
		Configurable Per Channel	✓	✓	✓	✓	✓	–
	Trigger Modes	Pacer/Software/External Pulse	✓	✓	✓	✓	✓	✓
		Analog Slope	✓	✓	✓	✓	✓	✓
		Advanced Trigger	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop	start/stop/delayed start/delayed stop
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	–
		DMA	Bus mastering	Bus mastering	Bus mastering	Bus mastering	Bus mastering	–
Analog Output	Resolution		12-bit	12-bit	16-bit	16-bit	16-bit	–
	Channels		2 (waveform output)	2 (waveform output)	2 (waveform output)	2 (waveform output)	2 (waveform output)	–
	Onboard FIFO		4,096 samples	4,096 samples	4,096 samples	4,096 samples	4,096 samples	–
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V, 4~20mA	–
	Output Rate		500 kHz	500 kHz	3 MHz	3 MHz	3 MHz (V), 20KHz (A)	–
	DMA Transfer		Bus mastering	Bus mastering	Bus mastering	Bus mastering	Bus mastering	–
Digital I/O	Input Channels		8 (Isolated)	8 (Isolated)	8 (Isolated)	8 (Isolated)	8 (Isolated)	4 (Isolated)
	Output Channels		8 (Isolated)	8 (Isolated)	8 (Isolated)	8 (Isolated)	8 (Isolated)	4 (Isolated)
Timer/Counter	Channels		2	2	2	2	2	–
	Resolution		32-bit	32-bit	32-bit	32-bit	32-bit	–
	Max. Input Frequency		10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	–
Isolation Voltage			2500 V_{DC}	2500 V_{DC}	2500 V_{DC}	2500 V_{DC}	–	2500 V_{DC}
Auto Calibration			✓	✓	✓	✓	✓	–
Dimensions (W x D x H)			200 x 156 x 58 mm (7.87" x 6.14" x 2.28")	200 x 156 x 58 mm (7.87" x 6.14" x 2.28")	200 x 156 x 58 mm (7.87" x 6.14" x 2.28")	200 x 156 x 58 mm (7.87" x 6.14" x 2.28")	165 x 130 x 65 mm (6.49" x 5.11" x 2.56")	40 x 98 x 133 mm (1.57" x 3.86" x 5.24")
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	–	✓
	Linux		-	-	-	-	✓	–
LabVIEW Driver			✓	✓	✓	✓	–	–

✓: supported, – : not supported, △ : optional

Analog I/O and Multifunction Cards

Category			Multifunction & Analog Input						
Sampling / Updating			Multiplexer						
Model			PCI-1710U/ 1710UL	PCI-1710HGU	PCI-1711U/ 1711UL	PCI-1712	PCI-1718HDU	PCI-1713U	PCI-1715U
Analog Input	Resolution		12-bit	12-bit	12-bit	12-bit	12-bit	12-bit	12-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	16 SE	16 SE/8 diff.	16 SE/8 diff.	32 SE/16 diff.	32 SE/16 diff.
	Onboard FIFO		4,096 samples	4,096 samples	1,024 samples	1,024 samples	1,024 samples	4,096 samples	1,024 samples
	Sampling Rate		100 kS/s	100 kS/s	100 kS/s	1 MS/s	100 kS/s	100 kS/s	500 kS/s
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 1, 0 ~ 0.1, 0 ~ 0.01 V	–	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V
		Bipolar Inputs	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±1, ±0.5, ±0.1, ±0.05, ±0.01, ±0.005 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V
		Configurable Per Channel	✓	✓	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/Software/ External Pulse	✓	✓	✓	✓	✓	✓	✓
		Analog Slope	–	–	–	✓	–	–	–
		Advanced Trigger	–	–	–	✓	–	–	–
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓	✓
		DMA	–	–	–	Bus mastering	–	–	Bus mastering
Analog Output	Resolution		12-bit	12-bit	12-bit	12-bit	12-bit	–	–
	Channels		2 (PCI-1710U only)	2	2 (PCI-1711U only)	2	1	–	–
	Onboard FIFO		–	–	–	32,768 samples	–	–	–
	Output Range		0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10 V	–	–
	Output Rate		Static update	Static update	Static update	1 MHz	Static update	–	–
	DMA Transfer		–	–	–	✓	–	–	–
Digital I/O	Input Channels		16	16	16	16 (shared)	16	–	–
	Output Channels		16	16	16		16	–	–
Timer/ Counter	Channels		1	1	1	3	1	–	–
	Resolution		16-bit	16-bit	16-bit	16-bit	16-bit	–	–
	Max. Input Frequency		10 MHz	10 MHz	10 MHz	10 MHz	10 MHz	–	–
Isolation Voltage			–	–	–	–	–	2,500 V_{DC}	2,500 V_{DC}
Auto Calibration			–	–	–	✓	–	–	–
Board ID Switch			✓	✓	✓	–	✓	–	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			68-pin SCSI	68-pin SCSI	68-pin SCSI	68-pin SCSI	DB37	DB37	DB37
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓
	Linux		–	–	✓	–	–	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓

* All channels should be set to the same range.
✓: supported, – : not supported, △ : optional

Analog I/O and Multifunction Cards

Category			Multifunction & Analog Input				
Sampling / Updating			Multiplexer			Simultaneous Sampling	
Model			☞ PCI-1716/1716L	☞ PCI-1718HDU	☞ PCI-1747U	☞ PCI-1714U/ 1714UL	☞ PCI-1706U
Analog Input	Resolution		16-bit	12-bit	16-bit	12-bit	16-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	64 SE/32 diff.	4 SE	8 diff.
	Onboard FIFO		1,024 samples	1,024 samples	1,024 samples	32,768/8,192 samples	8,192 samples
	Sampling Rate		250 kS/s	100 kS/s	250 kS/s	30/10 MS/s	250 kS/s
	Input Ranges	Unipolar Inputs	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	–	–
		Bipolar Inputs	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±10, ±5, ±2.5, ±1.25, ±0.625 V	±5, ±2.5, ±1, ±0.5 V	±10, ±5, ±2.5, ±1.25 V
		Configurable Per Channel	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/Software/ External Pulse	✓	✓	Pacer/software	✓	✓
		Analog Slope	–	–	–	✓	✓
		Advanced Trigger	–	–	–	✓	✓
	Data Transfer Modes	Software	✓	✓	✓	✓	✓
		DMA	Bus mastering	-	Bus mastering	Bus mastering	✓
Analog Output	Resolution		16-bit	12-bit	–	–	12-bit
	Channels		2 (PCI-1716 only)	1	–	–	2
	Onboard FIFO		–	–	–	–	–
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	–	–	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20, 0 ~ 24, 4 ~ 20 mA
	Output Rate		Static update	Static update	–	–	Static update
	DMA Transfer		–	–	–	–	–
Digital I/O	Input Channels		16	16	–	–	16 (shared)
	Output Channels		16	16	–	–	
Timer/ Counter	Channels		1	1	–	–	2
	Resolution		16-bit	16-bit	–	–	32-bit
	Max. Input Frequency		10 MHz	10 MHz	–	–	10 MHz
Isolation Voltage			–	–	–	–	–
Auto Calibration			✓	–	✓	✓	✓
Board ID Switch			✓	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			68-pin SCSI	DB37	68-pin SCSI	4 x BNC	68-pin SCSI
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	Linux		✓	–	✓	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓

* All channels should be set to the same range.
✓: supported, – : not supported, △ : optional

Category			Multifunction & Analog Output				
Sampling / Updating			Static Update				Dynamic Update
Model			PCI-1720U	PCI-1727U	PCI-1724U	PCI-1723	PCI-1721
Analog Input	Resolution		–	–	–	–	–
	Channels		–	–	–	–	–
	Onboard FIFO		–	–	–	–	–
	Sampling Rate		–	–	–	–	–
	Input Ranges	Unipolar Inputs	–	–	–	–	–
		Bipolar Inputs	–	–	–	–	–
		Configurable Per Channel	–	–	–	–	–
	Trigger Modes	Pacer/ Software/ External Pulse	–	–	–	–	–
		Analog Slope	–	–	–	–	–
		Advanced Trigger	–	–	–	–	–
	Data Transfer Modes	Software	–	–	–	–	–
		DMA	–	–	–	–	–
Analog Output	Resolution		12-bit	14-bit	14-bit	16-bit	16-bit
	Channels		4	12	32	8	4 (waveform output)
	Onboard FIFO		–	–	–	–	1,024 samples
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20, 4 ~ 20 mA	±10, 0 ~ 20 mA	±10, 0 ~ 20 mA	±10, 0 ~ 20, 4 ~ 20 mA	0 ~ 5, 0 ~ 10, ±5, ±10, 0 ~ 20, 4 ~ 20 mA
	Output Rate		Static update	Static update	Static update	Static update	10 MHz
	DMA Transfer		–	–	–	–	Bus mastering
Digital I/O	Input Channels		–	16	–	16 (shared)	16 (shared)
	Output Channels		–	16	–		
Timer/ Counter	Channels		–	–	–	–	1
	Resolution		–	–	–	–	16-bit
	Max. Input Frequency		–	–	–	–	10 MHz
Isolation Voltage			2,500 V_{DC}	–	1,500 V_{DC}	–	–
Auto Calibration			–	–	–	✓	✓
Board ID Switch			✓	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			DB37	2 x 2-pin DB37	DB62	68-pin SCSI	68-pin SCSI
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	Linux		✓	✓	✓	–	✓
LabVIEW Driver			✓	✓	✓	✓	✓

✓: supported, – : not supported, △ : optional

Analog I/O and Multifunction Cards

Category			Multifunction & Analog Input							
Sampling / Updating			Multiplexer			Simultaneous Sampling				
Model			PCIE-1805	PCIE-1810	PCIE-1816/H	PCIE-1812	PCIE-1813	PCIE-1802/ 1802L	PCIE-1803	PCIE-1840/ 1840L
Analog Input	Resolution		16-bit	12-bit	16-bit	16-bit	26-bit	24-bit	24-bit	16-bit
	Channels		32 SE/ 16 diff.	16 SE/8 diff.	16 SE/8 diff.	8 diff.	4 diff.	8 diff./ 4 diff.	8 diff.	4 SE
	Onboard FIFO		4096 samples	4,096 samples	4,096 samples	4,096 samples	4,096 samples	4,096 samples	4096 samples	1 G samples
	Sampling Rate		128 kS/s	500 kS/s	500 KSPS/ 1MSPS	250 kS/s	38.4 kS/s	216 kS/s	128 kS/s	125/80 MS/s
	Input Ranges	Unipolar Inputs	0~20 mA, 4~20 mA	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	±31.25 mV/V, ±62.5 mV/V, ±125 mV/V, ±250 mV/V, ±500 mV/V, and ±1 V/V (bridge inputs)	–	–	–
		Bipolar Inputs	±1 V, ±2 V, ±5 V, ±10 V	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±0.625 V	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±0.625 V	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±0.625 V	±10 V, ±5 V, ±2.5 V, ±1.25 V, ±625 mV, ±312.5 mV	±10 V, ±5 V, ±2 V, ±1 V, ±0.5 V, ±0.2 V	±10 V, ±5 V, ±2 V, ±1 V	±20 V, ±10 V, ±4 V, ±2 V, ±1 V, ±0.4 V, ±0.2 V,
		Configurable Per Channel	✓	✓	✓	✓	✓	✓	✓	✓
	Trigger Modes	Pacer/ Software/ External Pulse	✓	✓	✓	✓	✓	✓	✓	✓
		Analog Slope	✓	✓	✓	✓	✓	✓	✓	✓
		Advanced Trigger	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop	start/stop/ delayed start/ delayed stop
	Data Transfer Modes	Software	✓	✓	✓	✓	✓	✓	✓	✓
		DMA	BUS mastering	Bus mastering	Bus mastering	Bus mastering	Bus mastering	Bus mastering	BUS mastering	Bus mastering
Analog Output	Resolution		–	12-bit	16-bit	16-bit	16-bit	–	–	–
	Channels		–	2 (waveform output)	2 (waveform output)	2 (waveform output)	2 (waveform output)	–	–	–
	Onboard FIFO		–	4,096 samples	4,096 samples	4,096 samples	4,096 samples	–	–	–
	Output Range		–	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	–	–	–
	Output Rate		–	500 kS/s	3 MHz	3 MHz	3 MHz	–	–	–
	DMA Transfer		–	Bus mastering	Bus mastering	Bus mastering	Bus mastering	–	–	–
Digital I/O	Input Channels		–	24 (shared)	24 (shared)	32 (shared)	32 (shared)	1	1	–
	Output Channels							2	2	
Timer/ Counter	Channels		–	2	2	4 (encoder included)	4 (encoder included)	–	–	–
	Resolution		–	32-bit	32-bit	32-bit	32-bit	–	–	–
	Max. Input Frequency		–	10 MHz	10 MHz	10 MHz	10 MHz	–	–	–
Isolation Voltage			–	–	–	–	–	–	–	–
Auto Calibration			✓	✓	✓	✓	✓	✓	✓	✓
Board ID Switch			✓	✓	✓	✓	✓	✓	✓	✓
Dimensions (L x H)			168 x 98 (6.6" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	168 x 100 (6.6" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			DB 62 (female)	68-pin SCSI (female)	68-pin SCSI (female)	100-pin SCSI (female)	100-pin SCSI (female)	1 x 19-pin MINI SCSI (for AI) 1 x HDMI (for Ext. clock and trigger)	1 x 36-pin MINI SCSI (for AI) 1 x HDMI (for Ext. clock and trigger)	4 x BNC (for AI) 1 x HDMI (for Ext. clock and trigger)
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	–	✓	–
	Linux		✓	✓	✓	–	–	✓	✓	–
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓	✓

✓: supported, – : not supported, △ : optional

Digital I/O Cards






Category			Non-Isolated Digital I/O					
Bus			PCI					
Model			☞ PCI-1735U	☞ PCI-1737U	☞ PCI-1739U	☞ PCI-1751	☞ PCI-1753	☞ PCI-1757UP
TTL DI/O	Input Channels		32	24 (shared)	48 (shared)	48 (shared)	96 (shared)	24 (shared)
	Output Channels		32					
	Output Channel	Sink Current	24 mA @ 0.5 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.4 V	24 mA @ 0.44 V	24 mA @ 0.5 V
		Source Current	15 mA @ 2.0 V	15 mA @ 2.4 V	15 mA @ 2.4 V	15 mA @ 2.4 V	24 mA @ 3.76 V	24 mA @ 3.7 V
Isolated Digital I/O	Input	Channels	–	–	–	–	–	–
		Isolation Voltage	–	–	–	–	–	–
		Input Range	–	–	–	–	–	–
	Output	Channels	–	–	–	–	–	–
		Isolation Voltage	–	–	–	–	–	–
		Output Range	–	–	–	–	–	–
		Max. Sink Current	–	–	–	–	–	–
Timer/ Counter	Channels		3	–	–	3	–	–
	Resolution		16-bit	–	–	16-bit	–	–
	Max. Input Frequency		10 MHz	–	–	10 MHz	–	–
Advanced Function	Pattern Match		–	–	–	–	✓	–
	Change of State		–	–	–	–	✓	–
	Board ID Switch		✓	✓	✓	✓	✓	✓
	Channel-Freeze Function		–	–	–	–	–	–
	Output Status Read Back		✓	✓	✓	✓	✓	✓
	Dry/Wet Contact*		–	✓	✓	✓	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	120 x 65 mm (4.7" x 2.5")
Connector			5 x 20-pin	1 x 50-pin	2 x 50-pin	68-pin SCSI	100-pin SCSI	1 x DB25
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓
	Linux		–	✓	✓	✓	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
✓: supported, – : not supported, △ : optional

Digital I/O Cards

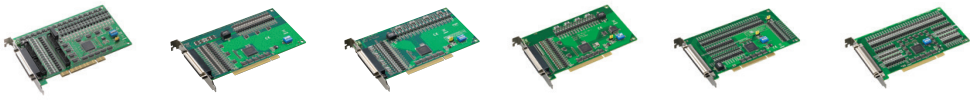
Category			Isolated Digital I/O							
Bus			PCI Express							
Model			☞ PCIE-1730/ 1730H	☞ PCIE-1750U	☞ PCIE-1752	☞ PCIE-1754	☞ PCIE-1756/ 1756H	☞ PCIE-1758UDI	☞ PCIE-1758UDO	☞ PCIE-1758UDIO
TTL DI/O	Input Channels		16	–	–	–	–	–	–	–
	Output Channels		16	–	–	–	–	–	–	–
	Output Channel	Sink Current	24 mA @ 0.5 V	–	–	–	–	–	–	–
		Source Current	15 mA @ 2.4 V	–	–	–	–	–	–	–
Isolated Digital I/O	Input	Channels	16	16	–	64	32	128	–	64
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	–	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	–	2,500 V_{DC}
		Input Range	10 ~ 30 V_{DC}	10 ~ 30 V_{DC}	–	10 ~ 30 V_{DC}	10 ~ 30 V_{DC}	10 ~ 30 V_{DC}	–	10 ~ 30 V_{DC}
	Output	Channels	16 (sink)	16 (Sink or Source)	64 (sink)	–	32 (sink)	–	128	64
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	–	2,500 V_{DC}	–	2,500 V_{DC}	2,500 V_{DC}
		Output Range	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	–	5 ~ 40 V_{DC}	–	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}
		Max. Sink Current	500 mA	500 mA	500 mA	–	500 mA	–	90 mA	90 mA
Timer/ Counter	Channels		–	–	–	–	–	–	–	–
	Resolution		–	–	–	–	–	–	–	–
	Max. Input Frequency		–	–	–	–	–	–	–	–
Advanced Function	Pattern Match		–	–	–	–	–	–	–	–
	Change of State		–	–	–	–	–	–	–	–
	Board ID Switch		✓	✓	✓	✓	✓	✓	✓	✓
	Channel-Freeze Function		✓	–	✓	–	✓	–	–	–
	Output Status Read Back		✓	✓	✓	–	✓	–	✓	✓
	Dry/Wet Contact*		✓	✓	–	–	–	–	–	–
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	168 x 100 mm (6.6" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			1 x DB37 4 x 20-pin	DB 37	100-pin SCSI	100-pin SCSI	100-pin SCSI	Dual 100-pin mini SCSI	Dual 100-pin mini SCSI	Dual 100-pin mini SCSI
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓	✓
	Linux		✓	✓	✓	–	✓	–	–	–
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓	✓

*** Simultaneous dry/wet contact within a group is acceptable.**
✓: supported, – : not supported, △ : optional

Category			Relay Output					Non-Isolated Digital I/O	
Bus			PCI Express						
Model			PCIE-1760	PCIE-1761H	PCIE-1762H	PCIE-1763AH/DH	PCIE-1765	PCIE-1751	PCIE-1753
TTL DI/O	Input Channels		–	–	–	–	–	48 (shared)	96 (shared)
	Output Channels		–	–	–	–	–		
	Output Channel	Sink Current	–	–	–	–	–	15 mA @ 0.8 V	15 mA @ 0.8 V
		Source Current	–	–	–	–	–	15 mA @ 2.0 V	15 mA @ 2.0 V
Isolated Digital I/O	Input	Channels	8	8	16	16	–	–	–
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	–	–	–
		Input Range	4.5 ~ 12 V_{DC}	4.5 ~ 12 V_{DC}	10 ~ 50 V_{DC}	10 ~ 30 V_{DC}	–	–	–
	Output	Channels	6 x Form A 2 x Form C	6 x Form A 2 x Form C	16**	16 x Form A	12 Form C	–	–
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	1,500 V_{DC}	2,500 V_{DC}	–	–
		Output Range	0.5 A @ 125 V_{AC}	2 A @ 250 V_{AC}	0.25 A @ 250 V_{AC}	400 V_{AC} / 60 V_{DC}	2 A @ 250 V_{AC}	–	–
		Max. Sink Current	1 A @ 30 V_{DC}	2 A @ 30 V_{DC}	0.5 A @ 30 V_{DC}	1.2 A_{RMS} / 1.2 A	2A @ 30 V_{DC}	–	–
Timer/Counter	Channels		8 x UP CTR 2 x PWM	8 x CTR 2 x PWM	–	–	–	3	–
	Resolution		16-bit	16-bit (2,500 isolation)	–	–	–	32-bit	–
	Max. Input Frequency		500 Hz	500 Hz for CTR	–	–	–	10 MHz	–
Advanced Function	Pattern Match		✓	✓	–	–	–	✓	✓
	Change of State		✓	✓	–	–	–	✓	✓
	Board ID Switch		✓	✓	✓	✓	–	✓	✓
	Channel-Freeze Function		–	–	✓	-	–	–	–
	Output Status Read Back		✓	✓	✓	✓	–	✓	✓
	Dry/Wet Contact*		–	–	–	✓	–	✓	✓
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	168 x 100 mm (6.6" x 3.9")	175 x 100 mm (6.9" x 3.9")	168 x 100 mm (6.6" x 3.9")	168 x 100 mm (6.6" x 3.9")
Connector			1 x DB37	1 x DB37	1 x DB62	DB 62	1 x DB37	68-pin SCSI	68-pin SCSI
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓
	WinCE		–	–	–	–	–	–	–
	Linux		✓	–	✓	✓	–	–	–
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
** Jumper selectable Form A / Form B type relay output
✓: supported, – : not supported, △ : optional

Digital I/O Cards



Category			Isolated Digital I/O					
Bus			PCI					
Model			☞ PCI-1730U	☞ PCI-1733	☞ PCI-1734	☞ PCI-1750/ 1750SO	☞ PCI-1752U/ 1752USO	☞ PCI-1754
TTL DI/O	Input Channels		16	–	–	–	–	–
	Output Channels		16	–	–	–	–	–
	Output Channel	Sink Current	24 mA @ 0.5 V	–	–	–	–	–
		Source Current	15 mA @ 2.4 V	–	–	–	–	–
Isolated Digital I/O	Input	Channels	16	32	–	16	–	64
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	–	2,500 V_{DC}	–	2,500 V_{DC}
		Input Range	5 ~ 30 V_{DC}	5 ~ 30 V_{DC}	–	5 ~ 50 V_{DC}	–	10 ~ 50 V_{DC}
	Output	Channels	16 (sink)	–	32 (sink)	16 (sink/source)	64 (sink/source)	–
		Isolation Voltage	2,500 V_{DC}	–	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	–
		Output Range	5 ~ 40 V_{DC}	–	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	–
		Max. Current	300 mA	–	200 mA	200 mA	200 mA	–
Timer/ Counter	Channels		–	–	–	1	–	–
	Resolution		–	–	–	16-bit	–	–
	Max. Input Frequency		–	–	–	1 MHz	–	–
Advanced Function	Pattern Match		–	–	–	–	–	–
	Change of State		–	–	–	–	–	–
	Board ID Switch		✓	✓	✓	–	✓	✓
	Channel-Freeze Function		✓	–	–	–	✓	–
	Output Status Read Back		✓	–	✓	–	✓	–
	Dry/Wet Contact*		✓	✓	–	✓	–	–
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			1 x DB37 4 x 20-pin	1 x DB37	1 x DB37	1 x DB37	100-pin SCSI	100-pin SCSI
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓
	Linux		✓	✓	✓	✓	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓	✓

*** Simultaneous dry/wet contact within a group is acceptable.**
✓: supported, – : not supported, △ : optional

Category			Isolated Digital I/O						
Bus			PCI						
Model			PCI-1756	PCI-1758UDI	PCI-1758UDO	PCI-1758UDIO	PCI-1760U	PCI-1761	PCI-1762
TTL DI/O	Input Channels		–	–	–	–	–	–	–
	Output Channels		–	–	–	–	–	–	–
	Output Channel	Sink Current	–	–	–	–	–	–	–
		Source Current	–	–	–	–	–	–	–
Isolated Digital I/O	Input	Channels	32	128	–	64	8	8	16**
		Isolation Voltage	2,500 V_{DC}	2,500 V_{RMS}	–	2,500 V_{DC}	2,500 V_{DC}	3,750 V_{DC}	2,500 V_{DC}
		Input Range	10 ~ 50 V_{DC}	5 ~ 25 V_{DC}	–	5 ~ 25 V_{DC}	4.5 ~ 12 V_{DC}	5 ~ 50 V_{DC}	10 ~ 50 V_{DC}
	Output	Channels	32 (Sink)	–	128	64	6 x Form A 2 x Form C	4 x Form A 4 x Form C	16
		Isolation Voltage	2,500 V_{DC}	–	2,500 V_{RMS}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}
		Output Range	5 ~ 40 V_{DC}	–	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	0.5 A @ 125 V_{AC} 1 A @ 30 V_{DC}	2 A @ 250 V_{AC} 2 A @ 30 V_{DC}	0.5 A @ 250 V_{AC} 0.5 A @ 30 V_{DC}
		Max. Sink Current	200 mA	–	90 mA	90 mA			
Timer/Counter	Channels		–	–	–	–	8 x CTR 2 x PWM	–	–
	Resolution		–	–	–	–	16-bit (2,500 isolation)	–	–
	Max. Input Frequency		–	–	–	–	500 Hz for CTR	–	–
Advanced Function	Pattern Match		–	–	–	–	✓	–	–
	Change of State		–	–	–	–	✓	–	–
	Board ID Switch		✓	✓	✓	✓	✓	✓	✓
	Channel-Freeze Function		✓	–	–	–	–	–	✓
	Output Status Read Back		✓	-	✓	✓	✓	✓	✓
	Dry/Wet Contact*		–	–	–	–	–	–	–
Dimensions (L x H)			175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			100-pin SCSI	Dual 100-pin mini SCSI	Dual 100-pin mini SCSI	Dual 100-pin mini SCSI	1 x DB37	1 x DB37	1 x DB62
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓	✓	✓
	Linux		✓	✓	✓	✓	–	✓	✓
LabVIEW Driver			✓	✓	✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
** Jumper selectable Form A / Form B type relay output
✓: supported, – : not supported, △ : optional

Digital I/O Cards

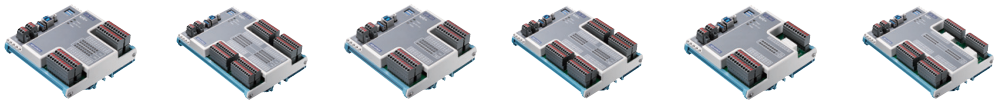




Category			Isolated Digital I/O		Counter	Encoder	
Bus			PCI-104		PCI	PCI	PCIE
Model			☞ PCM-3730I	☞ PCM-3761I	☞ PCI-1780U	☞ PCI-1784U	☞ PCIE-1884
TTL DI/O	Input Channels		–	–	8	–	–
	Output Channels		–	–	8	–	–
	Output Channel	Sink Current	–	–	24 mA @ 0.5 V	–	–
		Source Current	–	–	15 mA @ 2.4 V	–	–
Isolated Digital I/O	Input	Channels	16	8	–	4	4
		Isolation Voltage	2,500 V_{DC}	2,500 V_{DC}	–	2,500 V_{DC}	2,500 V_{DC}
		Input Range	5 ~ 30 V_{DC}	5 ~ 30 V_{DC}	–	10 ~ 30 V_{DC}	5 ~ 50 V_{DC}
	Output	Channels	16	8 x Form C	–	4	4
		Isolation Voltage	2,500 V_{DC}	2,000 V_{DC}	–	2,500 V_{DC}	2,500 V_{DC}
		Output Range	5 ~ 30 V_{DC}	0.25 A @ 250 V_{AC} 2 A @ 30 V_{DC}	–	TTL level	TTL level
		Max. Sink Current	300 mA		–	50mA	24mA
Timer/ Counter	Channels		–	–	8 x CTR	4	4
	Resolution		–	–	16-bit	32-bit	32-bit
	Max. Input Frequency		–	–	20 MHz	2 MHz (8 MHz for quadrature X4)	10 MHz (40 MHz for quadrature X4)
Advanced Function	Pattern Match		–	–	–	–	–
	Change of State		–	–	–	–	–
	Board ID Switch		–	✓	✓	✓	✓
	Channel-Freeze Function		–	–	–	–	–
	Output Status Read Back		–	✓	–	–	–
	Dry/Wet Contact*		–	–	–	–	–
Dimensions (L x H)			96 x 90 mm (3.8" x 3.5")	96 x 90 mm (3.8" x 3.5")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")	175 x 100 mm (6.9" x 3.9")
Connector			2 x 20-pin	1 x 20-pin 1 x 50-pin	68-pin SCSI	1 x DB37	1 x DB37
DAQNavi Driver	Windows 7/8/10		✓	✓	✓	✓	✓
	Linux		–	✓	✓	✓	–
LabVIEW I/O Driver			✓	✓	✓	✓	✓

* Simultaneous dry/wet contact within a group is acceptable.
** Jumper-selectable Form A/B-type relay output.
✓: supported, – : not supported, △ : optional

USB I/O Modules and USB Hubs



Category			USB 3.0 Isolated Digital I/O					
Model			USB-5830	USB-5856	USB-5850	USB-5855	USB-5860	USB-5862
Isolated Digital I/O	Input	Channels	16	32	16	32	8	16
		Input Range	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)
		Isolation Protection	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}	2,500 V_{DC}
	Output	Channels	16	32	–	–	–	–
		Load Voltage	5 ~ 40 V_{DC}	5 ~ 40 V_{DC}	–	–	–	–
		Load Current	350mA/ch (sink) @ 25°C 250mA/ch (sink) @ 60°C	350mA/ch (sink) @ 25°C 250mA/ch (sink) @ 60°C	–	–	–	–
		Isolation Protection	2,500 V_{DC}	2,500 V_{DC}	–	–	–	–
		Opto-Isolator Response Time	100 µs	100 µs	–	–	–	–
Relay Output	PhotoMOS SPST (Form A)	Channels	–	–	8	16	–	–
		Load Voltage	–	–	60V (AC peak or DC)	60V (AC peak or DC)	–	–
		Load Current	–	–	1.2A/ch	1.2A/ch	–	–
		Isolation Protection	–	–	1,500 V_{DC}	1,500 V_{DC}	–	–
		Response Time	–	–	Turn-on: 1 ms (typical) Turn-off: 0.6 ms (typical)	Turn-on: 1 ms (typical) Turn-off: 0.6 ms (typical)	–	–
	Relay Output Form A	Channels	–	–	–	–	8	16
		Contact Rating (resistive)	–	–	–	–	2A @ 250 V_{AC}, 2A @ 30 V_{DC}	2A @ 250 V_{AC}, 2A @ 30 V_{DC}
		Max. Switching Power	–	–	–	–	500 VA, 60 W	500 VA, 60 W
		Max. Switching Voltage	–	–	–	–	270 V_{AC}, 125 V_{DC}	270 V_{AC}, 125 V_{DC}
		Response Time	–	–	–	–	Operating time: 10 ms (max.) Release time: 5 ms (max.)	Operating time: 10 ms (max.) Release time: 5 ms (max.)
Dimensions (L x W x H)			120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	168 x 120 x 40 mm (6.61" x 4.72" x 1.57")	120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	168 x 120 x 40 mm (6.61" x 4.72" x 1.57")	120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	168 x 120 x 40 mm (6.61" x 4.72" x 1.57")
Board ID Switch			✓	✓	✓	✓	✓	✓
Operating Temperature			0 ~ 60 °C (32 ~ 140 °F)					
Supported Operating Systems			Windows XP/7/8/10 and Linux					

✓: supported, – : not supported, △ : optional

USB I/O Modules and USB Hubs



Category			USB 3.0 Analog Input Modules		
Model			☞ USB-5801	☞ USB-5817	☞ USB-5820
Analog Input	Resolution		24	16	–
	Channels		4 diff./pseudo-diff.	8 diff.	–
	Sampling Rate		192KS/s, Simultaneous	200kS/s, Multiplexed	–
	IEPE		2mA	–	–
	Value Range	Unipolar	–	–	–
		Bipolar	±10 V, ±1 V	0- 20mA, ±10V	–
		Configurable Per Channel	✓	✓	–
	Trigger Modes	Pacer/ Software	✓	✓	–
		External Pulse	✓	✓	–
Analog Output	Resolution		24	–	16
	Channels		2	–	4
	Updating Rate		192KS/s, Simultaneous	–	200kS/s, Multiplexed
	Output Range		±1 V, ±10 V	–	0-5V, 0-10V, ±5V, ±10V, 0-20mA, 4-20 mA
Tachometer	Channels		2	–	–
	Input Range		Logic 0: 3 V max. Logic 1: 10 V min. (30 V max.)	–	–
	Input Frequency		5kHz	–	–
Isolated Digital I/O	Input Channels		4	–	–
	Output Channels		4	–	–
	Opto-Isolator Response Time		100us	–	–
	Isolation Protection		2,500 V_{DC}	–	–
Dimensions (L x W x H)			168 x 120 x 40 mm (6.61" x 4.72" x 1.57")	120 x 120 x 40 mm (4.72" x 4.72" x 1.57")	120 x 120 x 40 mm (4.72" x 4.72" x 1.57")
Board ID Switch			✓	✓	✓
Operating Temperature			0 ~ 60 °C (32 ~ 140 °F)		
Supported Operating Systems			Windows XP/7/8/10 and Linux		

✓: supported, – : not supported, △ : optional




Category			USB 3.0 Multifunction		USB 2.0 Multifunction	
Model			☞ USB-4711A	☞ USB-4716	☞ USB-4702	☞ USB-4704
Analog Input	Resolution		12-bit	16-bit	12-bit	14-bit
	Channels		16 SE/8 diff.	16 SE/8 diff.	8 SE/4 diff.	8 SE/4 diff.
	Onboard FIFO		1,024 samples	1,024 samples	512 samples	512 samples
	Sampling Rate		150 kS/s	200 kS/s	10 kS/s	48 kS/s
	Input Ranges	Unipolar Inputs	–	0 ~ 10, 0 ~ 5, 0 ~ 2.5, 0 ~ 1.25 V	–	–
		Bipolar Inputs	±10, ±5, ±2.5, ±1.25 V ±0.625 V	±10, ±5, ±2.5, ±1.25 V ±0.625 V	±10, ±5, ±4, ±2.5, ±1.25, ±1 V	±10, ±5, ±4, ±2.5, ±1.25, ±1 V
		Configurable Per Channel	✓	✓	✓	✓
	Trigger Modes	Pacer/Software	✓	✓	✓	✓
		External Pulse	✓	✓	✓	✓
	Data Transfer	Software	✓	✓	✓	✓
Analog Output	Resolution		12-bit	16-bit	12-bit	12-bit
	Channels		2	2	2	2
	Output Range		0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5, 0 ~ 10, ±5, ±10 V	0 ~ 5 V	0 ~ 5, 0 ~ 10 V
	Output Rate		Static update	Static update	Static update	Static update
Digital I/O	Input Channels		8	8	8	8
	Output Channels		8	8	8	8
Timer/ Counter	Channels		1	1	1	1
	Resolution		16-bit	16-bit	32-bit	16-bit
	Max. Input Frequency		1 KHz	1 KHz	5 MHz	10 MHz
Auto Calibration			✓	✓	✓	✓
Dimensions (L x W x H)			132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")	70 x 70 mm (2.76" x 2.76")	132 x 80 x 32 mm (5.2" x 3.15" x 1.26")
Connector			Onboard screw terminal	Onboard screw terminal	DB37	Onboard screw terminal
Supported Operating Systems			Windows XP/7/8/10 and Linux			
LabVIEW Driver			✓	✓	✓	✓

✓: supported, – : not supported, △ : optional

Signal Conditioners and Terminal Boards

Signal Conditioners



Model		ADAM-3011	ADAM-3013	ADAM-3014
Signal Type		Thermocouple	RTD	DC input
Channel		1	1	1
Input Type	Voltage	–	–	±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
	Current	–	–	0 ~ 20, ±20 mA
	Others	J, K, T, E, S, R, B Type	Pt or Ni	–
Output	Voltage	0 ~ 10 V	0 ~ 5, 0 ~ 10 V	0 ~ 10, ±5, ±10 V
	Current	–	0 ~ 20 mA	–

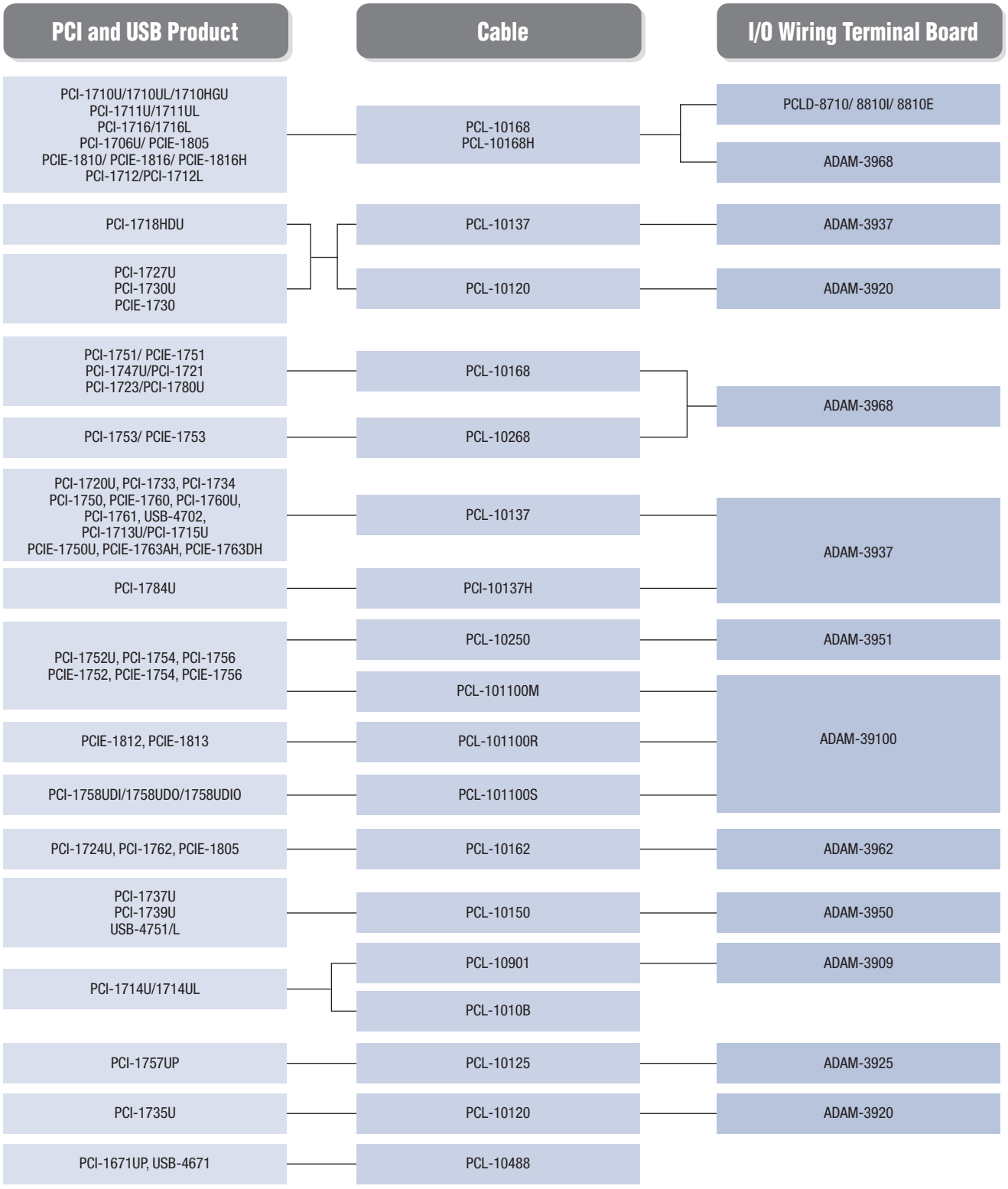



Model		ADAM-3016	ADAM-3017	ADAM-3112	ADAM-3114
Signal Type		Strain gauge	IEPE input	AC/DC input	Current input
Channel		1	1	1	1
Input Type	Voltage	±10, ±20, ±30, ±100 mV (electrical voltage)	4 ~ 24 V (IEPE sensor with up to 10 mA current source)	AC: 0 ~ 120, 0 ~ 250, 0 ~ 400 V DC: 0 ~ 120, 0 ~ 250, 0 ~ 400 V	–
	Current	–	–	–	AC: 0 ~ 5 A_{rms} DC: 0 ~ 5 A
	Others	–	–	–	–
Output	Voltage	0 ~ 10, ±5, ±10 V	DC couple: 4~24 V AC couple: ±11 V	0 ~ 5 V_{DC}	0 ~ 5 V_{DC}
	Current	–	–	–	–

✓: supported, – : not supported, △ : optional

Signal Conditioners and Terminal Boards

Recommended cables, I/O wiring terminal boards, and isolated digital I/O terminals for connecting to PC/104 and PCI-104 DAQ products



Signal Conditioners and Terminal Boards

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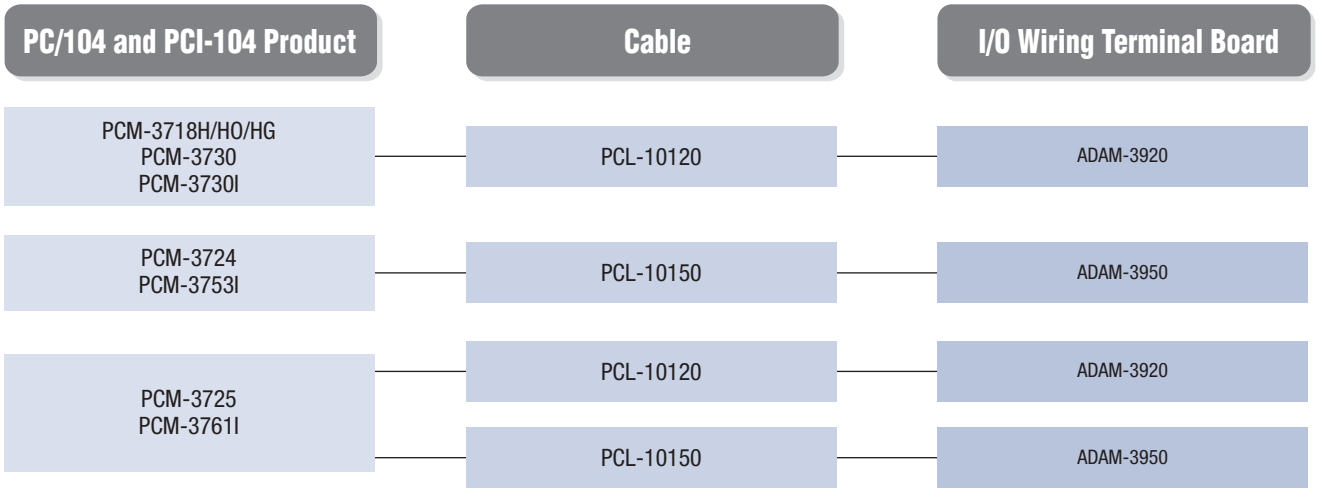

Functional Wiring Board Accessories

Part Number	Description
PCLD-780-BE	Screw terminal board with flat cables
PCLD-782B-AE	16/24-ch opto-isolated DI board
PCLD-782-BE	Opto-Isolated D/I board
PCLD-785-AE	16-ch relay output wiring board
PCLD-785B-AE	24-ch relay output wiring board
PCLD-8762-AE	48-ch relay output wiring board
PCLD-788-AE	Relay scanner/multiplexer board
PCLD-8115-AE	Industrial wiring terminal board with CJC circuit
PCLD-8710-AE	DIN-rail wiring terminal board with CJC circuit
PCLD-8712-AE	DIN-rail wiring terminal for PCI-1712/L
PCLD-8751-AE	48-ch opto-isolated DI board
PCLD-8761-AE	24/24-ch relay output/isolated DI board
PCLD-880-AE	Wiring terminal board with flat cables and adapter
PCLD-8810E-AE	Screw terminal board with CJC for PCIE-18 series
PCLD-8810I-AE	Screw terminal board with CJC for PCI-17 series
PCLD-8811-AE	Low-pass active filter board
PCLD-8813-AE	Advanced signal conditioning board for PCIE-1812/ PCIE-1813
PCLD-881B-AE	Wiring terminal board for PCI-1713 & PCL-813L
PCLD-8840-AE	20-pin DIN-rail HDMI cable wiring board
PCLD-885-AE	16-ch power relay output wiring board

Part Number	Description
PCL-10137H-3E	DB37 high-speed cable, 3 m
PCL-10150-1.2E	50-pin flat cable, 1.2 m
PCL-10162-1E	DB62 cable, 1 m
PCL-10162-3E	DB62 cable, 3 m
PCL-10168-1E	68-pin SCSI shielded cable, 1 m
PCL-10168-2E	68-pin SCSI shielded cable, 2 m
PCL-10168H-1E	68-pin SCSI shielded cable with noise rejection, 1 m
PCL-10168H-2E	68-pin SCSI shielded cable with noise rejection, 2 m
PCL-10250-1E	100-pin SCSI to 2 x 50-pin SCSI cable, 1 m
PCL-10250-2E	100-pin SCSI to 2 x 50-pin SCSI cable, 2 m
PCL-10268-1E	100-pin SCSI to 2 x 68-pin SCSI cable, 1 m
PCL-10268-2E	100-pin SCSI to 2 x 68-pin SCSI cable, 2 m
PCL-10488-2E	IEEE-488 cable, 2 m
PCL-10502-AE	Dual 20-pin to PC slot plate extender