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Overview

Complete Application-Ready Platforms for General Motion Control **Applications**

Since the release of motion control cards in the 1990's, Advantech has kept developing various types of motion control cards for users world-wide. Today, Advantech is still focused on providing the most robust, cost-effective and application-ready platform for General Motion Control (GMC).

Advantech offers application-ready platforms that range from industrial workstations and industrial-grade CPUs, to motion control, encoder input and isolated I/O cards for general motion control (GMC) applications such as SMT/PCB, semiconductor and LCD manufacturing machinery. Advantech provides a full-range of industrial computing platforms that include high-brightness LCD displays, keypads, up to 20-slot backplanes and redundant power supplies for machine builders.

Advantech motion control solutions have 3-axis, 4-axis and 6-axis inputs with pulsetype and voltage-pulse models and the AMONet series of distributed motion modules. Furthermore, these cards are supported by complete motion control libraries under DOS and Windows OS, which are widely applied in GMC applications.



Figure 1 : Wire-Saving/Long-Distance

AMONet[™] - Advantech Distributed Motion Control Solutions

Motion control is growing in complexity as the number of axes in newly developed machines with motion control increases each year. Distance is also becoming an issue, as motors are located further and further away from the host computer. AMONet™ (Advantech Motion Network) was engineered to tackle the problems of increasing spending on wiring and maintenance of these complex motion control systems, and it also gets rid of distance limitations.

The first series of distributed motion control products from Advantech are called the AMONet RS-485 Series. AMONET RS-485 products are categorized as Master cards or Slave modules. While the Master card is kept in the host PC, the slave modules can be distributed so that they are next to motor drivers on the factory floor. The communication speed between the AMONet RS-485 slave modules can be up to 20 Mbps. This makes it possible to scan 2048 I/O points within 1.04 ms (or 1024 I/O points in 0.56 ms). Furthermore, an AMONet RS-485 master will update the I/O status automatically, and map data into local memory. Software running on the host PC can then read the status by simply reading the onboard memory, so no polling of slave modules is necessary.

Each port of a master card can control up to 2048 I/O connections or 64 motion axes. so future extensions are easily implemented. The distance between a master card and its slave modules can be up to 100 meters, and this distance is covered with a low-cost Cat 5 network cable. In addition to saving wiring costs - debugging and maintenance is also simplified.

Another advantage of AMONet RS-485 is its compatibility with motor drivers from different vendors. Advantech provides specially designed wiring boards for popular motion drivers from vendors such as Panasonic[®], Mitsubishi[®] and Yaskawa[®]. This makes configuration easier, as pin-to-pin cables can be used. Having a selection of motor vendors can also be an advantage when sourcing of a certain motor is difficult.

Motion control and I/O functions with AMONet RS-485 use the same library. This unique feature saves time, as programmers do not need to study both a motion library and an I/O library. You can also connect to a manual pulse generator directly to adjust and calibrate the system without having to write programs first.

AMONet[™] makes machine building with motion control easier. The savings made on wiring and programming effort, as well as the compatibility with a wide range of popular motors have already led to many requests for AMONet products. Advantech is not content with the current selection though. There are already plans to release more AMONet products based on PCI, PC/104, and 1-axis motion slave modules as well as DI/O slave modules.



Figure 2: System Architecture

Overview

A Broad Array of Products for Centralized Motion Control

Advantech's full product offering can accommodate all your motion control needs. You can choose from 3-axis, 4-axis or 6-axis controllers, pulse-output or voltage-output, ISAbus-based or PCI-bus-based, and standard PC-based or embedded in a system. The functions of the motion cards also vary, from high-end 3-axis circular interpolation cards to low-cost point-to-point motion devices. And if you cannot find a controller to meet your exact requirements for an embedded motion controller, then Advantech can design one to your specifications. We are ready to build cost-effective controllers to meet your criteria, whether it be adding digital I/O channels or changing connector styles, or perhaps changing CPU grade. With all the inherent costs, time and risks involved, there's no reason why you should design your own controller when you can instead rely on the expertise, cost-efficiency, experience and proven reliability of Advantech.



Figure 3 : Development Architecture

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Selection Guide

Motion Cards Series

Bus			PCI						ISA		
Category		Pulse type			Voltage type	Encoder card	Pulse	e type	Encoder card		
Model		PCI-1240	PCI-1240U	PCI-1242	PCI-1243U	PCI-1261	PCI-1241	PCI-1784	PCL-839+	PCM-3240	PCL-833
Axes	Number of Axes	4	4	4	4	6	4	-	3	4	-
	Linear Interpolation	~	✓	~	-	~	~	-	-	~	-
	2-axis Circle Interpolation	~	~	~	-	~	~	-	-	~	-
	3-axis Circle Interpolation	-	-	~	-	~	~	-	-	-	-
Advanced	Encoder Channels	4	4	5	-	6	5	4	-	4	3
Functions	Limit Switch Input Channels	8	8	8	8	12	8	-	6	8	-
	Home Input Channel	4	4	4	4	6	4	-	3	4	-
	Emergency Stop Input Channels	1	1	1	1	1	1	-	-	1	-
	Slow Down Limit Switches	8	8	-	8	-	-	-	6	8	-
	General Purpose DI Channels	-	-	-	8	-	-	4	16	4	4
	Servo On Output Channels	4	4	4	-	6	4		-	4	-
	General Purpose DO Channels	4	4	-	8	-	-	4	16	4	-
	BoardID Switch	~	✓	~	~	~	~	~	-	-	-
	Position Compare Event	-	~	~	-	~	~	-	-	-	-
	Remote IO	-	-	~	-	~	~	-	-	-	-
Dimension	s (mm)	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	175 x 100	185 x 100	96 x 90	185 x 100
Connectors	3	100-pin SCSI-II	100-pin SCSI-II	68-pin SCSI-II	DB-62	100-pin SCSI-II	68-pin SCSI-II	DB-37	1xDB-37 2x20-pin	PCL- 10150-1	1xDB-25
Wiring Boa	ırd	ADAM- 3952, ADAM- 3952-J2S	ADAM-3952, ADAM-3952- J2S	ADAM- 3968 ADAM- 3941	ADAM-3962	ADAM- 39100 ADAM- 3961	ADAM- 3968 ADAM- 3941	ADAM- 3937	ADAM- 3937 ADAM- 3920	ADAM- 3950 ADAM- 3952-J2S	ADAM- 3925
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AMONet series

Bus		P	PC/104		
Category		Pulse type	Remote Card	Remote Card	
Model		PCI-1247	PCI-1202	PCM-3202	
Axes	Number of Axes	4	-	-	
	Linear Interpolation	✓	-	-	
	2-Axis Circle Interpolation	✓	-	-	
	3-Axis Circle Interpolation	-	-	-	
Advanced	Encoder Channels	4	-	-	
Functions	Limit Switch Input Channel	8	-	-	
	Home Input Channel	4	-	-	
	Emergency Stop Input Channel	1	-	-	
	Slow Down Limit Switch	4	-	-	
	General Purpose DI Channel	3	-	-	
	Servo On Output Channel	4	-	-	
	General Purpose DO Channels	4	4	-	
	Position Compare Event	✓	-	-	
	Remote Motion	✓	✓	✓	
	Remote IO	✓	✓	✓	
Dimensions	(mm)	176x100	175x100	185x100	
Connectors		2x68 pin-SCSI 1xDB15I 1xRJ45	1xDB15 2xRJ45	2xRJ45	
Digital I/O W	Viring Board	ADAM-3752F ADAM-3756F ADAM-3754F	ADAM-3752F ADAM-3756F ADAM-3754F	ADAM-3752F ADAM-3756F ADAM-3754F	
Remote Motion Wiring Board		ADAM-3210 ADAM-3211/PMA ADAM-3212/J2S ADAM-3213/YS2	ADAM-3210 ADAM-3211/PMA ADAM-3212/J2S ADAM-3213/YS2	ADAM-3210 ADAM-3211/PMA ADAM-3212/J2S ADAM-3213/YS2	
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4-axis Motion Control Card with AMONet[™] RS-485 Master



Features

- Max. 6.5 MHz, 4-axis pulse output
- Linear, circular and continuous interpolation .
- High speed position latch function .
- Manual pulse generator input interface .
- Simultaneously start/stop on multiple axes .
- Programmable acceleration and deceleration time
- Programmable pulse output and interrupt
- Position compare and trigger output •
- 1 Ring of AMONet™ RS-485 master •
- . Programmable baud-rate up to 20 Mbps transfer rate
- . Max. 64 AMONet digital slave modules support
- Easy installation with RJ45 phone jack and LED diagnostic •

Introduction

PCI-1247 is an advanced motion controller with two major functions: 4-axis motion control (ASIC), and high-speed distributed motion control with AMONet™ RS-485.

CE

With its 4-axis motion control functions, PCI-1247 provides 4 axes of liner interpolation, 2 axes of circular interpolation and also continuous interpolation with velocity continuity. There are 13 homing modes for different machine designs, and position compare and trigger output functions are supported to interface with applications such as on-the-fly image acquisition. For applications like tool length measurement, it provides position latch and interrupt functions. PCI-1247 provides digital I/O interfaces that are dedicated to servo drivers/motors, (e.g. ALM, INP, ERC) and also digital I/O interfaces that are dedicated to machines (e.g. ORG, PEL, EMG). These dedicated I/O signals guarantees functionality via hardware and therefore reduces software loading.

AMONet™ RS-485 is a new series of products designed for versatile and distributed automation applications with special motion control requirements. PCI-1247 is equipped with 1 master, that can connect with up to 64 slave modules. There are 2 categories of slave modules, one for motion control, and one for digital I/O. For motion control slave modules, there are 4 types of 1-axis motion modules in the ADAM-3210 Series. For digital I/O slave modules, there are 4 types, 32-IN, 32-OUT, 16-IN & 16-OUT and 24-IN & 8-OUT.

Specifications

Motion Control

•	Pulse Output Modes	±OUT/DIR, ±CW/CCW
•	Pulse Output Rates	Max. 6.5 Mpps / Min. 0.05 pps
•	Position Range	28 bits(±134,217,728 pulses)
•	Home Return Modes	13 types
•	Velocity Profiles	T-curve, S-curve
•	Interpolation Modes	linear, circular and continuous
•	Counter for Encoder Feedback Signals	28 bits up/down x 4
•	Position Latch Inputs	LTC x 4
•	Position Compare Outputs	CMP x4
•	Incremental Encoder Inputs	±EA x 4, ±EB x 4
•	Encoder Index Signal Inputs	±EZ x 4
•	Machine Interfaces	PEL x 4, MEL x 4, ORG x 4, SLD x 4
•	Servo Driver Interface	ALM x 4, RDY x 4, SVON x 4, INP x 4, ERC x 4
•	Simultaneous Start/ Stop Motion Inputs	STA, STP
•	General Inputs	IN x 3
•	General Outputs	OUT x 4
•	I/O Pin Type	Optically isolated with 2.5 kVrms on all 68 SCSI pins
G	eneral	
•	PCI Spec. 2.2	Supports 32-bit, 3.3/5 V _{ee} operation

+5 V_{DC} @ 0.5 A typical

AMONet[™] RS-485

- Number of Rings
- Serial Interface
- Cable Type
- Surge Protection
- **Transmission Speeds**
 - 2.5, 5, 10 and 20 Mbps Automatic

10 kV

- **Data Flow Control** Communication Distance
- Slave Module Function Digital I/O slave module
 - Motion slave module

Half duplex RS-485 with transformer isolation

Max. 100 m (20 Mbps / 64 slave modules)

CAT5 UTP/STP Ethernet cable

Ordering Information

- PCI-1247 4-axis Motion Control Card with AMONet Master ADAM-3210 1-Axis Motion Slave Module ADAM-3211/PMA 1-Axis Motion Slave for Panasonic® Minas A ADAM-3212/J2S 1-Axis Motion Slave for Mitsubishi® MR-J2S ADAM-3213/YS2 1-Axis Motion Slave for Yaskawa® Sigma-II ADAM-3968M 68-pin Motor Wiring Board ADAM-3968M/PMA Terminal Board for Panasonic® Minas A ADAM-3968M/J2S Terminal Board for Mitsubishi® MR-J2S ADAM-3968M/YS2 Terminal Board for Yaskawa® Sigma-II ADAM-3752 32-CH Digital Input Module ADAM-3754 32-CH Digital Output Module ADAM-3756 16-CH/16-CH Digital Input/Output Module
 - ADAM-3758 24-CH/8-CH Digital Input/Output Module
 - 68-pin SCSI cable, 2m (One PCI-1247 works with two PCL-10168M-2

AD\ANTECH Motion Control

Power Consumption

Operating Temperature $0 \sim 60^{\circ}$ C (32 ~ 140° F)



Software

- Windows[®] 2000/XP WDM Driver
- Supports BCB/VB/VC++ programming on Windows® 2000/XP platforms with DLL MotionNAVI
 - MotionNAVI is a Windows[®] utility for testing motion control functions

All product specifications are subject to change without notice

AMONet EzLink

AMONet EzLink is a Windows® utility for testing AMONet RS-485 configurations

PCM-3202

PC/104 AMONet™ RS-485 Master Card



Features

- Max. 20 Mbps transfer rate
- Supports 2 independent AMONet[™] RS-485 rings
- Supports up to 128 AMONet[™] RS-485 slave modules
- Easy installation with RJ45 phone jack and LED diagnostics
- Max. 100 m (20 Mbps / 32 slave modules) communication distance

Introduction

PCM-3202 is a PC/104 interface card which supports two AMONet[™] RS-485 master ports, and transfers data between host and slaves directly without any operations in between. Each port of the master can control up to 2048 I/O points, 64 axes, or a combination of I/O points and axes for motion control. The master ports support up to 20 Mbps transfer rate and a maximum communication distance of up to 100 meters.

The communication between master and slave is based on a customized RS-485 solution that saves wires, covers a long distance, supports high-speed communication and has

CE

time-deterministic features. The communication interface between master and host PC is accomplished by memory mapping. Various functions can be chosen on the slave modules, and standard industrial DIN rail mounting design makes it easy to distribute them in the field. The master collects information from slave modules and publishes the information to its host PC.

Specifications

- 16-bit PC/104
- Number of Rings
- IRQ Selection
- Transmission Speed
- Serial Interface
- Cable Type
- Surge Protection
- Communication Distance
- Communication Slave Module Number
- Power Consumption +5 V_{DC} at 0.5 A typical

2

10 kV

9, 10, 11 or 12

2.5, 5, 10 or 20 Mbps with automatic data flow control

Half duplex RS-485 with transformer isolation

Max. 100 m (20 Mbps/64 slave modules)

2 Rings with Max. 128 (1 Ring with 64 slaves)

CAT5 UTP/STP Ethernet cable

- Operating Temperature $0 \sim 60^{\circ} \text{ C} (32 \sim 140^{\circ} \text{ F})$

Ordering Information

- PC/104 AMONet™ RS-485 Master Card
- ADAM-3210 1-Axis Motion Slave Module
- ADAM-3211/PMA
 1-Axis Motion Slave for Panasonic[®] Minas A

32-CH Digital Input Module

- ADAM-3212/J2S 1-Axis Motion Slave for Mitsubishi[®] MR-J2S
- ADAM-3213/YS2 1-Axis Motion Slave for Yaskawa[®] Sigma-II
- ADAM-3752
- ADAM-3754 32-CH Digital Output Module
- ADAM-3756 16-CH/16-CH Digital Input/Output Module
- ADAM-3758 24-CH/8-CH Digital Input/Output Module

Software

- Windows[®] 2000/XP WDM driver
 Supports BCB/VB/VC++ programming on Windows[®] 2000/XP platform with DLL
- AMONet EzLink

AMONet EzLink is a Windows® diagnosis utility

AMONet[™] Slave Module Address Number Setting



2-Port AMONet[™] RS-485 Master Card



Features

- Max. 20 Mbps transfer rate
- 2 independent AMONet[™] RS-485 Master Rings .
- Max. 128 AMONet™ RS-485 slave modules support •
- Programmable digital input to notify events .
- Easy installation with RJ45 phone jack and LED diagnostic

Introduction

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

PCI-1202 is a PCI interface card which supports two AMONetTM RS-485 master ports, and transfers data between host and slaves directly without any operations in between. Each port of the master can control up to 2048 I/O points, 64 axes, or a combination of I/O points and axes for motion control. The master ports support up to 20 Mbps transfer rate and a maximum communication distance of up to 100 meters.

The communication between master and slave is based on a customized RS-485 solution that saves wires, covers a long distance, supports high-speed communication and has time-deterministic features. The communication interface between master and host PC is accomplished by memory mapping. Various functions can be chosen on the slave modules, and standard industrial DIN rail mounting design makes it easy to distribute them in the field. The master collects information from slave modules and publishes the information to its host PC.

Specifications

- AMONet RS-485 Rings 2
- Transmission Speed 2.5, 5, 10 and 20 Mbps with automatic data flow control
- Serial Interface
- Cable Type
- Surge Protection 10 kV
- Communication Max. 100 m (20 Mbps/64 slave modules) Distance
- **Communication Slave** 128 (2 rings with 64 slaves each) Module number
- Digital Input 8-Ch isolated, sink type, 0-24 V_{pc} , Max. 50 mA current, 10 mA sink current
- 4-Ch isolated, open collector type, 5~30 V_{DC} voltage Digital Output PCI Spec. 2.2; supports 32-bit, 3.3 V/5 V_{pc} operation

Half duplex RS-485 with transformer isolation

CAT5 UTP/STP Ethernet cable

- Power Consumption +5Vpc at 0.5 A typical
- Operating Temperature 0 ~ 60° C (32 ~ 140° F)

Ordering Information

- PCI-1202 ADAM-3210
- ADAM-3211/PMA
- 2 port AMONet™ RS-485 master card 1-axis AMONet™ RS-485 Motion Slave Module
- 1-axis AMONet™ RS-485 Motion Slave for Panasonic® Minas A
- ADAM-3212/J2S
 - 1 axis AMONet[™] RS-485 slave for Mitsubishi[®] MR-J2S
 - 1-axis AMONet[™] RS-485 Slave for Yaskawa[®] Sigma-II 32-CH AMONet™ RS-485 Digital Input Module 32-CH AMONet™ RS-485 Digital Output Module
- ADAM-3213/YS2 ADAM-3752
- ADAM-3754 ADAM-3756

Pin Assignments



Module

DIO Dsub-15 p ins Definition

ADAM-3240 Series

4-Axis AMONet[™] **RS-485 Motion Slave** Modules

NEW



Features

- Max. 20 Mbps transfer rate
- Max. 6.5 MHz. 4-Axes pulse output
- 28 bits counter for incremental encoder •
- Programmable acceleration and deceleration time
- T-curve and S-curve velocity profiles support
- Change speed/position on-the-fly •
- Simultaneously start/stop on multiple motion control modules .
- Easy installation with RJ45 phone jack and LED diagnostic
- Easy installation for servo or stepping motor driver

Introduction

Products in the ADAM-3240 Series are used to increase the number of axes with interpolation for an AMONet™ RS-485 distributed motion control network. These extension slave modules connect serially by a simple and affordable Cat.5 LAN cable, reducing the wiring between driver and controller. This is very suitable to highly integrated machine automation applications. AMONet™ RS-485 has driver specific motion slave modules to support a range of common motor vendors such as: Mitsubishi® J2-Super series, Panasonic® Minas A type, and Yaskawa[®] Sigma-II. Please select the respective cable SCSI-20P or SCSI-50P and plug this cable into the motor driver and motion slave module. AMONet™ RS-485 also supports a general purpose motion slave module for general motor drivers, including step motor drivers. This general purpose motion slave module is designed with many screw terminals to support easy wiring. Please refer to the related installation guides.

Specifications

	-	
•	Communication Controller	AMONet [™] slave motion controller ASIC
	Scheme Type	Half duplex BS-485 with transformer isolation
	Cable Type	CAT5 LITP/STP Ethernet cable
	Surge Protection	10 kV
	Transmission Sneed	2.5.5.10 and 20 Mbps
	Programmable Pulse	+OUT/DIR. +CW/CCW. +A/B phase
	Output Mode	
•	Programmable Pulse	Max 6.5 Mpps / Min 0.05 pps
	Command Speed	
•	Position Range	28 bits (±134, 217, 728 pulses)
•	Home Return Mode	13 types
•	Velocity Profiles	T-curve, S-curve
•	Counter for Encoder	28 bits up/down
	Feedback Signals	
•	Position Latch Input	LTC x 4
•	Position Compares	CMP x 4
	Output	
•	Incremental Encoder	±EA x 4, ±EB x 4
	Input	
•	Encoder Index Signal	±EZ X 4
_	Input Maahina Interfese	
	Machine Internace	PEL X 4, MEL X 4, URG X 4, SLD X 4
•	Servo Driver Interlace	ALIVI X 4, RUY X 4, SVUN X 4, INP X 4, ERU X 4
•	SIMUITANEOUS Start/Ston Motion Innut	51A, 51P
-	I ED Indicator	DW/R RIIN ERR DEL MEL ORC SLD
-	Dower Supply	18 V to 20 V consumption: 2 W typical
-	norating Temperature	+ 10 v_{DC} to + 30 v_{DC} , consumption. S W typical 0 60° C (22 140° E)
-	operating remperature	$0 \sim 00 = 0 (32 \sim 140 + 1)$

Ordering Information

ADAM-3240 4-Axis General Purpose AMONet™ RS-485 Slave Module ADAM-3241/PMA 4-Axis AMONet[™] RS-485 Slave Module for Panasonic® Minas A Servo driver ADAM-3242/J2S 4-Axis AMONet[™] RS-485 Slave Module for Mitsubishi® MR-J2S Servo driver ADAM-3243/YS2 4-Axis AMONet[™] RS-485 Slave Module for Yaskawa® Sigma-II Servo driver PCL-10120M-2 SCSI 20-pin cable, 2m (Optional for ADAM-3242/J2S) PCL-10150M-2 SCSI 50-pin cable, 2m (Optional for ADAM-3241/PMA and ADAM-3243/YS2)

ADAM-3210 Series

1-Axis AMONet[™] **RS-485 Motion Slave Modules**



Half duplex RS-485 with transformer isolation

CAT5 UTP/STP Ethernet cable

Max 6.5 Mpps / Min 0.05 pps

28 bits (±134,217,728 pulses)

±OUT/DIR, ±CW/CCW, ±A/B phase

2.5, 5, 10 and 20 Mbps

10 kV

13 types

LTC

CMP

±EA, ±EB

Features

- DIN rail mounting (L-124 x W-72 x H-53 mm)
- Max. 20 Mbps transfer rate .
- Max. 6.5 Mhz, 1-Axis pulse output
- 28 bits counter for incremental encoder .
- Programmable acceleration and deceleration time
- T-curve and S-curve velocity profiles support
- Change speed on-the-fly
- Simultaneous start/stop on multiple motion control modules
- Easy installation with RJ45 phone jack and LED diagnostic .
- Easy installation for servo or stepping motor driver

Introduction

Products in the ADAM-3210 Series are used to increase the number of axes for an AMONetTM RS-485 distributed motion control network. These extension slave modules connect serially by a simple and affordable Cat.5 LAN cable, reducing the wiring between driver and controller. This is very suitable for highly integrated machine automation applications.

AMONet™ RS-485 has driver specific motion slave modules to support a range of common motor vendors such as: Mitsubishi® J2-Super series, Panasonic® Minas A type, and Yaskawa® Sigma-II. Please select the respective cable SCSI-20P or SCSI-50P and plug this cable into the motor driver and motion slave module.

AMONet™ RS-485 also supports a general purpose motion slave module for general motor drivers, including step motor drivers. This general purpose motion slave module is designed with many screw terminals to support easy wiring. Please refer to the related installation guides.

Specifications

- Series Interface
- Cable Type
- Surge Protection
- Transmission Speeds **Programmable Pulse**
- **Output Mode**
- **Programmable Pulse Command Speed**
- Position Range
- Home Return Mode Velocity Profiles
 - T-curve. S-curve **Counter for Encoder** 28 bits up/down Feedback Signals
- Position Latch Input
- **Position Compare** Output
- Incremental Encoder Input
- Encoder Index Signal +F7 Input
- Machine Interface PEL. MEL. ORG. SLD
- Servo Driver Interface ALM, RDY, SVON, INP, ERC
- Simultaneous STA, STP Start/Stop Motion Input
- LED Indicator PWR, RUN, ERR, PEL, MEL, ORG, SLD
- Power Supply
- +18 V_{DC} to +30 V_{DC} , consumption: 3 W typical Operating Temperature 0 ~ 60° C (32 ~ 140° F)

- **Ordering Information**
- ADAM-3210 ADAM-3211/PMA

ADAM-3212/J2S

- 1-Axis AMONet[™] RS-485 Slave Module for Panasonic® Minas A Servo driver
- 1-Axis AMONet[™] RS-485 Slave Module for Mitsubishi[®] MR-J2S Servo driver

1-Axis General Purpose AMONet™ RS-485 Slave

ADAM-3213/YS2

Module

- PCL-10120M-2
- PCL-10150M-2
- 1-Axis AMONet[™] RS-485 Slave Module for Yaskawa[®] Sigma-II Servo driver SCSI 20-pin cable, 2m (Optional for ADAM-3212/J2S) SCSI 50-pin cable, 2m (Optional for ADAM-3211/ PMA and ADAM-3213/YS2)

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ADAM-3750F Series

Flat-Cable Type **Digital NPN** 1/0 Modules



Features

- DIN rail mounting (L-124 x W-72 x H-53 mm)
- Max. 20 Mbps transfer rate .
- Flat-Cable Connection
- Easy installation with RJ45 phone jack and LED diagnostic .
- 3-wire terminal board for sensor
- LED indicator for each IO channel
- Selection of I/O-channel configuration (32 DI, 32 DO or 16/16 DI/O) .
- 2500 Vrms Isolation voltage

Introduction

The ADAM-3750F Series consists of digital slave modules for AMONet™ RS-485 that extend the digital I/O capacity. All the DIO slave extension modules are connected serially with a simple Cat.5 cable. This reduces wiring between driver and controller and is very suitable for highly integrated machine automation applications. High speed, scalability and cost-effectiveness ensures a solid solution for machine builders.

There are 3 main types of DI/O slave modules, 32In, 32Out, and 16In/16Out. With these slave modules, you can connect actuators/sensors directly with minimum hassle. You can access I/O points nearby or 100 meters away using simple and low-cost wiring, and the high speed of AMONet™ RS-485 makes it possible to scan 2048 IO channels in 1.04 ms.

Specifications

- Cable Type
- Surge Protection
- Transmission Speed
- Online Module
- I/O Isolation Voltage
- Input Impedance
- Output Types
- NPN/PNP open collector Darlington transistors Each output channel is 60 mA at 24 V_{pc} Switch Capacity

2.4 k Ω /0.5 Ω , Input current: ±10 mA (Max)

Flat-cable type 32-CH Digital NPN Input Module

Flat cable type 32-CH Digital NPN Output Module

Flat cable,16/16CH Digital NPN In/Output Module

CAT5 UTP/STP Ethernet cable

2.5, 5, 10 and 20 Mbps

Insertion and Removal

10 kV

2.5 kVrms

- Response Time On to Off, about 180 µs; Off to On, about 1.2 µs
- Power Supply
- +18 V_{DC} to +30 V_{DC} , consumption: 3 W typical Operating Temperature 0 ~ 60° C (32 ~ 140° F)

Ordering Information

- ADAM-3752FN
- ADAM-3754FN
- ADAM-3756FNN
- ADAM-3934D
- Dual 34-pin wiring terminal with DIN-rail
- PCL-10134-1 34-pin IDC flat cable, 1M

Pin Assignments

	ADAM-3754F						
Din	Label	N1	Label	Din	(N2	Label
1		2	Laber			2	.241/
2	OUT_00	2	CND	2	001_20	2	CND
5	001_01	4	- 241/	5	001_21	4	- 241/
- 2	001_02	0	+24V	2	001_22	0	+Z4V CND
-/	001_03	10	GIND		001_23	10	GIND
9	001_04	10	+24V	9	001_24	10	+24V
11	001_05	12	GND	11	001_25	12	GND
13	001_06	14	+24V	13	001_26	14	+24V
15	001_07	16	GND	15	001_27	16	GND
17	OUT_10	18	+24V	17	OUT_30	18	+24V
19	OUT_11	20	GND	19	OUT_31	20	GND
21	OUT_12	22	+24V	21	OUT_32	22	+24V
23	OUT_13	24	GND	23	OUT_33	24	GND
25	OUT_14	26	+24V	25	OUT_34	26	+24V
27	OUT_15	28	GND	27	OUT_35	28	GND
29	OUT 16	30	+24V	29	OUT 36	30	+24V
31	OUT 17	32	GND	31	OUT 37	32	GND
33	FG	34	FG	33	FG	34	FG
00 1	10	0. 1	10	00	10	01	10
			ADA	M-3752F			
		N1			(N2	
Pin	Label	Pin	Label	Pin	Label	Pin	Label
1	IN_00	2	+24V	1	IN_20	2	+24V
3	<u>IN_01</u>	4	GND	3	<u>IN 21</u>	4	GND
5	IN_02	6	+24V	5	IN_22	6	+24V
7	IN_03	8	GND	7	IN_23	8	GND
9	IN_04	10	+24V	9	IN_24	10	+24V
11	IN_05	12	GND	11	<u>IN 25</u>	12	GND
13	IN_06	14	+24V	13	IN_26	14	+24V
15	IN_07	16	GND	15	<u>IN_27</u>	16	GND
17	IN_10	18	+24V	17	IN_30	18	+24V
19	IN_11	20	GND	19	IN_31	20	GND
21	IN_12	22	+24V	21	IN_32	22	+24V
23	IN_13	24	GND	23	IN_33	24	GND
25	IN_14	26	+24V	25	IN_34	26	+24V
27	IN_15	28	GND	2/	IN_35	28	GND
29	IN_16	30	+24V	29	IN_36	30	+24V
31	IN_1/	32	GND	31	IN 37	32	GND
33	FG	54	FG	33	FG	34	FG
				M-3756			
		N1	71271			N2	
Pin	Label	Pin	Label	Pin	Label	Pin	Label
1	IN 00	2	+24V	1	OUT 00	2	+24V
3	IN_01	4	GND	3	OUT 01	4	GND
5	IN 02	6	+24V	5	0UT 02	6	+24V
7	IN_02	8	GND	7	OUT_02	8	GND
6	IN_04	10	1241/	6	001_03	10	241/
11	IN_04	10	CND	11	001_04	10	CND
10	IN_00	14	GIND	10	001_05	14	GIND
15	IN_00	14	+24V	13	001_00	14	+24V
15	IN_0/	10	GNU	15	001_07	10	GNU
1/	IN_10	18	+24V	1/	001_10	18	+24V
19	IN_11	20	GND	19	001_11	20	GND
21	IN_12	22	+24V	21	UU (_12	22	+24V
23	IN_13	24	GND	23	OUT_13	24	GND
25	IN_14	26	+24V	25	OUT_14	26	+24V
27	IN_15	28	GND	27	OUT_15	28	GND
29	IN_16	30	+24V	29	OUT_16	30	+24V
31	IN_17_	32	GND	31	OUT_17	32	GND

4-Axis Pulse-Type Motor Control Card Servo Motor Control Card



Features

- PCI Bus interface
- 4-axis servo or stepping motor pulse command control
- 5 -channel encoder input
- 13 dedicated input and 5 dedicated output .
- 128 remote serial input / output interfaces

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Introduction

PCI-1242 applied motion ASIC sends the pulse of each axis with DDA (Digital Differential Analyzer) algorithm to realize 4 axis servo positioning and synchronized control. Under the pulse output control, the encoder value can be read back from the encoder input port. So, it will be easier to carry out the software close loop control in stepping motor application. At the control of each axis, there is one set of sensor input point, including home point, plus limit point and minus limit point. In addition, there are inhibit signal output points, position ready output point, and emergency stop input point. For other input / output points, this board uses wire-saving I/O design, which can be expanded to 64 points input and 64 point output maximum.

Specifications

Hardware

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

 Size System Clock Bus Interface Motion

 Positioning Axes 4 DDA Pulses 1024 ~ 32767 Pulse/DDA Cycle DDA Cycle 25 µs ~ 3350 ms Programmable Pulse Output Format Pulse/DirectionCW/CCW A/B Phase Error Counter 16 Bits (For Output Pulse) Remote IO 64 IN/64 OUT Maximum Encoder Input 5 Axes Differential Input with Photo-Isolation Interface Input Format A/B/Z Phase Pulse /DirectionCW/CCW x0, x1, x2, x4, Software programmable in A/B/Z phase

32 bits

185 x 109 mm

40 MHz

PCI

- Decoder input
- Encoder Counter
- Latch 15 trigger signal for each axis

Local IO

- Home Sensor 4 **Signal Inputs**
- **Positive Over Travel** 4 Signal Inputs
- **Negative Over Travel** 4
- Signal Inputs
- Inhibit Signal Outputs 4
- **Emergency Stop Input** 1
- Position Ready Output 1

Software Support

- Device driver for DOS, Windows[®] 95/98/2000/NT/XP
- Motion control library MCCL for DOS, Windows[®] 95/98/2000/NT/XP

Ordering Information

- PCI-1242 PCL-10168
- 4-axis Pulse-type Servo Motor Control Card 68-pin SCSI-II cable with male connectors on both ends and special shielding for noise reduction,
- ADAM-3968
- 1 and 2 m 68-pin SCSI-II Wiring Terminal Board for DIN-rail
- mounting ADAM-3941 Wiring terminal for PCI-1241/1242 with LEDs 64 DI / 64 DO Remote IO Board

AD\ANTECH Last updated : January 2005

PCI-1240U

4-Axis Universal PCI Stepping/Pulse-type Servo Motor Control Card



Features

- Independent 4-axis motion control
- Hand wheel and jog function
- 2/3-axis linear interpolation function
- 2-axis circular interpolation function
- Continuous interpolation function
- Programmable T/S-curve acceleration/deceleration rate
- Up to 4 MPPS pulse output for each axis
- Two pulse output types: Up/Down or Pulse/Direction
- Up to 1 MHz encoder input for each axis
- Two encoder pulse input types: A/B phase or Up/Down
- Constant speed control
- Position management and software limit switch function
- BoardID[™] switch

Introduction

Advantech introduces the PCI-1240U 4-axis Universal PCI (supports both 3.3V and 5V signal slot) stepping/pulse-type servo motor control card designed for general-purpose extreme motion applications. The PCI-1240U is a high-speed 4-axis motion control card for the PCI bus that simplifies stepping and pulse-type servo motor control, giving you added performance from your motors. The card's intelligent NOVA® MCX314-motion ASIC builds in a variety of motion control functions, such as 2/3-axis linear interpolation, 2-axis circular interpolation, T/S-curve acceleration/deceleration rate and more. In addition, the PCI-1240U performs these motion control functions without processor loading during driving. For advanced applications, Advantech supplies Windows® DLL drivers and user-friendly examples to decrease your programming load. Moreover, through a free bundled PCI-1240U motion utility, you can complete configuration and diagnosis easily.

Specifications

Motion Axis

Number of Auro		4.4
NUMBER OF AXES		4 AX8S
2/3 -axis Linear	Range	+/- 2,147,483,646 for each axis
Internolation	Speed	1 PPS ~ 4 MPPS
interpolation	Precision	± 0.5 LSB
2-avis fircular	Range	+/- 2,147,483,646 for each axis
Internelation	Speed	1 PPS ~ 4 MPPS
ווונפוµטומנוטוו	Precision	±1LSB
Continuous Interpolation	Speed	1 PPS ~ 2 MPPS
	Range	1 PPS ~ 4 MPPS
	Precision	1 LSB
	Change of Acceleration for S Curve	954 ~ 31.25 x 10 ⁹ PPS/sec ²
	Acceleration/Deceleration	125 ~ 500 x 10 ⁹ PPS/sec ²
	Initial Velocity	1 PPS ~ 4 MPPS
Drive Output Pulses	Drive Speed	1 PPS ~ 4 MPPS (Can be changed during driving)
	Number of Output Pulses	0 ~ 4.294.967.295 (fixed pulse driving)
	Pulse Output Type	Pulse/Direction (1-pulse, 1-direction type) or Up/Down (2-pulse type)
	Output Signal Modes	Differential Line driving output/Single-ended output
	Speed Curve	T/S-curve Acceleration/Deceleration
	Encoder Pulse Input Type	Quadrature (A/B phase or Up/Down)
Input Pulse for	Counts per Encoder Cycle	x1, x2, x4 (A/B phase only)
Encoder Interface	Protection	2,500 V _{DC} isolation
	Input Range	+5V ~ +30V
Position Counter	Range of Command Position Counter (for	-2,147,438,648 ~ +2,147,483,647
(read/write at any time)	Range of Actual Position Counter (for output pulse)	-2,147,438,648 ~ +2,147,483,647
	COMP+ Register Bange	-2 147 438 648 ~ +2 147 483 647
Comparison	COMP- Begister Bange	-2 147 438 648 ~ +2 147 483 647
Register	Can he use	d for software over traveling limit

		Position Counter \geq COMP-			
		Position Counter < COMP-			
Interrupt Functions	Interrupt CONDITION	Position Counter \geq COMP+			
(excluding	(All conditions could be	Position Counter < COMP+			
Interpolation)	enable individually)	Constant speed begin or end during			
. ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	acceleration/deceleration driving pulse			
		finished			
	Input Signal*	nEXOP+ and nEXOP			
	Max. Input Frequency	100 Hz			
External Signals	Driving Mode	Fixed pulse driving or continuous driving			
Driving	Driving wode	Supports Hand wheel/Jog			
	Protection	2,500 V _{DC} Photo coupler isolation; accept			
	PTOLECTION	mechanical connection point.			
External	Input Signal*	nINI ~ 3			
Deceleration/	Max. Input Frequency	4 KHz			
Instantaneous Stop	Protoction	2,500 V _{DC} Photo coupler isolation and RC			
Signal	FIULEGLIUIT	filtering			
Input Signal for	logut Cignal*	nALArm (servo alarm)			
Servo Motor Drivers	input Signai"	nINPOS (position command coompleted)			
General Purpose	Output Of an alt	-01174 - 7			
Output Signal	Output Signal	110014 ~ 7			
Over Traveling	Input Signal*	nLMT+ and nLMT-			
Limit Switch Innut	Protection	2,500 V _{DC} Photo coupler isolation and RC			
Linni Switch Input	TIOLOGIION	filtering; accept mechanical connection point.			
	Input Signal*	EMG- one emergency stop input for PCI-1240			
Emergency Stop	Protection	2,500 V_{DC} Photo coupler isolation and RC			
	110000001	filtering; accept mechanical connection point.			
General					
1/0 Connector Type		100-pip SCSI-II famala			
Dimensions	17	5 x 100 mm (6 0" x 3 0")			
Dimensions	Typical	5 X 00 mm (0.5 X 3.5)			
Power Consumption	Турісаі	+5 V @ 850 IIIA			
Eutornal Dawar	IVIdX.	+3 V @ I A			
External Power		DC +12 ~ 24 V			
voitage					
	Operating	$ 0 \sim 60^{\circ} \cup (32 \sim 140^{\circ} F)$			
lemperature		(reter to IEC 68-2-1, 2)			
	Storage	-20 ~ 85° C (-4 ~ 185° F)			
Relative Humidity	5 ~95% RH n	on-condensing (refer to IEC 68-2-3)			
Certification		CE certified			

Note: *: "n" represents the axis (X, Y, Z or U) that is concerned.

PCI-1240U

Ordering Information

PCI-1240U 4-axis universal PCI stepping/pulse-type servo motor control card ADAM-3952 50-pin SCSI-II wiring terminal for DIN-rail mounting PCL-10251-1 100-pin SCSI to two 50-pin SCSI cable for PCI-1240U, 1m PCL-10251-3 100-pin SCSI to two 50-pin SCSI cable for PCI-1240U, 3m

Feature Details

Programmable T/S-curve Acceleration and Deceleration

Each of four axes can be preset individually with S-curve or trapezoidal acceleration/ deceleration rates. When using S-curve acceleration to control driving speed, output pulse is generated in parabolic-shaped acceleration or deceleration curves, and the triangular curve phenomenon will not occur through the NOVA® MCX314-motion ASIC design concept.

Linear and Circular Interpolation

Any two or three axes can be selected to execute linear interpolation driving and any two axes can be selected to execute circular arc interpolation control. The interpolation speed range is from 1 PPS to 4 MPPS.

Powerful Position Management Function

Each axis is equipped with a 32-bit logical position counter and a 32- bit real position counter. The logical position counter counts the axis' pulse output number and the real position counter is recorded with the feedback pulse from the outside encoder or linear scale

Applications

- General motion control (GMC)
- Packaging and assembly machinery
- · Robotics and semiconductor manufacturing and measurement
- Precise X-Y-Z position and rotation control

Block Diagram



	\sim		
	(
VEX	1	51	VEX
EMG	2	52	NC
XLMT+	3	53	ZLMT+
XLMT-	4	54	ZLMT-
X IN1	5	55	Z IN1
X IN2	6	56	Z IN2
X IN3	7	57	ZINB
YLMT+	8	58	ULMT+
YLMT-	9	59	ULMT-
Y_1N1	10	60	U_IN1
Y_1N2	11	61	U_IN2
Y_1N3	12	62	U_IN3
X_INPOS	13	63	Z_INPOS
ALARM	14	64	Z_ALARM
XECAP	15	65	ZECAP
XECAN	16	66	ZECAN
XECBP	17	67	ZECBP
XECBN	18	68	ZECBN
XINOP	19	69	ZINOP
XINON	20	70	ZINON
/_INPOS	21	71	U_INPOS
_ALARM	22	72	U_ALARM
YECAP	23	73	UECAP
YECAN	24	74	UECAN
YECBP	25	75	UECBP
YECBN	26	76	UECBN
YINOP	27	77	UINOP
YINON	28	78	UINON
XEXOP+	29	79	ZEX0P+
XEXOP-	30	80	ZEXOP-
YEXOP+	31	81	UEX0P+
YEXOP-	32	82	UEXOP-
GND	33	83	GND
XOUT4	34	84	ZOUT4
XOUT5	35	85	ZOUT5
XOU16	36	86	20016
XUUI7	37	87	20017
XP+P	38	88	ZP+P
XP+ N	39	89	ZP+ N
XP-P	40	90	ZP-P
XP-N OND	41	91	ZP=N
GNU	42	92	GND
YOUTA	43	93	00014
VOLITE	44	94	00015
YOUT7	40	90	00010
1001/ VD. D	40	96	
TP+P VD, N	4/	9/	UP+P
VD D	40	90	
VD N	49	99	UP-P
107-09	1217	100	UT-19

Pin Assignments

All product specifications are subject to change without notice

AD\ANTECH

Last updated : January 2005

6-Axis Pulse-Type Stepping Motion Control Card



Features

- PCI bus interface
- Asynchronous/synchronous 6-axis motion control
- Linear, helical interpolation functions
- 2/3-axis arc, circle interpolation functions
- Jog functions
- Continuous interpolation functions
- T/S-curve acceleration/decelerations
- Constant speed and over speed control
- In position and compensation functions
- Go home functions
- Position management and software limit switch functions
- Event trigger functions
- 19 dedicated inputs and 7 dedicated outputs
- Up to 4 MPPS pulse output for each axis

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Introduction

The PCI-1261 realizes 6-axis asynchronous/synchronous control with a DDA (Digital Differential Analyzer) that ensures even movement of each axis. At pulse output control, it can also read back motor encoder values via its encoder input port. In the control of each axis, there is a set of sensor input points, including home points, plus limit points and minus limit points. Further, there are servo-on signal output points, position ready output point and an emergency stop input point. For advanced applications, we supply Windows® DLL drivers and user-friendly examples to decrease your programming load. Moreover, through a free bundled PCI-1261 motion utility, you can complete configuration and diagnosis easily.

Specifications

Motion Axis

Number of Axes	6 Axes			
	Range	-2, 147, 483, 648 ~ 2, 147, 483, 647 for each axis		
Interpolation	Time Interval	1 ms ~ 10 ms		
	Speed	1 PPS ~ 4 MPPS		
	Command Type	Jog, Point to Point, Line, Arc, Circle, Helical		
	Speed Curve	T/S-Curve Acceleration/Deceleration		
	Command Mode	Position Command		
	Pulse Output Format	Pulse/Direction, CW/CCW, A/B Phase		
N/ - 4:	Position Accuracy	In Position Check		
NIOTION	Continuous Moving	Blending Mode		
, anothene	Compensation	256 Divisions		
	Over Traveling Limit	Software and Hardware OT Check		
	Go Home	3 Modes (Normal, Encoder Index, Home Sensor)		
	Motion Operation	Hold, Continuous, Abort		
	Changing Speed in Moving	Over Speed Control		
	Encoder Pulse Input Type	A/B/Z Phase, Pulse/Direction, CW/CCW		
	Counts per Encoder Cycle	X0, X1, X2, X4 (A/B phase only)		
Encoder	Latch	15 Trigger Signals for each axis		
IIILEITACE	Interface	Differential with Photo Coupler		
	Max. Input Frequency	2 MHz		
	Input	6 Channels		
Position Counter	Range of Command Position Counter	-2, 147, 483, 648 ~ 2, 147, 483, 647 for each axis		

Range of Actual Position Counter	-2, 147, 483, 648 ~ 2, 147, 483, 647 for each axis	
Register Range	-2, 147, 483, 648 ~ 2, 147, 483, 647	
	Local IO Input	
Interrupt Signal (All	Encoder Index	
disabled individually)	Encoder Comparison	
Home Sensor Signal	6 Inputs	
Plus Over Traveling Signal Input	6 Inputs	
Minus Over Traveling Signal Input	6 Inputs	
Inhibit Signal	6 Outputs	
Emergency Stop	1 Input	
Position Ready	1 Output	
	Range of Actual Position Counter Register Range Interrupt Signal (All signals could be enabled/ disabled individually) Home Sensor Signal Plus Over Traveling Signal Input Minus Over Traveling Signal Input Inhibit Signal Emergency Stop Position Ready	

General

I/O Connector Type	Motion connector 100-pin SCSI-II Female			
Dimensions	175 x 107 mm			
Dower Concumption	Typical	+5 V @ 850 mA; +12 V @ 400 mA		
Power consumption	Max.	+5 V @ 1 A; +12 V @ 600 m		
External Power Voltage	+12 V ~ +24 V			
Tomporoturo	Operating	-10 ~ 60° C		
Temperature	Storage	-20 ~ 85° C		

Ordering Information

- PCI-1261
 ADAM-39100
- PCL-101100M-1
- PCL-101100M-3
- ADAM-3961
- 6-axis Pulse-type Stepping Motion Control Card 100-pin SCSI-II Wiring Terminal for DIN-rail Mounting 100-pin SCSI cable, 1m 100-pin SCSI cable, 3m
- 1 Wiring terminal for PCI-1261 with LED

SCSI II 100 PIN

Applications

- General Motion Control (GMC)
- Packing and assembly machinery
- Robotics and semiconductor manufacturing and measurement
- Precise X-Y-Z-U-V-W position and rotation control

Feature Details

Programmable T/S-curve Acceleration and Deceleration

Each axis can be individually configured with S-curve or trapezoidal acceleration/ deceleration rates. When using S-curve acceleration to control motion speed, output pulse is generated in parabolic-shaped acceleration or deceleration curves.

Linear and Circular Interpolation

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

Any two or three axes can be selected to execute linear or circular arc interpolation control. The interpolation speed range is from 1PPS to 4 MPPS.

Powerful Position Management Function

Each axis is equipped with a 32-bit logical position counter and a 32-bit real position counter. The logical position counter counts the axis pulse output number and the real position counter is recorded with the feedback pulse from the outside encoder or linear scale.

AGND	1	51	AGND
NC	2	52	NC
NC	3	53	NC
NC	4	54	NC
VCC_OUT(+5V)	5	55	LDI_COM -
LDO_COM+	6	56	LDI_COM -
LDI_COM	7	57	E_STOP
LDI_COM	8	58	P_RDY
HOME_I1	9	59	HOME_I2
OT+_I1	10	60	OP+_I2
OT- 11	11	61	OT - 12
INH 01	12	62	INH O2
HOME 13	13	63	HOME I4
OT+ 13	14	64	OT+ 14
OT - 13	15	65	OT - 14
INH 03	16	66	INH O4
HOME 15	17	67	HOME I6
OT+ 15	18	68	OT+ 16
OT - 15	19	69	OT - 16
NH O5	20	70	INH O6
XENC INA1	21	71	XENC INA2
~XENC INA1	22	72	~XENC INA2
XENC INB1	23	73	XENC INB2
~XENC INB1	24	74	~XENC INB2
XENC INC1	25	75	XENC INC2
~XENC INC1	26	76	~XENC INC2
XENC INA3	27	77	XENC INA4
~XENC INA3	28	78	~XENC INA4
XENC INB3	29	79	XENC INB4
~XENC_INB3	30	80	~XENC INB4
XENC INC3	31	81	XENC INC4
~XENC_INC3	32	82	~XENC INC4
XENC INA5	33	83	XENC INA6
XENC INA5	34	84	~XENC INA6
XENC INB5	35	85	XENC INB6
~XENC_INB5	36	86	~XENC INB6
XENC INC5	37	87	XENC INC6
~XENC INC5	38	88	~XENC INC6
XDDA OUTA1	39	89	XDDA OUTA2
~XDDA_OUTA1	40	90	
XDDA OUTB1	41	91	XDDA OUTB2
	42	92	
XDDA OUTA3	43	93	
	44	94	
	45	05	
	46	96	
	47	97	
	47	97	
	10	00	
	49	100	
~7004_00185	50	100	~~~~~~

9-17

4-axis Quadrature Encoder and Counter Card



Introduction

The PCI-1784 is a 4-axis quadrature encoder and counter add-on card for PCI bus. The card includes four 32-bit quadruple AB phase encoder counters, 8-bit timer with multi range time-base selector and 4 isolated digital inputs as well as 4 isolated digital outputs. Its flexible interrupt sources are suitable for motor control and position monitoring.

Specifications

Encoder Input

- Resolution
- Max. Quadrature Input 1.0 MHz with Digital Filter
- 2.0 MHz without Digital Filter 4 stage
- Digital Filter
- Drive Type Single-ended or differential Quadrature, Up/Down, Count/Direction
- Counter Mode
- Optical Isolation 2,500 V_{DC}
- Max. Input Pulse Freq. x 1, x 2, x 4 8, 4, 2, or 1 MHz
- Sample Clock Freq.

Input Range

• Single Ended Configuration:

Input	Logic
CH- = 0V (GND) CH+ > 2.8V	High
CH- = 0V (GND) CH+ < 0.8V	Low

4 (independent)

32-bit

CH+ max. input voltage: +12V

- Differential Configuration:

own

CH+/CH- max. input voltage: ±12V

Timer

Resolution	8-bit
Time Base	50, 5 k, 500, 50, 5 Hz

Isolated Digital Input

 Channels 	
------------------------------	--

- Optical Isolation 2,500 V_{DC}
- Opto-Isolator Rsp.Time 25 ms
- Over-Voltage Protection 70 Vpc

 Input Voltage 	VIH (max.)	30 V _{D0}
	VIH (min.)	$10 V_{DC}$
	VII (max)	3 V.,

Δ

Isolated Digital Output

- Channels
- Optical Isolation 2,500 V_{DC}
- Response Time 20 ms (max.)
- Supply Voltage TTL level
- Sink/Source Current 50 mA max./channel

Interrupt

 Source Counter overflow, Counter underflow, Index input, Timer, Digital input **Counter Latch** Source Software, Timer, Index input, Digital input General I/O Connector Type 37-pin D-sub female 175 x 100 mm (6.9" x 3.9")

+5 V @ 450 mA

- Dimensions (L x H)
- Power Consumption Typical+5 V @ 200 mA Max.
- Operating Temperature 0 ~ 60° C (32 ~ 140° F)
- Storage Temperature -20 ~ 70° C (-4 ~ 158° F)
- **Relative Humidity** 5~95% RH non-condensing (refer to IEC 68-2-3)
- Certifications CE certified

Ordering Information

- PCI-1784
- PCL-10137H-1
- PCL-10137H-3
- ADAM-3937
- High-speed DB37 cable assembly, 1m High-speed DB37 cable assembly, 3m

4-axis Quadrature Encoder and Counter Card

DB37 Wiring Terminal Board for DIN-rail mounting

Feature Details

Encoder Interface

Each channel includes a decoding circuit for incremental quadrature encoding. Inputs accept either single-ended or differential signals. Quadrature input works with or without an index, allowing linear or rotary encoder feedback.

Counters

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

The PCI-1784 has four independent 32-bit counters. The maximum quadrature input rate is 2 MHz, and the maximum input rate in counter mode is 8 MHz. You can individually configure each counter for quadrature decoding, pulse/direction counting or up/down counting.

Digital Input and Interrupts

The PCI-1784 provides four digital input channels. Each channel accepts digital input as an index input for a rotary encoder or as a home sensor input for a linear encoder. The card can generate an interrupt to the system based on a signal from its digital inputs, overflow/underflow and overcompare/undercompare of its counters, or on a programmed time interval. It can repeatedly generate interrupts at any time interval you specify, from 20 microseconds to 51 seconds. These interrupts let you precisely monitor the speed of a control system.

Flexible Digital Output function

The PCI-1784 provides four digital output channels. Each channel accepts digital output as a normal TTL output for a rotary encoder, or as an indicated output with pulse/level mode for a linear encoder. The PCI-1784 can generate an indicated output based on a signal from overcompare/undercompare of its counters. The pulse width of an indicated output depends on the counter clock or clear interrupt.

Special Shielded Cable for Noise Reduction

The PCL-10137H shielded cable is specially designed for the PCI-1784 for reducing noise. Its wires are all twisted pairs, and the input signals and output signals are separately shielded, providing minimal cross talk between signals and the best protection against EMI/EMC problems.

BoardID™ Switch

The PCI-1784 has a built-in DIP switch that helps define each card's unique ID when multiple PCI-1784 cards have been installed on the same PC chassis. The BoardID switch setting function is very useful when users build their system with multiple PCI-1784 cards. With correct BoardID switch settings, you can easily identify and access each card during hardware configuration and software programming.

Pin Assignments

EGND CH0A+ CH0B+ CH0Z+ CH1A+ CH1B+ CH1Z+ CH2B+ CH2Z+ CH2B+ CH2Z+ CH3B+ CH3Z+ IDI COM IDI2 EGND ID00 ID02	1 2 3 4 5 6 7 8 9 10 11 12 13 14 5 16 17 18 19	20 21 22 23 24 25 26 27 28 29 30 231 32 33 34 35 36 37	CH0A- CH0B- CH0Z- CH1A- CH1B- CH2A- CH2B- CH2A- CH2B- CH2A- CH3B- CH3Z- EGND IDI1 IDI3 EGND IDO1 IDO1 IDO1
	1 /		

Block Diagram



ADVANTECH Last updated : January 2005

PCL-839+

3-axis Stepping Motor Control Card



Features

- Independent, simultaneous control of three stepping motors
- Optically-isolated outputs
- Five isolated digital inputs per axis for limit switches
- Half-size PC add-on card
- Up to 250 kpps step rate
- 16 DI and 16 DO

Introduction

The PCL-839+ three axis intelligent stepping motor control card turns your IBM-compatible PC into a 3-axis motion-control station. The card's one PCD-4541 intelligent controller chips can execute a variety of motion-control commands. For advanced applications, we supply function libraries which you can link to your C program.

Programming the PCL-839+

You can control each axis directly through the card's I/O registers. but use of the card's high-level interpreter is recommended. This interpreter reads high-level commands from a text file to perform specific tasks. We also supply function libraries which you can call from your C program. The libraries come with 'Turbo C' source code which you can recompile if you want to access the libraries from other C compilers.

Specifications

- Axes
- Max. Step Count
- Max. Step Rate
- Acceleration/ Automatic trapezoidal, ramping, programmable start run and sampling rate
- Deceleration
 run and sampling rate

 Output Pulse Signal
 Two pulse (CW/CCW) mode or one pulse (pulse, direction) mode. Optically coupled with 10 K pull-up resistor

 Output Driving
 20 mA @ 0.4 V (sink)

Positive/negative, programmable

forward/reverse high speed limit)

3, independent

0~16,777,215

200 kpps

- Capability
- Output Polarity
- Limit Switches

DI/O and Interrupt

- DI/O
- Interrupt

16 digital inputs and 16 digital outputs, TTL compatible IRQ 2, 4, 5, 7, 11, 12 or 15 for limit switches, jumper selectable

Five per channel (home, forward/reverse end limit,

General

- I/O Addresses
- Power Consumption 5 V @ 390 mA max.
- Operating Temperature $0 \sim 60^\circ$ C (32 $\sim 140^\circ$ F)
- Storage Temperature $-20 \sim 70^\circ$ C $(-4 \sim 158^\circ$ F)
- **Operating Humidity** 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- Connectors
- DB37 for limit switches and pulse output; 20-pin flat cable for general DIO
- Dimensions (L x H) 185 x 100 mm (7.3" x 3.9")

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Ordering Information

- PCL-839+ Intelligent 3-axis stepping motor control card, user's manual and driver CD-ROM (cable not included)
 PCL-10137-1 DB37 cable assembly, 1 m
 PCL-10137-2 DB37 cable assembly, 2 m
 PCL-10137-3 DB37 cable assembly, 3 m
 ADAM-3937 DB37 wiring terminal for DIN-rail mounting
- **Applications**
- X-Y table control
- Rotary machine control
- Robotics control
- Precision position control using stepping motors

PCL-833

3-axis Quadrature Encoder and Counter Card



Features

- 1.0 MHz max. quadrature input rate
- 3 24-bit counters (can cascade up to 48 bits)
- Optically isolated up to 2,500 V_{RMS}
- 4-stage digital filter
- 2.4 MHz max. input pulse rate
- Pulse/direction and up/down counting
- Digital input with interrupt for each axis
- Programmable time-interval interrupt
- Half-size AT bus card

Introduction

TThe PCL-833 is a 3-axis quadrature encoder and counter add-on card for the IBM PC/AT and compatibles (ISA bus). This card lets your PC perform position monitoring for motion control systems.

Encoder Interface

Each input includes a decoding circuit for incremental quadrature encoding. Inputs accept either single-ended or differential signals. Quadrature input works with or without an index, allowing linear or rotary encoder feedback.

Counters

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com

The PCL-833 has three independent 24-bit counters. The maximum quadrature input rate is 1.0 MHz, and the maximum input rate in counter mode is 2.4 MHz. You can individually configure each counter for quadrature decoding, pulse/direction counting or up/down counting.

Digital Input and Interrupts

The PCL-833 provides five digital input channels. Each channel accepts digital input as an index input for a rotary encoder or as a home sensor input for a linear encoder. The card can generate an interrupt to the system based on a signal from its digital inputs, overflow/underflow of its counters, or on a programmed time interval. It can repeatedly generate interrupts at any time interval you specify, from 0.1 msec. to 255 sec. These interrupts let you precisely monitor the speed of a control system.

Specifications

Encoder Input

•	
 Axes 	3, independent
 Max. Quadrature 	1.0 MHz
Input Frequency	
 Max. Input Pulse 	2.4 MHz
Frequency	
 Counts per Encoder 	x1, x2, x4 (S/W selectable)
Cycle	
 Encoder Type 	Single-ended or differential
 Counter Size 	24 bits, easily daisychains for up to 48 bits
 Counter Modes 	quadrature, up/down, pulse/direction (S/W selectable)
 Digital Filter 	4 stage
 Sample Clock 	8, 4 or 2 MHz (S/W selectable)
Frequency	
Input Isolation	2,500 V _{RMS} using optical isolators
Nigital Input	
- Number of Channels	Five digital with interrupt
- NUMBER OF CHAINERS	Five digital, with interrupt
 Input isolation 	2,500 V _{RMS} using optical isolators

Programmable Interrupt Controller

1 Hz, 10 Hz, 1 KHz or 10 KHz time base (S/W selected) with a programmable multiplier of 1, 2, 3, 4, ..., 255 $\,$

General

 Power Consumption 	+5 V @ 700 mA (typical) +12 V @ 15 mA (typical)
 Operating Temperature 	0~60° C (32~140° F)

- Storage Temperature -20 ~ 70° C (-4 ~ 158° F)
- Operating Humidity 5 ~ 95% RH non-condensing (refer to IEC 68-2-3)
- ConnectorDimensions (L x H)
- DB25 female connector 185 x 100 mm (7.3" x 3.9")
-

Ordering Information

•	PCL-833	3-axis quadrature encoder and counter card, user's manual and driver CD-ROM (cable not included)
•	ADAM-3925	DB25 wiring terminal for DIN-rail mounting
•	PCL-10125-1	DB25 cable assembly, 1m
•	PCL-10125-3	DB25 cable assembly, 3m



PCI-1243U

4-Axis Low Cost Stepping Motor Control Card



Features

- 4 axis stepping motor control
- PCI universal bus .
- Up to 400 k pulse output rate
- T-curve acc/dec
- Pulse/Dir and CW/CCW pulse output mode
- Up 24-bit step count
- Opto-Isolated Digital input and output .
- Up to 1500 Vrms system isolation

Introduction

PCI-1243U is a 4-axis intelligent stepping motor control card with PCI interface. The card's PCD-4541 motion controller can execute a variety of motion-control commands. For advanced applications, we supply a DLL so that programs can be created for the Microsoft® Windows® environment.

PCI-1243U is a cost-effective solution for PCI based motion control. Each axis can be controlled directly through the card's I/O registers. However, use of the card's high-level DLL driver is recommended. With the DLL driver, you can easily link to VC++®, Visual Basic® or BCB.

Specifications

•	Axes	4, independent
•	Max. Step Count	16,777,215
•	Max. Step Rate	400 kpps
•	Acceleration Mode	T or S-curve acceleration/deceleration
•	Pulse Output Mode	Pulse/direct and CW/CCW
•	I/O for each Axis	ORG, +SD, -SD, +Lmt, -Lmt
•	General I/O	8 ch Opto-isolated digital output and input
•	Input Range	5 V ~ 30 V
•	Isolated Voltage	1500 V _{DC}
•	Max. Sink Current	200 mÅ

4-Axis Stepping Motor Control card

DB62 wiring terminal with DIN-rail mounting

General

- Power Consumption +5 V @ 340 mA; +5 V @ 500 mA (max) • Operating Temperature $0 \sim 60^{\circ} \text{ C} (32 \sim 140^{\circ} \text{ F})$
- Operating Humidity 5~95% non-condensing
- Storage Temperature -20 ~ 80° C

Ordering Information

- PCI-1243
- PCL-10162-1 DB62 Cable Assembly, 1M
- PCL-10162-3 DB62 Cable Assembly, 3M
- ADAM-3962

Pin Assignments

I FXT COM			22		
NC	EMG	1	22	43	Tri_STA
EXT GND	ADIR	2	23	44	AOUT
AORG	ALIM-	3	24	45	ALIM+
ALCOM	ASD-	4	25	46	ASD+
	BDIR	5	20	47	BOUT
BORG	BLIM-	6	27	48	BLIM+
BLCOM	BSD-	7	20	49	BSD+
EXT GND	CDIR	8	20	50	соит
CORG	CLIM-	9	30	51	CLIM+
CLCOM	CSD-	10	32	52	CSD+
EXT GND	DDIR	11	32	53	DOUT
DORG	DLIM-	12	34	54	DLIM+
DLCOM	DSD-	13	35	55	DSD+
IDO2	IDO0	14	36	56	IDO1
IDO5	IDO3	15	37	57	IDO4
IDO COM	IDO6	16	38	58	ID07
NC	EXT_GND	17	30	59	EXT_GND
IDI2	IDI0	18	40	60	IDI1
IDI5	IDI3	19	40	61	IDI4
IDI COM	IDI6	20	42	62	IDI7
	NC	21]

4-Axis Voltage-type Servo Motor Control Card



Features

- PCI Bus interface
- 4-axis servo positioning control
- 5-channel encoder input
- 4 channel 16-bit D/A Converters
- 13 dedicated input and 5 dedicated output
- 6 channel 12-bit A/D converter (Optional)
- · 256 remote serial input/ output interfaces

Introduction

PCI-1241 uses an ASIC for 4-axis servo positioning and synchronized control with a DDA (Digital Differential Analyzer) to evenly move each axis. Closed-Loop control is implemented with P control, and -10 to +10 V signals are used for outputs to the speed type servo motor driver. It can be applied to multi-axis precision servo control, and it can also read back motor encoder values via its encoder input port to allow stepping motor control. In the control of each axis, there is a set of sensor input points, including: home points, plus limit points and minus limit points. Furthermore, there are inhibit signal output points, position ready output points and an emergency stop input point. It can be expanded up to 128 points input and 128 points output. Additionally, the board reserves a set of 6-channel A/D conversion.

Specifications

Hardware

- Size
- System Clock
- Bus Interface

Motion

 Positioning Axes 4 Max. DDA Commands 210-15 pulses DDA Cycle 25 µs ~3350ms Programmable Velocity Command +/- 10V Range Pulse Output Format Pulse/DirectionCW/CC WA/B Phase Error Counter 16 bits (For Output Pulse) 128 IN/128 OUT Maximum Remote IO D/A Converter 4 channels. 16-bit resolution A/D Converter 6 channels, 12-bit resolution with differential inputs (Optional) Encoder Input 5 axes Interface Differential Input with Photo-Isolation Input Format A/B/Z Phase Pulse /DirectionCW/CCW Decoder x0, x1, x2, x4, Software programmable in A/B/Z phase input Encoder Counter 32 bits Latch 15 trigger signals for each axis Local IO Home Sensor Signal 4

185 x 109 mm

40 MHz

PCI

Signal Input

- Negative Over Travel 4 Signal Inputs
- Inhibit Signal Outputs 4
- Emergency Stop Inputs 1
- Position Ready Outputs 1

Software Support

- Device driver for DOS, Windows[®] 95/98/2000/NT/XP
- Motion control library MCCL for DOS, Windows[®] 95/98/2000/NT/XP

Ordering Information

- PCI-1241 4-axis Voltage-type Servo Motor Control Card
 PCL-10168 68-pin SCSI-II cable with male connectors on both ends and special shielding for noise reduction, 1 and 2m
 ADAM-3968 68-pin SCSI-II Wiring Terminal Board for DIN-rail mounting
 ADAM-3941 Wiring terminal for PCI-1241/1242 with LEDs
 PCLD-8241 64 DI / 64 DO Remote IO Board
- 0

Positive Over Travel

Δ

Input

AD\ANTECH

4-Axis Stepping/Pulse-type Servo Motor Control Card



Features

- PC/104 interface
- Independent 4-axis motion control
- Hand wheel and jog function
- 2/3-axis linear interpolation function
- 2-axis circular interpolation function
- Continuous interpolation function
- Programmable T/S-curve acceleration/deceleration rate
- Up to 4 MPPS pulse output for each axis
- Two pulse output types: Up/Down or Pulse/Direction
- Up to 1 MHz encoder input for each axis
- Two encoder pulse input types: A/B phase or Up/Down
- Constant speed control
- · Position management and software limit switch function
- BoardID[™] switch

Introduction

PCM-3240 is a 4-axis stepping/pulse-type servo motor control card designed for general-purpose motion applications. PCM-3240 is a high-speed 4-axis motion control card for the PC/104 bus that simplifies stepping and pulse-type servo motor control, giving you added performance from your motors. The card's intelligent NOVA® MCX314-motion ASIC builds in a variety of motion control functions, such as 2/3-axis linear interpolation, 2- axis circular interpolation, T/S-curve acceleration/deceleration/deceleration rate and more. In addition, the PCM-3240 performs these motion control functions without processor loading during driving. For advanced applications, we supply Windows® DLL drivers and user-friendly examples to decrease your programming load. Moreover, with a free bundled PCM-3240 motion utility, you can easily complete configuration and diagnosis.

Specifications

Motion Axes

Nunber of Axes	4 Axes			
0/2 ovia Lincor	Range	+/- 2,147,483,646 for each axis		
Z/J -dXIS LIIIEdr	Speed	1 PPS ~ 4 MPPS		
Interpolation	Precision	± 0.5 LSB		
2 oxio Circulor	Range	+/- 2,147,483,646 for each axis		
Z-AXIS GITCUIAL	Speed	1 PPS ~ 4 MPPS		
Interpolation	Precision	± 1 LSB		
Continuous Interpolation	Speed	1 PPS ~ 2 MPPS		
	Range	1 PPS ~ 4 MPPS		
	Precision	1 LSB		
	Change of Acceleration	954 31 25 x 10 ⁹ PPS/sec ²		
	for S Curve	954 ~ 51.25 × 10 11 5/360		
	Acceleration/Deceleration	125 ~ 500 x 10 ⁹ PPS/sec ²		
	Initial Velocity	1 PPS ~ 4 MPPS		
Drive Output Pulses	Drive Speed	1 PPS ~ 4 MPPS (Can be changed during driving)		
	Number of Output Pulses	0 ~ 4294967295 (fixed pulse driving)		
	Pulse Output Type	Pulse/Direction (1-pulse, 1-direction type) or Up/Down (2-pulse type)		
	Output Signal Modes	Differential Line driving output/Single-ended output		
	Speed Curve	T/S-curve Acceleration/Deceleration		
	Encoder Pulse Input Type	Quadrature (A/B phase or Up/Down)		
Input Pulse for	Counts per Encoder Cycle	x1, x2, x4 (A/B phase only)		
Encoder Interface	Protection	$2,500 V_{DC}$ isolation		
	Input Range	5 V ~ 30 V		
Position Counter	Range of Command Position Counter (for	-2,147,438,648 ~ +2,147,483,647		
(read/write at any time)	Range of Actual Position Counter (for output pulse)	-2,147,438,648 ~ +2,147,483,647		
0	COMP+ Register Range	-2,147,438,648 ~ +2,147,483.647		
Comparison	COMP- Register Range	-2,147,438,648 ~ +2,147,483.647		
neyister	Can be used for software over traveling limit			

		Position Counter \geq COMP-		
	Interrupt CONDITION	Position Counter < COMP-		
Interrupt Functions		Position Counter ≥ COMP+		
(excluding	(All conditions could be	Position Counter < COMP+		
Interpolation)	enable individually)	Constant speed begin or end during		
		acceleration/deceleration driving pulse		
		finished		
	Input Signal*	nEXOP+ and nEXOP		
	Max. Input Frequency	100 Hz		
External Signals	Driving Mode	Fixed pulse driving or continuous driving		
Driving		Supports Hand wheel/Jog		
	Protection	2,500 V _{DC} Photo coupler isolation; accept		
	TIOLOGIUM	mechanical connection point.		
External	Input Signal*	nINI ~ 3		
Deceleration/	Max. Input Frequency	4 kHz		
Instantaneous Stop	Protection	2,500 V _{DC} Photo coupler isolation and RC		
Signal		filtering		
Input Signal for	Input Signal*	nALArm (servo alarm)		
Servo Motor Drives		nINPOS (position command coompleted)		
General Purpose Output Signal	Output Signal*	nOUT4 ~ 7		
Over Traveling	Input Signal*	nLMT+ and nLMT-		
Uver fraveling	Drotaction	2,500 V _{DC} Photo coupler isolation and RC		
Linin Switch Input	PTOLECTION	filtering; accept mechanical connection point.		
	Input Signal*	EMG- one emergency stop input for PCI-1240		
Emergency Stop	Protection	$2,500 V_{\text{DC}}$ Photo coupler isolation and RC		
	TIOLOGUIUIT	filtering; accept mechanical connection point.		
General				
100		D 1100 50 1 1		

I/O Connector Type	Dual IDC 50-pin male		
Dimensions	96 x 91 mm		
Rower Consumption	Typical	+5 V @ 850 mA	
rower consumption	Max.	+5 V @ 1 A	
External Power Voltage	DC +12 ~ 24 V		
Temperature	Operating	0 ~ 60° C (32 ~ 140° F) (refer to IEC 68-2-1, 2)	
	Storage	-20 ~ 85° C (-4 ~ 185° F)	
Relative Humidity	5 ~95% RH non-condensing (refer to IEC 68-2-3)		
Certifications	CE certified		

Note: *: "n" represents the axis (X, Y, Z or U) that is concerned.

Ordering Information

- PCM-3240 4-axis stepping/pulse-type servo motor control card
- PCL-10150-1.2 50-pin flat cable , 1.2 m
- ADAM-3950 .
- PCL-12250-1
- . ADAM-3952-J2S
- ADAM-39100

.

- 50-pin flat cable wiring terminal for DIN-rail mounting
- Two 50-pin flat cable to 100-pin SCSI connector, 1 m
- 4-axis wiring terminal for Mitsubishi® J2S series driver
- SCSI-100 wiring terminal for DIN-rail mounting



YOUT7/ YP+P

YP+N YP-P

YP-N

47 48

49 50

CON50



9-25

ATM & AWS

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Motion Control

cPCI

ADAM-3900 Series

Wiring Terminals for DIN-Rail Mounting



ADAM-3952

PCI-1240 50-Pin SCSI-II Wiring Terminal for DIN-rail Mounting



ADAM-3952/J2S

PCI-1240 Wiring terminal for Mitsubishi® MR-J2S

Features

- DIN-rail mounting wiring terminal for PCI-1240 applications
- Case dimensions (W x L x H): 77.5 x 179.5 x 41.5mm (3.1" x 7.1" x 1.6")
- SCSI 50-pin connector
- To be used with PCI-1240U

Features

- DIN-rail mounting wiring terminal for PCI-1240 connecting with Mitsubishi[®] MR-J2S servo motor driver
- Case dimensions (W x L x H): 121 x 202 x 45mm (4.76" x 7.95" x 1.77")
- One SCSI-100-pin connector to connect with PCI-1240/PCI-1240UU
- Eight SCSI 20-pin connector to connect with Mitsubishi motor driver
- Optional cable PCL-101100M-1 and PCL-10120M-2 To be used with PCI-1240U/PCM-3240



ADAM-3968M-PMA

PCI-1247 Wiring terminal for Panasonic® Minas A Series

Features

- General purpose wiring terminal for PCI-1247 applications with DIN-rail mounting
- Case dimensions (W x L x H): 72 x 124 x 53 mm (2.83" x 4.88" x 2.09")
- One SCSI-68-pin connector to connect with PCI-1247
- Optional cable PCL-10168M-2

Features

- PCI-1247 wiring terminal for Panasonic[®] Minas A series driver with DIN-rail mounting
- Case dimensions (W x L x H): 72 x 124 x 53 mm (2.83" x 4.88" x 2.09")
- One SCSI-68-pin connector to connect with PCI-1247
- Two SCSI 50-pin connector to connect with Panasonic motor driver
- Optional cable PCL-10168M-2 and PCL-10150M-2

NEW

ADAM-3968M-J2S

PCI-1247 wiring terminal for Mitsubishi MR-J2S series driver

NEW



ADAM-3968M-YS2

PCI-1247 wiring terminal for Yaskawa Sigma-II series driver

Features

AD\ANTECH

- PCI-1247 wiring terminal for ${\rm Mitsubish}_{\odot}$ MR-J2S series driver with DIN-rail mounting
- Case dimensions (W x L x H): 72 x 124 x 53 mm (2.83" x 4.88" x 2.09")

Motion Control

- One SCSI-68-pin connector to connect with PCI-1247
- Four SCSI 20-pin connector to connect with Mitsubishi motor driver
- Optional cable PCL-10168M-2 and PCL-10120M-2

Features

- PCI-1247 wiring terminal for Yaskawa[®] Sigma-II series driver with DIN-rail mounting
- Case dimensions (W x L x H): 72 x 124 x 53 mm (2.83" x 4.88" x 2.09")
- One SCSI-68-pin connector to connect with PCI-1247
- Two SCSI 50-pin connector to connect with Yaskawa motor driver
- Optional cable PCL-10168M-2 and PCL-10150M-2



ADAM-3968M

PCI-1247 Wiring terminal