



Solutions for industrial Measurement & Automation Short form 6.3



www.addi-data.com



Welcome to ADDI-DATA!



Inspired by users

When developing new products, our customers are important partners who give us practical ideas and suggestions. You benefit from this close cooperation because the products you find in our range feature functionalities which meet users' requirements.

Discover our new products on page 8 and especially our new ethernet-ready I/O modules on page 11.

RoHS/WEEE is an important topic at the moment. We are redesigning most of our products to RoHS-compliant.

Read more about it at www.addi-data.com.

Have a good time reading our short form catalogue!

Achim Stösser

Head of the development department

Your satisfaction is our goal!

Over 20 years of experience

Take advantage of the experience we have gained since 1984 in the areas of PC measurement and automation. This enables us to offer you efficient and reliable solutions for use in tough industrial environments.

Marketability and proximity to customers

Your market is constantly changing. This means that it is even more important that your needs and requirements are recognised and implemented. Our close customer relations help us to do this. In this way, the feedback we receive is from direct personal experience and you can benefit from this. We are continually expanding our range of products with which you can best solve new tasks.

A diversified range of solutions

Solve your tasks using numerous and diverse Addi-Data measurement boards for the PCI, PC/104PLUS and the CompactPCI bus as well as Ethernet-ready solutions. The range covers digital and analog I/O, multifunction boards and communication boards through to multifunction counters and motion control boards. An open and scalable PCI embedded system with RTAI Linux is the latest addition to the program. It is based exclusively on hardware and software standards and is web-compatible.

Matching accessories

The range of accessories offered by ADDI-DATA is matched to each board. This means that you immediately have a complete package available which will guarantee smooth and reliable interaction of components.

A diverse range of software

You also receive all the support you need in the software area. Device drivers for the current operating systems and programming examples are delivered free of charge on CD-ROM. Visit our website at www.addi-data.com. You can always find the latest drivers to download there.

Customer tailored solutions

You do not deal with standard products? You require a product adaptation or even a special development which is tailored precisely to your needs?

Contact us. We will work with you to find the best solution.

Long-term availability

Our product range is continually expanding. However, you can be sure that it will still be possible to deliver and maintain most of the products that you use for years to come.

This ensures that your investment is secure in the long term.

Your partner for interference-free measurement



The company ADDI-DATA, located in the German Federal State Baden-Württemberg, develops and sells Embedded solutions and PC measurement boards for industrial measurement and automation.

Product range:

- Embedded systems
- Ethernet I/O modules
- PC measurement boards:
digital I/O, 24 V, multifunction counter boards, analog and multifunction boards, boards for the acquisition of transducers, strain gauges and Pt100 / thermocouples, noise and vibration measurement, 1 - to 8-port communication boards, motion control boards.
- All products are delivered with free drivers, adequate accessories (cables, screw terminal panels) are available.

Test our products for free!

You want to make really sure that the product you have chosen meets the requirements of your application? Then try it! We can provide you with most of our products free of charge and without any obligation on a trial basis.

Product warranty

All our products come with a 2-year warranty.

Quality management

A DQS (German Association for the Certification of Quality Systems) certification in accordance with DIN EN ISO 9001:2000 signifies a quality seal. It is our company philosophy to continually make improvements in order to serve you better.

Training and workshops

The more professionally you and your users use our products, the greater is your value. We therefore offer you individual training sessions and workshops.

Our service line: We are here for you!

Your application must run interference-free. We supply you with more than just the product - we are there for you if you require our technical support or advice. You can contact our team of experts by phone, e-mail or fax. We deal with your needs. Quickly and competently.

New: our online service line

"Where are you now?", "What can you see now?" These questions are redundant with our new service line software. We can see what you see and do on the screen live via the internet. This enables us to optimise your system together easily and quickly. You can save time and therefore money.

**ONLINE
SERVICE LINE**

FAQ on the web

At www.addi-data.com we have created a FAQ menu for you. In addition to the full text search, you now have the possibility to search for selectable keywords or product designations. Questions about RoHS are stored in a special list, the RoHS-FAQ.

Should you not find the information you want in the FAQ lists, then enter your question in the form available on the page. We will answer quickly and competently and add your question in the FAQ list.

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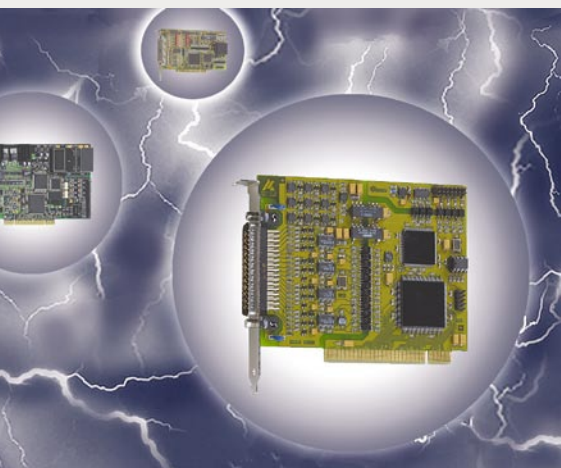
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www.addi-data.com



Why are interference-free products so important?

Motors, valves and caps are components which really put the interference-free characteristics of PCs and components to the test.

High-frequency interference spectra occur when switching inductive and capacitive loads due to steep edges in current and voltage fluctuations. Furthermore, shocks, vibrations or extreme temperatures in the environment make PC based solutions, for example, difficult.

The solution: all-round protected PC boards

In order to guarantee interference-free PC boards, ADDI-DATA implements effective protective measures which have been tried and tested over the last 20 years.

Isolation

Rapid transients, overvoltages and mass looping are frequent causes of imprecise measurements or even failure of measuring devices. In order to achieve efficient electrical isolation up to 1000 V, ADDI-DATA matches various components to one another. Optoelectronic couplers, DC/DC converters and connectors are carefully selected and the layout of the boards given a creepage distance of 3.2 mm (in accordance with the IEC 61010-1 standard).

Isolation of analog and digital signals

In order to produce precise measurements for you in harsh environments, the layout of our analog boards is neat and the switching part for analog acquisition or analog output is consequently isolated from the switching part using a digital function (PC interface, digital I/O). This isolation limits the influence of high-frequency logic signals or intensive switching to a minimum. It can also be used for connectors and thus provides the entire application with a good basis on which to design fully isolated cable routing for sensitive analog measurement signals and digital input and output signals.

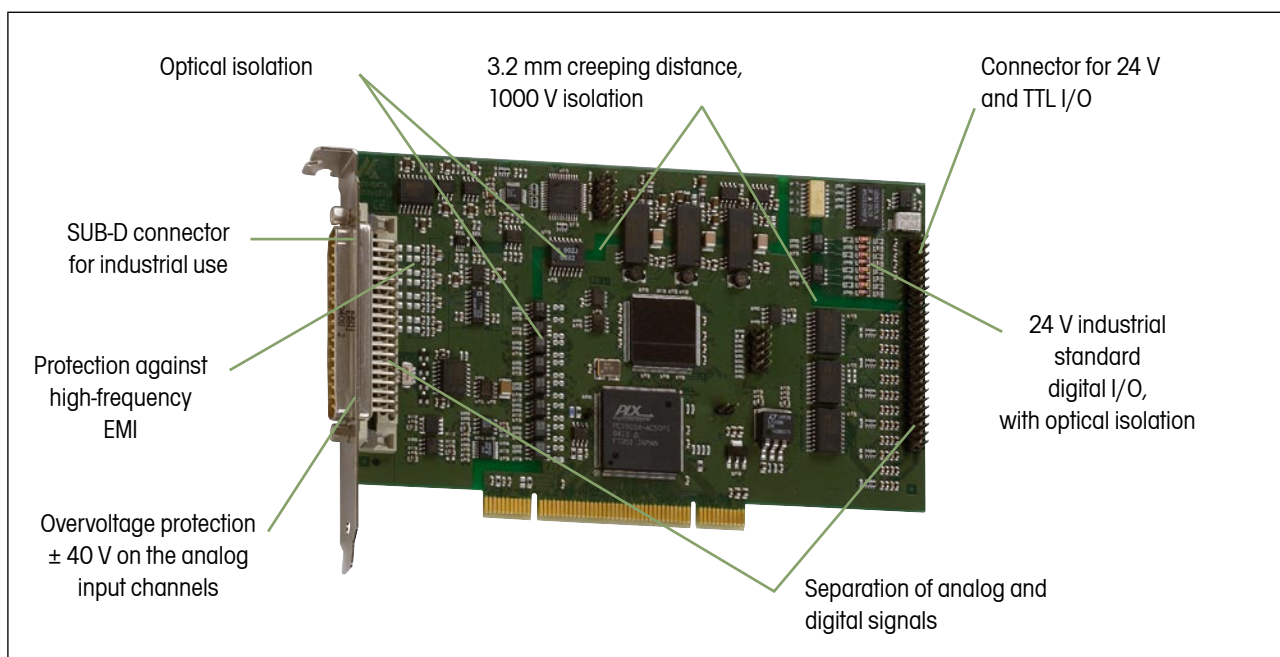
Protective circuits

In addition to optical isolation, the PC boards made by ADDI-DATA are protected against short-circuits, high temperatures and overvoltages. The inputs and outputs are equipped with filters.

EMC tests: What do we measure?

EMC tests are used to measure the level of interference emitted by the device under test and the interference-free properties of the device under test compared with electromagnetic influences. This test for interference should ensure that a device still functions correctly under defined interference influences.

When the development phase is complete, the PC boards are subjected to an EMC test in an external accredited laboratory.

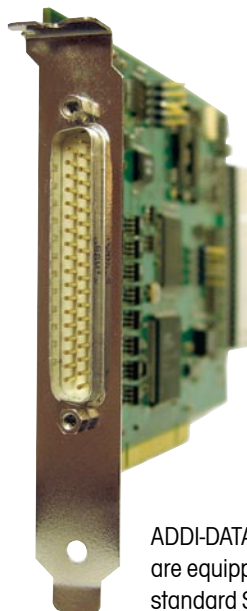


Digital I/O, 24 V instead of TTL

24 V signals provide a significantly greater signal-to-background ratio than normal TTL sensors when used in severe industrial environments. Furthermore, it is possible to create larger distances between the signal transmitter and measurement data acquisition. Our 24 V inputs and outputs correspond to the industry standard and may also be suitable for customer-specific requirements using various additional properties (protection against overvoltage or short-circuits, filter).

Standard SUB-D connectors for industrial applications

Our PC boards and accessories are fitted with robust industry standard SUB-D connectors. They enable twisted pair round cables with different cross-sections and special shielding to be used. They are most suitable for analog acquisition or for digital 24 V switching technology. With many high-density connectors (e.g. SCSI) it is not possible to implement separate cabling or to use standard cables with different shielding designs without a special tool.



ADDI-DATA boards are equipped with standard SUB-D connectors for industrial use



Green light for RoHS

What is RoHS?

(Restriction of certain Hazardous Substances)

On the 27th January 2003 the European Parliament and Council issued a directive (2002/95/EG) for the restriction of the use of certain hazardous substances in electric and electronic appliances.

What does it mean for you?

ADDI-DATA has to redesign its products to RoHS-compliant. However, for several products a redesign will not be possible because important components will not be made RoHS-compliant by their manufacturers. The discontinued products are listed together with substitute products on the web at www.addi-data.com, RoHS/WEEE. This table helps you finding quickly the adequate solution for your application.

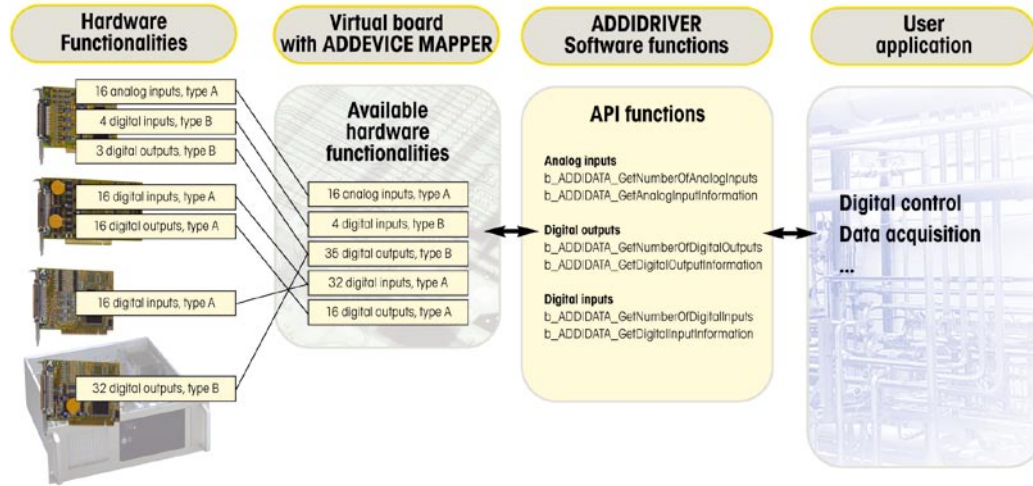
Call us for support!

We are at your disposal for all your questions about RoHS. Because we are a manufacturer, our competent team can give you the technical support you need for changing to a follow-up product.

More information about RoHS at www.addi-data.com, RoHS/WEEE

ADDIPACK: user-friendly driver concept facilitates application design

If you install one or more measurement boards in your PC, you must also manage them individually. The reason for this is that every board is supplied with its own API (a collection of functions). If you exchange a board, you must fully reinstall and reconfigure the new one and sometimes even adapt your application. **You can now save yourself all this time and effort!**



The solution

ADDIPACK is a software package based on the principle of a virtual board: The functionalities of all ADDI-DATA boards installed in the PC are grouped together in one pool (ADDEVICE MAPPER). This pool embodies the functionalities of an individual virtual board. Now, instead of selecting which PC board to use it is a question of what functionality you require.

The ADDIPACK concept

The ADDIPACK software has two main constituents:

- **ADDIDRIVER (ADDIDATA.DLL):** The library contains all API functions used to control ADDI-DATA boards.
- **ADDEVICE MAPPER:** This program can be used to manage the functionalities on the virtual board. The program supports you by providing you with a clear visual representation of this virtual board. These two main constituents form the interface between our boards and your application.

Functionalities supported

The following functionalities are supported:

- Digital inputs and outputs
- Analog inputs and outputs
- Measurement via sensors of temperature, pressure, resistance and inductive transducers
- Interrupt
- Timer
- Watchdog
- Counter ...

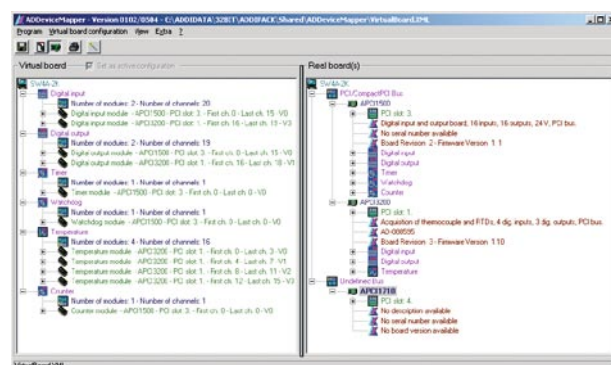
Dynamic management

The newly developed ADDEVICE MAPPER provides the user with access to dynamic management of the ADDI-DATA virtual board. Using this program the user can

control the number and types of functionalities in the application and change the virtual module and channel indices. New boards can be easily added or exchanged. The modifications to the functionalities that are caused by this process are immediately visible.

A secure investment for the future

ADDIPACK will have new functions with the development of new boards. The drivers have been written so that they can also be used for the products of future bus types such as PCI-Express and Ethernet modules.



Example: Function „Read Digital Input“

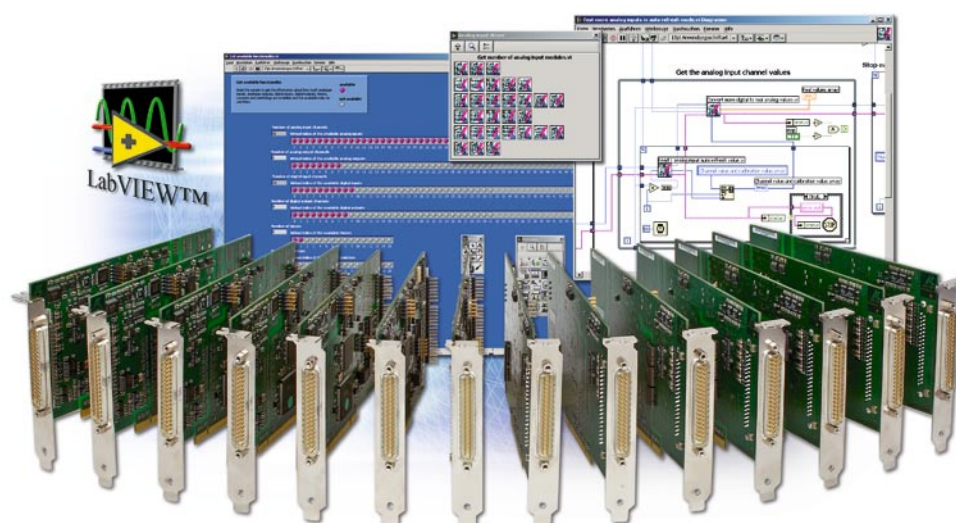
In this example of the function „Read Digital Input“; you can see the difference between the API function and the ADDIPACK function.

Before ADDIPACK:

board-specific function
i_PA1000_Read1DigitalInput (...)
Syntax:
<Return Wert> = i_PA1000_Read1DigitalInput
(BYTE b_BoardHandle,
BYTE b_Channel,
PBYTE pb_ChannelValue)

New with ADDIPACK:

The function for digital boards
b_ADDIDATA_Read1DigitalInput (...)
Syntax:
<Return value> = b_ADDIDATA_Read1DigitalInput
(DWORD dw_DriverHandle,
WORD w_Channel,
PBYTE pb_ChannelStatus)



Full software support

API and Samples

ADDI-DATA boards are supplied with an API (Application Programming Interface). This device driver allows the user to access the functions of the board quickly and easily.

Programming examples are supplied with the driver in order to facilitate your understanding of the API functions. ADDI-DATA boards are supplied with drivers for the following operating systems, programs and compilers:

Operating systems:

- Windows™ XP/2000/NT
- Linux • RTAI Linux
- RTX • VxWorks

Programs:

- LabVIEW™
- LabWindows/CVI™
- DASyLab® • DIAdem®

Compilers:

- C (Microsoft/Borland)
- Visual Basic • Delphi
- Other compilers on request

Customer tailored drivers

You have not found the drivers you need in the above-mentioned list?

You need customer tailored drivers for your application?

Our specialists are at your disposal. Contact us!

Source codes

Source codes enable you to adapt your driver to your specific requirements. Some boards have source code for Linux, further are available on request. Contact us!

New generation of LabVIEW™ driver

NEW

A new generation of LabVIEW™ drivers has been developed for almost all ADDI-DATA boards. The drivers have been totally redesigned to allow a fast and easy parametering of PCI-boards with LabVIEW™. Now it is much more simple for you to develop your application.

Fast realisation of your signal circuit diagrams

The LabVIEW™ software is based on the symbolic display with Virtual Instruments (VIs), which have been assigned programming guidelines. These guidelines make it easy for you to realise signal circuit diagrams. Our new drivers generation uses these guidelines.

Examples of programming guidelines:

- Array of inputs and outputs
- Clear field designation
- Clear structure, ...

The detailed context help gives you precise explanations about the different VIs.

Drivers for all LabVIEW™ versions

The LabVIEW™ version 7 features new objects in addition to VIs. Drivers

which have been developed from this version on cannot be used with earlier LabVIEW™ versions, because they are not downwards compatible.

However, we wanted you to enjoy the advantages of the new drivers even if you work with an earlier LabVIEW™ version. This is why we have developed the new drivers with the LabVIEW™ version 6i which guaranties downwards compatibility.

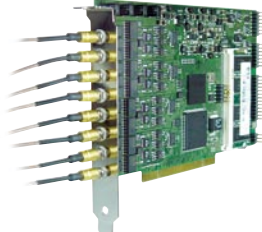
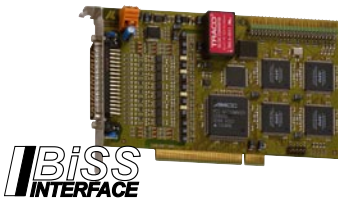
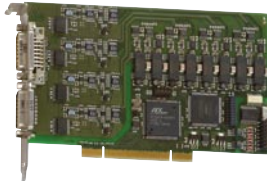
Practical simulation

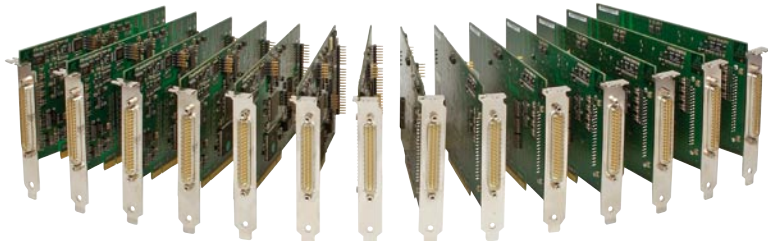
The supplied samples help you set and simulate the inputs and outputs of your process. You can develop faster and easier even complex measuring and regulating tasks.

Meaningful error messages instead of codes

In case of error, a meaningful error message makes more sense than meaningless codes. This is why the error messages have been redefined in the front panel where the switching states and measuring values are displayed. You can see immediatly which kind of error has occurred.

See our current driver list on the web at www.addi-data.com, under "Download"

	Function	Page
	MX370x: Ethernet I/O modules for length measurement With the new Ethernet-ready modules MX3701 and MX3700 you can connect your transducers (half-bridge or LVDT) directly and acquire your data fast and precisely on-site. Several modules can be cascaded and synchronised for simultaneous data acquisition. The integrated processor allows data processing (minimum, maximum and average value). Ethernet I/O modules for analog input and output, counter and digital I/O are in preparation.	Page 11
	APCI-1564-3,3V- Digital I/O board, now available for 3.3 V systems The successful digital I/O board with 32 inputs and outputs is now available for 3.3 V systems. It is optically isolated up to 1000 V, 16 of 32 inputs are interruptible and 3 inputs can be used as 32-bit counter. Inputs and outputs have several protection circuits for a reliable use in rough environment.	Page 17
	PC104-PLUS1500 - 32 digital I/O board for PC104+ The new 32-bit digital I/O board is the first of the PC/ 104-Plus series. The board can be installed in highly compact Embedded systems and so allows the control of digital I/Os in very confined space. The PC104-PLUS1500, which has 32 I/Os can be used for standard equipment in large-scale production.	Page 33
	APCI-3600 - Noise and vibration measurement with extras Acoustic processes in test applications are not limited to simple noise and vibration measurements. The new noise and vibration measurement board APCI-3600 by Addi-Data offers a PC-based solution to almost all additional measuring tasks which may arise thanks to its many functionalities.	Page 28
	APCI-1710 / CPCI-1710 - BiSS-Master function (Version: xPCI-1710-10k20) Addi-Data presents the new function "BiSS-Master" for the multifunction counter boards APCI-1710 (PCI-bus) and CPCI-1710 (CompactPCI-bus). It is a digital bi-directional sensor interface, which allows the synchronously quick and safe reading of the sensor data as well as the bi-directional access to the sensor register.	Page 20 / 33
	APCI-3002 - Analog input board, 16/8/4 diff. inputs, optically isolated The new analog PCI input board APCI-3002 offers two main advantages: the initialization of a high performance trigger logic allows the acquisition of time and path-measuring analog signals with several modi. Moreover the differential inputs guarantee a precise acquisition of these signals even if sensors and processing electronic are separated by a long distance.	Page 23
	APCI-3003 - Analog input board for simultaneous acquisition The fast 16-bit analog input board APCI-3003 allows high data transfer rates of up to 400 KHz for each channel. It provides 4 differential inputs. Each channel has its own A/D converter. All 4 channels optically isolated up to 500 V from each other. PC and peripheral are also optically isolated up to 500 V.	Page 23

Function	Page
New range of analog and multifunction boards for 3.3 V and 5 V PCI systems  Addi-Data offers a wide range of 21 analog and multifunction boards for 3.3 V and 5 V PCI systems, which can be used in PCI as well as in PCI-X systems. Outstanding features of the boards are reliability, flexibility and an attractive price. They offer 4 to 16 analog inputs and 12 to 16-bit resolution. Additionally, the boards are compatible with each other. The accessories of the former analog generation can be used.	Page 22-26
APCI-3010 - Analog input board, optically isolated, 16 SE/8 diff. inputs, 12-bit with extensive software and hardware functionalities: PCI-DMA, Auto Refresh, high throughput 200 kHz, ...	Page 22
APCI-3016 - Analog input board, optically isolated, 16 SE/8 diff. inputs, 16-bit with extensive software and hardware functionalities: PCI-DMA, Auto Refresh, high throughput 200 kHz, ...	Page 22
APCI-3000 - Analog input board, 16 SE/8 diff. inputs, 12-bit	Page 23
APCI-3006 - Analog input board, 16 SE/8 diff. inputs, 16-bit	Page 23
APCI-3110 - Multifunction board, optically isolated, 16 SE/8 diff. inputs, 4 analog outputs, 12-bit with extensive software and hardware functionalities: PCI-DMA, Auto Refresh, high throughput 200 kHz, ...	Page 24
APCI-3116 - Multifunction board, optically isolated, 16 SE/8 diff. inputs, 4 analog outputs, 16-bit with extensive software and hardware functionalities: PCI-DMA, Auto Refresh, high throughput 200 kHz, ...	Page 24
APCI-3100 - Multifunction board, 16 SE/8 diff. inputs, 4 analog outputs, 12-bit	Page 24
APCI-3106 - Multifunction board, 16 SE/8 diff. inputs, 4 analog outputs, 16-bit	Page 25
APCI-3500 - Analog output board, 4 analog outputs, 12-bit	Page 26
 PX_BNC The connection box PX_BNC allows the direct connection of analog voltage and current signals through BNC connectors. Many Addi-Data analog boards can be connected. With the PX-BNC, you can connect up to 8 differential or 16 single-ended analog inputs as well as 8 analog output channels through BNC connectors. The box is supplied with two clamps for DIN rail mounting.	Page 34



The PC alternative system for networked control, regulation and acquisition of measurement data

Are you looking for a future-proof system for measuring, controlling and regulating which replaces the PC?

Full machine time for your application,
Open Source for ultimate programming freedom.

We have designed this system for you: the **MSX-Box**.

- Compact system for decentral MSR applications
- 64-bit MIPS processor
- PCI backplane, without hard disk
- Flexible I/O configuration through PCI measurement boards
- Open and scalable

- Real time, full machine time only for your application
- Webserver functions and FTP server
- Communication via Ethernet (TCP/IP)
- Web-services (SOAP interface)
- Fieldbus interfaces (CAN, Interbus Master, Profibus Slave, RS232/RS485)
- Investment-safe, long-term availability

MSX-Box-500 / MSX-Box-800



MSX-Box-500

MSX-Box-800

MSX-Box-500 - PCI Controller board

RISC processor:	64 bit MIPS, no fan
Clock:	200 MHz (optional 333 MHz)
Memory:	16 MB flash, 128 MB SDRAM, option up to 256 MB
Installed OS:	Embedded RTAI Linux
Standard interfaces:	
SUB-D 9-pin:	1 x RS232
SUB-D 25-pin:	Reset input 24 V; „H“ active 1 x relay output, free prog., closing contact
Optional:	
SUB-D 25-pin:	1-8 CAN, master/slave, isolated 1 x RS232/RS485, isolated
Additional bracket:	1 x Profibus/slave, isolated 2 x Interbus/Master, isolated 4 x dig. input, 24 V/10 mA, isolated 3 x dig. output, 24 V/200 mA, isolated
Dimensions:	PCI half size board

MSX-Box-800 - PCI Controller board

Same as MSX-Box-500, but with 8 PCI slots on the ATX backplane, incl. 6 free slots for PCI I/O boards

Ethernet PCI board (RJ45)

Data transfer rate: 10/100 MBits

Mains supply unit (MSX-Box 500)

Input voltage: 100 V - 240 V, AC, 47-63 Hz
(other voltage on request)
Output voltage: 5 VDC - 35 W (max 6 A)
Protection against: short circuit, overload, overvoltage
Connection: 2 m power cable

Extensive software support

Free development tools (GNU Compiler, Cygwin, samples in source code), Knoppix CD development environment

ATX backplane with 5 PCI slots (MSX-Box-500)

PCI slots:	total amount: 5
reserved:	1 x PCI controller board 1 x PCI ethernet board
free slots:	for 3 additional PCI half size boards
Conformity:	PCI specification PICMG rev. 2.1.
Housing dimensions:	(L x H x W) 278 x 170 x 165 mm
Weight (approx.):	2 kg (standard MSX box system)

ATX backplane with 8 PCI slots (MSX-Box-800)

PCI slots:	total amount: 8
reserved:	1 x PCI controller board 1 x PCI ethernet board
free slots:	for 6 further PCI half size boards
Conformity:	PCI specification PICMG rev. 2.1.
Housing dimensions:	(L x H x W) 292 x 170 x 292 mm
Weight (approx.):	3 kg (Standard MSX-Box system)

Housing

Material: chromated aluminium, colour RAL 5010 blue „Enzianblau“
Heat dissipation: through programmable fan
Temperature range: 0 - 50 °C
Temperature monitoring: configuration at delivery: 5 °C to 45 °C

min. and max. value programmable through software
The temperature value can be monitored. Resolution: 0.5 °C

for 5 PCI boards and 1 bracket (MSX-Box-500) for 8 PCI boards and 3 brackets (MSX-Box-800)

Front openings: 5 LEDs, incl. 2 freely programmable

Status display:

Options
MSX-256MB: Memory extension: optional up to 256 MB
MSX-485-232: 1-port serial interface RS485 or RS232 with optical isolation
MSX-Basis: Basic equipment for options MSX-CAN, MSX-Profibus, MSX-IBS and MSX-DIO-IO

Options and accessories



MSX-ComboCard

Optional accessories

Network card with additional functions:

MSX-ComboCard

- 1 x RJ-45 LAN, 10/100/1000 Mbps connection
- 3 x USB 2.0, 2 external and 1 internal
- 3 x FireWire IEEE 1394a, 1 external (4-pin), 1 external (6-pin) und 1 internal (6-pin), transfer rate up to 400 MBps
- Operating voltage 3.3 V and 5 V
- Ordering designation: MSX-Combo

Board fixation: Board holding-down clamp

Mounting possibilities:

- DIN rail
- Removable mounting bracket
- Carrying handle

Cable: Ethernet patch cable 2 m, shielded, RJ45 connector (PC <-> MSX-Box)

Colours: other housing colour (according to RAL scale) and inscriptions (on request).

Ordering information

MSX-Box 500 with 3 free slots for PCI boards

MSX-Box 800 with 6 free slots for PCI boards

MSX-CAN-X: 1-8 x CAN bus, master/slave, isolated

MSX-Profibus: 1 x Profibus, slave

MSX-IBS-1/-2: 1 / - 2 x Interbus-S, master

MSX-DIO-IO: 4 digital inputs and 3 digital outputs, 24 V. All basic extensions are optically isolated and incl. ribbon cable, 9-pin SUB-D male connector on separate bracket

Complete information about drivers and accessories see www.addi-data.com

NEW

Ethernet I/O modules for length measurement

With the new Ethernet I/O modules MSX-E3701 and MSX-E3700, you can connect your transducers (half-bridge or LVDT) directly and acquire your data fast and precisely on-site.

- Precise, simultaneous data acquisition on-site
- Direct connection of commercially available transducers
- Dynamic measurement (encoder-trigger)
- Saves space and reduces heat emission
- Fit for industrial use thanks to normed degrees of protection (IP 65 or IP 40)

ARM[®]9
Technology



MSX-E3701 / MSX-E3700

Your advantage: simultaneous acquisition and trigger through encoder.

You can synchronise the modules and cascade the external trigger signal (hardware trigger) from one module to the next. The combination of synchronisation and cascading of the trigger signal allows you to acquire data from several modules simultaneously and to trigger the transducer acquisition through an encoder.

Spare time with free software package

With the extensive software package, you save time when connecting the modules and then again when commissioning them into operation: Direct access from the PC for all operating systems supporting SOAP and Socket, drivers for Windows XP and 2000, samples, calibration and update tool for selecting the transducers and testing the channels.

- Connection of all commercially available transducers (half-bridge or LVDT)
- 16, 8, or 4 channels depending on the version, cascable
- 24-bit resolution
- Dynamic measurement via 24 V digital trigger input
- Synchronisation of several modules
- Onboard RAM for storing measurement data
- Onboard ARM9 32-bit processor for data processing
- 2-port integrated Ethernet switch
- The modules can be cascaded
- The 24 V supply can be cascaded
- Possibility of diagnostics at short-circuit or line-break of the transducers
- The modules comply with the degrees of protection IP 65 or IP 40

- Robust, normed metal housing
- Power Save Mode: reduced power consumption when no acquisition runs
- LED status display for fast error diagnostics

Acquisition modes:

- Auto refresh: Automatic update of the acquired data in the background
- Sequence mode: Data acquisition in „packages“

Transducer precision

Example for the precision of a measurement with transducer: Type TESA GT21, range $\pm 2 \text{ mm}$ ($\Delta 4 \text{ mm}$), 16-bit accuracy

$$\frac{4 \text{ mm}}{2^{16}} = \pm 61 \text{ nm} = 0.061 \mu\text{m}$$

Versions	Number of transducers	Transducer type	Degrees of protection	Connections
MSX-E3701-HB-16	16	Half Bridge	MSX-E3701: Degree of protection IP 65 Protection against a water jet directed at the enclosure from any direction. Protection against the penetration of dust. Total protection against contact (dust-proof). 	Ethernet: 2x 4-pin flange type socket, D-coded M12 for Port 0 and 1Port1 Trigger/synchro input: 1 x 5-pin flange connector M12 Trigger/synchro output: 1 x 5-pin flange type socket M12 24 VDC input: 1 x 5-pin flange connector M12 24 VDC output: 1 x 5-pin flange type socket M12
MSX-E3701-HB-8	8			
MSX-E3701-HB-4	4			
MSX-E3701-LVDT-16	16	LVDT		
MSX-E3701-LVDT-8	8			
MSX-E3701-LVDT-4	4			
MSX-E3700-HB-16	16	Half Bridge	MSX-E3700: Degree of protection IP 40 Protection against the penetration of foreign bodies with a diameter more than 1 mm. 	Ethernet: RJ45 for Port 0 and 1 24 VDC: 1 x 3-pin binder, 5.08 mm grid External trigger: 1 x 3-pin binder, 3.81 mm grid Synchro signal: 1 x 3-pin binder, 3.81 mm grid
MSX-E3700-HB-8	8			
MSX-E3700-HB-4	4			
MSX-E3700-LVDT-16	16	LVDT		
MSX-E3700-LVDT-8	8			
MSX-E3700-LVDT-4	4			

Ordering information

MX3701 / MX3700

Ethernet I/O modules for the acquisition of 4 to 16 inductive displacement transducers. Including standard binder SMX-10 and cable CMX-10, technical description and software drivers.

MX3701 (Degree of protection IP 65)

- MX3701-16-HB:** for 16 HB displacement transducers, IP 65
- MX3701-16-LVDT:** for 16 LVDT displacement transducers, IP 65
- MX3701-8-HB:** for 8 HB displacement transducers, IP 65
- MX3701-8-LVDT:** for 8 LVDT displacement transducers, IP 65
- MX3701-4-HB:** for 4 HB displacement transducers, IP 65
- MX3701-4-LVDT:** for 4 LVDT displacement transducers, IP 65

Connection cables for Ethernet, trigger/synchro, power supply see www.addi-data.com
Optional mounting kit see www.addi-data.com

MX3700 (Degree of protection IP 40)

- MX3700-16-HB:** for 16 HB displacement transducers, IP 40
- MX3700-16-LVDT:** for 16 LVDT displacement transducers, IP 40
- MX3700-8-HB:** for 8 HB displacement transducers, IP 40
- MX3700-8-LVDT:** for 8 LVDT displacement transducers, IP 40
- MX3700-4-HB:** for 4 HB displacement transducers, IP 40
- MX3700-4-LVDT:** for 4 LVDT displacement transducers, IP 40

Connection cables for Ethernet, trigger/synchro, power supply see www.addi-data.com
Optional mounting kit see www.addi-data.com

Complete information about drivers and accessories see www.addi-data.com

Digital I/O boards, relay boards



	Digital input, 24 V		Digital I/O, 24 V				Digital output, 24 V		Digital I/O, TTL	Relay board
	APCI-1016	APCI-1032 APCI-1032-5	APCI-1564 APCI-1564-5	APCI-1564-3,3	APCI-1500 CPCI-1500	APCI-1516	APCI-2016	APCI-2032 APCI-2032-5	APCI-1648 APCI-1696	APCI-2200
PCI bus 32-bit	5 V	5 V	5 V	3.3 V	PCI 5 V / CPCI	5 V	5 V	5 V	3.3 V / 5 V	5 V
Filters and protection circuitry	✓	✓	✓		✓	✓	✓	✓	✓	✓
Input channels	16	32	32		16	8				
Optical isolation 1000 V	✓	✓	✓		✓	✓				
Interruptible input channels		16	16		14					
Nominal voltage(V) DC (V)	24 (19-30)	24 (19-26) 5 V	24 (19-30) 5 V		24 (19-30)	24 (19-30)				
Input current at 24 VDC	6 mA	5 mA	5 mA		6 mA	6 mA				
Output channels (high side drivers 24 V)			32		16	8	16	32	48/96 TTL	
Relays										8/16 relays
Optical isolation 1000 V			✓		✓	✓	✓	✓		✓
Nominal voltage(V)			24 DC (10-36)		24 DC (10-36)	24 DC (10-36)	24 DC (10-36)	24 DC (10-36)	TTL	60 DC 48 AC
Output current (A) for one channel			0.5 ⁽¹⁾		0.5 ⁽¹⁾	0.5 ⁽¹⁾	0.5 ⁽²⁾	0.5 ⁽²⁾	12 LS TTL loads	1
Functions										
Watchdog (depth)			✓ 8-bit		✓ 16-bit	✓ 8-bit	✓ 8-bit	✓ 8-bit		✓ 8-bit
Timer / counter (depth)			1/3 32-bit		3/- 16-bit					
Page	16	16	17		APCI-1500: 17 CPCI-1500: 31	16	18	18	18	19
Software	Drivers for Windows XP/2000/NT/98, Linux; LabVIEW™, LabWindows CVI™ + Samples. Current driver list on the web : www.addi-data.com									

(1) Limited to 3 A for all input channels, self-resetting fuse against short circuits
(2) Limited to 2 x 3 A, for all output channels, self-resetting fuse against short circuits

Counter

	Multifunction counter boards
	APCI-1710 / CPCI-1710
Bus 32-bit	PCI 5 V / CompactPCI 5 V
Filters/Protection circuitry	✓
Isolation 1000 V	✓
Number of function modules	4 function modules with numerous functions, quickly and easily programmable: Each of the 4 function modules is programmed with one function. You can program 4 times the same function or freely combine 4 different functions.
Available functions for each module:	1 x 32-bit incremental encoder acquisition 2 x 16-bit incremental encoder acquisition 3 x acquisition of absolute value encoder/SSI 3 x counter/timer 1 x chronos/TOR for frequency measurement 4 x pulse width measurement 1 x chronos for pulse width measurement 1 x chronos for period duration measurement 2 x TOR for velocity measurement 8 x digital I/O, 24 V, TTL, RS422 2 x PWM (Pulse Width Modulation) 24x TTL I/O only possible on one module 1 x SSI-Monitor 1 x BiSS-Master 2 x ETM (Edge Time Measurement) Other functions on request
Page	APCI-1710 page 20 CPCI-1710 page 32

NEW

Watchdog

	Watchdog
	APCI-035
Bus 32-bit	5 V/3.3 V
Isolation 500 V	✓
Watchdog/timer	4
Diagnostic	- Status of the 4 watchdogs readable - Watchdog 1 can switch 2 relays 1 digital input as watchdog trigger - timer gate
Time base	µs, ms, s, min
Relays	2 with change-over contacts
Digital input, 24 V	1 trigger channel / gate input
Alarm levels	2
Real range of application	0-60 °C
Applications	- Supervision of PC-controlled processes - Time measurement - Temperature monitoring - Timer-controlled software applications
Page	20

Motion Control

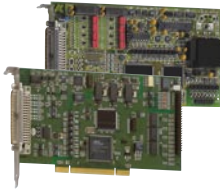
	Motion Control
	APCI-8001
Bus 32/64-bit	PCI 3.3 V or 5 V/CompactPCI 5 V
Optical isolation	✓
Function	Motion control for 3 servo or stepping motors, can be extended to up to 8 axes
Interpolation	2D .. 3D linear, 2D circular, 3D circular, 3D helical, spline, asynchronous and synchronous interpolation with secondary axes
Processor	150 MHz
RAM	16 MB
Digital I/O	16 inputs, 24 V, optically isolated 8 outputs, 24 V, optically isolated
Analog I/O	optional
Page	21

	Digital I/O board for PC/104-Plus
	PC104-PLUS1500
Bus	PC104-Plus
Functions	16 digital inputs, 24 V, incl. 2 interruptible inputs, 16 digital outputs, 24 V, 150 mA/channel - Optical isolation 1000 V - Input and output filter - Watchdog, timer - Resets the outputs to "0" at Power-On
Page	33

NEW

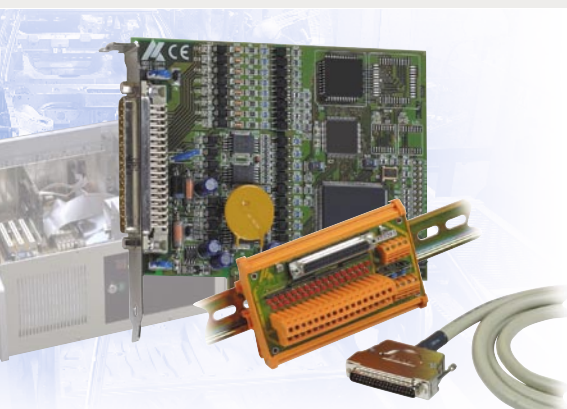


Multifunction, analog input and analog output boards for 3.3 V or 5 V PCI slots



	Analog input							Multifunction boards					
	NEW	NEW	NEW	NEW		NEW	NEW	NEW	NEW			NEW	NEW
	APCI-3010	APCI-3016	APCI-3002	APCI-3003	APCI-3001 CPCI-3001	APCI-3000	APCI-3006	APCI-3110	APCI-3116	APCI-3120 CPCI-3120	APCI-3122	APCI-3100	APCI-3106
PCI-bus 32-bit	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	3.3/5 V	5 V	3.3/5 V	3.3/5 V
CompactPCI bus					5 V					5 V			
Simultaneous acquisition				✓									
Analog inputs													
Single Ended	16/8/4	16/8/4			16/8/4	16/8/4	16/8/4	16/8	16/8	16/8		16/8	16/8
Differential	8/4/2	8/4/2	16		8/4	8/4/2	8/4/2	8/4	8/4	8/4		8/4	8/4
Diff. separated from each other				4									
Resolution (bit)	12	16	16	16	12	12	16	12	16	16		12	16
Optical isolation	✓	✓	✓	✓	✓	-	-	✓	✓	500 V		-	-
Throughput (kHz)	200	200	200	400/ channel	100	100	100	200	200	100		100	100
Voltage range													
0-10 V; ± 10 V / 0-5 V; ± 5 V 0-2 V; ± 2 V / 0-1 V; ± 1 V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Other ranges optional	0-20 mA	0-20 mA	0-20 mA	0-20 mA	0-20 mA	-	-	0-20 mA	0-20 mA	0-20 mA		-	-
Gain 1, 2, 5, 10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
FIFO (value)	512	512	512	1024	256	512	512	512	512	256		512	512
Functions of the analog inputs													
DMA (scatter gather, single, continuous, sequence)	✓	✓	✓	✓		-	-	✓	✓			-	-
DMA (single, continuous, sequence)					✓					✓			
Auto Refresh	✓	✓	✓	✓		-	-	✓	✓			-	-
Interrupt	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Programmed I/O	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Trigger: Software TTL input 24 V input	✓ ✓	✓ ✓	✓ - ✓	✓ - ✓	✓ - ✓	✓ ✓ -	✓ ✓ -	✓ ✓ ✓	✓ ✓ ✓	✓ - ✓		✓ - ✓	✓ - ✓
Sequence RAM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Analog outputs								4	4	4 or 8	4	4	4
Resolution (bit)								12	12	14	12	12	12
Optical isolation								✓	✓	✓	✓		
0-10 V ± 10 V								✓	✓	✓	✓	✓	✓
Other ranges													
Setup time								15 µs	15 µs	30 µs	15 µs	15 µs	15 µs
Digital I/O 24 V inputs, isolated 24 V outputs, isolated	4 4(50mA)	4 4(50mA)	4 4(50mA)	4 4(50mA)	4 4(OpenC)	- -	- -	4 4(50mA)	4 4(50mA)	4 4(OpenC)	10 12(500mA)	- -	- -
TTL I/O	24	24				24	24	24	24			24	24
Timer/Counter/Watchdog (depth) and/or	3 / 3 / 1 16-bit	3 / 3 / 1 16-bit	1 / - / - 16-bit	1 / - / - 16-bit	1 / - / - 16-bit	3 / 3 / - 16-bit	3 / 3 / - 16-bit	3 / 3 / 2 16-bit	3 / 3 / 2 16-bit	1 / - / 1 24-bit		3 / 3 / - 16-bit	3 / 3 / - 16-bit
Page	22	22	23	23	22	23	23	24	24	25 / 32	25	24	25
Software	Drivers for Windows XP/2000/NT/98; Linux; LabView; LabWindows CVI + Samples							Current driver list on the web www.addi-data.com					

	Length measurement	Noise and vibration measurement	Temperature measurement	Pressure measurement
		NEW		
	 APCI-3701	 APCI-3600	 APCI-3200	 APCI-3300
PCI bus 64 or 32-bit	3.3 V / 5 V	3.3 V / 5 V	5 V	5 V
Noise and vibration measurement		✓		
Thermocouples J,K,T,E,R,S,B,N P1100, P11000			✓	
Strain gauges				✓
Inductive displacement transducers	Half Bridge, LVDT			
Signal conditioning		4 current sources for ICP™ sensor supply		
Analog inputs			4 groups 4 channels	4 groups 4 channels
Single-ended (SE)/ differential (diff.)	16/8/1 channels for inductive displacement transducers	8/8	16 thermo/8 RTDs 8 thermo/4 RTDs 4 thermo/2 RTDs	8/4 inputs for DMS
Resolution (bit)	16	24	18	18
Optical isolation			✓	✓
Throughput	depends on transducer type 2-20 kHz (50 kHz opt.)	2-200 kHz (through software)	20-160 Hz	20-160 Hz
Voltage ranges		± 10 V	+ 2.5 V	0-2.5 V
Gain	depends on transducer type		1, 2, 4, 8, 16, 32, 64, 128	1, 2, 4, 8, 16, 32, 64, 128
FIFO (values)		128 DWORD		
Functions analog inputs				
DMA (scatter gather; single; continuous; sequence)	✓	scatter gather free run, ring buffer		
Auto Refresh	✓			
Interrupt	✓	✓	✓	✓
Programmed I/O	✓	✓	✓	✓
Trigger: Software 24 V Input	✓ ✓	✓ ✓	✓ ✓	✓ ✓
Sequenz-RAM	✓			
Analog outputs		2		
Resolution (bit)		16		
Optical isolation				
0-10 V ± 10 V		± 10 V		
Chronometer inputs Gate inputs		4 2		
Timer/Watchdog (depth) in combination, and/or	1 / - 16-bit		- / -	- / -
Digital I/O Inputs 24 V, isolated Outputs, 24 V, isolated	8 8 (125 mA)	8 8 (50 mA)	4 3 (Open Collector)	4 3 (Open Collector)
Page	29	28	28	29
Software	Current driver list on the web www.addi-data.com			

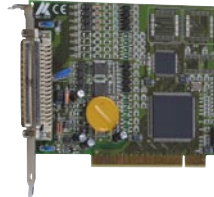


Secure and reliable

Digital I/O boards by ADDI-DATA are most suitable for use in industrial automation and process control engineering.

Applications can be found in industrial I/O controlling, signal switching, as an interface for automatic testing equipment, input/output monitoring of electrical consumers or as an interface for machines. All boards work with the 24 V signal corresponding to the industry standard.

A direct connection to PLC controlling is therefore possible.

Digital input board, optically isolated, 16 digital inputs, 24 V	Digital input board, optically isolated, 32 digital inputs, 24 V or 5 V	Digital I/O board, optically isolated, 16 digital inputs/outputs, 24 V
 APCI-1016 16 digital inputs, 24 V, optically isolated - Optical isolation 1000 V - Automatic addressing through BIOS 32-bit data bus - Protection against voltage reversal - All inputs filtered - Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI Specifications Input current: 6 mA typ. at 24 V Logical input level: UH max: 30 V/current 9 mA typ UH min: 19 V/current 2 mA typ UL max: 14 V/current 0.7 mA typ UL min: 0 V/current 0 mA typ Signal delay: 70 µs (channel 1-16) Max. input frequency: 5 kHz at 24 V Optical isolation: 1000 V through optical couplers Dimensions: PCI short 131 x 99 mm PCI 32-bit: 5 V, acc. to specification 2.1 (PCISIG) Operating voltage/current: 5 V, ±5% from PC, 216 mA Front connector: 37-pin SUB-D male connector Ordering information APCI-1016: Digital input board, optically isolated, 16 digital inputs, 24 V, incl. technical description and software drivers Connection: PX 901-D: Screw terminal panel, LED status display PX 901-DG: Screw terminal panel, LED status display for DIN-rail ST010: shielded round cable, 2 m PX9000: 3-row screw terminal panel for DIN rail, LED status display	 APCI-1032 APCI-1032-5 32 digital inputs, 24 V, optically isolated (5 V optional), incl. 16 interruptible inputs - Optical isolation 1000 V - Automatic addressing through BIOS 32-bit data bus - Protection against voltage reversal - All inputs filtered - Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI - Additional noise suppression on the interrupt lines Specifications Input current: 6 mA typ. at 24 V Logic input level: UH max: 30 V/current 7.3 mA typ. UH min: 19 V/current 3.2 mA typ UL max: 14 V/current 1.3 mA typ. UL min: 0 V/current 0 mA typ. Interrupt compare logic: AND and OR mode Signal delay: 70 µs (channel 1-16) Max. input frequency: 5 kHz at 24 V Optical isolation: 1000 V through optical couplers Dimensions: PCI short 131 x 99 mm PCI 32-bit: 5 V, acc. to specification 2.1 (PCISIG) Operating voltage/current: 5 V, ±5% from the PC, 180 mA Front connector: 37-pin SUB-D male connector Ordering information APCI-1032: Digital input board, optically isolated, 32 digital inputs, 24 V, incl. technical description and software drivers APCI-1032-5: Digital input board, optically isolated, 32 digital inputs, 5 V version Connection: PX 901-DG: Screw terminal panel, LED status display for DIN-rail PX 9000: 3-row screw terminal panel for DIN-rail, LED status display ST010: Standard round cable, shielded, twisted pairs, 2 m ST011: Standard round cable, shielded, twisted pairs, 5 m	 APCI-1516 8 digital inputs, 24 V, optically isolated 8 digital outputs, 24 V, optically isolated, 10 to 36 V, 500 mA/channel - Optical isolation 1000 V - Watchdog for resetting the outputs to "0" - Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI - Inputs: Protection against voltage reversal, input filters - Outputs protected against short circuit - On PowerOn/Reset all outputs are set to "0" - Overtemperature and overvoltage protection 24 V power outputs with protection diodes - Shutdown logic when the external supply voltage drops below 5 V Specifications Input current: 6 mA typ. at 24 V Interrupt compare logic: AND and OR mode Signal delay: 70 µs at 24V Max. input frequency: 5 kHz at 24 V Output type: High-side acc. to IEC 1131-2 output driver Supply voltage: 10 to 36 V, min. 5 V Output current / output: 500 mA typ. Watchdog: Timer progr. 20 ms to 5 s Dimensions: Short board (131 x 99 mm) Operating voltage / current: 5 V, ±5% from the PC, 220 mA Front connector: 37-pin SUB-D male connector Ordering information APCI-1516: Digital I/O board, optically isolated, 16 digital inputs/outputs, 24 V, incl. technical description, software drivers Connection: PX 901-DG: Screw terminal panel, LED status display for DIN-rail PX8500-G: Relay output board for DIN rail, cascadable ST010: Standard round cable, shielded, twisted pairs, 2 m ST010-S: Same as ST010, for high currents ST021: Round cable between APCI-1516 and PX8500-G, shielded, twisted pairs, 2 m ST022: Round cable between PX8500-G and PX9001 or PX900, shielded, 2 m.



with isolated 24 V I/O boards

In order to guarantee that the board is interference-free, the inputs and outputs are fitted with extensive protective measures. 1000 V electrical isolation to protect against rapid transients, electrostatic charge and high-frequency interfering radiation are standard.

Interruptible inputs increase the availability of your PC.

All outputs are set to "0" when the computer is powered up so that no indefinable conditions can occur.

The classic

Digital I/O board, optically isolated, 32 digital inputs/outputs, 24 V



APCI-1500

The APCI-1500 is a 32-bit digital I/O board, which was designed especially for use in the industrial automation and process control. In order to protect the board from interferences, the 16 digital inputs and outputs are equipped with extensive safety features: optical isolation 1000 V, protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI etc.

The inputs correspond to the industrial standard +24 V for „logic 1“.

14 inputs are interruptible. The interrupts can be released through software. The board also features 3 timers. Timer2 can be used as a programmable watchdog for resetting the output channels.

The output voltage supply (10-36 V) is filtered through a protection circuitry. The output type is high-side (load at ground). The nominal voltage is 24 V and the output current is 500 mA. The outputs are protected against short circuit, overtemperature and voltage drop. A diagnostic report allows to detect short circuits or overtemperature.

- 16 digital inputs, 24 V, isolated, incl. 14 interruptible
- 16 digital outputs, 24 V, isolated, 10 to 36 V, 500 mA/channel
- Optical isolation 1000 V
- Watchdog for resetting the outputs to "0"
- Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI
- Inputs: protection against voltage reversal, input filters
- Outputs protected against short circuit
- On PowerOn/Reset all outputs are set to "0"
- Overtemperature and overvoltage protection
- Diagnostic report in case of short circuit, overtemperature and voltage drop...
- 24 V power outputs with protection diodes
- Shutdown logic when the external supply voltage drops below 5 V

Specifications

Input current:	6 mA typ. at 24 V
Interrupt compare logic:	AND and OR mode
Signal delay:	70 µs at 24 V
Max. input frequency:	5 kHz at 24 V
Output type:	High-side acc. to IEC 1131-2 output driver
Supply voltage:	10 to 36 V, min. 5 V
Output current/output:	500 mA typ.
Watchdog:	timer progr. 10 µs to 37 s
Timer:	16-bit
Dimensions:	short board (131 x 99 mm)
PCI 32-bit:	5 V, acc. to specification 2.1 (PCISIG)
Operating voltage / current:	5 V, ±5% from the PC, 400 mA
Front connector:	37-pin SUB-D male connector

Customer-tailored
modifications designed
to suit your needs
Hardware and software,
firmware, PLDs, ...
Contact us!



PX901-DG

Ordering information

APCI-1500: Digital I/O board, optically isolated, 32 digital inputs/outputs, 24 V, incl. technical description, software drivers and monitoring program

Connection:

PX901-DG: Screw terminal panel, LED status display for DIN rail

PX9000: 3-row screw terminal panel for DIN rail

PX8500-G: Relay output board for DIN rail, cascable,

ST010: Standard-round cable, shielded, twisted pairs, 2 m

ST011: Standard round cable, shielded, twisted pairs, 5 m

ST010-S: Same as ST010, for high currents (separate 24 V supply)

ST021: Round cable between APCI-1500 and PX8500-G, shielded, twisted pairs, 2 m

ST022: Round cable between PX8500-G and PX901-DG, shielded, 2 m

ST8500: Ribbon cable for cascading two PX8500.

Free standard driver

A CD-ROM with software drivers and programming samples is supplied with the boards*.

Standard drivers for:

Real-time drivers for Windows XP/2000/NT/98 and Linux.

The boards are supplied with the **universal software ADDIPACK**

Driver for the following application software:

LabVIEW™ from version 5.01, LabWindows/CVI™, DasyLab™

Samples for the following compilers:

Microsoft VC++ 5.0 • Borland C++ 5.01

Visual Basic 5.0 • Delphi 4.0

* Depending on the type of board.

Current list on the web: www.addi-data.com



Digital I/O board, optically isolated, 64 digital inputs/outputs, 24 V/5 V



APCI-1564
APCI-1564-5
APCI-1564-3,3V

NEW

- 32 digital inputs, 24 V, optically isolated (5 V optional), incl. 16 interruptible and 3 as 32-bit counter
- 32 digital outputs, 24 V (5 V optional), optically isolated, 10 to 36 V, 500 mA /channel
- Optical isolation 1000 V
- Watchdog for resetting the outputs to "0"
- Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI
- Inputs: protection against voltage reversal, input filters
- Outputs protected against short circuit
- On PowerOn/Reset all outputs are set to "0"
- Overtemperature and overvoltage protection
- Diagnostic report in case of short circuit, overtemperature and voltage drop...
- 24 V power outputs with protection diodes
- Shutdown logic when the external supply voltage drops below 5 V

Specifications

Input current:	6 mA typ. at 24 V
Interrupt compare logic:	AND and OR mode
Signal delay:	70 µs at 24 V
Max. input frequency:	5 kHz at 24 V
Output type:	High-side acc. to IEC 1131-2 output driver
Supply voltage:	10 to 36 V, min. 5 V
Output current / output:	500 mA max.
Watchdog:	timer progr. 20 ms to 5 s
Timer/counter:	1/3, software programmable
Dimensions:	171 x 99 mm
PCI 32-bit:	5 V, acc. to specification 2.1 (PCISIG)
Operating voltage:	5 V, ± 5 % from the PC, 380 mA (APCI-1564) 3.3 V, ± 5 % from the PC, (APCI-1564-3,3V)
Front connector:	37-pin SUB-D male connector
Additional connector:	on separate bracket

Ordering information

APCI-1564: Digital I/O board, optically isolated, 64 digital inputs/outputs, 24 V, incl. ribbon cable, technical description and software drivers

APCI-1564-5: Same as APCI-1564 (with 5 V digital I/O)

APCI-1564-3,3V: Same as APCI-1564 (for 3.3 V) PCI bus

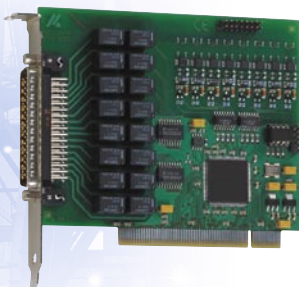
Connection:

PX901-DG: Screw terminal panel for DIN-rail

ST010: Standard round cable, shielded, twisted pairs, 2 m

Further cables available

Complete information about drivers and accessories see www.addi-data.com



Relay and digital output boards, 24 V

ADDI-DATA offers a range of isolated digital I/O and relay boards for the PCI bus. The output boards work with a voltage range between 10 V and 36 V. The outputs can drive 500 mA each and have the following safety features: optical isolation up to 1000 V, protection against fast transients, electrostatic discharge, high-frequency interfering radiation, short-circuits and high temperatures.

The relay board is used in industrial process monitoring. It receives digital data and controls external devices using relays with change-over contacts. It has up to 16 change-over contacts and receives direct-current voltage signals up to 24 VDC via 8 electrically

Digital output board, optically isolated, 16 digital outputs, 24 V

APCI-2016



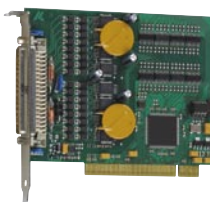
- 16 digital outputs, 24 V, optically isolated, 10 to 36 V, 500 mA/channel, total current limited to 3 A
- Optical isolation 1000 V
- Watchdog for resetting the outputs to "0"
- On PowerOn/Reset all outputs are set to "0"
- Protection against fast transients overvoltage, electrostatic discharge and high-frequency EMI
- Outputs protected against short circuit
- Overtemperature and overvoltage protection
- 24 V power outputs with protection diodes
- Shutdown logic when the external supply voltage drops below 5 V
- Overtemperature diagnostic

Specifications

Output type:	High-side acc. to IEC 1131-2 output driver
Supply voltage:	10 to 36 V, min. 5 V
Output current/output:	500 mA max.
Watchdog:	20 ms to 5 s
Dimensions:	PCI-short 131 x 99 mm
PCI 32-bit:	5 V, acc. to specification 2.1 (PCISIG)
Operating voltage / current:	5 V, $\pm 5\%$, from PC/233 mA
Front connector:	37-pin SUB-D male connector

Digital output board, optically isolated, 32 digital outputs, 24 V or 5 V

**APCI-2032
APCI-2032-5**

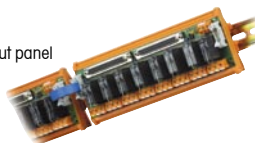


- 32 digital outputs, 24 V (5 V optional), optically isolated, 10 to 36 V, 500 mA/channel, total current limited to 3 A
- Optical isolation 1000 V
- Watchdog for resetting the outputs to "0"
- On PowerOn/Reset all outputs are set to "0"
- Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI
- Outputs protected against short circuit
- Overtemperature and overvoltage protection
- 24 V power outputs with protection diodes
- Shutdown logic when the external supply voltage drops below 5 V
- Diagnostic report at overtemperature

Specifications

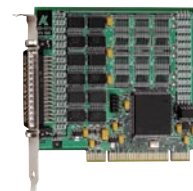
Output type:	High-side acc. to IEC 1131-2 output driver
Supply voltage:	10 to 36 V, min. 5 V
Output current / output:	500 mA typ.
Watchdog:	20 ms to 5 s
Dimensions:	PCI-short 131 x 99 mm
PCI 32-bit:	5 V, acc. to specification 2.1 (PCISIG)
Operating voltage / current:	5 V, $\pm 5\%$, from PC / 224 mA
Front connector:	37-pin SUB-D male connector

PX 8500
Relay output panel



TTL I/O board, 48 digital TTL inputs/outputs

APCI-1648



- 48 digital TTL I/O, driver performance up to 15 TTL loads
- Bidirectional I/O, configurable through software
- Overvoltage protection, optional
- All I/O through pull-up resistors to 5 V
- Filter on each I/O line

Specifications

Front connector:	50-pin SUB-D male connector
Dimensions:	PCI-short (131 x 99 mm)
PCI 32-bit:	universal, 3.3 V / +5 V
Operating voltage / current:	5 V / 3.3 V, $\pm 5\%$ from the PC

TTL I/O board, 96 digital TTL inputs/outputs

APCI-1696



- 96 digital TTL inputs and outputs
- Bidirectional I/O, configurable through software
- Overvoltage protection, optional
- All I/O through pull-up resistors to 5 V
- Filter on each I/O line

Specifications

Front connector:	50-pin SUB-D male connector
Additional connector:	50 pin. SUB-D male connector
Dimensions:	PCI-short (131 x 99 mm)
PCI 32-bit:	universal, 3.3 V / +5 V
Operating voltage / current:	5 V / 3.3 V, $\pm 5\%$ from the PC

Ordering information

APCI-2016: Digital output board, optically isolated, 16 digital outputs, 24 V, incl. technical description and software drivers
Connection:
PX901-DG: Screw terminal panel, LED status display for DIN rail
PX8500-G: Relay output board for DIN rail, LED status display
PX8500-G: Relay output board for DIN rail, cascable up to 32 relays, 220 V, 10 A
ST010: Standard round cable, shielded, twisted pairs, 2 m,

Ordering information

APCI-2032: Digital output board, optically isolated, 32 digital outputs, 24 V incl. technical description and software drivers
APCI-2032-5: Same as APCI-2032 (with 5 V)
Connection:
PX901-DG: Screw terminal panel, LED status display for DIN rail
PX9000: 3-row screw terminal panel for DIN rail, LED status display
PX8500-G: Relay output board for DIN rail, cascable
ST010: Standard round cable, shielded, twisted pairs, 2 m

Ordering information

APCI-1648: TTL I/O board, 48 digital TTL inputs/outputs, incl. technical description and software drivers
APCI-1696: Same as APCI-1648, with 96 TTL inputs/outputs
Connection:
PX8000: Screw terminal panel
ST370-16: Shielded round cable, 2 m

Complete information about drivers and accessories see www.addi-data.com

isolated inputs. Transorb diodes and EMI filters protect the electrically isolated inputs from high-frequency interfering radiation. A watchdog timer which represents a down counter that resets the digital outputs after its reload value has expired serves as a safety function.

The TTL I/O boards are fitted with driver components which can drive up to 15 TTL loads. Control tasks in 3.3 V as well as in 5 V systems can be completed.



Free standard driver

A CD-ROM with software drivers and programming samples is supplied with the boards *.

Standard drivers for:

Real-time drivers for Windows XP/2000/NT/98 and Linux.

The boards are supplied with the **universal software ADDIPACK**

Driver for the following application software:

LabVIEW™ from version 5.01, LabWindows/CVI™, DasyLab™

Samples for the following compilers:

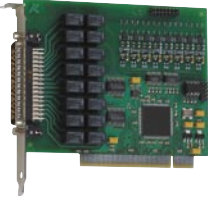
Microsoft VC++ 5.0 • Borland C++ 5.01

Visual Basic 5.0 • Delphi 4.0

* Depending on the type of board.

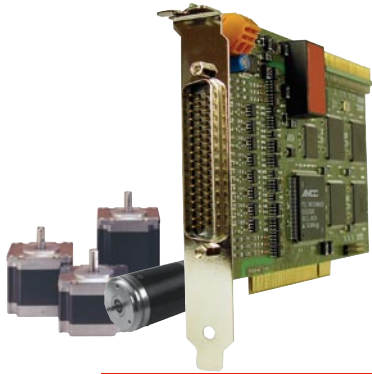
Current list on the web: www.addi-data.com



Relay board, optically isolated, 8/16 relay outputs, 8 digital inputs, 24 V	Screw terminal panel with screw terminals, for DIN-rail	8-port relay output panel, can be cascaded in 32 relays
APCI-2200	PX 901-DG	PX 8500
 8 or 16 electromechanical relays with change-over contacts, optically isolated - Max. switching voltage for the relays: 60 VDC, 48 VAC - Max. switching current: max. 1 A - Short response time - Option: 8 digital inputs with optical isolation - Input voltage: 12-24 V (DC) - Watchdog: programmable release, time selection through software - EMV-tested - Watchdog activity can be read back Specifications Max. switching capacity: 62.5 VA, 30 W Contact resistance: < 100 mΩ Response time: Max. 5 ms typ. 2.5 ms Release time: Max. 5 ms typ. 0.9 ms Mechanical life: 5 x 10⁶ operations 8 digital inputs: isolated Watchdog: software programmable, 20 ms to 5 s Dimensions: PCI-Short 131 x 99 mm System bus: PCI 32-bit, 5 V Operating voltage: 5 V, ± 5 %, from the PC Front connector: 50-pin SUB-D male connector Additional connector: 16-pin male connector for digital inputs, APCI-2200-16-8: connection through ribbon cable FB2200-3. Connects the layer board to a bracket with a 37-pin SUB-D male connector. Connected to PX901-ZG	 - Fast connection of up to 37 signal or signal reference lines - LED indicator status - Separate ground connections - Connection through screw terminals - Overvoltage protection of the 24 V supply terminals through varistors and transil diodes - Terminals can be labelled - Additional 4-pin terminal for connecting the ground or the supply voltage - All terminals intended for large conductor cross sections up to 2.5 mm² Specifications Signal line terminals: 32 for connecting peripherals Additional terminals: - 4 for feeding the external operating voltage (digital I/O) - 2 for ground lines Status display: 32 LEDs, 1 LED for indicator status of the operating voltage Connector: 37-pin SUB-D female connector Dimensions: (L x W x H) 130 x 70 x 35 mm with housing: (L x W x H) 132 x 87 x 70 mm Temperature range: 0-70°C	 8 relays, cascadable in 16, 24 and 32 relays - All terminals intended for large conductor cross sections up to 2.5 mm² - Operating voltage display through a green LED - Relay status display through red LEDs - Relays mounted on sockets - Overvoltage protection of the 24 V supply voltage through varistors and transil diodes - Contact protection of the relays through varistors (option Vt) 4 mm creeping distance between change-over contact and closer of adjoining relay 6 mm creeping distance between change-over contact and closer of adjoining relay - Free-wheeling diode in the coil circuit - With housing for mounting on a standard supporting rail (option G) Specifications Max. switching voltage: 30 VAC - 277 VAC Max. switching capacity: 300 W - 2500 VA Max. switching current: 10 A Contact resistance: < 100 mΩ Response time: 15 ms Release time: 5 ms Mechanical life: 5,000,000 operations Operating time at max. switching capacity: 100,000 operations Operating voltage: + 24 V Connector: 2 x 37-pin SUB-D female connector Dimensions: (L x W x H) 210 x 68 x 42 mm with housing: (L x W x H) 212 x 87 x 72 mm Ordering information PX 9000, screw terminal panel for digital I/O with housing for DIN-rail Available round cables, twisted pairs, shielded ST010, shielded round cable, 2 m ST010-S, for high currents ST011, shielded round cable, 5 m
Ordering information APCI-2200-16-8: 16 relays, 8 digital inputs, 24 V APCI-2200-8-8: 8 relays, 8 digital inputs, 24 V APCI-2200-16: 16 relays APCI-2200-8: 8 relays Incl. technical description and standard drivers Connection: PX8000: Screw terminal panel, 50-pin for DIN rail ST370-16: Shielded round cable, 2 m PX901-ZG: Screw terminal panel for DIN rail ST010: Shielded round cable, 2 m	Ordering information PX901-DG: Screw terminal panel with LEDs and housing for DIN rail PX901-D: Screw terminal panel with LEDs	Ordering information PX 8500, 8-port relay output panel PX 8500-G with housing The PX 8500 is available with varistors on request Cable: ST010, shielded round cable, 2m ST011, shielded round cable, 5m ST021, connection to CPCL/APCI-1500 ST022, between PX8500 and PX901-DG ST8500, ribbon cable for cascading two PX8500

Complete information about drivers and accessories see www.addi-data.com

Develop your own counter system



PCI counter boards with FPGA logic

The APCI-1710 board is a fast multifunction and multi-channel counter board for the PCI bus. It is characterised by flexible applications, high accuracy, speed and reliability in rough industrial environments.

With the APCI-1710 you can put into practice a large range of applications on the same hardware basis thanks to FPGA technology. The functions are programmed individually for each function module using the supplied software. You can adapt the functions of the board to the requirements of your application and change them as required.

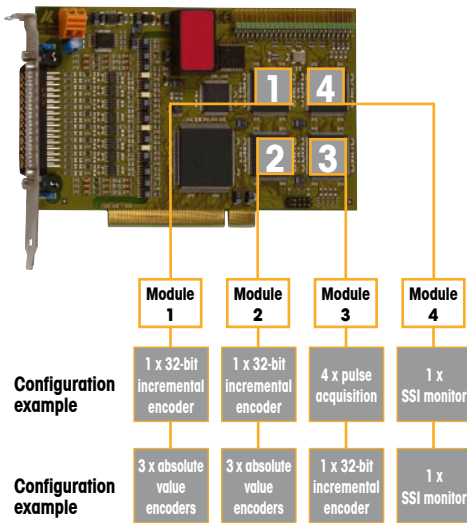
We can expand the functions upon request. Contact us!

Reprogrammable functions!

Multifunction counter board, optically isolated, encoder, incremental counter, timer/counter, SSI, PWM,...

APCI-1710

Also available for
CompactPCI™
page 33



Specifications

Dimensions: 179 x 99 mm
PCI 32-bit: according to spec. 2.1 (PCISIG)
Space required: 1 slot
Operating voltage: 5 V, $\pm 5\%$, from the PC +24 V ext. / 10 mA
Current consumption:
APCI-1710: 600 mA typ. $\pm 10\%$
APCI-1710-24V: 450 mA typ. $\pm 10\%$
Front connector: 50-pin SUB-D male connector

4 function modules with numerous functions quickly and easily programmable:

Each of the 4 function modules is programmed with one function. You can program 4 times the same function or freely combine 4 different functions.

Available functions for each module:

1 x 32-bit incremental encoder acquisition
 2 x 16-bit incremental encoder acquisition
 3 x acquisition of absolute value encoder/SSI
 3 x counter/timer
 1 x chronos/TOR for frequency measurement
 4 x pulse width measurement
 1 x chronos for pulse width measurement
 1 x chronos for period duration measurement
 2 x TOR for velocity measurement
 8 digital I/O, 24 V, TTL, RS422
 2 x PWM (Pulse Width Modulation)
 24 x TTL I/O only on 1 function module
 2 x ETM (Edge Time Measurement)
 1 x BiSS-Master
 1 x SSI monitor
 Other functions on request

Available functions, when all four function modules are programmed with the same function:

4 x 32-bit incremental encoder acquisition
 8 x 16-bit incremental encoder acquisition
 12 x acquisition of absolute value encoder/SSI
 12 x counter/timer
 4 x chronos/TOR for frequency measurement
 16 x pulse width measurement
 4 x chronos for pulse width measurement
 4 x chronos for period duration measurement
 8 x TOR for velocity measurement
 32 digital I/O, 24 V, TTL, RS422
 8 x PWM
 4 x BiSS-Master
 8 x ETM
 4 x SSI monitor

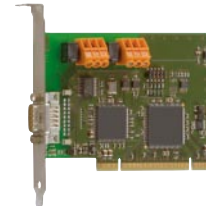
Customer-tailored
modifications designed to suit
your needs

Hardware and software, firmware,
PLDs, ...

Contact us!

Watchdog board, optically isolated, 4 watchdogs/timers

APCI-035



The board APCI-035 is equipped with 4 watchdogs which can monitor software and hardware tasks independently from each other. Watchdog 1 works with 2 alarm levels and can be programmed with 1 of 4 different time units (μ s, ms, s, min). In case of error, watchdog 1 warns the PC or the peripheral. If the error is not removed, the alarm level 2 is automatically triggered after a defined timeout and prepares the system and the peripheral for a hardware reset. The alarm levels are controlled through 1 trigger channel and 4 different time bases. The internal PC temperature can be monitored through the onboard temperature sensor.

- 4 watchdogs, timers
- Activation through software

Specifications

Optical isolation: 500 V
Reset time: 2 s
Time base watchdog/timer: μ s, ms, s, min
Temperature monitoring: precision $\pm 2^\circ\text{C}$
 measuring range -45°C to 135°C
 (practical range $0-60^\circ\text{C}$)

Relay data

Type of contacts: 2 change-over contacts
Max. switching voltage: 60 VDC, 125 VAC
Max. switching current: max. 1 A at 2 VDC
Max. switching capacity: 62.5 VA, 30 W

Digital input

Nom. input current at 24V: 6 mA
Nom. input voltage: 24 V
Approx. dimensions: 120 x 85 mm
PCI 32-bit: Universal, 3.3 V / +5 V
Operating voltage: 5 V / $3.3\text{ V} \pm 5\%$ from the PC
Front connector: 9-pin SUB-D male connector

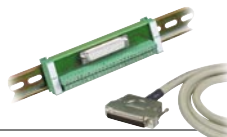
Ordering information

APCI-1710: Multifunction counter board, optically isolated, encoder, incremental counter, timer/counter, SSI, PWM, ... incl. technical description and software drivers
APCI-1710-24: 24 V for diff.input signals
APCI-1710-5V-I: 5 V inputs (E, F, G) instead of 24 V
APCI-1710-10K20: same as APCI-1710, with additional function for connecting a BiSS interface

Connection:

PX 8000: screw terminal panel for DIN rail
ST370-16: shielded round cable, 2 m, between APCI-1710 and PX 8000
FB8001: ribbon cable for the function "TTL I/O", 50-pin male connector to 50-pin SUB-D male connector with bracket

PX8000 and ST370-16



Ordering information

APCI-035: Watchdog board, optically isolated, 4 watchdogs/timers.
 Incl. technical description and software drivers

Complete information about drivers and accessories see www.addi-data.com

Intelligent motion control board

- From simple drive solutions to multi-axis systems
- Autonomous real-time system for fast calculations
- Powerful command set

With increasingly efficient servo and stepper motors, modern drive engineering is a key technology for innovative solutions in the area of robot, CNC, tool and special engineering.

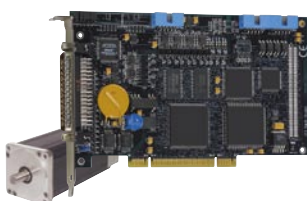
The APCI-8001 is used to control power amplifiers for servo and stepper motors as well as direct connection to current sensors such as incremental encoders and SSI absolute encoders.

Customer-tailored
modifications designed to suit your needs
Hardware and software, firmware, PLDs, ...
Contact us!

Intelligent motion control for 1 to 8 CNC axes

Customer-tailored functions on request

APCI-8001



- Intelligent board, based on a 64-bit RISC processor
- Positioning of 3 axes with servo or stepping motors. Mixed operating possible
- For commercial power amplifiers
- Linear, circular and CAD interpolation
- Point-to-point movement with independent control of each axis
- All inputs and outputs with optical isolation
- Multiple axis system through cascading
- Gray code operating user interface
- Table interpolation
- Scanner functions for measurement tasks
- Programming through PC application or stand-alone program

Specifications

Optical isolation:	all I/O channels
64-bit RISC processor:	150 MHz
RAM:	16 MB
Data exchange with PC:	through PCI bus
Interpolation:	2D.. 3 D linear, 2D circular, 3D circular, 3D helical, spline, asynchronous and synchronous interpolation with secondary axes. With OPMF all kind of interpolations
	2D..8D depending on the number of axes
Incremental encoders evaluation:	quadruple, 32-bit with sign, 2.0 MHz (8 MHz after quadrupling) 5 MHz optional (20 MHz after quadrupling)
Inputs for SSI encoders:	Up to 32-bit, Gray/binary code var. frequency 30 kHz 2 MHz
Setpoint value outputs (servo):	1 per channel, D/A converter, 16-bit resolution, ± 10 V

- For 3 servo or stepper motors
- Can be extended to 8 axes
- Powerful command set
- Stand-alone operating mode
- Optical isolation
- 16-bit analog output channels
- Direct connection to incremental or absolute value encoders
- Menu-driven test application

Setpoint value outputs (stepper):	RS422, pulse and direction signals
Pulse outputs (stepper motors):	1 stepper signal (RS422) and 1 direction signal (RS422) for each channel, pulse frequency up to 2.5 MHz (optional 10 MHz)
Isolated digital inputs:	16 inputs, 24 V, as end or reference switch or freely programmable
Isolated digital outputs:	8 channels, 24 V/500 mA through PCI BIOS
Interrupts:	Bus master
DMA:	24 V external for digital I/O
Auxiliary voltage:	175 x 106 mm
Dimensions:	PCI - universal
System bus:	Space required: Board APCI-8001: 1 PCI slot
Slave board OPMF:	1 PCI slot
Cable FB8000:	1 slot opening
Operating voltage:	3.3 V/0.8 A (5 V on request)
Front connector APCI-8001:	axis 1, 2, 3: 50-pin SUB-D male connector axes 4, 5, 6: 50-pin SUB-D male connector axes 7, 8: 50-pin SUB-D male connector
Frontstecker OPMF:	
Ribbon cable FB8001:	

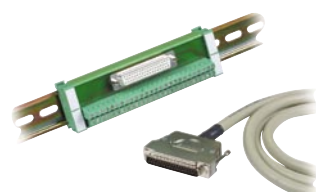
Ordering information

APCI-8001: positioning of 3 axes for servo or stepper motors
APCI-8001-STEP: positioning of 3 axes for stepper motors
APCI-8001-1: positioning of 1 servo or stepper motor axis
 Incl. technical description and standard drivers
Connection:
OPMF-x: slave board for the extension to a total of 4 to 8 axes
OPMF-AI12-4/8: slave board with 4/8 A/D, 12-bit
OPMF-DIO: slave board with 8 dig. inputs and 4 dig. outputs, 24 V

FB8001: ribbon cable between OPMF and a 50-pin SUB-D male connector with bracket
PX 8000: screw terminal panel for DIN rail
ST8001: shielded round cable, 2 m between **APCI-8001** and **PX 8000**

Screw terminal panel for 50 lines, interference-proof

PX8000



Screw terminal panel with screw terminals, for DIN rail.
 Connection of 50 signal lines.
 With labels on the sides of the board

Specifications

Signal line terminals:	50 for connecting the peripherals
Ground connection:	Female pins directly connected to the connection terminal
Current / voltage:	2.5 A / 125 V
Cross section:	up to 1.5 mm ²
Connector:	50-pin SUB-D female connector
Dimensions:	(L x W x H): 155 x 45 x 42
Temperature range:	0 to 60 °C

Standard round cable, shielded, twisted pairs

ST8001

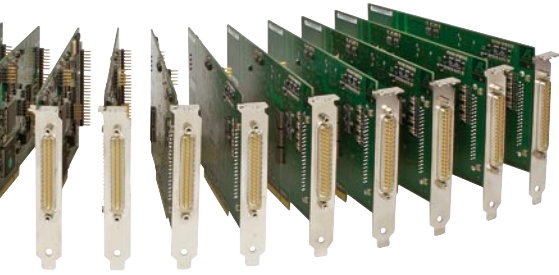
- Standard round cable, shielded, 2 m, 50-pin SUB-D male connector - 50-pin SUB-D female connector
- With twisted pairs
- Metallised hoods with fixing screws

Ordering information

PX 8000: screw terminal panel for DIN rail
ST8001: shielded round cable, 2 m

Complete information about drivers and accessories see www.addi-data.com

Data acquisition with or without isolation



The new analog I/O boards from ADDI-DATA are available in many different versions. Choose the board which fits your application best! Depending on the version, the boards are fitted with functions such as DMA, auto refresh and optical isolation, etc. The drivers supplied enable a direct integration in LabVIEW. All universal boards can be used in both 3.3 V and 5 V systems.



Customer-tailored
modifications designed to suit your needs
Hardware and software, firmware, PLDs, ...
Contact us!

NEW

**Analog input board, optically isolated,
16 SE/8 diff. inputs, 12-bit**

APCI-3010



- PCI 5 V or 3.3 V (32- or 64-bit)
- Optical isolation 1000 V
- 16, 8 single-ended (SE) or 8, 4 differential inputs
- 12-bit resolution, throughput: 200 kHz
- Conversion through software, scan, timer, external event
- PCI-DMA, sequence RAM, Auto Refresh
- Overvoltage protection, input filter: 225 kHz
- Protection against high-frequency EMI
- Short-circuit protection, EMI-filters
- 3 timers/counters, 16-bit
- 4 digital inputs, 4 digital outputs, 24 V, isolated
- 24 TTL I/O

Specifications

Input ranges:	0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V software-configurable for each channel, 0-20 mA option
Throughput:	200 kHz
Trigger:	through software, timer, external event (24 V input)
Functions:	DMA (Scatter gather, single, continuous, sequence) Auto refresh mode
Interrupt:	DMA, timer
Gain:	x1, x2, x5, x10 through software
Number of digital I/O:	4 inputs and 4 outputs, 24 V 24 TTL I/O
Dimensions:	175 x 99 mm
Operating voltage / current:	+ 5 V, ± 5 %
PCI 32- or 64-bit:	5 V + 3.3 V
Front connector:	37-pin SUB-D male connector
Additional connector:	50 pin male connector for TTL and 24 V isolated I/O

Ordering information

APCI-3010-16: 16 SE/8 diff. inputs
APCI-3010-8: 8 SE/4 diff. inputs
APCI-3010-4: 4 SE/2 diff. inputs
 Incl. technical description and standard drivers
Option:
OPT. DF: Precision filter for 1 diff. channel
OPT. PC: Current input 0(4)-20 mA for 1 channel
 (OPT. PC-SE: for Single-Ended, OPT. PC-DIFF: for differential)
OPT. SF: Precision filter for 1 SE-channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for
 the connection of the analog I/O, with housing for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m

NEW

**Analog input board, optically isolated,
16 SE/8 diff. inputs, 16-bit**

APCI-3016



- PCI 5 V or 3.3 V (32- or 64-bit)
- Optical isolation 1000 V
- 16, 8 or 4 SE or 8, 4, 2 differential inputs
- 16-bit resolution, throughput: 200 kHz
- Conversion through software, scan, timer, external event
- PCI-DMA, sequence RAM, Auto Refresh
- Overvoltage protection, input filter: 225 kHz
- Protection against high-frequency EMI
- Short-circuit protection, EMI-filters
- 3 timers/counters, 16-bit
- 4 digital inputs, 4 digital outputs, 24 V, isolated
- 24 TTL I/O

Specifications

Input ranges:	0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V software-configurable for each channel, 0-20 mA option
Throughput:	200 kHz
Trigger:	through software, timer, external event (24 V input)
Functions:	DMA (Scatter gather, single, continuous, sequence) Auto refresh mode
Interrupt:	DMA, timer
Gain:	x1, x2, x5, x10 through software
Number of digital I/O:	4 inputs and 4 outputs, 24 V 24 TTL I/O
Dimensions:	175 x 99 mm
Operating voltage / current:	+ 5 V, ± 5 %
PCI 32- or 64-bit:	5 V + 3.3 V
Front connector:	37-pin SUB-D male connector
Additional connector:	50 pin male connector for TTL and 24 V isolated I/O

Ordering information

APCI-3016-16: 16 SE/8 diff. inputs, 16-bit
APCI-3016-8: 8 SE/4 diff. inputs, 16-bit
APCI-3016-4: 4 SE/2 diff. inputs, -bit
 Incl. technical description and standard drivers
Option:
OPT. DF: Precision filter for 1 diff. channel
OPT. PC: Current input 0(4)-20 mA for 1 channel
 (OPT. PC-SE: for Single-Ended, OPT. PC-DIFF: for differential)
OPT. SF: Precision filter for 1 SE-channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for
 the connection of the analog I/O, with housing for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m

**Analog input board, optically isolated,
16/8/4 SE or 8/4 diff. inputs, 12-bit**

APCI-3001



Also available for
CompactPCI™
page 32

- Optical isolation 500 V
- 16 single-ended (SE)/8 differential inputs
or 8 SE/4 differential inputs, or 4 SE
- 12-bit resolution
- Voltage inputs (current inputs optional)
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, ext. event
- Onboard FIFO for 256 analog values
- PCI-DMA (Windows 2000/NT), Sequence RAM
- Overvoltage protection, input filters: 160 kHz

Specifications

Input ranges:	0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V configurable through soft- ware for each channel, 0-20 mA optional
Input impedance:	$10^{12} \Omega/20$ nF against GND
Throughput:	100 kHz
Gain:	x1, x2, x5, x10 through software
Number of dig. I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	175 x 99 mm
System bus:	PCI 5 V, 32-bit
Operating voltage:	5 V, ± 5 %, from the PC
Front connector:	37-pin SUB-D male connector
Additional connector:	16-pin male connector

Ordering information

APCI-3001-16: 16 SE/ 8 diff. inputs, 8 dig. I/O
APCI-3001-8: 8 SE/ 4 diff. inputs, 8 dig. I/O
APCI-3001-4: 4 SE inputs, 8 dig. I/O
 Incl. technical description and standard drivers
Option:
OPT. DC: Current input for 1 diff. channel, 0(4)-20 mA
OPT. DF: Precision filter for 1 differential channel
OPT. SC: Current input for 1 SE-channel 0(4)-20 mA
OPT SF: Precision filter for 1 SE-channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for
 the connection of the analog I/O, with housing for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m

Complete information about drivers and accessories see www.addi-data.com



Drivers for
LabVIEW™

Fast application design with LabVIEW™ drivers

Free standard driver

A CD-ROM with software drivers and programming samples is supplied with the boards *.

Standard drivers for:

Real-time drivers for Windows XP/2000/NT/98 and Linux.

The boards are supplied with the **universal software ADDIPACK**

Driver for the following application software:

LabVIEW™ from version 5.01, LabWindows/CVI™, DasyLab™

Samples for the following compilers:

Microsoft VC++ 5.0 • Borland C++ 5.01

Visual Basic 5.0 • Delphi 4.0

* Depending on the type of board.

Current list on the web: www.addi-data.com



NEW

Analog input board, 16 SE/8 diff. inputs, 16-bit

APCI-3006



- PCI 5 V or 3.3 V (32- or 64-bit)
- 16, 8 Single-Ended (SE) or 8, 4 differential inputs
- 16-bit resolution, throughput: 100 kHz
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, ext. event
- Sequence RAM
- Short-circuit protection, EMI filters
- 3 timers/counters, 16-bit
- 24 TTL I/O

Specifications

Input range:	0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V
Throughput:	100 kHz
Trigger:	through software, timer
Interrupt:	timer
Gain:	x1, x2, x5, x10 through software
Number of digital I/O:	24 TTL I/O
Dimensions:	175 x 99 mm
Operating voltage/current:	+ 5 V, ± 5 %
PCI 32- or 64-bit:	Universal 5 V + 3.3 V
Front connector:	37-pin SUB-D male connector
Additional connector:	50-pin male connector for the TTL I/O

Analog input board, 16 SE/8 diff. inputs, 12-bit

APCI-3000

- PCI 5 V or 3.3 V (32- or 64-bit)
- 16, 8 or 4 SE or 8, 4, 2 differential inputs
- 12-bit resolution
- 100 kHz total throughput
- Further specifications same as APCI-3006

Ordering information

APCI-3006-16: 16 SE/8 diff. inputs, 16-bit
APCI-3006-8: 8 SE/4 diff. inputs, 16-bit
APCI-3006-4: 4 SE/2 diff. inputs, 16-bit
APCI-3000-16: 16 SE/8 diff. inputs, 12-bit
APCI-3000-8: 8 SE/4 diff. inputs, 12-bit
APCI-3000-4: 4 SE/2 diff. inputs, 12-bit
 Incl. technical description and standard drivers
Connection:
PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m

NEW

Analog input board, optically isolated, 16 differential inputs, 16-bit

APCI-3002



- PCI 5 V or 3.3 V (32- or 64-bit)
- Optical isolation 1000 V
- 16 differential inputs
- 16-bit resolution
- 200 kHz total throughput
- Automatic analog acquisition
- PCI-DMA for analog data acquisition
- Timer
- 4 digital inputs, 4 digital outputs, isolated, 24 V

Specifications

Input range:	0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V software-programmable for each channel, 0-20 mA optional
Throughput:	200 kHz
Trigger:	through software, timer, external event (24 V input)
Functions:	DMA (Scatter gather, single, continuous, sequence) Auto Refresh DMA, timer
Interrupt:	DMA, timer
Gain:	x1, x2, x5, x10 through software
Number of digital I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	175 x 99 mm
Operating voltage/current:	+ 5 V, ± 5 %
PCI 32- or 64-bit:	universal 5 V + 3.3 V
Front connector:	37-pin SUB-D male connector
Additional connector:	16-pin male connector for the digital I/O

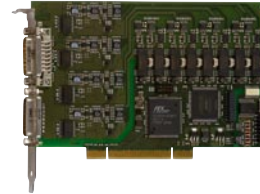
Ordering information

APCI-3002-16: 16 diff. inputs
Option:
OPT PC-DIFF: Current input for 1 diff.channel 0(4)-20 mA
Connection:
PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m

NEW

Analog input board, optically isolated, 4 diff. inputs, 16-bit

APCI-3003



- Optical isolation 1000 V
- 4 differential inputs with one A/D converter each
- 16-bit resolution
- High throughput, 400 kHz/channel
- Simultaneous acquisition on all channels,
all channels separated from each other
- PCI-DMA for analog data acquisition
- Timer
- 4 dig. inputs, 4 dig. outputs, isolated, 24 V

Specifications

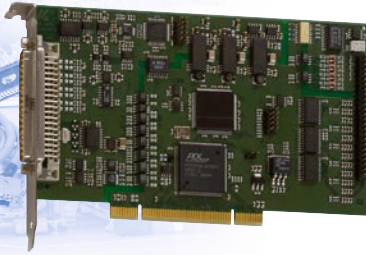
Input range:	0-10 V, ± 10 V, 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V software-programmable for each channel, 0-20 mA optional
Throughput:	400 kHz / input
Trigger:	through software, timer, external event (24 V input)
Functions:	DMA (Scatter gather, single, continuous, sequence) Auto Refresh DMA, timer
Interrupt:	DMA, timer
Gain:	x1, x2, x5, x10 through software
Number of digital I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	175 x 99 mm
Operating voltage/current:	+ 5 V, ± 5 %
PCI 32-bit or 64-bit:	Universal 5 V + 3.3 V
Front connector:	15-pin SUB-D male connector for analog inputs 15-pin female connector for the digital I/O

Ordering information

APCI-3003: Analog input board, optically isolated, 4 diff. inputs, 16-bit incl. technical description and software drivers
Option: current input 0 (4)-20 mA per channel (please specify the number of channels!)
Connection:
PX901-AG: Screw terminal panel with transorb diodes and housing for DIN rail for the connection of the analog inputs
PX901-ZG: Screw terminal panel for the connection of the digital I/O for DIN rail
ST3003-A: Connection cable, twisted pairs, 2 m, for the connection of the analog I/O
ST3003-D: Connection cable, twisted pairs, 2 m, for the connection of the digital I/O

Complete information about drivers and accessories see www.addi-data.com

Data acquisition with or without isolation



Fast application design with LabVIEW™ drivers

The analog input, output and multifunction boards by ADDI-DATA have been specifically developed for the industrial data acquisition and regulation.

The supplied drivers enable a direct integration in LabVIEW.

Many different types of conversion are possible (programmable timer, scan, external trigger signal).

NEW

**Multifunction board, isolated, 12-bit,
16 SE/8 diff. inputs, 4 analog outputs**

APCI-3110



- PCI 5 V or 3.3 V (32- or 64-bit)
- Optical isolation 1000 V of the analog I/O
- 16, 8 single-ended (SE) or 8, 4 differential inputs
- 12-bit resolution, throughput: 200 kHz
- Voltage inputs (current inputs optional)
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, external event
- Onboard FIFO for 512 analog values
- PCI-DMA, sequence RAM, Auto Refresh
- Overvoltage protection, input filter: 225 kHz
- Protection against high-frequency EMI
- 4 analog outputs, 12-bit, setup time: 15 µs typ.
- Short-circuit protection, EMI-filters
- 3 timers/counters, 16-bit
- 4 digital inputs, 4 digital outputs, 24 V, isolated
- 24 TTL I/O

Specifications

Input range: 0-10 V, ±10 V, 0-5 V, ±5 V,
0-2 V, ±2 V, 0-1 V, ±1 V
0-20 mA optional

Input impedance: $10^{12} \Omega/20$ nF against GND

Gain: 1, 2, 5, 10, through software

Output range: 0-10 V, ±10 V
through software

Max. output current: ± 5 mA/500 pF, 2 kΩ

Number of dig. I/O: 4 inputs and 4 outputs, 24 V
24 TTL I/O

Dimensions: 175 x 99 mm

PCI 32- or 64-bit: universal 5 V + 3.3 V

Operating voltage: +5 V, ±5 % from the PC

Front connector: 37-pin SUB-D male connector

Additional connector: 50-pin male connector for TTL
I/O and 24 V isolated I/O

Ordering information

APCI-3110-16: 16 SE/8 diff., 4 analog outputs, 12-bit

APCI-3110-8: 8 SE/4 diff., 4 analog outputs, 12-bit

Incl. technical description and standard drivers

Options:

OPT. DF: Precision filter for 1 diff. channel

OPT. PC: Current input 0(4)-20 mA for 1 channel

OPT. SF: Precision filter for 1 SE-channel

Connection:

PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail

PX_BNC: BNC connection box for the analog I/O

ST010: Standard round cable, shielded, twisted pairs, 2 m,

NEW

**Multifunction board, isolated, 16-bit
16 SE/8 diff. inputs, 4 analog outputs**

APCI-3116



- PCI 5 V or 3.3 V (32- or 64-bit)
- Optical isolation 1000 V of the analog I/O
- 16, 8 single-ended (SE) or 8, 4 differential inputs
- 16-bit resolution, throughput: 200 kHz
- Voltage inputs (current inputs optional)
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, external event
- Onboard FIFO for 512 analog values
- PCI-DMA, Sequence RAM, Auto Refresh
- Overvoltage protection, input filter: 225 kHz
- Protection against high-frequency EMI
- 4 analog outputs, 12-bit, setup time: 15 µs typ.
- Short-circuit protection, EMI-filters
- 3 timers/counters, 16-bit
- 4 digital inputs, 4 digital outputs, 24 V, isolated
- 24 TTL I/O

Specifications

Input range: 0-10 V, ±10 V, 0-5 V, ±5 V,
0-2 V, ±2 V, 0-1 V, ±1 V
0-20 mA optional

Input impedance: $10^{12} \Omega/20$ nF against GND

Gain: 1, 2, 5, 10, through software

Output range: 0-10 V, ±10 V
through software

Max. output current: ± 5 mA/500 pF, 2 kΩ

Number of dig. I/O: 4 inputs and 4 outputs, 24 V
24 TTL I/O

Dimensions: 175 x 99 mm

PCI 32- or 64-bit: universal 5 V + 3.3 V

Operating voltage: +5 V, ±5 % from the PC

Front connector: 37-pin SUB-D male connector

Additional connector: 50-pin male connector for the
TTL I/O and 24 V isolated I/O

Ordering information

APCI-3116-16: 16 SE/8 diff. inputs, 4 analog outputs, 16-bit

APCI-3116-8: 8 SE/4 diff. inputs, 4 analog outputs, 16-bit

Incl. technical description and standard drivers

Options:

OPT. DF: Precision filter for 1 diff. channel

OPT. PC: Current input 0(4)-20 mA for 1 channel

OPT. SF: Precision filter for 1 SE-channel

Connection:

PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail

PX_BNC: BNC connection box for the analog I/O

ST010: Standard round cable, shielded, twisted pairs, 2 m

NEW

**Multifunction board, 12-bit,
16 SE/8 diff. inputs, 4 analog outputs**

APCI-3100



- PCI 5 V or 3.3 V (32- or 64-bit)
- 16, 8 single-ended (SE) or 8, 4 differential inputs
- 12-bit resolution, throughput: 100 kHz
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, ext. event
- Onboard FIFO for 512 analog values
- Sequence RAM
- 4 analog outputs, 12-bit, setup time: 15 µs typ.
- Short-circuit protection, EMI-filters
- 3 timers/counters, 16-bit
- 24 TTL I/O

Specifications

Input range: 0-10 V, ±10 V, 0-5 V, ±5 V,
0-2 V, ±2 V, 0-1 V, ±1 V

Input impedance: $10^{12} \Omega/20$ nF against GND

Gain: 1, 2, 5, 10, through software

Output range: 0-10 V, ±10 V
through software

Max. output current: ± 5 mA/500 pF, 2 kΩ

Dimensions: 175 x 99 mm

PCI 32- or 64-bit: universal 5 V + 3.3 V

Operating voltage: +5 V, ±5 % from the PC

Front connector: 37-pin SUB-D male connector

Additional connector: 50-pin male connector for the
TTL I/O

Ordering information

APCI-3100-16: 16 SE/8 diff. inputs, 4 analog outputs, 12-bit

APCI-3100-8: 8 SE/4 diff. inputs, 4 analog outputs, 12-bit

Incl. technical description and standard drivers

Connection:

PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail

PX_BNC: BNC connection box for the analog I/O

ST010: Standard round cable, shielded, twisted pairs, 2 m

Complete information about drivers and accessories see www.addi-data.com



Drivers for
LabVIEW™

Fast application design with LabVIEW™ drivers

Free standard driver

A CD-ROM with software drivers and programming samples is supplied with the boards *.

Standard drivers for:

Real-time drivers for Windows XP/2000/NT/98 and Linux.

The boards are supplied with the **universal software ADDIPACK**

Driver for the following application software:

LabVIEW™ from version 5.01, LabWindows/CVI™, DasyLab™

Samples for the following compilers:

Microsoft VC++ 5.0 • Borland C++ 5.01
Visual Basic 5.0 • Delphi 4.0

* Depending on the type of board.

Current list on the web: www.addi-data.com



NEW

Multifunction board, 16-bit, 16 SE/8 diff. inputs, 4 analog outputs

APCI-3106



- PCI 5 V or 3.3 V (32- or 64-bit)
- 16, 8 Single-Ended (SE) or 8, 4 differential inputs
- 16-bit resolution, throughput: 100 kHz
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, ext. event
- Onboard FIFO for 512 analog values
- Sequence RAM
- 4 analog outputs, 12-bit, setup time: 15 µs typ.
- Short-circuit protection, EMI filters
- 3 timers/counters
- 24 TTL I/O

Specifications

Input range:	0-10 V, ±10 V, 0-5 V, ±5 V, 0-2 V, ±2 V, 0-1 V, ±1 V 10 ¹² Ω/20 nF against GND
Input impedance:	
Gain:	1, 2, 5, 10, through software
Output range:	0-10 V, ±10 V through software
Max. output current:	± 5 mA/500 pF, 2 kΩ
Dimensions:	175 x 99 mm
PCI 32- or 64-bit:	universal 5 V + 3.3 V
Operating voltage:	+5 V, ±5 % from the PC
Front connector:	37-pin SUB-D male connector
Additional connector:	50-pin male connector for the TTL I/O

Ordering information

APCI-3106-16: 16 SE/8 diff. inputs, 4 analog outputs 16-bit
APCI-3106-8: 8 SE/4 diff. inputs, 4 analog outputs, 16-bit
 Incl. technical description and standard drivers
Connection:
PX901-AG: Screw terminal panel with transorb diodes for
 the connection of the analog I/O, with housing for DIN rail
PX_BNC: BNC connection box for the analog I/O
ST010: Standard round cable, shielded, twisted pairs, 2 m

NEW

Multifunction board, isolated, 4 analog outputs, 12-bit, 22 digital I/O, 24 V

APCI-3122



- 10 digital inputs, 24 V, optically isolated
- Protection against voltage reversal, filters
- 12 digital outputs, isolated
10 to 36 V, output current/channel 500 mA
- Watchdog for resetting the outputs to "0"
- On Power-On, the outputs are reset to "0"
- 4 analog outputs ± 10 V
- Optical isolation
- 12-bit resolution
- Output voltage after reset: 0 V
- Each output channel has its own ground line
(without optical isolation)
- Setup time 15 µs typ
- Short-circuit current: ± 20 mA

Specifications

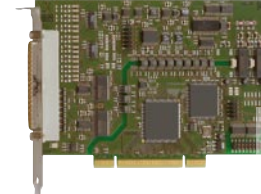
Digital:	
Number of digital I/O:	10 inputs and 12 outputs, 24 V
Logical input level:	U _{nom} : 24 V; current 6 mA
Analog:	
Output type:	single-ended
Output range:	-10 V to +10 V - 1 LSB
LSB:	4.8828 mV
Accuracy:	11-bit
Setup time:	typ 15 µs (at 10 V step)
Max. output current:	± 5 mA
Short-circuit current:	± 20 mA
Dimensions:	175 x 99 mm
Operating voltage/current:	+ 5 V, ± 5 % / 560 mA
PCI 32-bit:	5 V, acc. to spec. 2.2 (PCISIG)
Front connector:	Analog: 15-pin SUB-D HD female connector Digital: 26-pin SUB-D HD female connector

Ordering information

APCI-3122: Multifunction board, optically isolated, 4 analog
 outputs, 12-bit, 22 digital I/O, 24 V, incl. technical description
 and software drivers
Connection:
PX9200: Screw terminal panel for the connection of the
 analog outputs and the digital I/O
ST3122-A: High-Density round cable, shielded, twisted
 pairs, 2 m for the connection of the analog outputs
ST3122-D: High-Density round cable, shielded, twisted
 pairs, 2 m for the connection of the digital I/O

Multifunction board, isolated, 16-bit, 16 SE/8 diff. inputs, 4/8 analog outputs

APCI-3120



Also available for
CompactPCI™
page 32

- Optical isolation 500 V
- 16 SE/8 diff. or 8 SE/4 diff. inputs, or 4 SE
- 16-bit resolution
- Throughput: 100 kHz
- Voltage inputs (current inputs optional)
- Input voltage freely programmable for each channel
- Gain freely programmable for each channel
- Conversion through software, scan, timer, ext. event
- Onboard FIFO for 256 analog values
- PCI-DMA (Windows 2000/NT), sequence RAM
- Overvoltage protection, input filter: 160 kHz
- Protection against high-frequency EMI
- 4 or 8 analog outputs, 14-bit
- Setup time: 30 µs typ.
- Short-circuit protection, EMI-filters
- Each output has its own ground line
- Calibration tool
- 4 dig. inputs, 4 dig. outputs, 24 V, isolated

Specifications

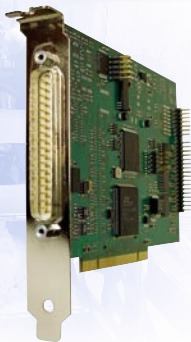
Input range:	0-10 V, ±10 V, 0-5 V, ±5 V, 0-2 V, ±2 V, 0-1 V, ±1 V software-programmable for each, 0-20 mA optional 10 ¹² Ω/20 nF against GND
Input impedance:	
Gain:	1, 2, 5, 10, through software
Output range:	0-10 V, ±10 V through software
Max. output current:	± 5 mA/500 pF, 2 kΩ
Number of dig. I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	175 x 99 mm
PCI 32-bit:	5 V, acc. to spec. 2.2 (PCISIG)
Operating voltage:	+5 V, ±5 % from the PC
Front connector:	37-pin SUB-D male connector
Additional connector:	16-pin male connector for dig. I/O on separate bracket

Ordering information

APCI-3120-8-4: 8 SE/4 diff. inputs, 4 analog outputs
APCI-3120-8-8: 8 SE/4 diff. inputs, 8 analog outputs
APCI-3120-16-4: 16 SE/8 diff. inputs, 4 analog outputs
APCI-3120-16-8: 16 SE/8 diff. inputs, 8 analog outputs
Options:
OPT. DF: Precision filter for 1 diff. channel
OPT. PC: Current input 0(4)-20 mA for 1 channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for
 the connection of the analog I/O, with housing for DIN rail
PX_BNC: BNC connection box for the analog I/O
ST010: Standard round cable, shielded, twisted pairs, 2 m

Complete information about drivers and accessories see www.addi-data.com

Fail-safe regulation



Analog output boards

The optically isolated analog output boards are suitable for controlling digital and analog actuators which are triggered by voltages or current looping. Depending on your application, you can choose between 12- or 14-bit versions.

NEW

Analog output board, optically isolated, 8/4 analog outputs, 14-bit

APCI-3501



- Optical isolation 500 V
- Output voltage: ± 10 V, 0-10 V
- Each output has its own ground line
- Short-circuit protection, EMI filters
- Watchdog for resetting the analog outputs
- 4 or 8 analog outputs, 14-bit
- Setup time: 30 μ s typ.
- 4 digital I/O 24 V, with optical isolation

Specifications

Output range:	0-10 V, ± 10 V through software
Max. output current:	± 5 mA/500 pF, 2 k Ω
Overvoltage protection:	± 12 V
Driver capacity:	5 mA/500 pF
Dimensions:	175 x 99 mm
Operating voltage/current:	+5 V, ± 5 %/630 mA typ.
PCI 32-bit:	5 V, acc. to spec. 2.2 (PCISIG)
Front connector:	37-pin SUB-D male connector
Additional connector:	16-pin male connector for the digital I/O

Analog output board, optically isolated, 4 analog outputs, 12-bit

APCI-3504



- Optical isolation 500 V
- Output voltage: ± 10 V, 0-10 V or 0-20 mA
- Each output has its own ground line
- Short-circuit protection, EMI filters
- 4 analog outputs, 12-bit
- Setup time: 15 μ s typ.

Specifications

Output range:	0-10 V, ± 10 V through software
Max. output current:	± 5 mA/500 pF, 2 k Ω
Overvoltage protection:	± 12 V
Driver capacity:	5 mA/500 pF
Dimensions:	175 x 99 mm
Operating voltage/current:	+5 V, ± 5 %/560 mA typ.
PCI 32-bit:	5 V, acc. to spec. 2.2 (PCISIG)
Front connector:	15-pin SUB-D HD female connector

Analog output board, 4 analog outputs, 12-bit

APCI-3500



- PCI 5 V or 3.3 V (32- or 64-bit)
- 4 analog outputs, 12-bit, setup time: 15 μ s typ.
- Short-circuit protection, EMI filters
- 24 TTL I/O

Specifications

Output range:	0-10 V, ± 10 V through software
Max. output current:	± 5 mA/500 pF, 2 k Ω
Dimensions:	175 x 99 mm
PCI 32- or 64-bit:	universal 5 V + 3.3 V
Operating voltage:	+5 V, ± 5 % from the PC
Front connector:	37-pin SUB-D male connector
Additional connector:	50-pin male connector for the TTL I/O

Ordering information

APCI-3501-8: 8 analog voltage outputs
APCI-3501-4: 4 analog voltage outputs
 Incl. technical description and standard drivers

Connection:

PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m
PX_BNC: BNC connection box for the analog I/O
PX901-ZG: Screw terminal panel for the connection of the TTL I/O, for DIN rail
FB3000: Ribbon cable for digital I/O

Ordering information

APCI-3504: Analog output board, optically isolated, 4 analog outputs, 12-bit
 Incl. technical description and software drivers
APCI-3504-C: 4 analog current outputs

Connection:

PX9200: Screw terminal panel
ST3122-A: High-Density round cable, shielded, twisted pairs, 2 m

Ordering information

APCI-3500: Analog output board, 4 analog outputs, 12-bit
 Incl. technical description and software drivers

Connection:

PX901-AG: Screw terminal panel with transorb diodes for the connection of the analog I/O, with housing for DIN rail
PX_BNC: BNC connection box for the analog I/O
ST010: Standard round cable, shielded, twisted pairs, 2 m

Complete information about drivers and accessories see www.addi-data.com

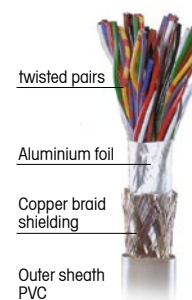
Interference-free connection technology

– what is it for?

Disturbances are linked and sent out via connection cables.

This affects the quality of the signals and the security of your PC.

The twisted pair standard round cables from ADDI-DATA have a thick shielding braid to reduce emissions.



Screw terminal panel for 37 lines, interference-proof

PX 901-AG



- Fast connection of up to 32 signal lines or signal reference lines
- Separate ground connections
- Connection through screw terminals
- Overvoltage protection through transil diodes
- Terminals can be labelled
- Additional 4-pin terminal for ground connection
- With housing, for mounting on a standard DIN rail (option G)
- Terminals for large conductor cross sections up to 2.5 mm

Specifications

Signal line terminals:	32 for connection peripherals
Additional terminals:	2 for connecting ground lines
Connector:	37-pin SUB-D female connector
Dimensions of the board:	(L x W x H) 130 x 70 x 35 mm
With housing:	(L x W x H) 132 x 87 x 70 mm
Temperature range:	0-70°C

Standard round cable, shielded

ST010/011



ST010, ST011

- Standard round cable, shielded, 2 or 5 m
- Twisted pairs
- 37-pin SUB-D female connector to 37-pin SUB-D male connector
- Metallised hoods with fixing screws

On request

- Other lengths
- With bent connectors

Application:

Suitable for use as control or signal cables in noisy environment, for indoor or outdoor applications. The tight braid reduces the emissions. The copper braid is used as "ground". Twisted pairs provide protection against crosstalk and external interferences.

Cable construction:

- Plain copper conductor, fine-strand according to VDE 0295 class 5
- Special PVC conductor insulation
- Twisted pairs conductors
- Core identification acc. to DIN 47100
- Conductors laid up in layers
- Separating foil
- Tinned copper braid shielding
- Covering grade approx. 85 %
- Special PVC outer sheath, grey
- Oil and petrol resistant according to VDE 0250 and 04772
- Self-extinguishing (SE) and flame retardant, B test according to VDE 0472 part 804 and IEC 332-1



Customer-tailored

modifications designed to suit your needs
Other lengths, with bent connectors, ...

Contact us!

Specifications

Special PVC data line for electronic control tasks according to VDE 0812 and 0814

Temperature range:	-5 °C to +80 °C
Nominal voltage:	350 V
Test voltage:	2000 V
Insulation resistance:	± 20 MΩ/km
Inductance:	Approx. 0.65 mH/km
Impedance:	Approx. 78 Ω
Capacitive coupling:	Approx. 300 pF/100m
Connector cross section:	0,14 mm ² (ST010-S and ST011-S with a connector cross section of 0.25 mm ²)

Material and finish:

ABS, flame-retardant to UL 94 V-0, plastic with nickel finish over Cu.

Temperature range:	-35 °C to +95 °C
Attenuation factor:	> 40 dB between 300 and 900 MHz

Construction:

The cable screen is screwed with low-impedance over strain relief on both sides of the housing hood with locking screws.
The connections are crimped.

Ordering information

PX 901-A: Screw terminal panel for analog I/O
PX 901-AG: Screw terminal panel for analog I/O with housing for DIN rail
Available round cables, twisted pairs, shielded
ST010: Shielded round cable, 2m
ST011: Shielded round cable, 5m
Other lengths on request

Ordering information

ST010: Round cable, 37-pin, 2 m
ST011: Round cable, 37-pin, 5 m
Other lengths on request
(3 m, 10 m, ...)

**Our cables are not to be exported
in the People's Republic of China**

Complete information about drivers and accessories see www.addi-data.com



All-rounder for noise and vibration measurement

- Synchronization of noise/vibrations with external signals (e.g. encoders)
- Dynamic noise measurement
- Current supply for ICP™ sensors
- 24-bit precision, antialiasing filter
- With numerous additional I/O functionalities for control and regulation processes

NEW

Noise and vibration measurement board, 24-bit, multifunction board, 8 analog inputs, anti-aliasing filter

APCI-3600



The new multifunction board APCI-3600 is designed for all highly precise noise and vibration measurement tasks. It offers the advantage of combining all functions needed for this kind of applications on just one board.

- Chronometer inputs (up to 1 MHz / 32-bit depth) allow applications with precise coordinates determination
- Analog I/O
- Current supply of the ICP™ sensors
- SDRAM memory allows transfer rates up to 24 MByte/s.
- The synchronization (cascading) of several APCI-3600 through Master/Trigger
- Digital I/O

For a fast integration in special test applications, the board is supplied with drivers and samples.

Specifications

Analog inputs:	8 SE or differential, simultaneous sampling
Resolution:	24-bit
A/D converter:	Delta-Sigma, 5th order, multibit, Delta-Sigma Modulator
Gain:	x1, x10 software programmable
Input ranges:	Gain x1, ± 10 V single-ended
Sampling frequency:	2 kHz $\leq f_s \leq$ 200 kHz; selectable through software
Oversampling:	64 xfs
Input coupling:	AC, DC, GND, through software
Dynamic characteristics:	
2 kHz $\leq f_s \leq$ 50 kHz:	Passband: DC (0Hz) to 0.47 xfs, min. to max.
50 kHz $\leq f_s \leq$ 100 kHz:	Passband: DC (0Hz) to 0.45 xfs, min. to max.
100 kHz $\leq f_s \leq$ 200 kHz:	Passband: DC (0Hz) to 0.24 xfs, min. to max.

SNR:

2 kHz $\leq f_s \leq$ 50 kHz:

50 kHz $\leq f_s \leq$ 100 kHz:

100 kHz $\leq f_s \leq$ 200 kHz:

Phase error

At $f_s = 200$ kHz

Amplitude error:

Offset error:

Current sources:

Analog outputs:

Output range:

Settling time: 10 V Step,

RL = 2 k, CL=1500 pF

Chronometer and gate inputs:

Digital I/O channels:

Master Trigger, External Clock:

Onboard SDRAM:

Data transfer:

Operating voltage:

PCI 32- or 64-bit:

Front connectors:

Additional connectors:

- 15-pin male connector for the chronometer inputs
- 15-pin male connector for the analog outputs
- 26-pin male connector for the digital I/O
- 6-pin male connector for the clock

Connection:

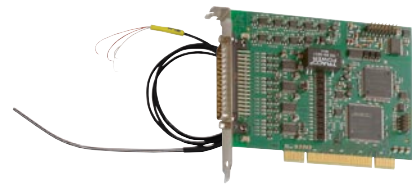
ST3601: Connection cable, 2 m, SMB coaxial female connector on BNC male connector

FB3600-D: Ribbon cable for the connection of the digital I/O on separate bracket 30 cm

FB3600-AC: Ribbon cable for the connection of the chronometers and the analog outputs on separate bracket, 30 cm

Temperature measurement board, 18-bit, isolated, for thermocouples, Pt100, RTD

APCI-3200



- Optical isolation 1000 V
- Up to 16 channels for thermocouples or 8 inputs for RTD or 16 single-ended (SE)/differential analog Inputs.
- 18-bit resolution, 16-bit precision
- Cold junction compensation (screw terminal panel PX 3200)
- Onboard gain and offset calibration
- 16-bit precision guaranteed for sample rates: 20, 40, 80 or 160 Hz/channel, others on request
- Short-circuit and line break detection
- 4 digital inputs, 3 digital outputs, 24 V
- Linearisation through table and calculation
- Protection against overvoltage (± 30 V) and high-frequency EMI

Specifications

Analog inputs:	- 16 x thermocouples or - 8 x RTD with 2-wire or 4-wire connection - 4 x RTD with 3-wire connection - 16 SE/8 diff. inputs, ± 2.5 V
Precision:	16-bit/18-bit
Gain amplifier:	1, 2, 4, 8, 16, 32, 64, 128
Conversion start:	external, software or timer
Number of I/O channels:	4 digital inputs, 24 V, 3 digital outputs, 24 V, 125 mA Open Collector
Overvoltage protection:	± 30 V
Operating voltage:	+ 5 V, ± 5 % mA typ.
Current consumption:	without load typ. 600 mA ± 10 %
System bus:	PCI-bus, 5 V, 32-bit 5 V / 3.3 V in preparation
Front connector:	50-pin SUB-D male connector
Additional connector:	16-pin male connector for the digital I/O

Ordering information

APCI-3600: Noise and vibration measurement board, 24-bit, multifunction board, 8 analog inputs, anti-aliasing filter. Incl. technical description and software drivers.

APCI-3600-L: 8 analog inputs, 4 current inputs for the connection of ICP sensors, 128 Mbytes SDRAM

Ordering information

APCI-3200: Temperature measurement board, optically isolated, 16/8/4 channels for thermocouples, Pt100, RTD, 18-bit, incl. technical description, software drivers and monitoring program

APCI-3200-16: 16 analog inputs: 16 thermocouples or 8 RTDs or 16 SE or 8 diff. voltage inputs

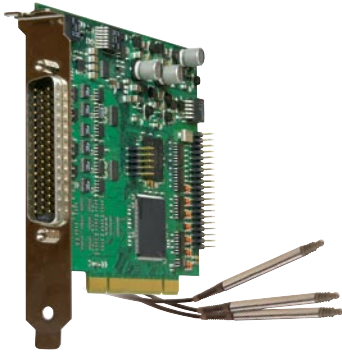
APCI-3200-8: 8 analog inputs: 8 thermocouples or 4 RTDs or 8 SE or 4 diff. voltage inputs

APCI-3200-4: 4 analog inputs: 4 thermocouples or 2 RTDs or 4 SE or 2 diff. voltage inputs

PX3200-G: Screw terminal panel with cold junction compensation, for DIN rail. **ST3200:** Standard round cable, 2m

ST010: Standard round cable, shielded, twisted pairs, 2 m

Complete information about drivers and accessories see www.addi-data.com

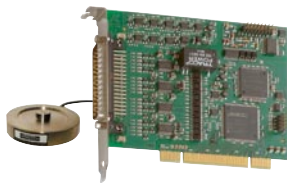


Acquisition of up to 16 displacement transducers

You can acquire up to 16 displacement transducers using the PCI board APCI-3701. The board allows the direct connection of Half Bridge or LVDTs with a 16-bit resolution. You can connect different transducer types to the same board which allows to use one board for different transducers. A wide choice of transducers and their properties are stored in a free library.

The board automatically adapts to these properties when a transducer is selected.

Pressure measurement board, isolated, up to 8 channels for strain gauge, 18-bit APCI-3300



- Optical isolation 1000 V
- 4 or 8 channels for strain gauges
- Voltage range 0 to + 2.5 V
- 4 or 8 voltage sources (one per channel)
- 18-bit resolution, 16-bit precision
- Onboard gain and offset calibration
- 16-bit precision guaranteed for sample rates: 20, 40, 80 or 160 Hz/channel
- Protection against overvoltage (± 30 V) and high-frequency EMI
- 4 digital inputs, 3 digital outputs, 24 V

Specifications

Analog inputs:	4 or 8 channels for strain gauges
Precision:	16-bit/18-bit
Gain amplifier:	1, 2, 4, 8, 16, 32, 64, 128
Conversion start:	external, software or timer
Voltage sources:	4 or 8 (one per channel)
Output voltage of the voltage sources:	5 V, 40 mA (others on request)
Number of I/O channels:	4 digital inputs, 24 V, 3 digital outputs, 24 V, 125 mA Open Collector ± 30 V
Overvoltage protection:	± 30 V
Operating voltage:	+ 5 V, ± 5 % mA typ.
System bus:	PCI, 5 V, 32-bit
Front connector:	50-pin SUB-D male connector
Additional connector:	16-pin male connector for the digital I/O

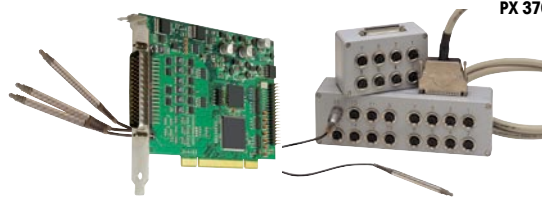
Ordering information

APCI-3300: Pressure measurement board, optically isolated, up to 8 channels for strain gauge, 18-bit incl. technical description and software drivers
APCI-3300-8: 8 analog inputs for pressure signals
APCI-3300-4: 4 analog inputs for pressure signals

Connection:

PX3200: Screw terminal panel with housing for DIN rail
ST3200: Standard round cable, shielded, twisted pairs, 2m
FB3000: Ribbon cable for digital I/O on separate bracket
PX901-ZG: Screw terminal panel for digital I/O for DIN rail
ST010: Standard round cable, shielded, twisted pairs, 2 m
ST011: Standard round cable, shielded, twisted pairs, 5 m

Length measurement board, 16-bit, 16 or 8 inductive transducers, LVDT, half-bridge APCI-3701



PX 3701 connection box transducers, Aluminium housing, shielded

- PCI interface to the 32-bit data bus
- Acquisition of 8 or 16 inductive displacement transducers (half-bridge, LVDT)
- Acquisition of different types of transducers with one board
- 16-bit resolution
- Sampling frequency depending on the transducer type: Standard version APCI-3701-8/-16: from 2 to 20 kHz; Knäbel version APCI-3701-K-8/-16: 50 kHz
- Measuring frequency, programmable through software: standard version APCI-3701-8/-16: from 2 to 20 kHz; Knaebel version APCI-3701-K-8/-16: 50 kHz
- Conversion can be triggered through software, digital input or timer
- End of conversion through software and/or interrupt
- PCI-DMA access
- On-board FIFO
- Sequence RAM
- 16 digital I/O channels, with optical isolation, 24 V
- Connection of the transducers through an external box (PX 3701-8 or -16) with cable. Type depends on the transducer ; order separately
- Software programming
- Automatic setting of the input stages (gain and offset) depending on the transducer sensitivity
- Transducer calibration tool for individual calibration through data base management
- Predefined data base for connecting/calibrating a large selection of industrial types of transducers:
 - Solartron - Tesa - Marposs - Schlumberger - Peter & Hirt
 - Mahr - RDP - Schaevitz - SMPR Knaebel.

Further transducers such as Horst Knaebel can be calibrated on request.
 Current list of the supported transducers on the web.

Example of measurement precision with transducer: Type TESA GT21, range ± 2 mm ($\Delta 4$ mm), 14-bit accuracy
 $\frac{4 \text{ mm}}{2^{14}} = \pm 0.2 \mu\text{m}$

Specifications

Number of inputs:	for 1, 8 or 16 transducers
Resolution:	16-bit
Interrupt:	At end of conversion, timer overrun or end of scan, DMA Short circuit on the transducer supply
Programmable modes:	- Trigger (external, through digital input) - Interrupt - Polling - DMA - Autorefresh
Diagnostic possibilities:	Short circuit or break - of the transducer supply - of the transducer signal line
Number of dig. I/O channels:	8 dig. inputs, 8 outputs, 24 V
Optical isolation:	1000 V through opt. couplers
Dimensions:	140 x 99 mm
Operating voltage:	+ 5 V, ± 5 % from the PC, 24 V extern
PCI 32-/64-bit:	3.3 V/5 V, acc. to spec. 2.1 (PCISIG)
Front connector:	50-pin SUB-D male connector
Additional connector:	16-pin male connector for connecting the digital I/O

Ordering information

APCI-3701: Length measurement board, optically isolated, 16-bit, 16 or 8 inductive transducers, LVDT, half-bridge, incl. technical description, software drivers and monitoring program.
Versions
APCI-3701-8: for 8 displacement transducers
APCI-3701-16: for 16 displacement transducers

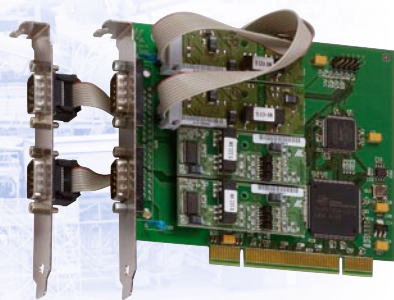
Connection for HB and LVDT transducers:

PX 3701HB-8/-16: Connection box for 8/16 half-bridge transducers
PX 3701LVDT-8/-16: Connection box for 8/16 LVDT transducers

Connection:

ST3701: Connection cable between board and connection box
FB3701: Ribbon cable for digital I/O
PX 901-ZG: Screw terminal panel for digital I/O
ST010: Standard round cable, shielded, twisted pairs, 2 m

Communication boards for 3.3 V and 5 V systems



Serial interfaces

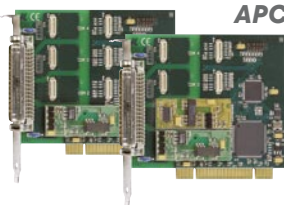
ADDI-DATA now offers 1-port to 8-port serial interfaces for both 3.3 and 5 V PCI systems. The interfaces consist of a basic board which can be fitted with the following modules: RS232, RS422, RS485 and Current Loop, with or without optical isolation.

These modules can also be combined as required. With this concept, you can optimise the hardware to suit your application and still change the configuration later to meet new requirements. The modules are protected against short circuits, rapid transients and electrostatic charge.

NEW

1- or 2-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting

**APCI-7300-3
APCI-7420-3**



- APCI-7300-3: 1-port serial interface
- APCI-7420-3: 2-port serial interface
- RS232, RS422, RS485, 20 mA Current Loop
- Modular mounting through modules
- With or without isolation (depending on modules)
- Mode configuration free for each port
- 128-byte FIFO buffer, common interrupt
- Transfer rate programmable up to 115,200 Baud
Option: up to 1 MBaud for RS485, RS422, RS232
Other transfer rates on request
- Automatic transmitter control for RS485

Specifications

Mode:	configurable RS232, RS422, RS485, 20 mA Current Loop (active, passive) with or without optical isolation (modules)
Transmission mode:	asynchronous, full, half duplex
Transfer rate:	progr. up to zu 115,2 kBaud, up to 1 MBaud on request 5-, 6-, 7- or 8-bit character 1, 1½ or 2 stop bits
Protocol:	
Parity:	even, odd, none, mark or space
Interrupt lines:	automatic through BIOS
Dimensions:	175 x 99 mm
Operating voltage/current:	+ 5 V, ± 5 %, 320 mA typ. 3.3 V / 5 V, acc. to spec. 2.1 (PCISIG)
Front connector:	
APCI-7300-3:	1 x 9-pin SUB-D male connector
APCI-7420-3:	2 x 9-pin SUB-D male connector

Ordering information

APCI-7300-3: 1-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting, incl. technical description and software driver

APCI-7420-3: Same as APCI-7300-3 (with 2-ports)

Base boards without modules.
Please order the modules separately.

NEW

4- or 8-port serial interface, RS232, RS422, RS485, 20 mA CL, modular mounting

**APCI-7500-3
APCI-7800-3**

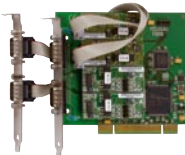


Also available for
CompactPCI™
page 32

- APCI-7500-3: 4-port serial interface
- APCI-7800-3: 8-port serial interface
- RS232, RS422, RS485, 20 mA Current Loop
- Modular mounting through modules
- With or without optical isolation (depending on modules)
- Mode configuration free for each port
- 128-byte FIFO buffer, common interrupt
- Transfer rate programmable up to 115,200 Baud
Option: up to 1 MBaud for RS485, RS422, RS232
- Automatic transmitter control for RS485

Specifications

Mode:	configurable RS232, RS422, RS485, 20 mA Current Loop (active, passive) with or without isolation (modules)
Transmission mode:	asynchronous, full, half duplex
Transfer rate:	progr. up to zu 115,2 kBaud to 1 MBaud on request 5-, 6-, 7- or 8-bit character 1, 1½ or 2 stop bits
Protocol:	
Parity:	even, odd, none, mark, space
Interrupt lines:	automatic through BIOS
Dimensions:	175 x 99 mm
Operating voltage/current:	+ 5 V, ± 5 %, 320 mA typ. 3.3 V / 5 V, acc. to spec. 2.1 (PCISIG)
Front connector:	
APCI-7500-3:	37-pin SUB-D male connector
APCI-7500-3/4C:	4 x 9-pin SUB-D connector
APCI-7800-3:	78-pin SUB-D connector



APCI-7500-3/4C

Same specifications as
APCI-7500-3,
with 2 PCI brackets and
4 x 9-pin SUB-D connectors

Ordering information

APCI-7500-3: 4-port serial interface (1 x 37-pin SUB-D)

APCI-7500-3/4C: 4-port serial interface (4 x 9-pin SUB-D)

APCI-7800-3: 8-port serial interface (1 x 78-pin SUB-D)

Base board without modules. Please order the modules separately. Incl. technical description and standard drivers

Connection APCI-7500-3

ST074: Shielded round cable, 37-pin to 4x25-pin

ST075: cable 37-pin to 4 x 9-pin for

Connection APCI-7800-3

ST7809: 78-pin to 8 x 9-pin

ST7825: Shielded round cable, 78-pin to 8x25-pin

Modules for mounting on serial interfaces, RS232, RS422, RS485, 20 mA CL

Modules



The base boards APCI-7xxx-3 can be configured in the following modes by inserting modules: RS232, RS422, RS485 (with or without optical isolation) and Current Loop (with isolation). The modules with isolation 1000 V allow a protection for the use in noisy environments where earth loops can occur. The modules are freely selectable for each port. Please order separately.

- **Mode RS232:** module MX232 or MX232-G (isolated)
- **Mode RS422:** module MX422 or MX422-G (isolated)
- **Mode RS485:** module MX485 or MX485-G (isolated)
- **Mode Current Loop:** module MXTTY (isolated)
- **Creeping distance 3.2 mm:** MX232-G, MX422-G, MX485-G, MXTTY
- **Short-circuit protection:** MX422, MX422-G, MX485, MX485-G
- **ESD protection:** MX232, MX232-G
- **Burst protection:** MX422, MX422-G, MX485-G, MX485, MXTTY
- **Transmission mode:**
Full Duplex: MX232, MX232-G, MXTTY,
Full/Half Duplex: MX422, MX422-G
Half Duplex: MX485, MX485-G
- **Max. Baud rate:**
- MX232-G: from 19.2 kBaud to 1 MBaud on request
- MX232, MX422, MX422-G, MX485, MX485-G:
from 115.2 kBaud to 1 MBaud on request
- MX232, MX232-G: from 19.2 kBaud to 1 MBaud on request
- MXTTY: 19.2 kBaud
- **Modem control signals:**
- MX232, MX232-G: through software
- MX422, MX422-G, MX485, MX485-G, MXTTY: automatic
- **Automatic transmitter control:** MX485, MX485-G
- **Current consumption:**
MX232: 21 mA • MX232-G: 48 mA
MX422: 5 mA • MX422-G: 42 mA
MX485: 5 mA • MX485-G: 54 mA
MXTTY: 51 mA

Ordering information

MXTTY: 20 mA Current Loop Mode (active, passive), isolated

OPT. QUARTZ: <1 Mbaud transfer rate for RS232, RS422, RS485, MXTTY

MX232-G: RS232 mode, isolated

MX232: RS232 mode

MX422-G: RS422 mode, isolated;

MX422-PEP: RS422 mode, isolated, with RTS/CTS

MX422: RS422 mode

MX485-G: RS485 mode, isolated

MX485: RS485 mode

Complete information about drivers and accessories see www.addi-data.com

Digital and analog I/O for CompactPCI bus and PXI



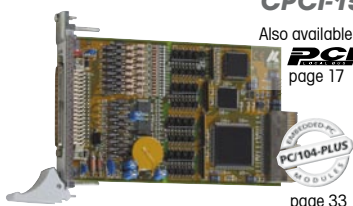
The more robust and reliable system

The majority of industrial computers used up to now are often inadequately protected against temperature fluctuations, overvoltage and vibrations and require high maintenance. For this reason, the CompactPCI and a PXI™ system are the better choice - not only in critical embedded systems but also in severe industrial environments.

Digital I/O board, optically isolated, 32 digital inputs/outputs, 24 V

CPCI-1500

Also available for
PCI
page 17



page 33

- 3U or 6U bracket
- Can be run in a PXI chassis
- 16 isolated inputs, 24 V, incl. 14 interruptible
- 16 isolated outputs, 10 to 36 V, 500 mA
- Optical isolation 1000 V
- Watchdog for resetting the outputs to "0"
- Protection against fast transients, overvoltage, electrostatic discharge and high-frequency EMI
- Inputs: voltage reversal, input filters
- Outputs protected against short circuit
- On Power ON/reset all outputs are set to "0".
- Overtemperature and overvoltage protection
- Diagnostic report in case of short circuit, overtemperature, voltage drop ...
- 24 V power outputs with protection diodes and filters

Specifications

Optical isolation:	1000 V through optical couplers
Input current:	6 mA typ. at 24 V
Interrupt compare logic:	AND and OR Mode
Signal delay:	70 µs at 24 V
Max. input frequency:	5 kHz at 24 V
Output type:	High-side acc. to IEC 1131-2
Supply voltage:	10 to 36 V, min. 5 V
Output voltage/output:	500 mA max.
Watchdog:	timer prog. 10 µs to 37 s
Timer/counter:	3, software programmable
Dimensions:	3U/4TE - 1 slot 3U
CPCI 32-bit:	acc. to spec. CompactPCI 2.1
Operating voltage:	5 V, ±5 %, from the PC
Front connector:	37-pin SUB-D male connector

Ordering information

CPCI-1500: Digital I/O board, optically isolated, 32 digital inputs/outputs, 24 V.
Incl. technical description, software drivers and monitoring program
Option:
URS-1500-6U: 6U bracket for mounting in 6U housing
Connection:
PX901-DG: Screw terminal panel, LED status display, for DIN rail
PX8500-G: Relay output board for DIN rail, cascable
ST010: Standard round cable, shielded, twisted pairs, 2 m
ST010-S: Same as ST010, for high currentsw (separate 24 V supply)

Reprogrammable functions!

Multifunction board, isolated, 16-bit analog, 32-bit counter, 4 analog outputs

CPCI-3009

NEW!



- 3U or 6U bracket
- Can be run in a PXI chassis
- 16 SE / 8 diff. inputs
- Optical isolation 1000 V
- 16-bit resolution, throughput: 200 kHz
- Progr. gain freely configurable for each channel
- Conversion through software, scan, timer, external event
- Onboard FIFO for 512 analog values
- PCI-DMA (Windows 2000/NT)
- Sequence RAM
- Reprogrammable counter functions, 32-bit access, 5 MHz counting frequency, RS422 signals, Functions: incremental encoder, chronos for frequency, pulse and period duration measurement. Further functions on request. Contact us!
- Overvoltage protection ± 40 V
- 4 digital inputs, 4 digital outputs, 24 V, optically isolated

Specifications

Input ranges, configurable per software for each channel:	0-10 V, ±10 V 0-5 V, ±5 V, 0-2 V, ±2V, 0-1V, ±1 V through gain, 0-20 mA optional
Throughput:	200 kHz
Optical isolation:	1000 V through opt. couplers
Gain:	x1, x2, x5, x10 software prog.
Number of dig. I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	3U/4TE - 1 slot 3U
CPCI 32-bit:	acc. to spec. CompactPCI 2.1
Operating voltage/current:	+5 V, ±5 %
Front SUB-D connectors:	26-pin female connector for analog I/O, 16-pin male connector for dig. I/O

Ordering information

CPCI-3009: Multifunction board, optically isolated, 16-bit analog, 32-bit counter, 4 analog outputs.
Incl. technical description and software drivers
Options:
URS-3009-6U: 6U bracket for mounting in 6U housing
OPT. DF: Precision filter for 1 diff. channel, (30 Hz)
OPT. SF: Precision filter for 1 SE-channel
OPT. PC-DIFF: Current input 0(4)-20 mA for 1 diff. channel
PC-SE: Current input 0(4)-20 mA for 1 SE-channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for the analog I/O, with housing for DIN-rail
PX901-ZG: Screw terminal panel for digital I/O, for DIN rail
ST3009-DZ: 15-pin HD SUB-D female to 37-pin SUB-D male connector, **ST3009-A:** 26-pin HD SUB-D female connector to 37-pin SUB-D male connector

NEW!

Multifunction board, isolated, 16 SE or 8 diff. inputs, 4 analog outputs, 12-bit

CPCI-3124



- 3U or 6U bracket
- Can be run in a PXI chassis
- 16 SE / 8 diff. inputs
- Optical isolation 1000 V
- 12-bit resolution
- Throughput: 200 kHz
- Progr. gain freely configurable for each channel
- Conversion through software, scan, timer, external event
- Onboard FIFO for 512 analog values
- PCI-DMA (Windows 2000/NT)
- Sequence RAM
- Overvoltage protection ±40 V
- 4 digital inputs, 4 digital outputs, 24 V, with optical isolation

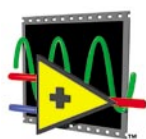
Specifications

Input ranges:	0-10 V, ±10 V 0-5 V, ±5 V, 0-2 V, ±2V, 0-1V, configurable per software for each channel, ±1 V through gain, 0-20 mA optional
Throughput:	200 kHz
Optical isolation:	1000 V through opt. couplers
Gain:	x1, x2, x5, x10 software prog.
Number of digital I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	3U/4TE - 1 slot 3U
CPCI 32-bit:	acc. to spec. CompactPCI 2.1
Operating voltage/current:	+5 V, ±5 %
Front SUB-D connectors:	26-pin female connector for analog I/O, 16-pin male connector for dig. I/O

Ordering information

CPCI-3124: Multifunction board, optically isolated, 16 SE or 8 diff. inputs, 4 analog outputs, 12-bit
Options:
URS-3124-6U: Board with 6U bracket for mounting in 6U housing
OPT. DF: Precision filter for 1 diff. channel, (30 Hz)
OPT. SF: Precision filter for 1 SE-channel
OPT. PC-DIFF: Current input 0(4)-20 mA for 1 diff. channel (30 Hz), **PC-SE:** Current input 0(4)-20 mA for 1 SE-channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for connecting the analog I/O, with housing for DIN-rail
PX901-ZG: Screw terminal panel for digital I/O, for DIN rail
ST3009-A: 26-pin HD SUB-D female on 37-pin SUB-D male connector

Complete information about drivers and accessories see www.addi-data.com



Drivers for
LabVIEW™

**Fast application design
with LabVIEW™ drivers**

Analog input board, optically isolated, 16 SE or 8 diff. inputs, isolated, 12-bit *CPCI-3001*



Also available for
PCI
page 22

- 3U or 6U bracket
- Can be run in a PXI chassis
- 16 single-ended/8 differential inputs or 8 single-ended/4 differential inputs or 4 single-ended
- Optical isolation 500 V
- 12-bit resolution
- Throughput: 100 kHz
- Voltage or current outputs
- Progr. gain freely configurable for each channel
- Conversion through software, scan, timer, external event
- Onboard FIFO for 256 analog values
- PCI-DMA (Windows 2000/NT)
- Sequence RAM
- Overvoltage protection, input filters: 160 kHz
- 4 digital inputs, 4 digital outputs, 24 V, optically isolated

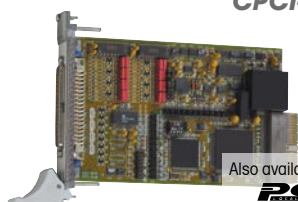
Specifications

Input ranges:	0-10 V, ± 10 V per software configurable for each channel 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V through gain, 0-20 mA opt. 100 kHz
Throughput:	100 kHz
Optical isolation:	500 V through optical couplers
Gain:	x1, x2, x5, x10 software prog. ± 12 V
Overvoltage protection:	± 12 V
Number of dig. I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	3U/4TE - 1 slot 3U
CPCI 32-bit:	acc. to spec. CompactPCI 2.1
Operating voltage/current:	+5 V, ± 5 %/886 mA typ.
Front connector:	37-pin SUB-D male connector

Ordering information

CPCI-3001-4: 4 SE inputs
CPCI-3001-8: 8 SE/4 diff. inputs
CPCI-3001-16: 16 SE/8 diff. inputs
Options:
URS-3001-6U: CPCI-3001 with 6U bracket
OPT. DF: Precision filter for 1 diff. channel, (30 Hz)
OPT. SF: Precision filter for 1 SE-channel
OPT. DC: Current input 0(4)-20 mA for 1 diff. channel
OPT. SC: Current input 0(4)-20 mA for 1 SE-channel
Connection:
PX901-AG: Screw terminal panel with transorb diodes for connecting the analog inputs, for DIN-rail
PX_BNC: BNC connection box for the analog I/O
ST010: Standard round cable, shielded, twisted pairs, 2 m

Multifunction board, isolated, 16 SE or 8 diff. inputs, 4/8 analog outputs, 16-bit *CPCI-3120*



Also available for
PCI
page 25

- 3U or 6U-bracket
- Can be run in a PXI chassis
- 16 single-ended/8 differential inputs or 8 single-ended/4 differential inputs
- Optical isolation 500 V
- 16-bit resolution, throughput: 100 kHz
- Progr. gain freely configurable for each channel
- Conversion through software, scan, timer, external event
- Onboard-FIFO for 256 analog values
- PCI-DMA, sequence RAM
- Overvoltage protection, input filter: 160 kHz
- 4 or 8 analog outputs, 14-bit
- Settling time: 30 μ s typ.
- Driver capacity: 5 mA/500 pF
- Short-circuit protection, EMI filters
- 8 digital I/O 24 V, optically isolated

Specifications

Input ranges:	0-10V, ± 10 V configurable through software for each channel 0-5 V, ± 5 V, 0-2 V, ± 2 V, 0-1 V, ± 1 V through gain, 0-20 mA opt. 100 kHz
Throughput:	100 kHz
Optical isolation:	500 V through optical couplers
Gain:	x1, x2, x5, x10 through software
Output range:	0-10 V, ± 10 V through software
Overvoltage protection:	± 12 V
Number of dig. I/O:	4 inputs and 4 outputs, 24 V
Dimensions:	3U/4TE - 1 slot 3U
Operating voltage/current:	+5 V, ± 5 %/1030 mA typ.
CPCI 32-bit:	acc. to spec. CompactPCI 2.1
Front connector:	37-pin SUB-D male connector

Ordering information

CPCI-3120-8-4: 8 SE/4 diff. inputs, 4 analog outputs
CPCI-3120-8-8: 8 SE/4 diff. inputs, 8 analog outputs
CPCI-3120-16-4: 16 SE/8 diff. inputs, 4 analog outputs
CPCI-3120-16-8: 16 SE/8 diff. inputs, 8 analog outputs
Options:
PX901-AG: Screw terminal panel with transorb diodes for connecting the analog inputs, for DIN-rail
PX_BNC: BNC connection box for the analog I/O
ST010: Standard round cable, shielded, twisted pairs, 2 m

4-port serial interface, RS232, RS422, RS485, 20 mA CL *CPCI-7500*



Also available for
PCI
page 30

- 3U or 6U bracket
- 4-port serial interface
- RS232, RS422, RS485, 20 mA Current Loop
- Modular mounting through modules
- With or without optical isolation
- Mode configuration free for each port
- 128-byte FIFO buffer, common interrupt
- Transfer rate programmable up to 115,200 Baud
Option: to 1 MBaud for RS485, RS422 and RS232
- Automatic transmitter control for RS485

Specifications

Mode:	configurable RS232, RS422, RS485, 20 mA Current Loop (active, passive) with or without optical isolation (modules)
Transmission mode:	asynchronous, full, half duplex
Transfer rate:	prgr. up to 115,2 kBaud to 1 MBaud on request 5-, 6-, 7- or 8-bit character 1, 1½ or 2 stop bits
Protocol:	even, odd, none, mark or space
Parity:	automatic through BIOS
Interrupt lines:	3U/4TE - 1 3U slot
Dimensions:	acc. to spec. PCI 2.1
CPCI 32-bit:	5 V, ± 5 %, from the PC
Operating voltage:	
Front connector:	37-pin SUB-D male connector

Ordering information

CPCI-7500: 4-port serial interface, RS232, RS422, RS485, 20 mA CL, incl. technical description and software drivers
Option: URS-7500-6U: Board with 6U bracket for mounting in 6U housing
MXTTY: 20 mA Current Loop Mode (active, passive), isolated
OPT. QUARZ: up to 1 MBaud possible
MX232-G: RS232 mode, isolated **MX232:** RS232 mode
MX422-G: RS422 mode, isolated;
MX422-PEP: RS422 mode, isolated, with RTS/CTS
MX422: RS422 mode
MX485-G: RS485 mode, isolated
MX485: RS485 mode
Connection:
ST075: Shielded round cable, 37- on 4x9-pin
ST074: Shielded round cable, 37- on 4x25-pin

Complete information about drivers and accessories see www.addi-data.com



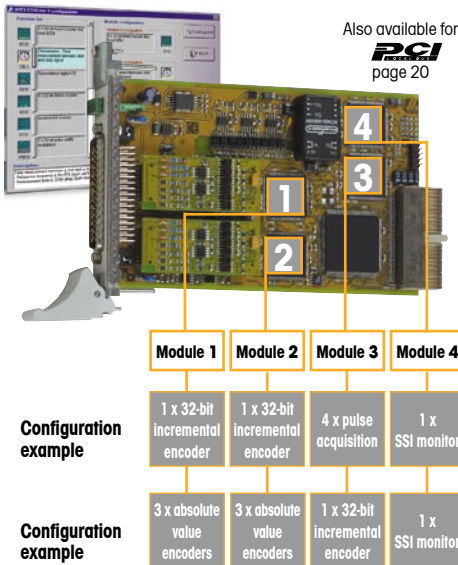
Develop your own counter system! PCI counter boards with FPGA logic

The CPCI-1710 board is a fast multifunction and multichannel counter board for the CompactPCI bus. It is characterised by flexible applications, high accuracy, speed and reliability in rough industrial environments.

With the CPCI-1710 you can put into practice a large range of applications on the same hardware basis thanks to FPGA technology. The functions are programmed individually for each function module using the supplied software. You can adapt the functions of the board to the requirements for your application and change them as required.

Reprogrammable functions!

Multifunction counter board, optically isolated, encoder, incremental counter, timer/counter, SSI, PWM,...



Specifications

Counter depth: 32-bit
Counter frequency: up to 5 MHz
Available channels: 28 digital inputs, 12 digital outputs, with optical isolation
Signals: - digital I/O signals
 - TTL or RS422
 - Option: 24 V
 +24 V ext. / 10 mA
Dimensions: 3U/4TE - 1 slot 3U
Space required: acc. to spec. CompactPCI 2.1
Operating voltage/current: +5 V, $\pm 5\%$ from the PC
 500 mA
Front connector: 50-pin SUB-D male connector

Available functions, when all four function modules are programmed with the same function:

4 x 32-bit incremental encoder acquisition
 8 x 16-bit incremental encoder acquisition
 12 x acquisition of absolute value encoder/SSI
 12 x counter/timer
 4 x chronos/TOR for frequency measurement
 16 x pulse width measurement
 4 x chronos for period duration measurement
 8 x TOR for velocity measurement
 32 digital I/O, 24 V, TTL, RS422
 8 x PWM
 1 x BiSS Master
 8 x ETM
 4 x SSI monitor

Ordering information

CPCI-1710: with 4 function modules, 3U bracket
CPCI-1710-10K20: same as CPCI-1710, with additional function for connecting a BiSS interface
CPCI-1711: with 2 function modules, 3U bracket
 Option 24 V on request
 Incl. technical description and standard drivers
Options:
URS-1710-6U: CPCI-1710 with 6U bracket
OPT. 24VX-171X: 24 V for diff. input signals
OPT. 5V: 24 V input signals are supplied with 5 V (channels E, F, G)
Connection:
ST370-16: Shielded round cable, 2 m
PX8000: Screw terminal panel for DIN rail

Customer-tailored
 modifications designed to suit your needs
 Hardware and software, firmware, PLDs, ...
Contact us!



NEW!

Digital I/O board, optically isolated, 32 digital inputs/outputs, 24 V



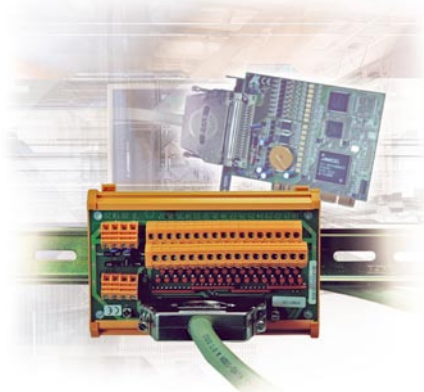
- 16 digital inputs, 24 V, optically isolated incl. 1 used as a counter input (channel 0)
- 2 interruptible inputs (channels 2 and 3)
- 16 digital outputs, 24 V, with optical isolation, 10 to 36 V, 150 mA/channel
- Optical isolation 1000 V
- Watchdog for resetting the outputs to "0"
- Protection against fast transients (burst) overvoltage, electrostatic discharge and high-frequency EMI
- Inputs: Protection against voltage reversal, input filters
- Outputs protected against short circuit
- On PowerOn/Reset all outputs are set to "0"
- Overtemperature and overvoltage protection
- 24 V power outputs with protection diodes
- Shutdown logic when the external supply voltage drops below 5 V

Specifications

Input current: 6 mA typ. at 24 V
Interrupt compare logic: OR mode (with defined filter times)
Signal delay: 70 μ s (at 24 V inputs)
Max. input frequency: Channel 0: 100 KHz (at 24 V)
 Channel 1-15: 5 KHz (at 24 V)
Output type: High-Side (Load at ground)
 acc. to IEC 1131-2
Supply voltage: 11 to 36 V
Output current / output: 150 mA typ.
Timers: 2, 12-bit, time base μ s, ms, s
Dimensions: 90 x 96 mm
Operating voltage: +5 V / 3.3 V, $\pm 5\%$ from PC
Front connector: 37-pin SUB-D male connector

Ordering information

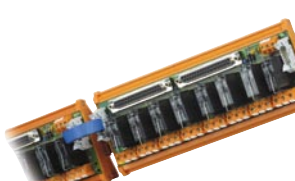
PC104-PLUS1500: Digital I/O board, optically isolated, 32 digital inputs/outputs, 24 V. Incl. technical description, software drivers and monitoring program
Connection:
FB104-1500: Ribbon cable 40-pin to 37-pin SUB-D male connector, 25 cm
PX901-DG: Screw terminal panel, LED status display, for DIN rail
PX8500-G: Relay output board for DIN rail, cascadable
ST010: Standard round cable, shielded, twisted pairs, 2 m
ST010-S: Same as ST010 for high currents (separate 24 V supply)
ST021: Round cable between FB104-1500 and PX8500-G, shielded, twisted pairs, 2 m
ST022: Round cable between PX8500-G and PX901-DG, shielded, 2 m
ST8500: Standard cable for cascading two PX8500



Single source solution!

Reliable data transfer must be ensured when designing systems in which the PC takes on important controlling and regulating tasks.

Interaction of the individual components involved determines the operational reliability of the entire system.

Screw terminal panel for 37 lines, interference-proof <i>PX 901</i>	3-row screw terminal panel for digital boards, interference-free <i>PX 9000</i>	8-port relay output panel, cascadable <i>PX 8500</i>
 - Fast connection of up to 37 signal or signal reference lines - LED indicator status (Version -D) - Separate ground connections - Connection through screw terminals - Overvoltage protection of the 24 V supply terminals through varistors and transil diodes - Terminals can be labelled - Additional 4-pin terminal for connecting the ground or the supply voltage - With housing for mounting on a standard supporting rail (option G) - All terminals intended for large conductor cross sections up to 2.5 mm² Specifications Signal line terminals: 32 for connecting peripherals - 4 for feeding the external operating voltage (digital I/O) Additional terminals: - 2 for ground lines Status display: 32 LEDs, 1 LED for indicator status of the operating voltage (version D) Connector: 37-pin SUB-D female connector Dimensions: (L x W x H) 130 x 70 x 35 mm with housing: (L x W x H) 132 x 87 x 70 mm Temperature range: 0-70°C	 - Fast connecting of up to 37 signal or signal reference lines 3 rows of screw terminals - LED indicator status - Separate ground connections - Connection through screw terminals - Overvoltage protection of the 24 V supply terminals through varistors and transil diodes - Terminals can be labelled - Additional 4-pin terminal for connecting the ground or the external supply voltage - Supply voltage terminals: 2 rows of 39 terminals - With housing for mounting on a standard supporting rail - All terminals intended for large conductor cross sections up to 2.5 mm² Specifications Signal line terminals: 37 for connecting peripherals - 4 or feeding the external operating voltage (digital I/O) Additional terminals: - 2 for ground lines Status display: 37 LEDs Connector: 37-pin SUB-D female connector Dimensions: (L x W x H) 248 x 87 x 83 mm with housing (approx.): (L x W x H) 248 x 87 x 83 mm Temperature range 0-70°C	 8 relays, cascadable in 16, 24 and 32 relays - All terminals intended for large conductor cross sections up to 2.5 mm² - Operating voltage display through a green LED - Relay status display through red LEDs - Relays mounted on sockets - Overvoltage protection of the 24 V supply voltage through varistors and transil diodes - Contact protection of the relays through varistors (option Vt) 4 mm creeping distance between change-over contact and closer of adjoining relay 6 mm creeping distance between change-over contact and closer of adjoining relay - Free-wheeling diode in the coil circuit - With housing for mounting on a standard supporting rail (option G) Specifications Max. switching voltage: 30 VAC - 277 VAC Max. switching capacity: 300 W - 2500 VA Max. switching current: 10 A Contact resistance: <100 mΩ Response time: 15 ms Release time: 5 ms Mechanical life: 5,000,000 operations Operating time at max. switching capacity: 100,000 operations Operating voltage: + 24 V Connector: 2 x 37-pin SUB-D female connector Dimensions: (L x W x H) 210 x 68 x 42 mm with housing: (L x W x H) 212 x 87 x 72 mm
Ordering information PX 901-D, screw terminal panel for digital I/O PX 901-DG, screw terminal panel for digital I/O with housing PX 901-A, screw terminal panel for analog I/O PX 901-AG, screw terminal panel for analog I/O with housing PX 901-ZG, screw terminal panel for digital I/O with housing all housings for DIN-rail Available round cables, twisted pairs, shielded ST010, shielded round cable, 2 m ST011, 5 m ST010-S for high currents (for dig. I/O) Other lengths on request	Ordering information PX 9000, screw terminal panel for digital I/O with housing for DIN-rail Available round cables, twisted pairs, shielded ST010, shielded round cable, 2 m ST010-S, for high currents ST011, shielded round cable, 5 m	Ordering information PX 8500, 8-port relay output panel PX 8500-G with housing The PX 8500 is available with varistors on request Cable: ST010, shielded round cable, 2m ST011, shielded round cable, 5m ST021, connection to CPCI/APCI-1500 ST022, between PX8500 and PX901-DG ST8500, ribbon cable for cascading two PX8500

NEW BNC connection box for analog I/O boards for mounting on standard supporting rail



The connection box PX-BNC allows the direct connection of analog voltage and current signals through BNC connectors. Many ADDI-DATA analog boards can be connected. With the PX-BNC, you can connect up to 8 differential or 16 single ended analog inputs as well as 8 analog output channels through BNC connectors.

Ordering information
PX_BNC, BNC connection box

Ordering information

PX 8500, 8-port relay output panel

PX 8500-G with housing

The **PX 8500** is available with varistors on request

Cable:

ST010, shielded round cable, 2m

ST011, shielded round cable, 5m

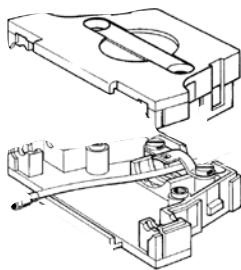
ST021, connection to **CPCI/APCI-1500**

ST022, between **PX8500** and **PX901-DG**

ST8500, ribbon cable for cascading two **PX8500**

Complete information about drivers and accessories see www.addi-data.com

Shielded cables for industrial applications



Shielded metallised hood with strain relief

Suitable for use as control or signal cables in noisy environment, for indoor or outdoor applications, in either dry or moist places. The tight braid reduces the emissions. The copperbraid is used as "ground". Twisted pairs provide protection against crosstalk and external interference.

- Plain copper conductor, fine-strand according to VDE 0295 class 5
- Special PVC conductor insulation
- Twisted-pair conductors
- Core identification according to DIN 47100
- Conductors laid up in layers
- Separating foil
- Tinned copper braid shielding
- Covering grade approx. 85%
- Special PVC outer sheath, grey
- Oil and petrol resistant according to VDE 0250 and 04772
- Self-extinguishing (SE) and flame retardant, B test according to VDE 0472 part 804 and IEC 332-1

Standard round cable, shielded

ST010/011



ST010, ST011

- Standard round cable, shielded for digital, multifunction, analog and counter boards
- Twisted pairs
- 37-pin SUB-D female connector to 37-pin SUB-D male connector
- Metallised hoods with fixing screws
- Available in 1 m, 2 m, 3 m, 5 m, 10 m

Shielded connection cables for serial interfaces

ST075/074



ST074, ST075

- Standard round cable, shielded, for 4-port serial interfaces.
- Twisted pairs
- 37-pin SUB-D female connector to 4 x 25-pin SUB-D male connector (ST074) or 25-pin SUB-D male connector to 4 x 9-pin (ST075)
- metallised hoods with fixing screws
- Length 35 cm, other lengths on request

ST010-S/011-S



ST010-S, ST011-S

- Standard round cable, shielded, for high currents, 2 or 5 m
- For digital I/O and digital output boards
- Twisted pairs
- 37-pin SUB-D female connector to 37-pin SUB-D male connector
- metallised hoods with fixing screws
- Other lengths on request

ST7809/7825



ST7809, ST7825

- Standard round cable, shielded, 35 cm, for 8-port serial interfaces.
- Twisted pairs
- 78-pin SUB-D male connector to 8 x 9-pin SUB-D male connector (ST7809) or to 9 x 25-pin SUB-D male connector (ST7825) (78-pin to board, 9-pin or 25-pin to the peripheral)
- metallised hoods with fixing screws

Ordering information

ST010: Standard round cable, 37-pin
ST011: Standard round cable 37-pin

ST010-S: Standard round cable 37-pin
ST011-S: Standard round cable 37-pin

Ordering information

ST075: Connection cable 37- to 4x9-pin
ST074: Connection cable 37- to 4x25-pin

ST7809: Connection cable 78- to 8x9-pin
ST7825: Connection cable 78- to 8x25-pin

Imprint

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Solutions for industrial Measurement & Automation



Embedded System MSX-Box



Ethernet I/O modules

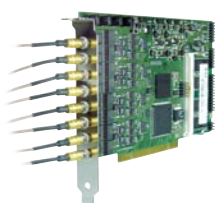


Digital I/O,
digital input, digital output,
relays



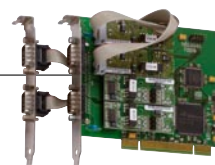
Counter boards

Analog multifunction, input and output

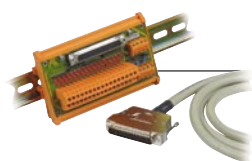


Measurement of noise and vibration,
temperature, strain gauges,
displacement measurement (transducers)

1 to 8-port serial interfaces



Motion control



Relay output boards, terminal panels,
connection cables

www.addi-data.com