# Analog Input / Output

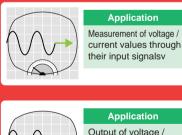
## **ANALOG I/O**

Interface modules that convert analog signals to digital data.

Converting analogue signals to data (digital signals) and feeding them to PC allows you to measure external events, whereas converting PC data to analogue signals for output allows you to control external devices.



Application Sensor Measurement through Voltage / Current input signals

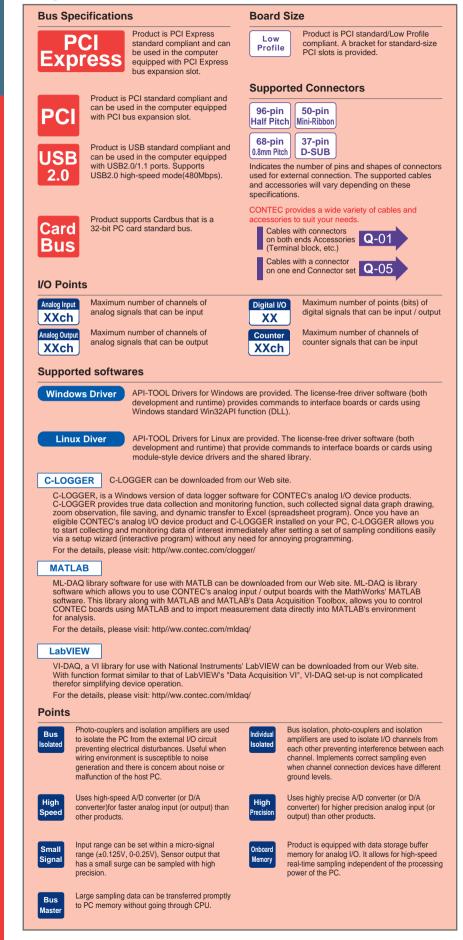


Application Output of voltage / current signals



Application Motor control through the output of voltage / current signals

#### **Pictograms**



ou can choose from a γ	Neup	ding to your desired bus, I/	/O points, and onboard fu	inctions.	Danal DOa
-	Analog Input	Analog Output	Digital I/O Counter	Page	Panel-PCs  Flat Panel
<b></b>	16bit 32ch 2µsec/ch	16bit 2ch 10µsec	DI: 8 DO: 8 2ch Mast		I-08 Displays Silicon Disk
	16ch			Onboard AI-1616L -L PE	Drives
(Dress_ Low	16bit 10µsec/ch		DI: 4 1ch		Option -10 Box PCs &Pa
Profile			DO: 4		PCswith Windows CE
		16bit 4ch 10µsec	DI: 8 Date But	Memory AO-1604L-LPE	I-10 Single Board Computer
	- 32ch - 2µsec/ch	2ch 10µsec	DI: 8 2ch Mast	ter Memory ADA 10-32/2(PCI)F	I-08 Backplane
	16bit 16ch	16bit 1ch	DI: 4	AD16-16U(PCI)EV	I-16 Analog I/O
	10µsec/ch		DO: 4	Onboard Memory AD16-16(PCI)EV	I-16 Digital I/O
	4ch 10msec/cl		Individ		I-18 Counter & Motion Contro
	1µsec/ch			Onboard AD12-16U(PCI)EV	I-16 Serial Communication
	-16ch	12bit 1ch 6µsec		Onboard AD12-16(PCI)EV	GPIB Communication
			DI: 4		Remote I/O
	12bit 10µsec/ch		DO: 4	AD12-16(PCI)	Expansion Ur
	64ch			AD12-64(PCI)	I-17 Bus Adapter Software
	<b>16ch</b> -20µsec/ch	]	Bus	AD112-16(P(1)	I-18 Accessories &
		16bit 4ch 20µsec	Individ		I-19 Cables Distributed Monitor
		-16ch		DA12-16(PCI)	Control Network: I Multi-Programm
		12bit 8ch 10µsec		DA12-8(PCI)	I-19 Display Wireless LAN
		- 4ch -		DA12-4(PCI)	Remote
	8ch	16bit 2ch 10µsec		Memory ADA16-8/2(LPCI)L	
			Bus	ted Memory ADAI16-8/2(LPCI)L	
	16bit 10µsec/ch	1		Onboard Memory AD16-16(LPCI)L	I-11
			Bu	ADI16-16(LPCI)L	Lineup
Low Profile	64ch		DI: 4 DO: 4 1ch	Onboard Memory AD16-64(LPCI)LA	I-11 Measurement
					Products Multi-function F Series
		4ch	Bu	S Onboard DAI16-4(I PCI)	PCI Express
		16bit 10µsec	Isolat		PCI
		8ch	1   -	Memory DA 16-6(LPCI)L	I-12 PC Card
		16ch		DA16-16(LPCI)L	Low-cost Multi-fund L series
ard	2µsec/ch		DI: 4 1ch Mast		PCI Express
Bus 🥁	16bit 8ch 10µsec/ch	16bit 2ch 10µsec	DO: 4	Onboard Memory ADA16-8/2(CB)L	I-13
0	16bit 8ch 10µsec/ch	16bit 2ch 10µsec	DI: 4	Onboard AL-160802AY-USB	PC Card
		]	DO: 4 DI: 4		E series
	Valtara	10µsec/ch+20µsec	DO: 4	Memory AI-TOUGAT-USB	
	Current:	40µsec/ch+20µsec	Isolat	ted Memory ADIT6-4(USB)	I-21 Standard
JSB	12bit 8ch 10µsec/ch +20µsec		Bus		I-21 PCI USB
		16bit Voltage: 10µsec	Bus		I-21
		4ch 12bit 20µsec	Bus		I-21

Global Portal : www.contec.com

### Box-PCs

Panel-PCs Flat Panel Displays

# **CONTEC DAQ Solution Products**

# **Graph Display and Logging**

Silicon Disk Drives Option

Box PCs &Panel PCswith Windows CE Single Board Computer Chassis / Backplane

Digital I/O

Counter & Motion Controller Serial

Communication GPIB

Communication

Remote I/O Expansion Unit /

Bus Adapter Software

Accessories & Cables

Distributed Monitor & Control Network: F&eIT Multi-Programmable

Wireless I AN

Display

Remote Monitoring Solution

Service & Products

-03

Lineup

PCI Express

PCI

PCI PC Card

Intelliger F series

PCI

PCI

USB

ISA

PC Card

PCI Express

### C-LOGGER for Windows Vista/ XP / 2000 / Server2003 Logging Software

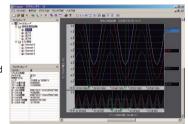
**HIGH SPEED SAMPLING & GRAPHING** 

C-LOGGER enhances the performance of hardware, providing high-speed graphing and quick response even when handling large amounts of data.

### Dual-graph display - full-scale and zoom

C-LOGGER has the option of displaying collected data on both full-scale and zoomed graphs. For example, while viewing complete data, an isolated dataset can be viewed by expanding the area and checking details.

Data



#### **OTHER FUNCTIONS**

Configuration Wizard (interactive program) for easy setting of sampling conditions.

Capable of loading data from saved files.

Customizable graph display (line colors, background color, label, etc.)

#### Available for Free Download

Ships with supported products

#### File viewer - Property viewer

**MULTI WINDOW INTERFACE** 

C-LOGGER can display two or more

windows at a time allowing the user

access to both graph and numeric displays. Each window can be

customized as to size and number

of channels displayed

P-06

FILE VIEWER provides a tree display for managing recently collected data and data files. PROPERTY VIEWER displays detailed information on each item of data

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7711182-7	プロパティビューア	×
	プロパティ くチャネル情報 チャネル名 物理チャネル レンプ スケール最大値 スケール最大値 スケールの特徴 カーンル4時間 カーンル4時間	18 EE271 0 -10.000 to 10.000 V 10.00000 -10.00000 -2005/10/17 10.4129/422*000 -4282035 2005/10/17 10.4129/524*000
Channel 3	カーソル8値 カーソル8-AI時間 カーソル8-AI長	-6.432190 00.00.00102*000 -2.170106

# **CONTEC's Complete Lineup of Multi-**

### Support Events Controller & Bus Master Transfer

# Multi-function F Series

#### MATLAB C-LOGGER LabVIEW

- PCI or CardBus
- Includes 16bit 32ch analog inputs, 16bit 2ch
- analog outputs, digital I/O, counter
- I/O range settings
- 2µsec/ch high speed converter, 64k data buffer (analog I/O)
- Event controller



**Standard Features - Low Cost** 

# Low cost Multi-function

C-LOGGER MATLAB LabVIEW

- Low price
- Includes 16bit 8-64ch analog inputs, 16bit 2-16ch analog outputs, digital I/O, counter
- Available for Low Profile PCI slots

# **PROGRAM DEVELOPMENT TOOLS**

Windows/Linux API Programming driver library for P-07

Included free with all products

## **API-TOOL** for Windows

Win32 API function commands

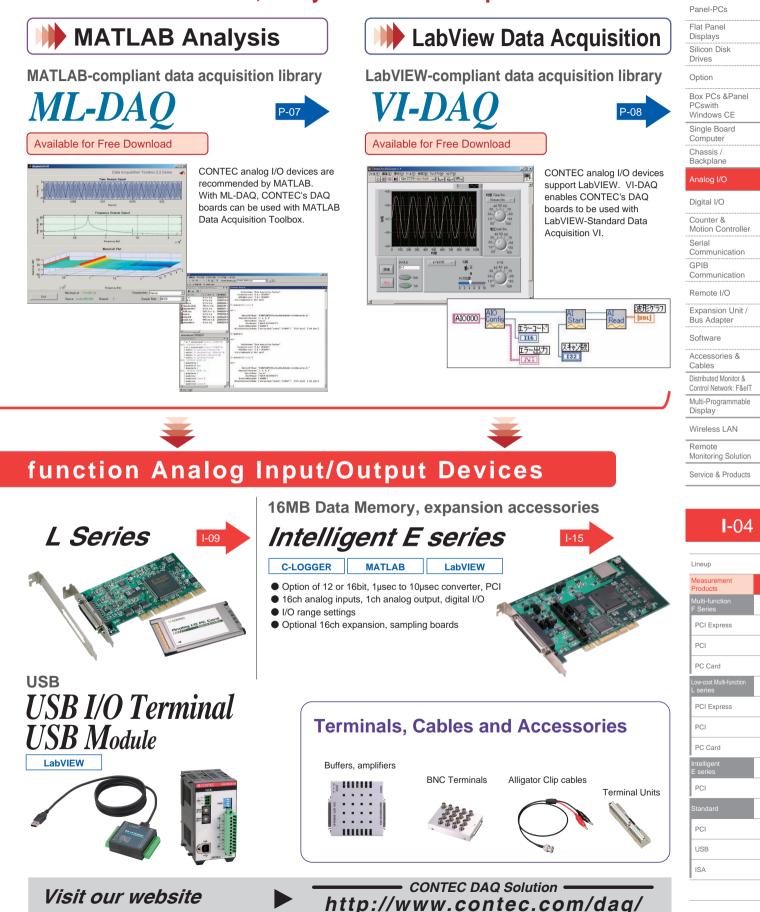
### API-TOOL for Linux

Module device drivers and shared library commands

- PCI or CardBus

Box-PCs

# The Best Measurement, Analysis and Data Acquisition Devices



Analog I/O

Box-PCs

Panel-PCs Flat Panel Displays Silicon Disk Drives

Option

Box PCs &Panel PCswith Windows CE Single Board Computer Chassis / Backplane

#### Analog I/O

Digital I/O

Counter & Motion Controller Serial

Communication GPIB Communication

Remote I/O

Bus Adapter Software

Accessories & Cables Distributed Monitor & Control Network: F&eIT Multi-Programmable

Display Wireless LAN

Remote Monitoring Solution

Service & Products

### **I**-05

Lineup
Measurement Products
Multi-function F Series
PCI Express
PCI
PC Card
Low-cost Multi-function L series
PCI Express
PCI
PC Card
Intelligent E series
PCI
Standard
PCI
USB
ISA

High-Quality Hardware and Support Software Tailored for Your Needs

# If you want to use a PC for measurement, CONTEC is your choice!

If you want to begin measuring right away but do not want to go through all the trouble...

# PC Measurement Software

## Free Download Service

We provide various free measurement software for Windows at our Web site. You can easily introduce a PC-based measurement system with a purposespecific configuration and detailed implementation procedure.

## Board × Cable × Terminal Block

**Recommended Combination** 

### For Laptop PC

8-channel Analog input 16bit, 10µsec/ch
2-channel Analog output 16bit, 10µsec
PC card : ADA16-8/2(CB)L Cable : ADC-68M/50M BNC terminal unit : ATP-8L

Box-PCs Panel-PCs Special Site http://www.contec.com/pcmeasure/ Flat Panel Displays Silicon Disk Drives Option **HYPER-LOGGER Function Generator** 77600 R#0 #≣0 999999011-+1 Box PCs &Panel PCswith High-speed sampling Outputs sine curve, 10 IV Windows CE and historical file triangular wave, 0 Single Board Computer saving square wave, low F #8 Chassis / ch4 ch5 ch6 ch9 ch9 ch10 ch12 ch13 ch14 voltage and arbitrary Backplane サインパ 三角波 方形波 wave form パルス 定電圧 併産対形 122-Digital I/O **FFT Analyzer Excel Scope** 140 1010 AF Counter & - C MR . 4 Motion Controller FFT Analyzer Displays graphs, logs Serial Communication FFT/DFT analysis and to Excel spreadsheets, 10211A7 filterina operation and report GPIB anna i 2/2014 #/2014 #/2015 #/20 Communication Graph display of power output Remote I/O spectrum / amplitude Expansion | Init / spectrum and file saving 9-C-488 5+-76-481 . Bus Adapter Software Accessories & Cables For Desktops (PCI) **For Laptops** Distributed Monitor & Control Network: F&elT Multi-Programmable Display High-speed / multiple channels High-speed / multiple channels 32-channel Analog input 8-channel Analog input 32-channel Analog input Wireless LAN 16bit, 2µsec/ch 16bit, 10µsec/ch 16bit, 2µsec/ch Remote Monitoring Solution 2-channel Analog output 2-channel Analog output 2-channel Analog output Service & Products 16bit, 10µsec 16bit, 10*µ*sec 16bit. 10*u*sec -06 Lineup I-08 I-10 Measur 1-08 PC card : ADA16-32/2(CB)F Low-profile PCI : ADA16-8/2(LPCI)L PCI board : ADA16-32/2(PCI)F PCI Express Cable : ADC-68M/96F Cable : PCB50PS Cable : PCB96PS BNC terminal unit : ATP-32F BNC terminal unit : ATP-8L BNC terminal unit : ATP-32F PCI PC Card Provided with PCI boards and PC cards PCI Express A & .E. If you want to create your own programs... アナログ入力関数一覧 PCI **API Function Library** PC Card A 4 .... P-09 API-PAC(W32) Intelliger PCI **API-TOOLs for Windows** Commands to add-on boards (cards) are M [VD: Anteger ] [ VD NET: Short ] [ C AlStepDe Longent ] ines [ VII: Lone provided via Win32 API functions (DLL). PCI Free Downloads **API-TOOLs for Linux** USB Commands to add-on boards (cards) are ISA Run time is provided via module-style device drivers license free and the shared library. アナロザ入力模能を執たないデバイスでは使用できまし デバイスが動作中の場合、この関数は実行できません。

#### Analog I/O Multi-function F series

Box-PCs

#### Panel-PCs Flat Panel Displays Silicon Disk Drives

Option

Box PCs &Panel PCswith Windows CE Single Board Computer Chassis / Backplane

Digital I/O

Counter & Motion Controller

Serial Communication GPIB

Communication

Remote I/O Expansion Unit /

Bus Adapter Software

Accessories & Cables Distributed Monitor & Control Network: F&eIT Multi-Programmable Display

Wireless LAN

Remote Monitoring Solution

Service & Products

## -07

Lineup Measurement Products PCI Express PCI PC Card PCI Express PCI PC Card ntelliger F sorie PCI PCI USB ISA

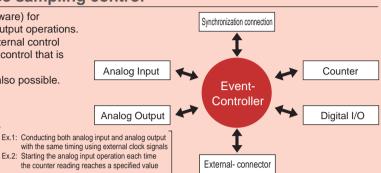
## Features of CONTEC's F series

### 1. Multi-function

Analog input / output, digital input / output and counter functions, for computers with limited numbers of expansion slots to be used in configuring complicated systems.

### 2. Event controller for diverse sampling control

Provides central management (via hardware) for start/stop/clock control of analog input/output operations. Easily combines event functions and external control signal inputs for high level synchronous control that is independent of controlling software. Individual operation of each function is also possible.



#### 3. Bus master transfer and complex data input

Arrows indicate the flow of control signals.

operation stop and clock signals.

Major control signals include operation start,

Both analog input and output utilize bus master transfer (either individually or concurrently), allowing bulk data transfer between the host computer and the board with no additional load on the CPU. Simultaneous transfer is available for data using bus master transfer (analog & digital input, digital output and count data) if they are synchronized with the analog input clock signals. This function enables synchronization between various data in the system.

#### 4. Buffer memory for software independent background processing

Both analog input and output feature onboard buffer memory for use when bus master transfer is not used. This function allows input/output in be performed in the background without depending on system operation status of either the host computer or the software.

#### 5. Setup and adjustment performed via software

Setup and adjustment, such as those concerning the range of analog input and output is done via software, eliminating the need to change jumper settings. It can also recognize any adjustment information that is different from that set at the factory. This allows for optimum settings for individual applications. Note: software range setting available only on PCI boards

#### 6. Synchronous control connector (ADA16-32/2(PCI)F, AIO-163202F-PE)

CONTEC's ADA16-32/2(PCI)F and AIO-163202F-PE are equipped with a synchronous control connector capable of synchronizing control of multiple boards, enabling channel through a increase of the number of boards. This synchronous operation is easily configured.

7. Filtering for facilitation in the connection of external signals

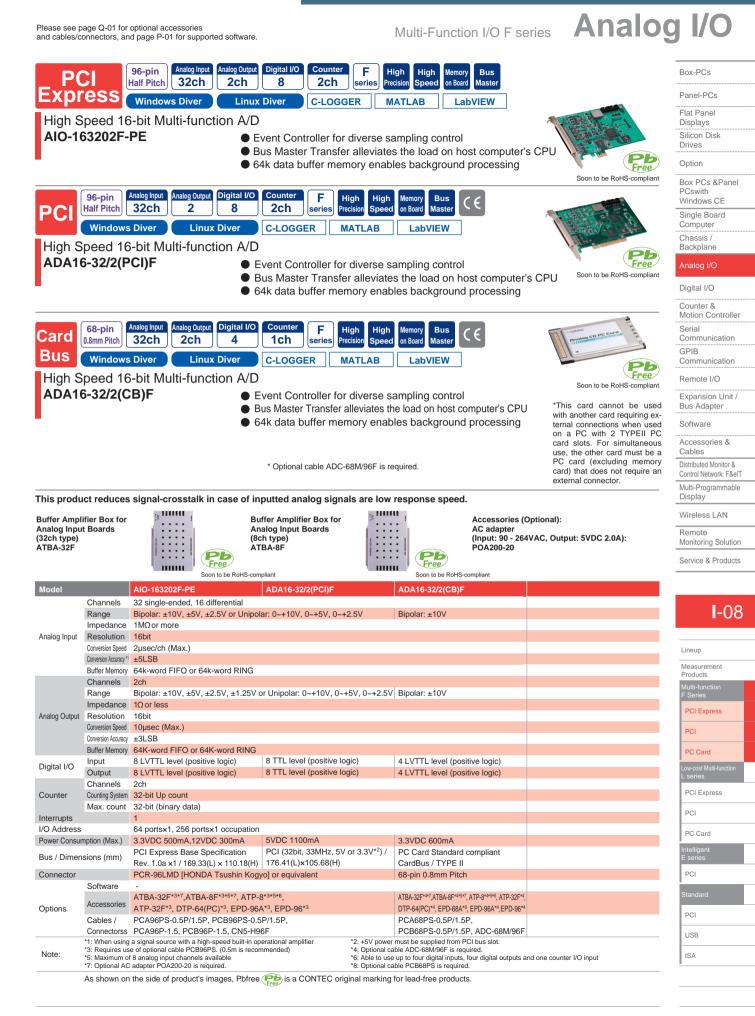
External analog input/output, digital input/output and counter input/output are equipped with a digital filter for the prevention of chatter.

### 8. Wide array of terminal blocks and cables to meet your demand For combinations, see page Q-01

We provide a variety of analog input and relay terminal blocks [and cables] to suit for your specific application.

BNC terminal unit ATP-32F	Soon to be RoHG-compliant	Example 1
Alligator Clip cable BNC-W60		ADA16-32/2(PCI)F + PCB96PS-0.5P (Cable with connectors on both sides)
BNC cable		+ ATP-32F (BNC terminal)
BNC-B100 (1m) BNC-B200 (2m)		Example 2
BNC-B300 (3m)		
EPD-96A		
		ADA16-32/2(CB)F + ADC-68M/96F + ATP-32F

Measurement and Control Products



# Analog I/O Low-cost Multi-function L series

Box-PCs

Panel-PCs

Flat Panel

Displays Silicon Disk

Drives

Option Box PCs &Panel PCswith Windows CE Single Board Computer Chassis / Backplane

Digital I/O Counter & Motion Controller Serial Communication

GPIB Communication Remote I/O Expansion Unit / Bus Adapter

Software

Display

Remote Monitoring Solution

-09

Lineup Measurement Products

PCI Express
PCI
PC Card

PCI Express
PCI
PC Card
ntelligent
series
PCI

PCI USB ISA

Accessories & Cables

Distributed Monitor & Control Network: F&eIT

Multi-Programmable

Service & Products

Wireless I AN

### Features of L Series - Low-Cost and Multi-Functional

#### Low-cost and multi-function

Contec's L Series consists of low-cost / high-precision multi-function analog boards / cards. Available in 4 different models to meet specific applications, they allow you to set up an analog I/O system with high cost performance.

#### For Desktop PC (Low Profile PCI/PCI)

 (	-/				
◎AIO-160802L-LPE		16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
◎ADA16-8/2(LPCI)L		16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
@ADAI16-8/2(LPCI)L	Isolated	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
©AI-1616L-LPE		16-bit Analog Input		Digital I/O	Counter
◎AD16-16(LPCI)L		16-bit Analog Input		Digital I/O	Counter
@ADI16-16(LPCI)L	Isolated	16-bit Analog Input		Digital I/O	Counter
◎AD16-64(LPCI)LA		16-bit Analog Input		Digital I/O	Counter
@AO-1604-LPE			16-bit Analog Output	Digital I/O	Counter
◎DA16-4(LPCI)L			16-bit Analog Output	Digital I/O	Counter
©DA16-8(LPCI)L			16-bit Analog Output	Digital I/O	Counter
◎DA16-16(LPCI)L			16-bit Analog Output	Digital I/O	Counter
◎DAI16-4(LPCI)L	Isolated		16-bit Analog Output	Digital I/O	Counter

#### For Note PC (CardBus)

© ADA16-8/2(CB)L	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
* ADA16-8/2(LPCI) and ADA-16-8/2(CB) are compating average of a depictor BC can be replaced by				ir high versatility, a

#### Wide array of sampling functions

Software / conversion data comparison (level comparison) and external triggers (6 points of analog I/O control) are supported for analog I/O start / stop conditions, allowing for the control of sampling start / stops at optimal timing.

#### Buffer memory

Onboard buffer memory is provided both for analog input and analog output (1k word). This allows for background analog I/O that is independent of software and PC operation status, and enables delay sampling, sampling which is implemented after the stop condition has been established.

#### Setup and adjustment via software

Setup and adjustment, such as those concerning the range of analog input and output is done via software, eliminating the need to change jumper settings. It can also recognize adjustment information that is different from that which was set at the factory. This allows for optimal settings for individual applications.

#### Filtering for facilitation in the connection of external signals

External analog input / output, digital input / output and counter input / output are equipped with a digital filter to prevent chatter.

### Variety of cables and terminal blocks to meet specific application needs For combinations, see page Q-02

Our compact terminal blocks provide excellent portability for a laptop data logger system.

t S	BNC terminal for Analog I/O ATP-8L	Soon to be RothS-compliant	Example 1
unction	Alligator Clip cable BNC-W60		ADA16-8/2(LPCI)L + PCB50PS-0.5P(Cable with connectors on both sides) + ATP-8L(BNC terminal)
	BNC cable BNC-B100 BNC-B200 BNC-B300		Example 2
	EPD-50A		ADA16-8/2(CB)L + ADC-68M/50M(68-pin to 50-pin conversion cable) + EPD-50A(M3 terminal)

Measurement and Control Products

		and cables/c		optional accessories	Low	-cost Multi-function L seri	es Analog	a I/O
Profile       Profile       Reference       MartLas         Low-cost 16-bit Multi-function AD AID-1608002L-LPE       ••••••••••••••••••••••••••••••••••••	Profile       Write Windows Dark       Beth J       Lu       Lu       Market Bill       Direction Dark       Direction Dar		onnectors, and					3
ADV-0001 16-bit Multi-function AD ADV-160802L-LPE <ul> <li></li></ul>	Leve-cost 16-bit Multi-function A/D Aro-160802L-LPE Aro-			Profile Mini-Ribbon 8ch	2ch 4 1ch			
AIC-1608802L-LPE	Alo-1608021-LPE	-			Diver C-LOGGER MA	TLAB	1 the second	Flat Panel
EVENUE       Solution       S	Image: Second			LPE	<ul> <li>timed input / output and</li> <li>Buffer memory enables of the software</li> <li>Software for analog input</li> </ul>	I input/output that is synchronize background processing to be e ut / output correction	atput, <u>Compliant</u> ad with external signals xecuted independently	Silicon Disk Drives Option Box PCs &Pane PCswith
Abord 16-bit Multi-function AD Al-16161-LPE <ul> <li></li></ul>				Profile Mini-Ribbon 16ch				Single Board Computer Chassis /
function input / august and	Inter imput / output and input / output and in	Low-co	cost 16-bi	it Multi-function A/D				Analog I/O
Low Windows Diver       Low Down	Low       L	AI- 10 1	10L-LF L		<ul> <li>timed input / output and</li> <li>Buffer memory enables of the software</li> <li>Software for analog input</li> </ul>	I input/output that is synchronize background processing to be e ut correction	ed with external signals xecuted independently	Counter & Motion Controlle Serial Communication GPIB
Provide       Verified       -       4.ch       4       1.ch       reade       Read	Provide the software begin being begin and being begin being begin being begin being begin and being beging begin and being begin and begin begin begin begin begin begin	_ D(			Analog Onput Digital I/O Counter	L High Memory		Communication Remote I/O
Low-cost 16-bit Multi-function AD AO-1604L-LPE	Accessing and a second se		race	Profile Mini-Ribbon -		series Precision on Board		Expansion Unit Bus Adapter
Constant Control mechanism provides analog input / output, includes the second independently in the software intervent in the software intervent in the software intervent in the software intervent	Portious-FETE	Low-co	cost 16-bi	it Multi-function A/D				Software
Noted     Alo-160602LLPE     Al-1616LLPE     Ao-160402LLPE     Mailer parameters       Software     Compliant (includes bracket for use in standard PCI slot)     Writelas LAW       Noted     Alo-160602LLPE     Al-1616LLPE     Ao-16041L-PE       Noted     Alo-160602LLPE     Al-1616LLPE     Ao-16041L-PE       Noted     Insigle-ended     15 single-ended     16 single-ended       Noted     Insigle-ended     15 single-ended     -       Named     Bipolar::10V     -     -       Impedance     10 or ines     -     -       Interget Resolution     10 in ines     -     -       Interget Resolution     10 or ines     -     -       Interget Resolution     10 in ineg     -     -     -       Interget Resolution     -     -     - <td< td=""><td>Initial distance         Buffer memory enables background processing too be executed independent in the software         Buffer memory enables background processing too be executed independent in the intervent is software for analog output correctio         Buffer memory enables background processing too be executed independent in the intervent is software for analog output correctio         Witches LAN           Added         Alo-160002_LPE         Al-1616_LPE         Alo-1600_LPE         Mini-Programme           Impediance         Milor or nore         1 Single-ended         -         Single-ended         Single-ended           Impediance         Milor or nore         -         -         -         -         -           Impediance         Milor or nore         -</td><td>AO-1€</td><td>ô04L-LP!</td><td>E</td><td></td><td></td><td>utput,</td><td>Cables</td></td<>	Initial distance         Buffer memory enables background processing too be executed independent in the software         Buffer memory enables background processing too be executed independent in the intervent is software for analog output correctio         Buffer memory enables background processing too be executed independent in the intervent is software for analog output correctio         Witches LAN           Added         Alo-160002_LPE         Al-1616_LPE         Alo-1600_LPE         Mini-Programme           Impediance         Milor or nore         1 Single-ended         -         Single-ended         Single-ended           Impediance         Milor or nore         -         -         -         -         -           Impediance         Milor or nore         -	AO-1€	ô04L-LP!	E			utput,	Cables
<ul> <li></li></ul>	boltware in altaou gruppine Contextual     boltware in altaou gruppine     boltware in a				<ul> <li>timed input / output and</li> <li>Buffer memory enables of the software</li> </ul>	l input/output that is synchronize background processing to be ex	ed with external signals	Distributed Monitor & Control Network: F&e Multi-Programmabl Display
Model     Al-16382L-PE     Al-163L-PE     Al-163L-PE     Monitoring Soluti       Range     Bioplan:±10V     16 single-ended     -     Service & Production       Impedance     MAD     -     -     Service & Production       Analog Input     Resolution     10bit     -     -       Channels     2.6h     -     -     -       Description     10 service (Max)     -     -     -       Description     10 service (Max)     -     -     -       Channels     2.6h     -     4ch     -       Range     Bipolar: ±10V     -     10 or less     -       Maded output     10 or less     -     10 or less     -       Maded output     10 or less     -     10 or less     -       Impedance     10 or less     -     10 or less     -       Digital 10     10 vertex     10 service (Max)     -     -       Channels     10 vertex     10 service (Max)     -     -       Digital 10     10 vertex     10 service (Max)     -     -       Counter Source (Max)     -     10 service (Max)     -     -       Counter Source (Max)     -     10 service (Max)     -     -       Digita	Addid         Add:108/22/L1PE         Add:168/2/L1PE         Add:168/2/L1PE         Monitoring Solution           Range         Bipolar: ±10V         -         -         -         Service & Production           Inspectance         Hold or more         -         -         -         -         -           Unade Indo: or more         -         -         -         -         -         -         -         -           Unade Indo: or more         -<						standard PCI slot)	
Range     Bipolar::10V     -     Service & Production       Impedance     IAMO or more     -     -       Coversito Systel     10psecich (Max.)     -     -       Manage Dupping     1k word     -     -       Analog Dupping     1k word     -     -       Analog Dupping     1k word     -     10psec (Max.)       Coversito Systel     10psec (Max.)     -     10psec (Max.) </th <th>Range     Biopar.: 10V     -     -     Service &amp; Product       Inadog Input     Resolution     Ibit     -     -       Consent Speed     Opport     -     -     -       Dimenticational     Science &amp; Product     -     -     -       Range     Bipolar:: 10V     -     -     -     -       Range     Bipolar:: 10V     -     10bit     -     Measurement       Products     -     10bit     -     -     Measurement       Displant Many     14.VTTL level (positive logic)     -     -     Products       Displant Many     14.VTTL level (positive logic)     -     -     Products       Displant Many     14.VTTL level (positive logic)     -     -     Products       Displant Many     14.VTTL level (positive logic)     -     -     Products       Output     14.VTTL level (positive logic)     -     -     -       Output     14.VTTL le</th> <th>Model</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Range     Biopar.: 10V     -     -     Service & Product       Inadog Input     Resolution     Ibit     -     -       Consent Speed     Opport     -     -     -       Dimenticational     Science & Product     -     -     -       Range     Bipolar:: 10V     -     -     -     -       Range     Bipolar:: 10V     -     10bit     -     Measurement       Products     -     10bit     -     -     Measurement       Displant Many     14.VTTL level (positive logic)     -     -     Products       Displant Many     14.VTTL level (positive logic)     -     -     Products       Displant Many     14.VTTL level (positive logic)     -     -     Products       Displant Many     14.VTTL level (positive logic)     -     -     Products       Output     14.VTTL level (positive logic)     -     -     -       Output     14.VTTL le	Model						
Analog Input Conversion Kozan <sup>1</sup> 16bit Conversion Kozan <sup>1</sup> 16bit Conversion Kozan <sup>1</sup> 16bit SUB       -	halog lopu Consist Acarg <sup>4</sup> = 5LB Bife Memory t word Channels 2ch Channels 2ch		- ale					
Consisting and the Mean of the Variable Action of the Varia	Convestion Squed         1 OpenCe/ch (Max.)         -		Range	8 single-ended 16 single-ended Bipolar: ±10V				Remote
Builer Menny         1 k word         -	Bdfe Menory         1 k word         -	Analog Input	Range Impedance	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more				Remote Monitoring Solution
Channels	Channels     2ch     -     4ch     Implement of the impedance of the imp	Analog Input	Range Impedance t Resolution Conversion Speed	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.)				Remote Monitoring Solutio Service & Product
Range     Bipolar: ±10V     -     Bipolar: ±10V     Impedance	Range Impedance Imp	Analog Input	Range       Impedance       Resolution       Conversion Speed       Conversion Accuracy *1	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB		• • • • •		Remote Monitoring Solution
Impedance     1Ω or less     1Ω or less     Lineup       Analog Quiption     16bit     10 bot     10 bot     Measurement       Analog Quiption     16bit     10 bot     10 bot     Measurement       Conversive Range     10 guesc (Max.)     10 guesc (Max.)     Measurement       Digital IO     10 guesc (Max.)     10 guesc (Max.)     Measurement       Digital IO     10 guesc (Max.)     10 guesc (Max.)     Maith Incloin       Digital IO     10 uption     1 k word     Maith Incloin       Output     4 LVTTL level (positive logic)     Ik word     Maith Incloin       Channels     1ch     Immerities     PCI Express       Interrupts     1     1     Vector     PCI Express       Point     32-bit Up count     33VDC 400mA, 12VDC 120mA     3.3VDC 400mA, 12VDC 250mA       Point     10 gr equivalent     33VDC 400mA, 12VDC 250mA     PCI Express       Point     10 gr equivalent     Immerities     PCI Express       Point     120 Gr (PC Gr Point     Software     PCI Express       Point     120 Gr (PC Gr Point)     Software     PCI Express       Point     120 Gr (PC Gr Point)     Software     PCI Express       Point     110 Gr (PC Gr (PC Gr Point)     Software     PCI Express <tr< td=""><td>Impedance         10 or less         10 or less         Ineup           Resolution         16bit         -         16bit         Impedance         Impedance</td><td>Analog Input</td><td>Range       Impedance       t     Resolution       Conversion Speed       Conversion Accuracy *1       Buffer Memory</td><td>8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word</td><td></td><td>• • • • • • •</td><td></td><td>Remote Monitoring Solutio Service &amp; Product</td></tr<>	Impedance         10 or less         10 or less         Ineup           Resolution         16bit         -         16bit         Impedance	Analog Input	Range       Impedance       t     Resolution       Conversion Speed       Conversion Accuracy *1       Buffer Memory	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word		• • • • • • •		Remote Monitoring Solutio Service & Product
Conversion Speed         10µsec (Max.)         -         10µsec (Max.)         Products           Conversion Speed         -         +5LSB         -         +5LSB         Mill-1unction         PSeries           Digital V0         Input         4 LVTTL level (positive logic)         1k word         PCI Express         PCI Express           Digital V0         Output         4 LVTTL level (positive logic)         I         PCI Express         PCI Express           Counter         Counting System         32-bit (Dinary data)         -         -         PCI Express           IV0 Address         Any 64-byte boundary         -         -         -         -         -           Power Consumption (Max.)         33/DC 400mA, 12/DC 200mA         3.3/DC 400mA, 12/DC 250mA         -         -         -         -           Power Consumption (Max.)         33/DC 400mA, 12/DC 200mA         3.3/DC 400mA, 12/DC 250mA         -	Conversion Speed         Opysee (Max.)         -         10µsee (Max.)         Products           Driversion Accarged         45 LSB         -         45 LSB         -         Mill-Montrolom         Parkins         Mill-Minictoring         Parkins         Mill-Minictoring         Parkins         Mill-Minictoring         Parkins         Products         Mill-Minictoring         Parkins         Products	Analog Input	Range       Impedance       Resolution       Conversion Speed       Conversion Accuracy*1       Buffer Memory       Channels       Range	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V				Remote Monitoring Solution Service & Product
Voltadiation       Voltage       Voltage </td <td>Joint Source         Topsour (mode)         Joint Source         Joint Sourc</td> <td></td> <td>Range       Impedance       Impedance       Conversion Speed       Conversion Accuracy*1       Buffer Memory       Channels       Range       Impedance</td> <td>8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less</td> <td></td> <td></td> <td></td> <td>Remote Monitoring Solution Service &amp; Product</td>	Joint Source         Topsour (mode)         Joint Source         Joint Sourc		Range       Impedance       Impedance       Conversion Speed       Conversion Accuracy*1       Buffer Memory       Channels       Range       Impedance	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less				Remote Monitoring Solution Service & Product
Buffer Memory     Tik word     Ik word       Digital I/O     Input     4 LVTTL level (positive logic)     PCI Express       Output     4 LVTTL level (positive logic)     PCI Express       Channels     1ch     PCI Express       Counter     Counting System     32-bit (binary data)     PCI Express       Interrupts     1     PCI Express     PCI Express       VO Address     Any 64-byte boundary     PCI Express     PCI Express       Power Consumption (Max)     3.3VDC 400mA, 12VDC 120mA     3.3VDC 400mA, 12VDC 250mA     PCI Express       PCI Express     PCI Express     PCI Express     PCI Express       PCI Express     PCI Express     PCI Express     PCI Express       Power Consumption (Max)     3.3VDC 400mA, 12VDC 120mA     3.3VDC 400mA, 12VDC 250mA     PCI Express       Power Consumption (Max)     PCI Express     PCI Express     PCI Express       Power Consumption (Max)     PCI Express     PCI Express     PCI Express       Connector     10250-52A2JL [3M] or equivalent     PCI Express     PCI Express       Connector     PCI Express     PCI Express     PCI Express       PCI Express     PCI Express     PCI Express     PCI Express       PCI Express     PCI Express     PCI Express     PCI Express       PCI Express<	Buffer Memory       Hk-word       -       1k word       Feedes         Digital I/O Output       Input       4 LVTTL level (positive logic)       PCI Express       PCI Express         Channels       1ch       PCI express       PCI express       PCI express         Zouning System       32-bit Up count       So thit po count       PCI express       PCI express         Max. count       32-bit Up count       Image: So thit po count       Image: So thit po count       PCI express         VO Address       Any 64-byte boundary       Image: So thit po count       Image: So thit po count </td <td></td> <td>Range Impedance Resolution Conversion Speed Conversion Accuracy<sup>11</sup> Buffer Memory Channels Range Impedance Resolution</td> <td>8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit</td> <td></td> <td></td> <td></td> <td>Remote Monitoring Solution Service &amp; Product</td>		Range Impedance Resolution Conversion Speed Conversion Accuracy <sup>11</sup> Buffer Memory Channels Range Impedance Resolution	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit				Remote Monitoring Solution Service & Product
Digital I/O       Output       4 LVTTL level (positive logic)       PCI         Channels       1ch       PCI         Max. count       32-bit (binary data)       PC Card         Interrupts       1       Counters       PC Card         VO Address       Any 64-byte boundary       PC Card       Lesries         Power Consumption (Max)       3.3VDC 400mA, 12VDC 200mA       3.3VDC 400mA, 12VDC 250mA       PC Express         Bus / Dimensions (Max)       9.00 Express       Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)       PCI         Connector       10250-52A2JL [3M] or equivalent       PCI Express       PCI Express         PCI Express       Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)       PCI express       PCI express         Options       Accessories       ATBA-8L***2*3*4, ATBA-16L***2*3*, EPD-50.4*1, ATP-8L***5**4, ATBA-16L***2*3*, EPD-50.4*1, ATP-8L***5**4, ATBA-16L***2*3*, EPD-50.4*1, ATP-8L***5**4, ATBA-16L***2*3*, EPD-50.4*1, ATP-8L***5**4, ATBA-16L***2*3*, EPD-50.4*1, ATP-8L***5**4, ATBA-16L***2**3*, EPD-50.4*1, ATP-8L***5**4, ATBA-16L***2***       PCI         Note:       **       **       **       **       **         Note:       **       **       **       **       **         Vote:       **       **       **       **       **         Vote:	Jightal I/O       Output       4 LVTTL level (positive logic)       PC1         Channels       1ch       PC and       PC1         Counter       Counting System       32-bit (binary data)       PC Card       PC Card         Max. count       32-bit (binary data)       Interrupts       Interrupts       Interrupts       PC Card       PC Card         Vower Consumption (Max)       33/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       Software       PCI Express         Your Consumption (Max)       3.3/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       Software       PCI Express         Your Consumption (Max)       3.3/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       Software       PCI Express         Your Consumption (Max)       3.3/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       PCI Express         Software       -       10250-524.2/L [3M] or equivalent       PCI       PCI Express         Connector       Accessories       ATBA-8L****3*4, ATBA-16L*****3, Expression (ATBA-8L*****3, Expression (ATBA-8L*****3, Expression (ATBA-8L*****3, Expression (ATBA-8L************************************		Range Impedance Conversion Speed Conversion Kouraoy "I Buffer Memory Channels Range Impedance Resolution Conversion Speed Conversion Acouracy "I	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit 10µsec (Max.) ±5LSB				Remote Monitoring Solution Service & Product I-1( Lineup Measurement Products Multi-function
Output       4 LV11L level (positive logic)       PCI         Channels       1ch       PC Card         Counter       32-bit Up count       32-bit Up count       PC Card         Max. count       32-bit Up count       PC Card       PC Card         Interrupts       1       Counter       PC Card       PC Card         VO Address       Any 64-byte boundary       PCI Express       PCI Express         Power Consumption (Max)       3.3VDC 400mA, 12VDC 200mA       3.3VDC 400mA, 12VDC 250mA       PCI Express         Bus / Dimensions (mm)       PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)       PCI Express       PCI Express         Software       -       10250-52A2JL [3M] or equivalent       PCI express       PCI express         Options       Accessories       ATBA-8L***2*3*4, ATBA-16L***2*3*, Express/**       PCI express       PCI express         Options       Accessories       Cables / PCBOPS-0.5P/1.5P, PC connectors       PCBSOPS-0.5P/1.5P, PC connectors       PCI express         Note:       **: Requires use of optional cable PCBSOPS-0.5P or PCBSOPS-0.5P or PCBSOPS-0.5P or PCBSOPS-0.5P or PCBSOPS-0.5P / 1.5P, **: Optional AC adapter "POA200-20" is required.       PCI         **: Note:       **: Maximum of 8 analog input channels and 2 analog output channels and 2 analog output channels and 2 analog output channels and 2 analog ou	Output       4 LVT1 Level (positive logic)       PCI         Counter       Counting System       32-bit Up count       PCI         Max. count       32-bit (binary data)       PCI cand       PC cand         Interrupts       1       1       PC cand       PC cand         Counting System       32-bit (binary data)       Image: Counter coun		Range       Impedance       tesolution       conversion Speed       conversion Accuracy *I       Buffer Memory       Buffer Memory       conversion Speed       conversion Speed       conversion Accuracy *I       Buffer Memory	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit 10µsec (Max.) ±5LSB 1k-word				Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series
Counter       Counting System       32-bit Up count       PC Card         Max. count       32-bit (binary data)       PC Card         Interrupts       1       Image: System       I	Counter       Counting System       32-bit Up count       PC Card         Max. count       32-bit Up count       32-bit Up count       Countors (Max Aunoto)         VO Address       Any 64-byte boundary       Image: Countor (Max Aunoto)       Councest Multi-Aunoto)         Yower Consumption (Max)       33/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       Councest Multi-Aunoto)         Yower Consumption (Max)       33/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       PCI Express         Yower Consumption (Max)       33/DC 400mA, 12/DC 200mA       3.3/DC 400mA, 12/DC 250mA       PCI Express         Yower Consumption (Max)       Software       10250-52A2JL [3M] or equivalent       PCI Express         Your Consumption (Max)       Accessorie       AtBA-8L*******, AtBA-16L******       PCI Express         Your Consumption (Max)       Accessorie       AtBA-8L********, AtBA-16L******       PCI Express         Your Consumption (Max)       Accessorie       AtBA-8L*********       PCI Express         Your Consumption (Max)       Accessorie       AtBA-8L********       PCI Express         Your Consumption (Max)       Accessorie       AtBA-8L*********       PCI Express         Your Consumption (Max)       Accessorie       AtBA-8L*********       PCI Express         Your Consumption (Max) <td< td=""><td></td><td>Range       Impedance       Impedance       conversion Speed       conversion Accuracy *1       Buffer Memory       Range       Impedance       conversion Speed       comersion Accuracy *1       Buffer Memory       conversion Speed       comersion Accuracy *1       Buffer Memory       Impedance       Impedance       Impedance       Impedance       Impedance       Impedance       Impedance       Impedance       Impedance       Impedance</td><td>8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)</td><td></td><td></td><td></td><td>Remote Monitoring Solution Service &amp; Product Lineup Measurement Products Multi-function F Series</td></td<>		Range       Impedance       Impedance       conversion Speed       conversion Accuracy *1       Buffer Memory       Range       Impedance       conversion Speed       comersion Accuracy *1       Buffer Memory       conversion Speed       comersion Accuracy *1       Buffer Memory       Impedance	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)				Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series
Max. count 32-bit (binary data)   Interrupts 1   Interrupts Any 64-byte boundary   Power Consumption (Max.) 3.3VDC 400mA, 12VDC 200mA   3.3VDC 400mA, 12VDC 200mA 3.3VDC 400mA, 12VDC 250mA   Bus / Dimensions (mm) PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)   Connector 10250-52A2JL [3M] or equivalent   Connector 10250-52A2JL [3M] or equivalent   PCI Express PCI Express   Software -   Cables / PC350PS-0.5P/1.5P   Connectors PC350PS-0.5P/1.5P   PCI PCI   *1: Requires use of optional cable PC850PS-0.5P or PC850PS-1.5P   *2: Only for AIO-160802L-IPE, AI-1616L-IPE.   *3: Optional Cadapter PC0200-201 is required.   *4: Maximum of 8 analog input channels and 2 analog output channels available   Driver Library [API-PAC(W32)] included	Max. count 32-bit (binary data) herrupts 1 Any 64-byte boundary Power Consumption (Max) 33VDC 400mA, 12VDC 200mA 3.3VDC 400mA, 12VDC 120mA 3.3VDC 400mA, 12VDC 250mA PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) Connector 10250-52A2JL [3M] or equivalent PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) Connector 10250-52A2JL [3M] or equivalent PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) Connector 10250-52A2JL [3M] or equivalent PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Card Intelligent Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H) PC Asoper So.5P/1.5P PC Asoper So.5P/1.5P *1. Requires use of optional cable PCBSOPS-0.5P or PCBSOPS-1.5P *2. Only for Alo-160802L-LPE, Al-1616L-LPE. *3. Optional Cadapter "PO200-20's required. *4. Maximum of 8 analog input channels are available for Al-1616L-LPE. *5. Maximum of 8 analog input channels are available brive Library [API-PAC(W32)] included IN 4.90(L) 4	Analog Output	Range       Impedance       Impedance       Resolution       Conversion Speed       Duffer Memory       Buffer Memory       Impedance       Range       Impedance       conversion Accuracy **       Buffer Memory       Buffer Memory       Buffer Memory       Buffer Memory       Buffer Memory       Duffer Memory       Buffer Memory       Onversion Accuracy **       Buffer Memory       Output	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1kword           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)				Remote Monitoring Solution Service & Product I-1( Lineup Measurement Products Multi-function F Series PCI Express
V/O Address       Any 64-byte boundary       L series         Power Consumption (Max.)       3.3VDC 400mA, 12VDC 200mA       3.3VDC 400mA, 12VDC 250mA       PCI Express         Bus / Dimensions (mm)       PCI Express Base Specification Rev.1.0a ×1 / 121.69(L)×67.90(H)       PCI       PCI         Connector       10250-52A2JL [3M] or equivalent       PCI       PC Card         Options       Accessories       ATBA-8L****3*4, ATBA-16L***2*3, EPD-50A**1, ATP-8L***5       PCI Express         Cables /       PC5050PS-0.5P/1.5P,       PCI       PCI         Note:       *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       PCI         *2: Only for AIO-160802L-LPE, AI-1616L-LPE.       *5: Maximum of 8 analog input channels are available for AI-1616L-LPE.       PCI         *5: Maximum of 8 analog input channels and 2 analog output channels available       PCI       USB	Intelligent E series       Accessorie       ATBA-8L***2*3*4, ATBA-16L*1*2*3, EPC 500°-0.5° or PCB50°P-0.5° or PCB50°P-0.5°       Intelligent E series       PCI         Note:       **: Requires use of optional cable PCB50°P-0.5° or PCB50°P-0.5°       **: Requires use of optional cable PCB50°P-0.5°       PCI       Standard         Note:       **: Requires use of optional cable PCB50°P-0.5° or PCB50°P-1.5°       **: Requires use of optional cable PCB50°P-0.5°       PCI       PCI         Note:       **: Requires use of optional cable PCB50°P-0.5° or PCB50°P-1.5°       **: Requires use of optional cable PCB50°P-0.5°       PCI       PCI         Note:       **: Requires use of optional cable PCB50°P-0.5° or PCB50°P-1.5°       **: Requires use of optional cable PCB50°P-0.5°       PCI         Note:       **: Requires use of optional cable PCB50°P-0.5° or PCB50°P-1.5°       **: Requires use of optional cable PCB50°P-0.5°       PCI         Note:       **: Requires use of optional cable PCB50°P-0.5° or PCB50°P-1.5°       **: Requires use of optional cable PCB20°P-0.5°       PCI         Note:       **: Requires use of optional cable PCB20°P-0.5°	Analog Output	Range       Impedance       Impedance       Resolution       Conversion Speed       Conversion Accuracy 11       Buffer Memory       Channels       Impedance       Range       Onversion Accuracy 11       Buffer Memory       Conversion Accuracy 11       Buffer Memory       Dury       Input       Output       Output       Channels       Counting System	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k word           4 LVTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit Up count				Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI
Note:       PCI Express         PCI Express       PCI Express	Power Consumption (Max).       3.3VDC 400mA, 12VDC 200mA       3.3VDC 400mA, 12VDC 250mA       PCI Express         Bus / Dimensions (mm)       PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)       PCI       PCI         Connector       10250-52A2JL [3M] or equivalent       PCI Express       PCI Express         Software       -       PC Card       PC Card         Deptions       Accessories EPD-50A*1, ATP-8L*1*5       EPD-50A*1, ATP-8L*1*5       PCI         Cables / Connector       PCB50PS-0.5P/1.5P,       PCI       PCI         Y*1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       *2: Only for AlO-168062U-LPE, Al-1616L-LPE.       *3: Optional AC adapter *POA200-20' is required.       *4: Maximum of 8 analog input channels are available for Al-1616L-LPE.       *5: Maximum of 8 analog input channels are available for Al-1616L-LPE.       PCI         *5: Maximum of 8 analog input channels are available for Al-1616L-LPE.       *5: Maximum of 8 analog input channels are available for Al-1616L-LPE.       YCI Express         *5: Maximum of 8 analog input channels are available for Al-1616L-LPE.       YCI Express       YCI Express         *5: Maximum of 8 analog input channels are available for Al-1616L-LPE.       YCI Express       YCI Express         *5: Maximum of 8 analog input channels are available for Al-1616L-LPE.       YCI Express       YCI Express         *5: Maximum of 8 analog input channels are	Analog Output Digital I/O Counter	Range       Impedance       Impedance       Resolution       Conversion Speed       Conversion Accuracy 11       Buffer Memory       Channels       Impedance       Range       Onversion Accuracy 11       Buffer Memory       Conversion Accuracy 11       Buffer Memory       Dury       Input       Output       Output       Channels       Counting System	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1kword           4LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)				Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card
Bus / Dimensions (mm)       PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)       PCI         Connector       10250-52A2.JL [3M] or equivalent       PCI         Software       -       PC Card         Accessories       ATBA-8L*1*2*3*4, ATBA-16L*1*2*3*, EPD-50A*1, ATP-8L*1*5       PC Card         Cables /       PCB50PS-0.5P/1.5P,       PCI         Connector       PC850PS-0.5P/1.5P,       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       *2: Only for AIO-160602L-IPE, AI-1616L-IPE.       *3: Optional AC adapter 'POA200-20' is required.         *3: Optional AC adapter 'POA200-20' is required.       *4: Maximum of 8 analog input channels are available for AI-1616L-IPE.       PCI         Vise Maximum of 8 analog input channels and 2 analog output channels available       Driver Library [API-PAC(W32)] included       USB	Bus / Dimensions (mm)       PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)       PCI         Connector       10250-52A2JL [3M] or equivalent       PCI         Doptions       Accessories       ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATP-8L*1*5       PC Card         Cables / Connector       PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P       PCI       Intelligent Eseries         Vote:       *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       ?       Optional AC adapter *POA200-20* is required.         *4: Maximum of 8 analog input channels are available tor Al-1616L-LPE.       *5: Maximum of 8 analog input channels are available Driver Library [API-PAC(W32)] included       PCI	Analog Output Digital I/O Counter Interrupts	Range       Impedance       Impedance       Conversion Speed       Conversion Accuracy *I       Buffer Memory       Impedance       Impedance       Conversion Speed       Conversion Accuracy *I       Buffer Memory       Input       Output       Channels       Conversion Accuracy *I       Buffer Memory       Input       Output       Channels       Counting System       Max. count	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)           1				Remote Monitoring Solution Service & Product I-1( Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function
Software	Software       -       PC Card         Accessories       ATBA-8L***2*3*4, ATBA-16L***2*3, EPD-50A*1, ATP-8L**5       Intelligent EPD-50A*1, ATP-8L**5         Cables / Connectors       PCBSOPS-0.5P/1.5P, PCA50PS-0.5P/1.5P       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P *2: Only for AlO-1608002L-IPE, Al-1616L-IPE. *3: Optional AC adapter 'POA200-20' is required. *4: Maximum of 8 analog input channels are available Driver Library [API-PAC(W32)] included       Standard         Vote:       -5: Maximum of 8 analog input channels and 2 analog output channels are available Driver Library [API-PAC(W32)] included       VCI	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu	Range Impedance Resolution Conversion Speed Conversion Accuracy 11 Buffer Memory Channels Range Impedance Conversion Accuracy 12 Buffer Memory Conversion Accuracy 14 Buffer Memory State Sta	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit (binary data)           1           Any 64-byte boundary           33VDC 400mA, 12VDC 200mA	16 single-ended			Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function L series
Options       Accessories       ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATB-8L*1*5       Intelligent EPD-50A*1, ATB-8L*1*5         Cables / Connectors       PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P,       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P *2: Only for AIO-160802L-IPE, AI-1616L-IPE.       Standard         *3: Optional AC adapter POA200-20' is required.       *4: Maximum of 8 analog input channels are available for AI-1616L-IPE.         *5: Maximum of 8 analog input channels and 2 analog output channels available Driver Library [API-PAC(W32)] included       PCI	Accessories       ATBA-8L*1*2*3*4, ATBA-16L**2*3, EPD-50A*1, ATP-8L**5       Intelligent         Cables / Connectors       PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P       PCI         **: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       *2: Only for AlO-160802L-UPE, Al-1616L-LPE.       *3: Optional AC adapter *POA200-20* is required.         *2: Only for AlO-160802L-UPE, Al-1616L-LPE.       *3: Optional AC adapter *POA200-20* is required.       *4: Maximum of 8 analog input channels are available for Al-1616L-LPE.       PCI         Note:       *5: Maximum of 8 analog input channels are available       Driver Library [API-PAC(W32)] included       USB	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen	Range Impedance Resolution Conversion Speed Conversion Accuracy 11 Buffer Memory Channels Range Impedance Conversion Accuracy 12 Buffer Memory Conversion Accuracy 14 Buffer Memory State Sta	8 single-ended 16 single-ended         Bipolar: ±10V         1MΩ or more         16bit         10µsec/ch (Max.)         ±5LSB         1k word         2ch         Bipolar: ±10V         1Ω or less         16bit         10µsec (Max.)         ±5LSB         1kword         4LVTL level (positive logic)         4LVTTL level (positive logic)         1ch         32-bit Up count         32-bit (binary data)         1         Any 64-byte boundary         3.3VDC 400mA, 12VDC 200mA         PCI Express Base Specification Rev	16 single-ended			Remote Monitoring Solution Service & Product I-10 Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function L series PCI Express
Accessories       EPD-50A*1, ATP-8L* <sup>1+5</sup> Incomposition         Cables /       PCB50PS-0.5P/1.5P,       PCI         Connectors       PCA50PS-0.5P/1.5P       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       *2: Only for AIO-160802L-LPE, AI-1616L-LPE.       Standard         *2: Only for AIO-160802L-UE, AI-1616L-LPE.       *3: Optional AC adapter "POA200-20" is required.       *4: Maximum of 8 analog input channels are available for AI-1616L-LPE.       PCI         Note:       *5: Maximum of 8 analog input channels and 2 analog output channels available       Diver Library [API-PAC(W32)] included       USB	Accessories       EPD-50A*1, ATP-8L*1*5       Interspective         Cables /       PCB50PS-0.5P/1.5P,       PCI         Connectors       PCA50PS-0.5P/1.5P       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       *2: Only for AlO-160802L-UPE, Al-1616L-LPE.       Standard         *2: Only in AlO-160802L-UPE, Al-1616L-LPE.       *3: Optional AC adapter *POA200-20' is required.       *4: Maximum of 8 analog input channels are available for Al-1616L-LPE.       Standard         Note:       Driver Library [API-PAC(W32)] included       USB       ISA	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen	Range Impedance Impedance Conversion Speed Conversion Accuracy <sup>14</sup> Buffer Memory Channels Range Impedance Impedance It Resolution Conversion Speed Conversion Accuracy <sup>14</sup> Buffer Memory Input Output Channels Counting System Max. count s sumption (Max.) Insions (mm)	8 single-ended 16 single-ended         Bipolar: ±10V         1MΩ or more         16bit         10µsec/ch (Max.)         ±5LSB         1k word         2ch         Bipolar: ±10V         1Ω or less         16bit         10µsec (Max.)         ±5LSB         1kword         4LVTL level (positive logic)         4LVTTL level (positive logic)         1ch         32-bit Up count         32-bit (binary data)         1         Any 64-byte boundary         3.3VDC 400mA, 12VDC 200mA         PCI Express Base Specification Rev	16 single-ended			Remote Monitoring Solution Service & Product I-10 Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function L series PCI Express
Processorial       ED-50A*1, ATP-8L*1*5       E series         Cables /       PCB50PS-0.5P/1.5P,       PCI         Connectors       PCA50PS-0.5P/1.5P       Standard         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       Standard       PCI         *2: Only for AIO-160802L-UPE, Al-1616L-UPE.       *3: Optional AC adapter *POA200.20* is required.       *4: Maximum of 8 analog input channels are available for Al-1616L-UPE.       PCI         Note:       *5: Maximum of 8 analog input channels and 2 analog output channels available       USB       USB	Precession is       EPD-50A*1, ATP-8L*1*5       E series         Cables / Connectors       PCB50PS-0.5P/1.5P,       PCI         Visit Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       Standard       PCI         *2: Only for AIO-160803CL-UPE, AI-1616L-LPE.       *3: Optional AC adapter *POA200-20' is required.       *4: Maximum of 8 analog input channels are available for AI-1616L-LPE.       PCI         Note:       *5: Maximum of 8 analog input channels are available for AI-1616L-LPE.       PCI       USB         ISA       ISA       ISA	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector	Range Impedance Impedance Conversion Speed Conversion Accuracy <sup>14</sup> Buffer Memory Channels Range Impedance Impedance It Resolution Conversion Speed Conversion Accuracy <sup>14</sup> Buffer Memory Input Output Channels Counting System Max. count s sumption (Max.) Insions (mm)	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit 10µsec (Max.) ±5LSB 1k-word 4 LVTTL level (positive logic) 4 LVTTL level (positive logic) 1ch 32-bit Up count 32-bit (binary data) 1 Any 64-byte boundary 3.3VDC 400mA, 12VDC 200mA PCI Express Base Specification Rev 10250-52A2JL [3M] or equivalent	16 single-ended			Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI Low-cost Multi-function L series PCI Express PCI Express PCI
Connectors       PCA50PS-0.5P/1.5P       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       Standard         *2: Optional AC adapter POA200.20' is required.       *2: Optional AC adapter POA200.20' is required.       PCI         *3: Optional AC adapter POA200.20' is required.       *4: Maximum of 8 analog input channels are available for AI-1616L-LPE.       PCI         Note:       *5: Maximum of 8 analog input channels and 2 analog output channels available       USB	Connectors       PCA50PS-0.5P/1.5P       PCI         *1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P       *2: Only for AIO-160802L-LPE, AI-1616L-LPE.       Standard         *2: Only for AIO-160802L-DE, AI-1616L-LPE.       *3: Optional AC adapter "POA200-20" is required.       *CI       PCI         *3: Optional AC adapter "POA200-20" is required.       *CI       *CI       PCI       USB         Inver Library [API-PAC(W32)] included       ISA       ISA       ISA	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu	Range Impedance Resolution Conversion Speed Conversion Accuracy <sup>11</sup> Buffer Memory Channels Range Impedance	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           1 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)           1           Any 64-byte boundary           3.3VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L*1*2*3*4, ATBA-16L*1*2*3,	16 single-ended			Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function L series PCI PC Card Intelligent
*1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P *2: Only for AIO-160802L-IPE, AI-1616L-IPE. *3: Optional AC adapter "POA200-20" is required. *4: Maximum of 8 analog input channels are available for AI-1616L-IPE. *5: Maximum of 8 analog input channels and 2 analog output channels available Driver Library [API-PAC(W32)] included USB	*1: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P *2: Only for AIO-160802L-LPE, AI-1616L-LPE. *3: Optional AC adapter *POA200-20* is required. *4: Maximum of 8 analog input channels are available for AI-1616L-LPE. *5: Maximum of 8 analog input channels and 2 analog output channels available Driver Library [API-PAC(W32)] included ISA	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector	Range Impedance Conversion Speed Conversion Accuracy <sup>14</sup> Buffer Memory Exange Impedance Range Impedance Conversion Accuracy <sup>14</sup> Buffer Memory Conversion Accuracy <sup>14</sup> Buffer Memory Buffer Memory Conversion Accuracy <sup>14</sup> Conversion Accuracy <sup>14</sup> Conversion Accuracy <sup>14</sup> Conversion Accuracy <sup>14</sup> Buffer Memory Conversion Accuracy <sup>14</sup> Conversion Accuracy <sup>14</sup> Buffer Memory Counting System Max. count Max. count Sumption (Max.) Insions (mm)	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)           1           Any 64-byte boundary           3.3VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATP-8L*1*5	16 single-ended			Remote Monitoring Solution Service & Product I-1 Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function C Express PCI PC Card PCI Express PCI PC Card Intelligent E series
*2: Only for AIO-160802L-IPE, AI-1616L-IPE. *3: Optional AC adapter *POA200.20* is required. *4: Maximum of 8 analog input channels are available for AI-1616L-IPE. Note: *5: Maximum of 8 analog input channels and 2 analog output channels available Driver Library [API-PAC(W32)] included	*2: Only for AIO-160802L-IPE, AI-1616L-IPE.     *3: Optional AC adapter *POA200-20* is required.       *4: Maximum of 8 analog input channels are available for AI-1616L-IPE.     *5: Maximum of 8 analog input channels and 2 analog output channels available       Note:     *5: Maximum of 8 analog input channels and 2 analog output channels available       Driver Library [API-PAC(W32)] included	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector	Range Impedance (amesian kautay 'i Buffer Memory Conversion Acutay 'i Buffer Memory Impedance (conversion Acutay 'i Buffer Memory Input Output Channels Counting System Max. count s S Software Accessories Cables /	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)           1           Any 64-byte boundary           3.3VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATP-8L*1*5           PCB50PS-0.5P/1.5P,	16 single-ended			Remote Monitoring Solution Service & Product I-1 Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function C Express PCI PC Card PCI Express PCI PC Card Intelligent E series
*4: Maximum of 8 analog input channels are available for Al-1616L-LPE. Note: *5: Maximum of 8 analog input channels and 2 analog output channels available Driver Library [API-PAC(W32)] included USB	*4: Maximum of 8 analog input channels are available for Al-1616L-LPE.     PCI       Note:     *5: Maximum of 8 analog input channels and 2 analog output channels available     USB       Driver Library [API-PAC(W32)] included     USB	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector	Range Impedance (amesian kautay 'i Buffer Memory Conversion Acutay 'i Buffer Memory Impedance (conversion Acutay 'i Buffer Memory Input Output Channels Counting System Max. count s S Software Accessories Cables /	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit 10µsec (Max.) ±5LSB 1k-word 4 LVTTL level (positive logic) 4 LVTTL level (positive logic) 1ch 32-bit Up count 32-bit (binary data) 1 Any 64-byte boundary 3.3VDC 400mA, 12VDC 200mA PCI Express Base Specification Rev 10250-52A2JL [3M] or equivalent - ATBA-8L <sup>±1+223+4</sup> , ATBA-16L <sup>±1+2+3</sup> , EPD-50A <sup>±1</sup> , ATP-8L <sup>±1+5</sup> PCB50PS-0.5P/1.5P	16 single-ended			Remote Monitoring Soluti Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-function L series PCI PC Card Intelligent E series PCI
Driver Library [API-PAC(W32)] included USB	Driver Library [API-PAC(W32)] included USB ISA	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector	Range Impedance (amesian kautay 'i Buffer Memory Conversion Acutay 'i Buffer Memory Impedance (conversion Acutay 'i Buffer Memory Input Output Channels Counting System Max. count s S Software Accessories Cables /	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit (binary data)           1           Any 64-byte boundary           3.3VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATP-8L*1*5           PCB50PS-0.5P/1.5P           *1: Requires use of optional cable PCB50P           *1: Requires use of optional cable PCB50P           *3: Optional AC adapter 'POA200-20' is re	16 single-ended  16 single-ended			Remote Monitoring Soluti Service & Product I-1
	ISA	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector Options	Range Impedance (amesian kautay 'i Buffer Memory Conversion Acutay 'i Buffer Memory Impedance (conversion Acutay 'i Buffer Memory Input Output Channels Counting System Max. count s S Software Accessories Cables /	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           1 ch           32-bit Up count           32-bit (binary data)           1           Any 64-byte boundary           33.VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L <sup>+1+2±3*4</sup> , ATBA-16L <sup>+1+2±3</sup> ,           EPD-50A*1, ATP-8L <sup>+1+5</sup> PCB50PS-0.5P/1.5P           *1: Requires use of optional cable PCB50P           *1: Requires use of optional cable PCB50P           *1: Requires use of optional cable PCB50P           *1: Requires use of optional cable PCB50P	16 single-ended			Remote Monitoring Solution Service & Product I-1 Lineup Measurement Products Multi-function F Series PCI Express PCI Card Lowcost Multi-function C Card Card PCI Express PCI PC Card Intelligent E series PCI Standard
ISA ISA		Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector	Range Impedance (amesian kautay 'i Buffer Memory Conversion Acutay 'i Buffer Memory Impedance (conversion Acutay 'i Buffer Memory Input Output Channels Counting System Max. count s S Software Accessories Cables /	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)           1           Any 64-byte boundary           3.3VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATP-8L*1*5           PCB50PS-0.5P/1.5P,           PCA50PS-0.5P/1.5P,           *1: Requires use of optional cable PCB50P           *2: Only for Alo-1680a2L-LPE, Al-1616L-L           *2: Only for Alo-1680a2L-LPE, Al-1616L-L	16 single-ended			Remote Monitoring Solution Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI Express PCI Express PCI Express PCI Express PCI Express PCI Express PCI Express PCI Express PCI Standard PCI
	As shown on the side of product's images, RoHS compliant (Refs) is a CONTEC original marking for RoHS-compliant products.	Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector Options	Range Impedance (amesian kautay 'i Buffer Memory Conversion Acutay 'i Buffer Memory Impedance (conversion Acutay 'i Buffer Memory Input Output Channels Counting System Max. count s S Software Accessories Cables /	8 single-ended 16 single-ended           Bipolar: ±10V           1MΩ or more           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec/ch (Max.)           ±5LSB           1k word           2ch           Bipolar: ±10V           1Ω or less           16bit           10µsec (Max.)           ±5LSB           1k-word           4 LVTTL level (positive logic)           4 LVTTL level (positive logic)           1ch           32-bit Up count           32-bit (binary data)           1           Any 64-byte boundary           3.3VDC 400mA, 12VDC 200mA           PCI Express Base Specification Rev           10250-52A2JL [3M] or equivalent           -           ATBA-8L*1*2*3*4, ATBA-16L*1*2*3, EPD-50A*1, ATP-8L*1*5           PCB50PS-0.5P/1.5P,           PCA50PS-0.5P/1.5P,           *1: Requires use of optional cable PCB50P           *2: Only for Alo-1680a2L-LPE, Al-1616L-L           *2: Only for Alo-1680a2L-LPE, Al-1616L-L	16 single-ended			Remote Monitoring Soluti Service & Product I-1
		Analog Output Digital I/O Counter Interrupts I/O Address Power Consu Bus / Dimen Connector Options	Range Impedance (amesion Speed Conversion Acoutary "I Buffer Memory Impedance (amesion Acoutary "I Buffer Memory Imput Output Channels Counting System Max. count s Software Accessories Cables / Connectors	8 single-ended 16 single-ended Bipolar: ±10V 1MΩ or more 16bit 10µsec/ch (Max.) ±5LSB 1k word 2ch Bipolar: ±10V 1Ω or less 16bit 10µsec (Max.) ±5LSB 1k-word 4 LVTTL level (positive logic) 4 LVTTL level (positive logic) 1ch 32-bit Up count 32-bit (binary data) 1 Any 64-byte boundary 3.3VDC 400mA, 12VDC 200mA PCI Express Base Specification Rev 10250-52A2JL [3M] or equivalent - ATBA-8L <sup>+122/344</sup> , ATBA-16L <sup>+12/3</sup> , EPD-50A <sup>+1</sup> , ATP-8L <sup>+1-5</sup> PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P	16 single-ended  16 single-ended	-     -       -     -       -     -       -     -       4ch     -       Bipolar: ±10V     -       10 or less     -       16bit     -       10usec (Max.)     +       ±5LSB     -       1k word     -       3.3VDC 400mA, 12VDC 250mA     -       -     -	iant products.	Remote Monitoring Soluti Service & Product Lineup Measurement Products Multi-function F Series PCI Express PCI Express PCI card Lowcost Multi-function Series PCI Express PCI DC Card PCI Express PCI Standard PCI USB

PCI PC Card Low-cost Multi-fun L series PCI Express PCI PC Card Intelligent E series PCI Standard PCI USB

ISA

Industrial	Automatior	n Produc	ts Measurement a	nd Control Products	5	
Ana	log	/0	Low-cost Multi-fund	ction L series		ee page Q-01 for optional accessories and ors, and page P-01 for supported software.
Box-PCs Panel-PCs Flat Panel Displays Silicon Disk Drives Option	-	Low Profile Windows cost 16-k I6-8/2(L	bit Multi-function A/D	4 1ch seri C-LOGGER MATL/ On-board control mecha output and input/output t 1k data buffer memory e Software for analog inpu	AB LabVIEW anism provides analog input / output that is synchronized with external si enables background processing	gnals Soon to be RoHS-compliant
Box PCs &Panel PCswith Windows CE Single Board Computer Chassis / Backplane Analog I/O Digital I/O Counter & Motion Controller	Digita	Low Profile Windows Cost 16- al Input 5-16(LPC	bit Analog to	4 1ch seri     C-LOGGER MATL/     On-board control mecha     input / output and input/o     1k data buffer memory e     Software for analog inpu	AB LabVIEW anism provides analog input / output butput that is synchronized with exte enables background processing	ernal signals Soon to be RoHS-compliant
Serial Communication GPIB Communication Remote I/O Expansion Unit / Bus Adapter Software Accessories &	Digita	Low Profile Windows Cost 16-I I Input	oit Analog to	4 1ch seri C-LOGGER MATL/ 64ch single-ended or 32 On-board control mecha output and input/output t Software for analog inpu	AB LabVIEW tch differential inputs anism provides analog input / output that is synchronized with external si	gnals Soon to be RoHS-compliant
Cables Distributed Monitor & Control Network: F&eIT Multi-Programmable Display Wireless LAN Remote Monitoring Solution	-			Buffer Amplifier Box for Analog Input Boards (16ch type) ATBA-16L		Sox for Analog
Service & Products	Model		ADA16-8/2(LPCI)L	AD16-16(LPCI)L	AD16-64(LPCI)LA	
I-11	Analog Input	Channels Range Impedance Resolution Conversion Speed Conversion Accuracy <sup>41</sup>	±5LSB	16 single-ended	64 single-ended or 32 different	
Lineup Measurement Products Multi-function F Series PCI Express	Analog Output	Resolution Conversion Speed Conversion Accuracy *1	2ch Bipolar: ±10V 1Ω or less 16bit 10μsec (Max.) ±3LSB	- - - - -		
201		Buffer Memory	1k-word	-		

	Impedance	1MΩ or more			
Analog Input	Resolution	16bit			
	Conversion Speed	10µsec/ch (Max.)			
	Conversion Accuracy *1	±5LSB			
	Buffer Memory	1k-word			
	Channels	2ch	-		
	Range	Bipolar: ±10V	-		
	Impedance	1Ω or less	-		
Analog Output	Resolution	16bit	-		
	Conversion Speed	10µsec (Max.)	-		
	Conversion Accuracy *1	±3LSB	-		
	Buffer Memory	1k-word	-		
Distist	Input	4 TTL level (positive logic)			
Digital I/O	Output	4 TTL level (positive logic)			
	Channels	1ch			
Counter	Counting System	32-bit Up count			
	Max. count	32-bit (binary data)			
Interrupts		1			
I/O Address		Any 64-byte boundary			
Power Consu	imption (Max.)	5VDC 380mA	5VDC 260mA	5VDC 450mA	
Bus / Dimer	isions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*2) / 121.69(L)×63.41(H)			
Connector		10250-52A2JL [3M] or equivalent		HDRA-E68W1LFDT-SL [HONDA Tsushin Kogyo] or equivalent	
	Software			reastine reggios equivalent	
	Continuito	ATBA-8L*3, ATBA-16L*3,	ATBA-8L*3, ATBA-16L*3*4,	ATP-32F*5*6, ATP-8*4*5*6, DTP-64(PC)*5*6,	
Options	Accessories	ATP-8L*3, EPD-50A*3	ATP-8L*3*4, EPD-50A*3	EPD-68A*6*7, EPD-96A*5*6, EPD-96*5*6	
optiono	Cables /			PCA68PS-0.5P/1.5P, ADC-68M96F,	
	Connectors	PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P		PCB68PS-0.5P,1.5P	
Note:		*1: When using a signal source with a high-speed built-in operational amplifier *3: Requires use of optional cable PCB50PS-0.5P/1.5P *5: Optional cable ADC-68M/96F is required. *6: AD16-64(LPC)LA requires two cables and accessories each for two connectors.		*2: +5V power must be supplied fron *4: Maximum of 8 analog input char	

h for two connectors \*7: Requires use of optional cable PCB68PS

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Measurement and Control Products

Analog I/O

Low-cost Multi-function L series

Low Profile	Analog Onput Ach 4 Counter L High Memory CE	Box-PCs
Windows Driver	Linux Diver MATLAB LabVIEW	Panel-PCs
Low-Cost 16-Bit Digital to	0	Flat Panel Displays
Analog Output DA16-4(LPCI)L	<ul> <li>Low Profile PCI - compliant (includes bracket for use in standard PCI slot)</li> <li>On-board control mechanism provides analog output, timed output</li> </ul>	Silicon Disk Drives
	<ul> <li>and output that is synchronized with external signals</li> <li>● 1k data buffer memory enables background processing.</li> </ul>	Option
	Software for analog input / output correction	Box PCs &Panel PCswith Windows CE
Low S0-pin Mini-Ribbon	ng Input - Ralog Onput 8ch 4 Counter 1ch High Memory on Board	Single Board Computer
	Linux Diver MATLAB LabVIEW	Chassis / Backplane
Low-Cost 16-Bit Digital	On-board control mechanism provides analog output, timed output and	Analog I/O
to Analog Output DA16-8(LPCI)L	output that is synchronized with external signals Soon to be RoHS-compliant	Digital I/O
DATOO(LFCI)L	<ul> <li>Filter function can simplify the connection of external signal</li> <li>Software for analog input / output correction</li> </ul>	Counter & Motion Controller
	<ul> <li>Low Profile PCI - compliant (includes bracket for use in standard PCI slot)</li> <li>Plug-ins for the dedicated libraries, the board also supports MATLAB and LabVIEW</li> </ul>	Serial Communication
		GPIB Communication
PCI Low 50-pin Mini-Ribbon	rg Input Analog Onput Digital I/O Counter L High Memory - 16ch 4 1ch Series Precision on Board	Remote I/O
	Linux Diver MATLAB LabVIEW	Expansion Unit / Bus Adapter
Low-Cost 16-Bit Digital	On-board control mechanism provides analog output, timed output and	Software
to Analog Output DA16-16(LPCI)L	output that is synchronized with external signals Soon to be RoHS-compliant	Accessories & Cables
-	<ul> <li>Filter function can simplify the connection of external signal</li> <li>Software for analog input / output correction</li> </ul>	Distributed Monitor & Control Network: F&eIT
	<ul> <li>Low Profile PCI - compliant (includes bracket for use in standard PCI slot)</li> <li>Plug-ins for the dedicated libraries, the board also supports MATLAB and LabVIEW</li> </ul>	Multi-Programmable Display
		Wireless LAN

Remote Monitoring Solution

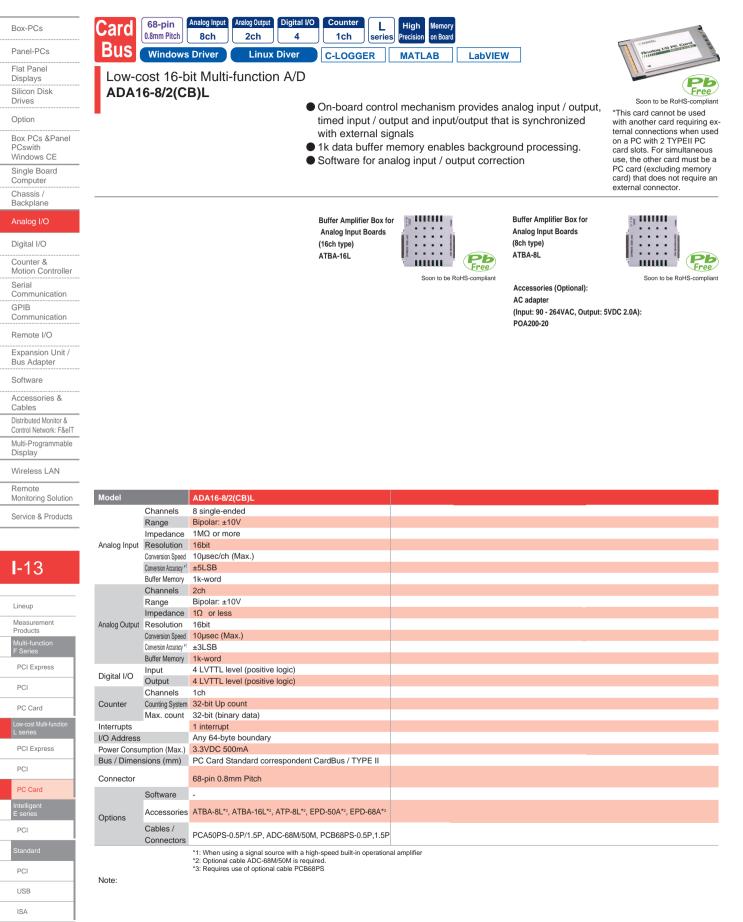
Service & Products

Model		DA16-4(LPCI)L	DA16-8(LPCI)L	DA16-16(LPCI)L	
	Channels	-			
	Range	-			I-12
	Impedance	-			
Analog Input	Resolution	-			
	Conversion Speed				Lineup
	Conversion Accuracy *1	-			Measurement
	Buffer Memory				Products
	Channels	4ch	8	16	Multi-function
	Range	Bipolar: ±10V			F Series
Analog Output	Impedance	1Ωor less			PCI Express
	Resolution	16bit			
	Conversion Speed	10µsec (Max.)			PCI
	Conversion Accuracy *1	±3LSB	±5LSB		
	Buffer Memory	1k-word			PC Card
Digital I/O	Input	4 TTL level (positive logic)			Low-cost Multi-function
•	Output	4 TTL level (positive logic)			L series
	Channels	1ch			PCI Express
	Counting System				PCI Express
	Max. count	32-bit (binary data)			PCI
Interrupts		1 interrupt			
I/O Address		Any 64-byte boundary			PC Card
Power Consu	1 ( )	5VDC 440mA	5VDC 850mA	5VDC 1100mA	Intelligent
Bus / Dimen	sions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*			E series
Connector		10250-52A2JL [3M] or equivale	nt		
	Software	-			PCI
Options	Accessories	ATP-8L*3*4, EPD-50A*3	EPD-50A*3		Standard
	Cables / Connectors	PCB50PS-0.5P/1.5P, PCA50PS	S-0.5P/1.5P		PCI
Note:		*1: When using a signal source with a *2: +5V power must be supplied from F *3: Requires use of optional cable PCE			 USB
		*4: Maximum of 2 analog output chann			ISA

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# Analog I/O Low-c

Low-cost Multi-function L series



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Measurement and Control Products

Analog I/O

Low-cost Multi-function L series

/ · · · · · · · · · · · · · · · · · · ·		50-pin Analog Input Analog Output	Digital I/O Counter	High Memory			Box-PCs
PCI		Mini-Ribbon 8ch 2ch		Precision on Board	A	CALLS AND	
	Windows		C-LOGGER MATLAB	LabVIEW			Panel-PCs
		Cost 16-Bit	<ul> <li>Low Profile PCI - compliant (</li> </ul>	lincludes bracket for use in sta	endard PCI slot)	AR	Flat Panel Displays
		Analog I/O	Isolation between PC signal	and external analog / digital si	ignals	Ì (Pb)	Silicon Disk Drives
ADAI	16-8/2(L	PCI)L	<ul> <li>On-board control mechanism output and input/output that i</li> </ul>	n provides analog input / outpu is synchronized with external s	ut, timed input /	Soon to be RoHS-compliant	Option
			<ul> <li>1k data buffer memory enable</li> <li>Software for analog input / or</li> </ul>				Box PCs &Par
							PCswith Windows CE
	Low	50-pin Analog Input Analog Output	Digital I/O Counter L	High Memory	1		Single Board
PCI		Mini-Ribbon 16ch -		Precision on Board	4		Computer
	Windows	Driver Linux Diver	C-LOGGER MATLAB	LabVIEW			Chassis / Backplane
		Cost 16-Bit	<ul> <li>Low Profile PCI - compliant (</li> </ul>	Geoludee bracket for use in sta	indexed PCI slot)	A. P. C.	Analog I/O
Analog	g Input		Isolation between PC signal	and external analog / digital si	ignals	Pb	Digital I/O
ADI16	6-16(LPC	)L	<ul> <li>On-board control mechanism output and input/output that i</li> </ul>	n provides analog input / outpu is synchronized with external s		Soon to be RoHS-compliant	Counter &
			<ul> <li>1k data buffer memory enabl</li> </ul>	les background processing.	lignais	ioun to be more	Motion Contro
			<ul> <li>Software for analog input / or</li> </ul>				Serial Communicatio
	(	50-pip Analog Input Analog Output	Digital I/O Counter				GPIB
PCI	Low Profile	SO-pin         Analog Input         Analog Output           Mini-Ribbon         -         4ch		High Memory Precision on Board			Communicatio
POT (	Windows		MATLAB LabVIEW				Remote I/O
laolati					V		Expansion Un Bus Adapter
	ed Low-0	Cost 16-Bit t	<ul> <li>Low Profile PCI - compliant (</li> <li>Isolation between PC signal</li> </ul>			V V	Software
	g Output 6-4(LPCI		<ul> <li>Isolation between PC signal</li> <li>On-board control mechanism</li> </ul>	and external analog / digital si n provides analog output, time		Free	Accessories &
Un	)=4(E: -	)∟	output that is synchronized w	with external signals		Soon to be RoHS-compliant	Cables
			1k data buffer memory enabled	les background processing.			Distributed Monitor Control Network: F
			<ul> <li>Software for analog input / or</li> </ul>	utout correction			Control Hotmont. 1
			<b>U</b> 1	•			
	Buffer Amplif Analog Input	1	Software for analog input / or Buffer Amplifier Box for Analog Input Boards	•	Accessories (Opti AC adapter	ional):	Multi-Programma
4 (	Analog Input (16ch type)	1	Buffer Amplifier Box fo Analog Input Boards (8ch type)	•	AC adapter (Input: 90 - 264VA	tional): AC, Output: 5VDC 2.0A):	Multi-Programma Display
4 (	Analog Input	Boards	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L		AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu
4 ( 4	Analog Input (16ch type)	Boards	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L	or	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu
4 ( 4	Analog Input (16ch type) ATBA-16L Isolation type	Boards	Buffer Amplifier Box fo Analog Input Boards (8ch type) ATBA-8L compliant ADI16-16(LPCI)L	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN
4 ( 4	Analog Input (16ch type) ATBA-16L Isolation type Channels	Boards Boards Soon to be RoHS-o ADA16-8/2(LPCI)L Bus isolation 8 single-ended	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L compliant	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu Service & Produ
4 ( 4	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance	Eboards Figure 2	Buffer Amplifier Box fo Analog Input Boards (8ch type) ATBA-8L compliant ADI16-16(LPCI)L	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu
f ( F	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution	E Boards F Boards F Boards F Control be RoHS-C Soon to be RoHS-C ADA16-8/2(LPCI)L Bus isolation 8 single-ended Bipolar: ±10V 1MΩ or more 16bit	Buffer Amplifier Box fo Analog Input Boards (8ch type) ATBA-8L compliant ADI16-16(LPCI)L	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu Service & Produ
Analog Input	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n	Boards	Buffer Amplifier Box fo Analog Input Boards (8ch type) ATBA-8L compliant ADI16-16(LPCI)L	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu Service & Produ
Model Analog Input	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed	Boards	Buffer Amplifier Box fo Analog Input Boards (8ch type) ATBA-8L compliant ADI16-16(LPCI)L	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu Service & Produ
Model Analog Input	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range	Boards Boards F and $F$ a	Abilite-ended	for Soon to be RoHS-compilar DAI16-4(LPCI)L - - - - - - - - - - - - -	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu Service & Produ Service & Produ Lineup Lineup Measurement Products Multi-function
Analog Input	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range	Boards Boards F and $F$ a	Buffer Amplifier Box fo Analog Input Boards (8ch type) ATBA-8L Compliant ADI16-16(LPCI)L 16 single-ended	for Soon to be RoHS-complian DAI16-4(LPCI)L - - - - - - - - - - - - -	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programma Display Wireless LAN Remote Monitoring Solu Service & Produ
Analog Input	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Channels Range Impedance Resolution Conversion Speed	Boards Figure 2 Constant of the Rolls of t	Abilite-ended	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm. Display Wireless LAN Remote Monitoring Solu Service & Produ Lineup Measurement Products Multi-function F Series PCI Express
Analog Output	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Accuracy 'n Buffer Memory Channels Range Impedance Range Impedance Range	Boards For the second	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L AD116-16(LPCI)L 16 single-ended - - - - - -	ior For Control of the second	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Produ Service & Produ Lineup Measurement Products PCI Express PCI
Analog Input	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range Impedance Resolution Conversion Speed Conversion Speed Conversion Speed Conversion Speed Conversion Speed Conversion Accuracy 'n Buffer Memory Input	Boards F Boards F $F$ $F$ $F$ $F$ $F$ $F$ $F$ $F$ $F$	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L Compliant AD116-16(LPCI)L 16 single-ended	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm. Display Wireless LAN Remote Monitoring Solu Service & Produ Service & Produ Lineup Measurement Products PCI Express PCI PC Card
Analog Output	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Corversion Accuracy 'n Buffer Memory Channels Range Impedance Resolution Conversion Speed Corversion Speed Corversion Speed	Boards For the set of the set o	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L Compliant AD116-16(LPCI)L 16 single-ended	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Produ Service & Produ Lineup Measurement Products PCI Express PCI
Analog Output	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Comesion Accuray'n Buffer Memory Channels Resolution Conversion Accuray'n Buffer Memory Input Output Channels Counting System	Boards For the second	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L Compliant AD116-16(LPCI)L 16 single-ended	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card
Model Analog Input Analog Output Digital I/O	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Comesion Accuray'n Buffer Memory Channels Resolution Conversion Accuray'n Buffer Memory Input Output Channels Counting System	Boards For the second	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L Compliant AD116-16(LPCI)L 16 single-ended	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Produ Service & Produ Lineup Measurement Products Multi-function F Series PCI PC Card Low-cost Multi-funct
Model Model Analog Input Analog Output Digital I/O Counter Interrupts I/O Address	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Input Conversion Accuracy 'n Buffer Memory Channels Conversion Accuracy 'n Buffer Memory Input Output Channels Counting System Max. counting	Boards For the second		ior Control Control	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Produ Lineup Measurement Products PCI Express PCI Low-cost Multi-funct Lesries PCI Express PCI Express PCI
Model Model Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Acuracy 'n Buffer Memory Channels Conversion Acuracy 'n Buffer Memory Input Output Channels Counting System Max. count	Boards For the set of the set o	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L Compliant AD116-16(LPCI)L 16 single-ended	for	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI PCI Express PCI Low-cost Multi-func L series PCI Express
Model Model Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur Bus / Dimensi	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Acuracy 'n Buffer Memory Channels Conversion Acuracy 'n Buffer Memory Input Output Channels Counting System Max. count	Boards For the set of the set		ior Control Control	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI PC Card Low-cost Multi-funct L series PCI PCI Express PCI PCI Express PCI PCI Card
Model Model Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range Impedance Resolution Conversion Accuracy 'n Buffer Memory Input Conversion Accuracy 'n Buffer Memory Input Counting System Max. counting System Max. counting System Max. counting	Boards For the second		ior Control Control	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI Express PCI PC Card Low-cost Multi-func L series PCI Express PCI PC Card Intelligent
Analog Input Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur Bus / Dimens Connector	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Conversion Accuracy 'n Buffer Memory Channels Conversion Accuracy 'n Buffer Memory Input Conversion Accuracy 'n Buffer Memory Input Counting System Max. count	Boards For the set of the set o	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L  AD116-16(LPCI)L  16 single-ended	or	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI PC Card Low-cost Multi-func Low-cost Multi-func Levress PCI PC Card Intelligent E series
Model Model Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur Bus / Dimensi	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Range Impedance Resolution Conversion Speed Conversion Accuracy 'n Buffer Memory Channels Conversion Accuracy 'n Buffer Memory Channels Conversion Accuracy 'n Buffer Memory Input Conversion Accuracy 'n Buffer Memory Input Counting System Max. count	Boards For the second	Buffer Amplifier Box for Analog Input Boards (8ch type) ATBA-8L  AD116-16(LPCI)L  16 single-ended	or	AC adapter (Input: 90 - 264VA POA200-20		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI PC Card Low-cost Multi-funct L series PCI Express PCI PC Card Intelligent E series PCI
Analog Input Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur Bus / Dimens Connector	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuray 'n Buffer Memory Input Conversion Accuray 'n Buffer Memory Input Conversion Accuray 'n Buffer Memory Input Counting System Max. count Sumption (Max.) nsions (mm)	Boards For the set of the set	SVDC 400mA  ATBA-8L*34, ATBA-16L*3, ATP-8L*34, EPD-50A	for <ul> <li></li></ul>	AC adapter (Input: 90 - 264VA POA200-20 nt		Multi-Programm Display Wireless LAN Remote Monitoring Solu Service & Prod Lineup Measurement Products Multi-function F Series PCI PC Card Intelligent E Series PCI Standard PCI
Analog Input Analog Input Analog Output Digital I/O Counter Interrupts I/O Address Power Consur Bus / Dimens Connector	Analog Input (16ch type) ATBA-16L Isolation type Channels Range Impedance Resolution Conversion Speed Conversion Accuray 'n Buffer Memory Input Conversion Accuray 'n Buffer Memory Input Conversion Accuray 'n Buffer Memory Input Counting System Max. count Sumption (Max.) nsions (mm)	Boards For the set of the set	SVDC 400mA  SVDC 400mA  ATBA-8L*34, ATBA-16L*3, ATP-8L*34, EPD-50A  speed built-in operational amplifier *S-0.5P/1.5P *4: Maximum of 8 aa	or	AC adapter (Input: 90 - 264VA POA200-20 nt		Multi-Programm Display Wireless LAN Remote Monitoring Soli Service & Prod Lineup Measurement Products Multi-function P Series PCI PC Card Low-cost Multi-func L series PCI PC Card Intelligent E series PCI Standard

Analog I/O Intelligent E series

Box-PCs

Panel-PCs

Flat Panel

Silicon Disk Drives

Box PCs &Panel

Displays

Option

PCswith Windows CE Single Board

Computer

Chassis /

Backplane

Digital I/O

Counter &

GPIB Communication

Motion Controller Serial

Communication

### Features of E series

#### 1. Bulk buffer memory

Data bulk buffer memory (FIFO or ring buffer) capable of storing up to 262,144 bits of data, enabling high speed sampling to be executed independently of the processing power of the PC. Either FIFO or ring format can be selected as memory type.

#### 2. Diverse sampling control

Sampling start / stop can be controlled via software, by using the signal change of specified channels or by utilizing external digital signals as a trigger. Consecutive samplings can be synchronized with the onboard timer or with external pulse signals.

#### 3. Interrupt events

Interrupt events can be generated by factors such as sampling termination, changes in external signal or sampling errors allowing board status to be monitored with no additional load on the host computer,

#### Dedicated function upgrades

A variety of functions can be added by using available add-on function boards

#### Channel expansion

Allows an analogue E Series 16 channel single-ended / 8 channel differential board to provide 32 single-ended channels / 16 differential channels

#### Insulation Amplifier

Provides both bus and channel-to-channel insulation

## 4. Analog output

Independent 1-channel analog output (digital to analog conversion)

### 5. Digital input / output

4 points of TTL level digital input and 4 points of digital output

#### nction boards

Concurrent sampling
 Allows 16 channels to be sampled in the same timing

#### Low Pass Filter

Can lower commercial power frequency and provide wide area filtering (antialiasing)

### Accessories & Cables for E series

Expansion Unit / . Bus Adapter Terminal Unit Can be DIN rail mounted using DIN-ADP1 Software Accessories & Cables EPD-37A, EPD-37 Distributed Monitor & 16ch Multiplexer Sub-board Control Network: F&eIT PCI DIN rail adapter Multi-Programmable ATCH-16A(PCI), ATUH-16A(PCI) DIN-ADP1 Display ISA 11111111111111 ATCH16(PC), ATUH-16(PC) Alligator clip cable BNC-W60 DTP-3A Wireless I AN When using 16-channel Remote multiplexer and signal conditioning simultaneously, an external power supply is Monitoring Solution reauired. Service & Products PCB37PS-0.5P Signal Conditioning PCB37P-1.5 **I-15** 00 000000000 Cables ATP-16E Lineup Terminal Board F FH FV Series ATII-8A Measurement Multi-Function A/D Signal Conditioning Products Board PCC16PS CB37PS-0.5P , Terminal Unit 100000000 PCI Express ..... Ferminal Board PCB37P-1.5 EPD-37A, EPD-37 PCI PCD8PS Signal Conditioning PC Card PCA37PS DTP-3A PCI Express I/O Cable PCI DT/E1 PCA37P PCB37PS-0.5P PC Card Топонны DTP-4A ditioning Intelliger PCB37P-1.5 PCI PCA15P Cable ATBA-16E PCI Panel with BNC I/O Cable Connecto ATP-16F DT/E2 Terminal Unit USB PCA37PS ISA 0 PCB15P PCA37P FTP-15

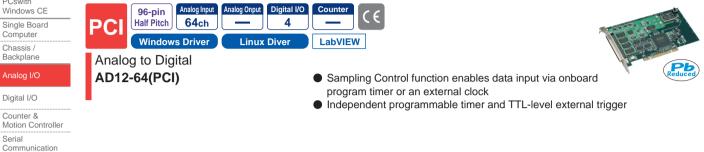
		Intelligent E series	Analog	g I/O
PCI 37-pin D-SUB Analog Input 16ch Analog Onput 1 Digital I/O Count	er E High Memory C E Speed on Board			Box-PCs
Windows Driver Linux Diver C-LOG	GER LabVIEW 16ch Multiplexer ATUH-16A(F		THE REPORT	Panel-PCs
High Speed Multi-function A/D		d or 8 differential	-	Flat Panel Displays
(-)	h-speed, high precision conver microsecond per channel (Ma		Soon to be RoHS-compliant	Silicon Disk Drives
	/IB data buffer memory (FIFO c	0 ,		Option
to b	e executed independently of th	e processing power of the	PC	Box PCs &Panel
37-pin Analog Input Analog Onput Digital I/O Count				PCswith Windows CE
PCI D-SUB 16ch 1ch 4 —	Series Precision Speed on Board	Sub-Board	The all and the	Single Board Computer
Windows Driver         Linux Diver         C-LOG           High Speed 16-bit Multi-function A/D Input	ATUH-16A(I 16 single-ender	PCI) d or 8 differential	a fail and the second	Chassis / Backplane
	inputs can be a h-speed, high precision conver		on Pere	Analog I/O
at	microsecond per channel (Ma //B data buffer memory (FIFO c	x.) with a 16-bit resolution	Soon to be RoHS-compliant	Digital I/O
to t	e executed independently of the	e processing power of the	PC	Counter & Motion Controller
PCI 37-pin Analog Input Analog Onput Digital I/O Count D-SUB 16ch 1ch 4	er E series Memory on Board C E			Serial Communication GPIB
Windows Driver Linux Diver C-LOG	GER LabVIEW 16ch Multiplexer ATCH-16A(F		A CONTRACT	Communication
Multi-function A/D Input		d or 8 differential	Ph	Remote I/O
	conversion at 10 microsecond 2-bit resolution	per channel (Max.) with	Soon to be RoHS-compliant	Expansion Unit / Bus Adapter
	/IB data buffer memory (FIFO o			Software
to b	e executed independently of th	e processing power of the	PC	Accessories & Cables
37-pin         Analog Input         Analog Onput         Digital I/O         Count           D-SUB         16ch         1ch         4         —	E High Memory C E Speed on Board		Concentration of the second	Distributed Monitor & Control Network: F&eIT
Windows Driver Linux Diver C-LOG	GER LabVIEW 16ch Multiplexer ATCH-16A(F		A CONTRACTOR	Multi-Programmable Display
16-bit Multi-function A/D Input		d or 8 differential	A CONTRACTOR OF THE OWNER	Wireless LAN
	h precision converter performs		Free	Remote Monitoring Solution
	rosecond per channel (Max.) w /B data buffer memory (FIFO c		Soon to be RoHS-compliant	Service & Products

 16MB data buffer memory (FIFO or ring buffer) enables sampling to be executed independently of the processing power of the PC

Model		AD12-16U(PCI)EV	AD16-16U(PCI)EV	AD12-16(PCI)EV	AD16-16(PCI)EV	<b>I</b> -16	
Input channels		16 single-ended, 8 differential					
Output chan	nnels	1ch					
Resolution		12bit	16bit	12bit	16bit	Lineup	
	Range	±10V, ±5V, ±2.5V, 0~+5V, 0~+10V (jumper selectable)	±10V, ±5V, 0~+10V, 0~+5V (jumper selectable)	±10V, 0~+10V	±10V, ±5V, ±2.5V, 0~+5V, 0~+10V (jumper selectable)		
	Gain	-		×1, ×2, ×4, ×8	-	Measurement Products	
Analog Input	Conversion Speed	1µsec/ch (Max.)		10µsec/ch (Max.)		Multi-function	
	Conversion Accuracy *3	±3LSB*1	±5LSB*1*4	±2LSB (Gain: x1, x2), ±4LSB (Gain: ±4, ±8) *1*2	±5LSB*1*2*3	F Series	
	Impedance	1MΩ or more				DOI Europe	
	Range	±10V, ±5V, 0~+10V (jumper selectable)	±10V, 0~+10V (jumper selectable)	±10V, ±5V, 0~+10V	±10V, 0~+10V (jumper selectable)	PCI Express	
	Rating	±5mA				PCI	
Analog Output	Conversion Speed	6µsec (Max.)	10µsec (Max.)	6µsec (Max.)	10µsec (Max.)		
	Conversion Accuracy	±1/2LSB*1	±3LSB*1	±1/2LSB*1	±3LSB*1	PC Card	
	Impedance	1Ω or less			-	La contra de la forma de la	
Trigger		Start Trigger: 3 modes, Stop Trigger	: 4 modes			Low-cost Multi-function L series	
Isolation typ	e	-					
Timer		-				PCI Express	
Digital I/O		General I/O: Input 4, Output 4 (TTL)	positive logic) (Counter output and se	elect by jumper)		PCI	
Interrupts		1				PGI	
Interrupts		1				PC Card	
I/O Address		Any 32-byte boundary					
Power Consum	nption (Max.) *4	5VDC 1000mA					
Bus / Dimen	nsions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*5) / 176.41(L)x105.68(H)					
Connector		CN1(AIO): 37-pin female D-type, CN2(DIO): 16-pin male Header					
	Software -					Standard	
Options	Accessories	ATBA-16E*6, ATP-16*6, ATP-16*6, ATII-86*6, ATII-86*6, ATLF-86*6, ATSS-16*6, DTP-3A*6, DTP-3A*6, EPD-374*6, EPD-374*6, FTP-1*7, ATCH-16A(PCI), ATUH-16A(PCI)					
	Cables / Connectors			CB15P-1.5*8, PCC16PS, PCD8PS, D		PCI	
Note:		*1: When operating temperature is close to *2: When using a signal source with a high-		nearity error may increase. A ±0.1% LSB non-	linearity error (max.) is possible.	r Gi	
		*3: An error of about 0.02% of the maximum	range value may occur with an un-isolated	bipolar setting of ±5V or an un-isolated unipol		USB	
		*4: If an external device requires the board *5: +5V power must be supplied from PCI b		ectors, the power consumption of the board w *6: Requires use of optional cable PCB37	vill be larger.		
		*7: Requires use of optional cables DT/E2 a		*8: PCB15P is a cable for FTP-15 termina		ISA	
	As shown on the side of product's images Phree PPb is a CONTEC original marking for lead-free products						

As shown on the side of product's images, Pbfree Pbfree is a CONTEC original marking for lead-free products.

#### Analog I/O Standard Digital I/O Analog Input nalog Onput 96-pin Box-PCs Half Pitch 16ch 4 PC Panel-PCs LabVIEW Windows Driver **Linux Diver** Flat Panel Analog to Digital Displays AD12-16(PCI) Silicon Disk • Sampling Control function enables data input via onboard Drives program timer or an external clock Independent programmable timer and TTL-level external trigger Option Box PCs &Panel PCswith



GPIB Communication

Remote I/O

Expansion Unit /

Bus Adapter

Software

Accessories & Cables Distributed Monitor & Control Network: F&eIT Multi-Programmable Display

Wireless LAN

Remote

Monitoring Solution

Service & Products

-17

Lineup Measureme Products

PCI Expre PCI PC Card Cow-cost Multiseries PCI Expre PCI PC Card ntelligent esries PCI

PCI

USB ISA

Model		AD12-16(PCI)	AD12-64(PCI)
Input channe	els	16 single-ended, 8 differential	64 single-ended, 32 differential
Resolution		12bit	
	Range	$\pm 10V, \pm 5V, \pm 2.5V, \pm 1.25V, 0 \rightarrow +10$ (each channel is settable by softw	
	Gain	-	
Analog Input	Conversion Speed *1	10µsec/ch (Max.)	
	Conversion	±10V, ±5V, 0~+10V, 0~+5V: ±2LS	BB
	Accuracy *2	±2.5V, ±1.25V, 0~+2.5V: ±4LSB,	0~+1.25V: ±8LSB
	Impedance	1MΩ or more	
Trigger		1 TTL level input	
Isolation type	e	-	
Timer		0.5µsec~17min (selectable in 250nsec intervals)	
Digital I/O		General I/O: Input 4, Output 4 (TTL positive logic)	
Interrupts		Request Events: 8 modes	
•		Request Levels: One interrupt request signal as INTA	
I/O Address		Any 32-byte boundary	
	mption (Max.)	5VDC 700mA	
Bus / Dimen	sions (mm)	PCI (32bit, 33MHz, 5V) / 176.41(L) × 106.68(H)	
Connector		PCR-E96LMD [HONDA Tsushin k	(ogyo] or equivalent
	Software	-	
Options	Accessories	EPD-96A*3, EPD-96*3	
	Cables /	PCA96P-1.5, PCB96P-1.5, PCA9	6PS-0.5P/1.5P,
	Connectors	PCB96PS-0.5P/1.5P, CN5-H96F	
		*1: Actual conversion speed depends up *2: When using a signal source with a hig *3: Requires use of optional cable PCB9	gh-speed built-in operational amplifier

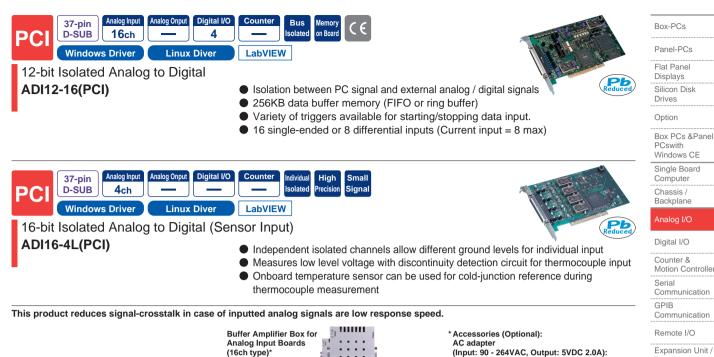
Note:

As shown on the side of product's images, Pbfree 🔬 is a CONTEC original marking for lead-free products.

Standard

POA200-20

Dh Free Soon to be RoHS-compliant



ATBA-16E

Software

Accessories & Cables Distributed Monitor & Control Network: F&eIT Multi-Programmable Display

Wireless LAN

Monitoring Solution

Model		ADI12-16(PCI)	ADI16-4L(PCI)			
Input channe	els	16 single-ended, 8 differential	4 differential			
Resolution		12bit	16bit		<b>I</b> -18	
	Range	±10V, 0~+10V, 4~20mA *1	±1.25V, ±0.125V, 0~+2.5V, 0~+0.25V			
Gain		x1, x2, x4, x8 (software selectable)	-			
Conversion Speed		20µsec/ch (Max.)	10msec/ch (Max.) *3			
Analog Input	Conversion Accuracy	±2LSB (input gain: x1, x2) at voltage input <sup>+2</sup> ±4LSB (input gain: x4, x8) at voltage input <sup>+2</sup> ±3LSB (input gain: x1) at current input <sup>+2</sup>			Lineup Measurement Products	
	Impedance	Voltage input: $1M\Omega$ or more, Current input: $250\Omega$			Multi-function F Series	
Digital trigge		1 opto-isolated input (share one of digital input)	-			
Conversion	start trigger	Software command, Analog level, External digital input	-		PCI Express	
Conversion	stop trigger	Storage complete/Software/Converted data comparison/Insulated external input digital signal	-		PCI	
Trigger		-	1 opto-isolated input (for sink current output)		PC Card	
Isolation typ	e	Bus isolation	Individual isolation		Policard	
Timer		-	0.5µsec~17min (selectable in 250nsec intervals)		Low-cost Multi-function	
Digital I/O		4 opto-isolated input (for sink current output), 4 Opto-Isolated Open Collector Output (Current sinking type)	-		L series	
		Request Events: 13 modes	Request Events: 8 modes		PCI Express	
Interrupts		Request Levels: One interrupt (Enable or Disable is selectable)	Request Levels: One interrupt request signal as INTA		PCI	
I/O Address		Any 16-byte boundary	Any 32-byte boundary			
Power Consu	imption (Max.)	5VDC 1200mA	5VDC 1200mA		PC Card	
Bus / Dimen	nsions (mm)	PCI (32bit, 33MHz, 5V) / 176.41(L) ×	(106.68(H)		Intelligent	
Connector		CN1(AIO): 37-pin female D-type CN2(DIO): 16-pin male Header	37-pin female D-type		E series	
	Software	ACX-PAC(W32) Ver.4.11			101	
Options	Accessories				Standard	
Optionio	Cables /	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P,	PCA37P-1.5, PCB37P-1.5,		PCI	
	Connectors	PCB37PS-0.5P/1.5P, PCA15P, PCB15P*7, DT/E1,	PCA37PS-0.5P/1.5P,			
	Connectors	DT/E2, PCC16PS, PCD8PS, CN5-D37M			USB	
Note:		*1: At 4~20mA current loop mode, ×1 input *3: Actual conversion speed depends upon *6: Requires use of optional cable DT/E2 an	gain can be used. *2: When usin operating system and drivers. *4: External p nd PCB15P *7: PCB15P i	ng a signal source with a high-speed built-in operational amplifier sower supply is required. 5: Requires use of optional cable PCB37P or PCB37PS s a cable for FTP-15 terminal panel.	ISA	
		As shown on the side of product's im	nages, PbFree 📭 is a CONTEC o	riginal marking for lead-free products.		
		As shown on the side of product's images, PbReduced 🚌 is a CONTEC original marking for reduced lead products.				

Analog I/O

Motion Controller

Communication

. Bus Adapter

Remote

Service & Products



DA12-8(PCI)

DA12-16(PCI)

DAI16-4C(PCI)

20usec/ch (Max.)

Individual isolation

Request Levels: 1

DTP-3A\*2, DTP-4A\*2,

EPD-37A\*2, EPD-37\*2 PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P,

PCB37PS-0.5P/1.5P, CN5-D37M

5VDC 2200mA

Request Events: 9 modes

±10V, 0~+10V, 0~20mA Voltage output: ±5mA, Current output: Max. 500 Ω

±5LSB (±15LSB only when current is 0~20mA) Voltage output:  $10\Omega$  or less 1 opto-isolated input (for sink current output)

4 16bit

Service & Products

### **I**-19

	Output chan	nels	4	8	16
Lineup	Resolution		12bit		
Measurement		Range	±10V, ±5V, 0~+10V (each channel s	oftware selectable)	
Products		Rating	±5mA		
Multi-function	Analog Output	Conversion Speed	10µsec/ch (Max.)		
F Series		Conversion Accuracy *1	±3LSB		
PCI Express		Impedance	10Ω or less		
I OI Express	Trigger		1 TTL level input		
PCI	Isolation type	Э	-		
	Timer		0.5µsec~17min (selectable in 250ns	ec intervals)	
PC Card	Digital I/O		-		
Low-cost Multi-function	Interrupte		Request Events: 8 modes,		
L series	Interrupts		Request Levels: 1		
2015	I/O Address		Any 32-byte boundary		
PCI Express	Power Consur	mption (Max.)	5VDC 600mA	5VDC 800mA	5VDC 1400mA
PCI	Bus / Dimens	sions (mm)	PCI (32bit, 33MHz, 5V) / 176.41(L) ×	: 106.68(H)	
1.01	Connector		37-pin female D-type		
PC Card		Software			
		Soliwale	-		
Intelligent E series	Options	Accessories	DTP-3A*2, DTP-4A*2, EPD-37A*2, EI	PD-37*2 ATP-16*2	
	Options	Accessories			
PCI		Cables /		S-0.5P/1.5P, PCB37PS-0.5P/1.5P, P	
0		Connectors	PCA37F-1.5, FCB37F-1.5, FCA37F	3-0.3F/1.3F, FCB37F3-0.3F/1.3F, F	CC 10P3, CN3-D3710
Standard			*1: Actual conversion speed depends upon operating system and drivers.		
PCI			*2: Requires use of optional cable PCB37P	or PCB37PS	
USB					
	Note:				
ISA	INUIC.				

DA12-4(PCI)

As shown on the side of product's images, Pbfree Real is a CONTEC original marking for lead-free products.

Standard

Analog I/O

Software Accessories & Cables Distributed Monitor & Control Network: F&eIT Multi-Programmable Display Wireless LAN Remote Monitoring Solution Service & Products

**I-20** 

Lineup Measurement Products

PCI Express
PCI
PC Card

PCI Express PCI PC Card

PCI

PCI USB ISA

Analog Input Analog Output Digital I/O Counter High Memor USB Box-PCs 4 8ch 2ch on Bo recisio 2.0 Panel-PCs Windows Driver C-LOGGER MATLAB LabVIEW Flat Panel 8 Channels 16-Bit USB Multifunction A/D Terminal Displays AIO-160802AY-USB Eight 16-bit analog input channels, 2 16-bit analog output Silicon Disk NEW Drives channels, 4 LVTTL digital inputs, 4 LVTTL digital outputs Bus-powered for convenience and portability Contains Option 1k-Word data buffer memory (FIFO or Ring buffer) 14 pin screw-type PЬ Box PCs &Panel terminal connector Analog input adjustable via software, no jumper settings Free PCswith (6 in one) Windows CE Soon to be RoHS-compliant required, information depending on user's environment Single Board Screw-type connectors for easy wiring Computer Chassis / Backplane Analog Output Digital I/O Counter Memory High USB 8ch 4 on Boar Precisio 2.0 Windows Driver C-LOGGER MATLAB LabVIEW Digital I/O 8 Channels 16-Bit USB Analog Input Terminal Counter & Motion Controller AI-1608AY-USB Eight 16-bit analog input channels, 4 LVTTL digital inputs. Serial Communication 4 LVTTL digital outputs Bus-powered for convenience and portability Contains GPIB Ph Communication Ik-Word data buffer memory (FIFO or Ring buffer) Free 14 pin screw-type terminal connector Analog input adjustable via software, no jumper settings Soon to be RoHS-compliant Remote I/O (6 in one) required, information depending on user's environment Expansion Unit / Screw-type connectors for easy wiring . Bus Adapter

Model		AIO-160802AY-USB	AI-1608AY-USB			
	Channels	8 single-ended				
	Range	Bipolar: ±10V				
	Impedance	1MΩ or more				
Analog Input	Resolution	16bit				
	Conversion Speed	10µsec/ch (Max.)				
	Conversion Accuracy *1	±12LSB				
	Buffer Memory	1k-word				
	Channels	2ch	-			
	Range	Bipolar: ±10V	-			
	Impedance	1Ω or less	-			
Analog Output	Resolution	16bit	-			
	Conversion Speed	10µsec (Max.)	-			
	Conversion Accuracy		-			
		1k word *5	-			
	Input	4 LVTTL level (positive logic) *2*3				
Digital I/O	Output	4 LVTTL level (positive logic)				
	Channels	-				
	Counting System	-				
Counter	Max. count	-				
Interrupts	Max. oount	-				
I/O Address		-				
		12Mbps <full speed="">,</full>				
USB Speed		480Mbps <high speed=""> *4</high>				
Power Consum	nption (Max.)	5VDC 450mA	5VDC 400mA			
Bus / Dimen	sions (mm)	USB Specification 2.0/1.1 / 64(W)×62(D)×24(H)				
Connector		14-pin (screw-terminal) plug header				
Included Cat	ble	USB cable 1.8m				
	Software	-				
Options	Applicable Module	-				
	Applicable Power Supply	CN6-Y14				
Note:		<ul> <li>*1: This numerical displays the conversion speed for A/D converter. The minimum executable sampling cycle depends on the operating condition</li> <li>*2: You cannot use both the DI00 / DI01 / DI02-pin of digital input feature and the external start / stop signal / external clock input simultaneously.</li> <li>*3: Each input accept TTL (5VDC) level signals.</li> <li>*4: The USB transfer speed depends on the host PC environment used (OS and US host controller).</li> <li>*5: A part of buffer memory is used by inside status data. An effective analog input data region depends on the number of the using channels.</li> </ul>				

As shown on the side of product's images, Pbfree Products is a CONTEC original marking for lead-free products.

#### Industrial Automation Products Measurement and Control Products Analog I/ Standard alog Onput Digital I/O Bus Box-PCs ISE 4ch olate 2.0 Panel-PCs Windows Driver LabVIEW Flat Panel Isolated Analog to Digital (USB cable & AC adapter included) Displays Onboard 256K data memory Silicon Disk ADI16-4(USB) Drives Voltage input and current input are both supported. Expansion of input channels possible with use of extension modules (3 sets max) Option Sample development and utility debugging software included Box PCs &Panel PCswith Digital I/O nalog Input nalog Onput Counte Windows CE Bus USB 8ch solate Single Board Computer 2.0 Windows Driver LabVIEW Chassis / Backplane Isolated Analog to Digital (USB cable & AC adapter included) Onboard 256K data memory ADI12-8(USB)GY Screwless connectors for easy wiring - no special tools needed Digital I/O Expansion of input channels possible with use of extension modules (3 sets max) Sample development and utility debugging software included Counter & Motion Controller Analog Onput Digital I/O Counter Serial Analog Input Bus USB Communication Isolated 4ch on Board GPIB 2.0 Windows Driver LabVIEW Communication Isolated Digital to Analog (USB cable & AC adapter included) Remote I/O Able to store 256K of conversion data and output desired wave form cyclically. Expansion Unit / DAI16-4(USB) Screwless connectors for easy wiring - no special tools needed Bus Adapter Expansion of output channels possible with use of extension modules (3 sets max.) Software Sample development and utility debugging software included Accessories & Cables Digital I/O nalog Onput Counter Bus Distributed Monitor & USB Isolated on Board Control Network: F&eIT 4ch 2.0 Multi-Programmable Windows Driver LabVIEW Display Isolated Digital to Analog (USB cable & AC adapter included) Wireless LAN Able to store 256K of conversion data and output desired wave form cyclically. DAI12-4(USB)GY Remote Screwless connectors for easy wiring - no special tools needed Monitoring Solution Expansion of output channels possible with use of extension modules (3 sets max.) Sample development and utility debugging software included Service & Products Model ADI16-4(USB) ADI12-8(USB)GY DAI16-4(USB) DAI12-4(USB)GY Bus Isolation Bus Isolated Voltage Input Isolation type **I**-21 Input channels 4 differential 8 differential

input channels		4 dillerential	o differential	-		
Output channels		-		4ch		
Resolution		16bit	12bit	16bit	12bit	
long at 1	(alta ca	Dinelary (10)/	Bipolar: ±10V, ±5V;			
•	Voltage	Bipolar: ±10V	Unipolar: 0 to +10V, 0 to +5V	-		
Range	Current	0~20mA	(common range setting of all channels)			
Output Type	Current	0~2011A	-	Voltage / Current (bus signal isolated	4)	
Output Type		-		Voltage / Current (bus signal isolated	Bipolar: ±10V,	
Output N Range	Voltage	-		Unipolar: 0~+10V, 0~+5V (Current output: ±5mA)	±5VUnipolar: 0~+10V, 0~+5V (Current output: 5mA)	
	Current	-		0~20mA		
		Voltage Range: ±8LSB,		Voltage Output: ±3LSB,		
Conversion A	ccuracy	Current Range: ±20LSB	±3LSB	Current Output: ±5LSB		
		Voltage Input: Channelsx10µsec/ch + 20µsec*3,		Voltage Output: 10µsec*4,		
Conversion Speed (Max.)		Current Input: Channelsx40µsec/ch + 20µsec*3	Channels×10µsec/ch + 20µsec*3	Current Output: 20µsec*4		
Buffer Memor	у	256K data (262,144 data)				
Sampling Tim	er	10µsec~1,073,741,824µsec				
Connector		FK-MC1,5/12-ST-3,81 [PHOENIX CONTACT]	FK-MC0.5/12-ST-2.5 [PHOENIX CONTACT]	FK-MC1,5/12-ST-3,81 [PHOENIX CONTACT]	FK-MC0.5/12-ST-2.5 [PHOENIX CONTACT]	
USB Speed		12Mbps <full speed="">, 480Mbps <high speed=""></high></full>				
Power Consump	otion (Max.)	5VDC 600mA *1	5VDC 650mA *1	5VDC 800mA *1	5VDC 700mA *1	
Dimensions (r	nm)	50.4(W)×64.7(D)×94.0(H)				
Weight (main	unit)	100g				
Included AC Adapt	er (POA-AD22)	AC90~264V, DC5.0V±5%, 2.0A(Max.), Cable length: approx. 1.4m				
Included cable	e length	USB cable 1.8m				
	Software	-				
	Applicable Module * <sup>2</sup>	ADI16-4(FIT)GY	ADI12-8(FIT)GY	DAI16-4(FIT)GY	DAI12-4(FIT)GY	
Applicable		POA200-20, POW-AD13GY, POW-AD22GY, POW-DD10GY, POW-DD43GY				
-	Power Supply *2	F0A200-20, F0W-AD1301, F0W-A	(bzzg1, FOW-bb10g1, FOW-bb4g			
Note:		[ADI12-8(USB)GY] The minimum executable sar *4: This numerical indicates the settling time of D [DAI16-4(USB)] The minimum executable output	d for A/D converter. ing cycle is from approx. 200µsec (single channel npling cycle is from approx. 600µsec (single chan /A converter. cycle is from approx. 200µsec (single channel sa	visit our web site for the details of the Applicable sampling) to 1msec (16 channel sampling), depe nel sampling) to 2msec (32 channel sampling), d mpling) to 1msec (16 channel sampling), depend sampling) to 1msec (16 channel sampling), depend	ends on internal processing time of this module. epends on internal processing time of this module is on internal processing time of this module.	

Lineup Measurement Products

PCI Express PCI

PCI Express

PC Card

PCI

PCI

ISA

Standard

Box-PCs

Analog I/O

				Stant		5 0
<b>USB</b>	nalog Input Analog C 4 -	Dutput Digital I/O Counter Bu				Box-PCs
2.0	Windows Driv	er				Panel-PCs
		re Sensor Input Modu	le (AC adapter &			Flat Panel Displays
USB ca PTI-4(U	ble include	ed)		Model	PTI-4(USB)	Silicon Disk Drives
111-4(0	,50)			Channels	4	Option
<ul> <li>IEC/JIS can be</li> </ul>		atinum resistance tempera	ture sensor (Pt100, JPt100		Pt100 (JIS C1604-1997, IEC 751 1983), JPt100 (JIS C1604-1989)	Box PCs &Panel
Suppor	ts acquisition	of resistance and tempera	ture, averaging and alarm	Wiring Method	3-lead type, 4-lead type	PCswith Windows CE
		re measurement	of extension modules (5 se	Temperature Measurement Range Temperature 0~50°C	Pt100: -200~850°C, JPt100: -200~510°C ±0.3°C* <sup>1</sup>	Single Board
max.)		fiantiels possible with use	or extension modules (5 se	Accuracy Temperature 15~35°C		Computer
,	e developmen	t and utility debugging soft	ware included	Resolution	0.01°C	Chassis / Backplane
	·	,		Conversion Speed Output Current for Temperature Detection	Selectable from 150 ms/40 ms/5 ms per channel 1 mA	Analog I/O
					Across platinum RTD & power supply: Photocoupler isolation	Digital I/O
				Isolation type	Across platinum RTD input channel:	Counter &
				Connector	No isolation FK-MC0.5/9-ST-2.5 [PHOENIX CONTACT]	Motion Controller
		200 E 200		Number of Writes to Flash ROM	100,000 (Max.)	Serial Communication
				USB Speed	12Mbps (Full Speed), 480Mbps (High Speed)	GPIB
				Power Consumption (Max.)	5VDC(±5%) 800mA *2 50.4(W)×64.7(D)×94.0(H)	Communication
		PD-4		Dimensions (mm)	(Exclusive of any protrusions)	Remote I/O
				Weight (main unit) Included AC adapter	200g	Expansion Unit /
				(POA-AD22)	AC90~264V, DC5.0V±5% 2.0A (Max.), Cable length: 1.4m	Bus Adapter
				Included Cable	an 1.8m USB cable	Software
				Software Applicable Module *3	- PTI-4(FIT)GY	Accessories & Cables
				Options Applicable	POA200-20, POW-AD13GY,	Distributed Monitor &
				Power Supply *3	POW-AD22GY, POW-DD10GY, POW-DD43GY	Control Network: F&eIT
					*1:When conversion speed is set to 150ms *2:Please use attached AC adapter or	Multi-Programmable Display
				Note:	optional power supply unit. *3:Please refer to P-04 or visit our web site for the details of the Applicable Module.	Wireless LAN
						Remote Monitoring Solution
		Analog to Digital	Individual Isolation	Isolation	_	Service & Products
ISA	Model	Input Board	Analog to Digital Input Board	Analog to Digital Input Board		
		AD12-16(PC)	ADI12-8CL(PC)H	ADI12-16(PC)		<b>I</b> -22
			A CONTRACTOR OF	and the second s		Lineup
						Measurement Products
	ATIONS		and the second sec			Multi-function F Series
SPECIFIC			<i>I</i>	//	_	PCI Express
Input channels Resolution	5	16 single-ended or 8 differential 12bit	8ch	16 single-ended or 8 differential	_	PCI
	Range	±5V, 0~5V, 0~10V	0~5V, 1~5V, 0~20mA, 4~20mA	±10V, ±5V, 0~10V, 4~20mA	-	PC Card
Input specifications	Gain Conversion speed	- 20usec/ch	1200µsec/ch	25µsec/ch	_	Low-cost Multi-function
Input specifications	Conversion Speed Conversion Accuracy *1	20µsec/ch ±2LSB	±3LSB	254966/01	_	Low-cost Multi-function
	Impedance	1MΩor more	1MΩor more (Current input: 250Ω		-	PCI Express
Trigger		1 TTL level	1 opto-isolated input (share 1 of digital input)	1 opto-isolated input (shared signal of Rising-edge or digital input)		PCI
Isolation type		-	Individual isolation	Bus isolation	<u></u>	
Timer		2 7-1013-000			-	PC Card

2 opto-isolated inpout,

4 opto-isolated output

External trigger or A/D Conversion end

0

(Negative logic)

5VDC 850mA



Isolation type Timer

Digital I/O

Interrupts

I/O address

Connector

CE marking

Options

Power consumption (Max.)

Bus / Dimensions (mm)

Ĩ	14	
1	CONTEC	USS Module NJA III II ERR
		2 <b>11</b> 2
	1	Software and
		stratic state

2 opto-isolated input (Negative

Collector Output (Negative logic)

One of IRQ 3~7, 9~12, 14 or 15

External trigger / Conversion end

logic)4 opto-isolated Open

Any 4-byte boundary

5VDC 500mA

XT Bus / 143.0(L)×107.0(H) viz. 5.5"(L)×4.25"(H) AT Bus / 163.0(L)×122.0(H) viz. 6.5"(L)×4.75"(H)

2~7×1013µsec

(Negative logic)

5VDC 700mA

API-PAC(W32)

Request Level One of IRQ 3~7, 9

Request Causes External trigger / Timer / Conversion end

Any 16-byte boundary

37-pin female D-type

Cables / Connectors PCA37P, PCB37P, PCA37PS, PCB37PS

DTP-3A\*2, DTP-4A\*2, EPD-37A\*2, EPD-37\*2

1 TTL level input/output

Lineup
Measurement Products
Multi-function F Series
PCI Express
PCI
PC Card
Low-cost Multi-function L series
PCI Express
PCI
PC Card
Intelligent E series
PCI
Standard
PCI
USB
ISA

\*1: Conversion Accuracy: A value in the table is linearity error at 25°C \*2: Requires use of optional cable PCB37P or PCB37PS

Software

Accessories

**I-23** 

Lineup

Multi-fur F Series

PCI

PCI USB ISA

PC Card Low-cost Multi-fu PCI Express PCI PC Card Intelligent PCI

Measurement Products

PCI Express

Standard

Box-PCs	ISA Model		12-bit Multi-Function A/D		16-Bit Multi-Function A/D		
Panel-PCs			AD12-16(PC)EH AD12-16U(PC)EH		AD16-16(PC)EH		
lat Panel lisplays							
ilicon Disk			Streen .	atom.	1000 million		
rives							
ption							
ox PCs &Panel Cswith							
Vindows CE	SPECIFIC	ATIONS					
ingle Board	Input channels Output channels		16 single-ended or 8 differential				
omputer			1				
hassis /	Resolution		12bit		16 bit		
Backplane		Range	±10V, 0~10V	±2.5V, ±5V, 0~5V, 0~10V	±5V, ±10V, 0~5V, 0~10V		
Analog I/O	Input	Gain	x1, x2, x4, x8 (software selectable)	-			
	specifications	Conversion speed	10µsec/ch (Max.)	1µsec/ch (Max.)	10µsec/ch (Max.)		
gital I/O	opeoinoutiono	Conversion accuracy *1	±2LSB (x1, x2), ±4LSB (x4, x8)	±3LSB	±5LSB		
-	Impedance		1MΩ or more				
ounter & otion Controller		Range	±5V, ±10V, 0~10V ±10V, 0~10V				
	Output	Rating	Drive current ± 5mA (Max.)				
erial ommunication	specifications	Conversion speed	6µsec/ch		13µsec/ch		
PIB		Conversion accuracy *1	±1/2LSB		±2LSB		
ommunication	Triggor	Impedance	1Ω or less				
	Trigger Isolation type		Start Trigger: 3 modes, Stop Trigger: 4 modes				
emote I/O	Timer		- 2~7 x 10 <sup>13</sup> µsec				
xpansion Unit /	Timer		Gernal DI/O: 4 TTL level inpout, 4 TTL level output (positive logic),				
us Adapter	Digital I/O		Sampling Control DIO: 3 TTL level input, 1 TTL level output (positive logic),				
Software		Request Events					
	Interrupts	Request Levels	One of IRQ 5, 7, 9, 10, 11, 12 or 15				
ccessories &	I/O address		Any 16-byte boundary				
ables	Power consumption		5VDC 800mA (max)	5VDC 1700mA (max)	5VDC 1000mA (max)		
stributed Monitor &	Bus / Dimensions (mm)		AT Bus / 163.0(L) × 122.0(H)	AT Bus / 174.0(L) × 122.0(H)	AT Bus / 163.0(L) × 122.0(H)		
ontrol Network: F&eIT	Connectors		CN1(AIO): 37-pin female D-type				
ulti-Programmable			CN2(DIO): 16-pin male header				
isplay		Software					
/ireless LAN			API-PAC (W32) DTP-3A* <sup>2</sup> , DTP-4A* <sup>2</sup> , EPD-37A* <sup>2</sup> , EPD-37A* <sup>2</sup> , DTP-3A* <sup>2</sup> , DTP-4A* <sup>2</sup> , EPD-37A*				
Remote	Options	Accessories	ATSS-16* <sup>2</sup> , ATII-8A* <sup>2</sup> , ATLF-8* <sup>2</sup> ,	ATSS-16 <sup>*2</sup> , ATII-8A <sup>*2</sup> , ATLF-8 <sup>*2</sup> ,	ATSS-16*2, ATII-8A*2, ATLF-8*2,		
onitoring Solution			FTP-15 <sup>*3</sup> , ATP-16E <sup>*5</sup> , ATCH-16(PC)		FTP-15 <sup>*3</sup> , ATP-16E <sup>*5</sup> , ATCH-16(PC)		
· · · ·		Cables / Connectors		CB37PS, PCA15P *4, PCB15P *4, PC			
ervice & Products							

Conversion Accuracy: Value is linearity error at 25%.
 Requires use of optional cable PCB37P or PCB37PS
 Requires use of optional cable DT/E2 and PCB15P
 4: Optional PCB15P cable is required when using FTP-15 terminal panel.
 5: Requires use of optional cable PCB37P-0.5P or PCB37PS-1.5P

### Options

### 16ch Multiplexer Sub-Board

When used with CONTEC's Intelligent E Series Analog boards, these multiplexers can double the number of available channels to 32 single-ended or 16 differential

\* Multiplexers occupy one chassis slot.



Global Portal : www.contec.com

#### Measurement and Control Products Industrial Automation Products

				Standa	j I/O
		Opto-Isolated	Opto-Isolated	-	
ISA	Model	Digital to Analog Board	Digital to Analog Board		Box-PCs
	Widder	DAI12-4C(PC)	DAI12-8C(PC)		Panel-PCs
		DA112-40(1 0)	DA112-00(1 0)		Flat Panel
					Displays
		and the second	All and a second		Silicon Disk Drives
					Option
		24			
SPECIFIC	CATIONS		P*		Box PCs &Panel PCswith
Input channel		-		-	Windows CE
Output chann		4ch	8ch	-	Single Board Computer
Resolution	Output range	12bit 0~5V, 4~20mA		-	Chassis /
	Output rating	±5mA (voltage output)		-	Backplane
Output specificatio		24µsec/ch		-	Analog I/O
	Conversion Accuracy *1 Output Impedance	$\pm$ 2LSB 1 $\Omega$ or less (voltage output)		-	Digital I/O
Trigger	Ouput impedance	-		-	
Isolation		Bus isolation		-	Counter & Motion Controller
Timer Digital I/O		- 2 opto-isolated inpout, 4 opto-isola	ated output (Negative logic)	-	Serial
Interrupt	Request Causes	-		-	Communication GPIB
I/O address	Request Level	- Any 4-byte boundary		-	Communication
Bus / Dimens	sions (mm)	5VDC 1200mA	5VDC 1600mA	-	Remote I/O
Bus / Dimens	sion (mm)	AT Bus / 163.0(L) × 122.0(H)		-	Expansion Unit /
Connector		37-pin female D-type		-	Bus Adapter
Option	Software	API-PAC(W32)		_	Software
Option	Accessories Cables / Connector	DTP-3A*2, DTP-4A*2, EPD-37A*2, PCA37P, PCB37P, PCA37PS, PC		-	Accessories &
CE marking	Cables / Connector	$\bigcirc$	0	-	Cables
	Accuracy: A value in the se of optional cable PCI	he table is linearity error at 25°C. B37P or PCB37PS		-	Distributed Monitor & Control Network: F&eIT
					Multi-Programmable
					Display
		-			Wireless LAN
ISA		Digital to Analog	Digital to Analog	16-Bit Digital to Analog	Remote Monitoring Solution
	Model	Output Board	Output Board	Output Board	Service & Products
		DA12-4(PC)	DA12-8L(PC)	DA16-4D(PC)	
		A BARA	23.20	A State	
					<b>I-</b> 24
SPECIFIC	CATIONS	<i>v</i> -		ar -	Lineup
Input channe		-			Measurement
Output chann Resolution	nels	4ch 12bit	8ch	4ch 16 bit	Products Multi-function
Resolution	Output range	±5V, ±10V, 0~10V	±5V, ±10V, 0~10V, 4~20mA (1ch)		F Series
	Output rating	±5mA	±5mA (voltage output)		PCI Express
Output specification	Conversion speed Conversion Accuracy *1	5µsec/ch ±1LSB	10µsec/ch ±3LSB	13µsec/ch	PCI
	Output Impedance	1Ω or less	1Ωor less (voltage output)	1Ω or less	
Trigger Isolation type		1 TTL level input	-		PC Card
Timer	5	- 2~7 × 10 <sup>13</sup> µsec	-		Low-cost Multi-function L series
		1 TTL level input/output	4 TTL level input/output		PCI Express
Digital I/O		(Negative logic)	(Positive logic)	-	PCI
Internet	Request Causes	External trigger / Timer	-	DMA Transmission end	
Interrupt	Request Level	One of IRQ 3~7, 9	-	One of IRQ 3~7, 9~12, 14 or 15	PC Card
I/O address Power consu	Imption (Max.)	Any 16-byte boundary 5VDC 1200mA	Any 4-byte boundary 5VDC 830mA	Any 8-byte boundary 5VDC 980mA	Intelligent E series
Bus / Dimens	,	XT Bus / 143.0(L) × 107.0(H)	AT Bus / 163.0(L) × 122.0(H)		PCI
Connector		37-pin female D-type			
	Software	API-PAC(W32)		-	Standard
Option		- ,,			PCI

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Cables / Connector PCA37P, PCB37P, PCA37PS, PCB37PS CE marking O \*1: Conversion Accuracy: A value in the table is linearity error at 25°C. \*2: Requires use of optional cable PCB37P or PCB37PS.

DTP-3A\*2, DTP-4A\*2, EPD-37A\*2, EPD-37\*2

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Accessories

Option

PCI

USB

ISA