

# DAQ PRODUCTS CATALOG

for Testing and Measurement



ver. **1.0**  
2010 |

## CONTEC SOLUTION

03

## Measurement and Control Products

**A** ANALOG I / O  
**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.

**B** DIGITAL I / O  
**Digital I/O**

Interface boards that provide computers with digital signal I/O functions. They monitor the status (ON/OFF) of relays, operating switches and measurement devices as well as controlling (ON/OFF) lamps, 7-segment display units and relays. These boards can also be used as an interface for conducting digital communication with controllers such as PLC or microcomputers.

**C** SERIAL COMMUNICATIONS  
**Serial Communications**

Provides PC with RS-232C/422/485 serial communication ports.

Used as a communication interface with measurement devices, barcode readers, industrial AV equipment, UPS, printers and modems which are equipped with RS-232C/422/485 serial communication port.

**D** GPIB COMMUNICATIONS  
**GPIB Communications**

Provides PC with GPIB-compliant communication port(s).

These can be used as the communication interface for measurement devices equipped with GPIB communication ports as well as various other controllers.

**E** MOTION CONTROL  
**Motion Controller**

These boards communicate pulse train input and pulse number count functions to the PC.

They calculate addition and/or subtraction of count values onboard and read out current count values when needed.

They can connect to incremental rotary encoders, linear gauges, pulse-output type flowmeters or power meters.

	Page
Our Environmental activities	03
Lead-Free, RoHS Compliancy	04

## Industrial Automation Products

	Page
Lineup	A-01
Measurement Products	A-04
F series Feature	A-07
L series Feature	A-08
E series Feature	A-09
PCI Express	A-10
PCI	A-14
ISA	A-24
PCMCIA	A-27
Card Bus	A-27
USB	A-28

	Page
Lineup	B-01
PCI Express	B-04
PCI	B-15
Compact PCI	B-26
ISA	B-27
PCMCIA	B-32
Card Bus	B-32
USB	B-34

	Page
Lineup	C-01
PCI Express	C-03
PCI	C-06
ISA	C-10
Card Bus	C-11
PCMCIA	C-11
USB	C-12

	Page
Lineup	D-01
PCI Express	D-03
PCI	D-04
Compact PCI	D-06
ISA	D-06
PCMCIA	D-07
Card Bus	D-07
USB	D-08

	Page
Lineup	E-01
PCI Express	E-02
PCI	E-03
ISA	E-06

## F COUNTER

### Counter

These boards communicate pulse train input and pulse number count functions to the PC.

They calculate addition and/or subtraction of count values onboard and read out current count values when needed.

They can connect to incremental rotary encodes, linear gauges, pulse-output type flowmeters or power meters.

	Page
Lineup	<b>F-01</b>
PCI Express	<b>F-02</b>
PCI	<b>F-03</b>
ISA	<b>F-05</b>
USB	<b>F-05</b>

## G USB-Based Remote I/O

### USB-Based Remote I/O

	Page
USB	<b>G-01</b>

## H Ethernet Remote I/O

### Ethernet Remote I/O

	Page
F&EIT series	<b>H-01</b>
Ethernet-based Remote I/O	<b>H-03</b>
I/O Controller	<b>H-04</b>
Monitoring Server	<b>H-05</b>
I/O Assistant Server	<b>H-05</b>
I/O Module	<b>H-06</b>
Media Converter	<b>H-07</b>

## I EXPANSION UNIT / BUS ADAPTER

### Expansion Unit / Bus Adapter

An expansion system is used to expand the number of available PCI bus slots of either CONTEC industrial computers or standard PCs. It is also useful in applications where the power consumption of add-on boards exceeds the power supply capacity of the host PC. An expansion system is used to join the expansion chassis and the host PC into one system.

	Page
Lineup	<b>I-01</b>
PCI Express Cable	<b>I-03</b>
PCI	<b>I-07</b>
Star Fabric	<b>I-12</b>
PCI Bus Board	<b>I-17</b>
ISA Bus Board	<b>I-18</b>

## J ACCESSORY

### Accessories

	Page
Analog I/O	<b>J-01</b>
Digital I/O	<b>J-02</b>
USB	<b>J-02</b>
Motion Controller	<b>J-02</b>
Counter	<b>J-02</b>
GBIP	<b>J-02</b>
Communication	<b>J-03</b>
Remote I/O & Wireless	<b>J-03</b>

## K CABLE

### Cables

	Page
Universal	<b>K-01</b>
Analog I/O. Digital I/O	<b>K-02</b>
Digital I/O. Motion	<b>K-02</b>
Digital I/O. Counter	<b>K-02</b>
Analog I/O	<b>K-02</b>
Digital I/O	<b>K-03</b>
Counter	<b>K-03</b>
GBIP	<b>K-03</b>
Communication	<b>K-03</b>

<b>A</b>	Analog I/O
<b>B</b>	Digital I/O
<b>C</b>	Serial Communication
<b>D</b>	GBIP Communication
<b>E</b>	Motion Controller
<b>F</b>	Counter
<b>G</b>	USB Remote I/O
<b>H</b>	F&EIT Ethernet IO
<b>I</b>	Bus Expansion
<b>J</b>	Accessories
<b>K</b>	Cables

# CONTEC Group's Environmental Activities



## ENVIRONMENTAL POLICY

To increase environmental awareness throughout the company, CONTEC Group has been actively implementing our ISO 14001 Environmental Management system. This includes the elimination of hazardous substances from all raw materials and components used in our products and during the manufacturing process.

© [Overview: Environmental Policy](#)

### 1 Environmental Policy

- 1.1 Environmental Management Principles
- 1.2 Elimination of hazardous substances
- 1.3 Organization
- 1.4 Management procedure for hazardous substances
  - 1.4.1 Designing for elimination of hazardous substances in products
  - 1.4.2 Hazardous substance control

### 2 Management of Hazardous Substances During Product Development

- 2.1 Management of hazardous substances
- 2.2 Procedure and documentation of changes

### 3 Environmental Quality Assurance Procedure for Manufacturing

- 3.1 Materials and Procurement
  - 3.1.1 Procurement Policy
  - 3.1.2 Outsourcing Policy
- 3.2 Inspection of incoming materials
- 3.3 Manufacturing process
- 3.4 Inspection of outgoing products
- 3.5 Documentation
- 3.6 Management, handling and disposal of hazardous substances

### 4 Education

### 5 Auditing hazardous substance management and procedures

## GREEN PROCUREMENT GUIDELINES

Along with our environmental policy, the CONTEC Group has implemented corporate-wide "Green Procurement guidelines" giving purchasing preference to products and materials that are less harmful to the environment. CONTEC is working closely with suppliers to promote environmental protection and requests that they follow these guidelines.

© [Overview: Green Procurement Guidelines](#)

### 1 Environmental Policy

### 2 Objectives of Green Procurement Guidelines

### 3 Request to suppliers for their cooperation to abide by CONTEC's Green Procurement Guidelines

- 3.1 Scope
- 3.2 Timeline
- 3.3 Materials used in Contec Group manufacturing processes
  - 3.1.1 Hazardous substance list
  - 3.1.2 Documentation of hazardous substance control
  - 3.1.3 "Eco-efficient" and "Energy-saving" products
- 3.4 Guidelines for procurement of non-manufacturing related items

### 4 Supplier evaluation

### 5 Contact information

As a global manufacturer, CONTEC is dedicated to pursuing environmental conservation on a global scale. CONTEC also maintains a pro-active management policy that strives to guarantee of complete customer safety and satisfaction. CONTEC proudly maintains ISO9000S, ISO14001 and JISQ15001 certifications as an active commitment to a corporate-wide guarantee of quality, environmental and personal information protection.



## Lead-Free and RoHS Compliancy

Implementation of the CONTEC Group's environmental policy includes design and manufacturing guidelines. This is to ensure that new products scheduled for released after December 2005 are RoHS-compliant in accordance with its relevant acts and guidelines.

In addition CONTEC is engineering design changes on those products which are currently available in order to produce versions that are both lead-free and RoHS-compliant.

### ● Lead-free projects

#### 1. New product development (as of April 2005)

All new products are scheduled to be lead-free (Phase 2 or better).

#### 2. Existing Products

Designs are being actively revised (including component changes) to make existing products lead-free (Phase 2 or better).

Some currently offered products, despite design changes, can not be brought into compliance due to the unavailability of reliable lead-free components. These products will be manufactured using lead-free solder and sold as reduced-lead.

### ● RoHS Directive Compliance

#### 1. New product development (as of October 2005)

All new products are scheduled to be RoHS-compliant.

#### 2. Existing Products

Designs are to be progressively revised (including component changes) to make existing products RoHS-compliant.

### ● Compliance Symbols

CONTEC is dedicated to the development of high quality products that also environmentally conscious. Compliant products and their packaging carry Contec's proprietary symbols.

#### 1. RoHS-COMPLIANT PRODUCTS

Products with these symbols are RoHS-compliant and are free of all six hazardous substances covered by the RoHS directive (2002/95/EC).



Compliant products & their packaging



Compliant Boards

#### 2. LEAD-FREE PRODUCTS

Products with this symbol comply with JEITA's lead-free classifications - Phase 2 or higher.



Compliant products & their packaging



Compliant Boards

#### 3. REDUCED LEAD PRODUCTS

Products with this symbol are reduced lead products.



Compliant products & their packaging



Compliant Boards

### ● Information

CONTEC has implemented an advanced management system to help control, reduce or eliminate hazardous substances both in its products and its manufacturing processes. Please contact us if you have questions or need further information on CONTEC's Lead-free and RoHS Directive compliance procedures.

### ■ CONTEC Information

Tel: 1-408-400-8700

Toll-free: 1-800-888-8884

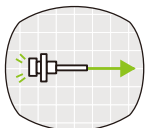
e-mail: sales@contecusa.com



# 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.



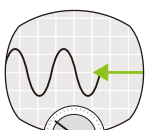
### Application

Sensor Measurement through Voltage / Current input signals



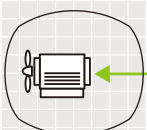
### Application

Measurement of voltage / current values through their input signals



### Application

Output of voltage / current signals



### Application

Motor control through the output of voltage / current signals

## Pictograms

### Bus Specifications

#### PCI Express

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

#### PCI

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

#### USB 2.0

Product is USB standard compliant and can be used in the computer equipped with USB2.0/1.1 ports. Supports USB2.0 high-speed mode(480Mbps).

#### Card Bus

Product supports Cardbus that is a 32-bit PC card standard bus.

### Board Size

#### Low Profile

Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

### Supported Connectors

#### 96-pin Half Pitch

#### 50-pin Mini-Ribbon

#### 68-pin 0.8mm Pitch

#### 37-pin D-SUB

Indicates the number of pins and shapes of connectors used for external connection. The supported cables and accessories will vary depending on these specifications.

CONTEC provides a wide variety of cables and accessories to suit your needs.

Cables with connectors on both ends Accessories (Terminal block, etc.)

J-01

Cables with a connector on one end Connector set

K-01

### I/O Points

#### Analog Input XXch

Maximum number of channels of analog signals that can be input

#### Analog Output XXch

Maximum number of channels of analog signals that can be output

#### Digital I/O XX

Maximum number of points (bits) of digital signals that can be input / output

#### Counter XXch

Maximum number of channels of counter signals that can be input

### Supported softwares

#### Windows Driver

API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

#### Linux Driver

API-TOOL Drivers for Linux are provided. The license-free driver software (both development and runtime) that provide commands to interface boards or cards using module-style device drivers and the shared library.

#### C-LOGGER

C-LOGGER can be downloaded from our Web site.

C-LOGGER, is a Windows version of data logger software for CONTEC's analog I/O device products. C-LOGGER provides true data collection and monitoring function, such collected signal data graph drawing, zoom observation, file saving, and dynamic transfer to Excel (spreadsheet program). Once you have an eligible CONTEC's analog I/O device product and C-LOGGER installed on your PC, C-LOGGER allows you to start collecting and monitoring data of interest immediately after setting a set of sampling conditions easily via a setup wizard (interactive program) without any need for annoying programming.

For the details, please visit: <http://www.contec.com/clogger/>

#### MATLAB

ML-DAQ library software for use with MATLAB can be downloaded from our Web site. ML-DAQ is library software which allows you to use CONTEC's analog input / output boards with the MathWorks' MATLAB software. This library along with MATLAB and MATLAB's Data Acquisition Toolbox, allows you to control CONTEC boards using MATLAB and to import measurement data directly into MATLAB's environment for analysis.

For the details, please visit: <http://www.contec.com/mldaq/>

#### LabVIEW

VI-DAQ, a VI library for use with National Instruments' LabVIEW can be downloaded from our Web site. With function format similar to that of LabVIEW's "Data Acquisition VI", VI-DAQ set-up is not complicated therefore simplifying device operation.

For the details, please visit: <http://www.contec.com/mldaq/>

### Points

#### Bus Isolated

Opto-couplers and isolation amplifiers are used to isolate the PC from the external I/O circuit preventing electrical disturbances. Useful when wiring environment is susceptible to noise generation and there is concern about noise or malfunction of the host PC.

#### Individual Isolated

Bus isolation, Opto-couplers and isolation amplifiers are used to isolate I/O channels from each other preventing interference between each channel. Implements correct sampling even when channel connection devices have different ground levels.

#### High Speed

Uses high-speed A/D converter (or D/A converter)/for faster analog input (or output) than other products.

#### High Precision

Uses highly precise A/D converter (or D/A converter) for higher precision analog input (or output) than other products.

#### Small Signal

Input range can be set within a micro-signal range ( $\pm 0.125V$ ,  $0-0.25V$ ). Sensor output that has a small surge can be sampled with high precision.

#### Onboard Memory

Product is equipped with data storage buffer memory for analog I/O. It allows for high-speed real-time sampling independent of the processing power of the PC.

#### Bus Master

Large sampling data can be transferred promptly to PC memory without going through CPU.



# Analog I/O

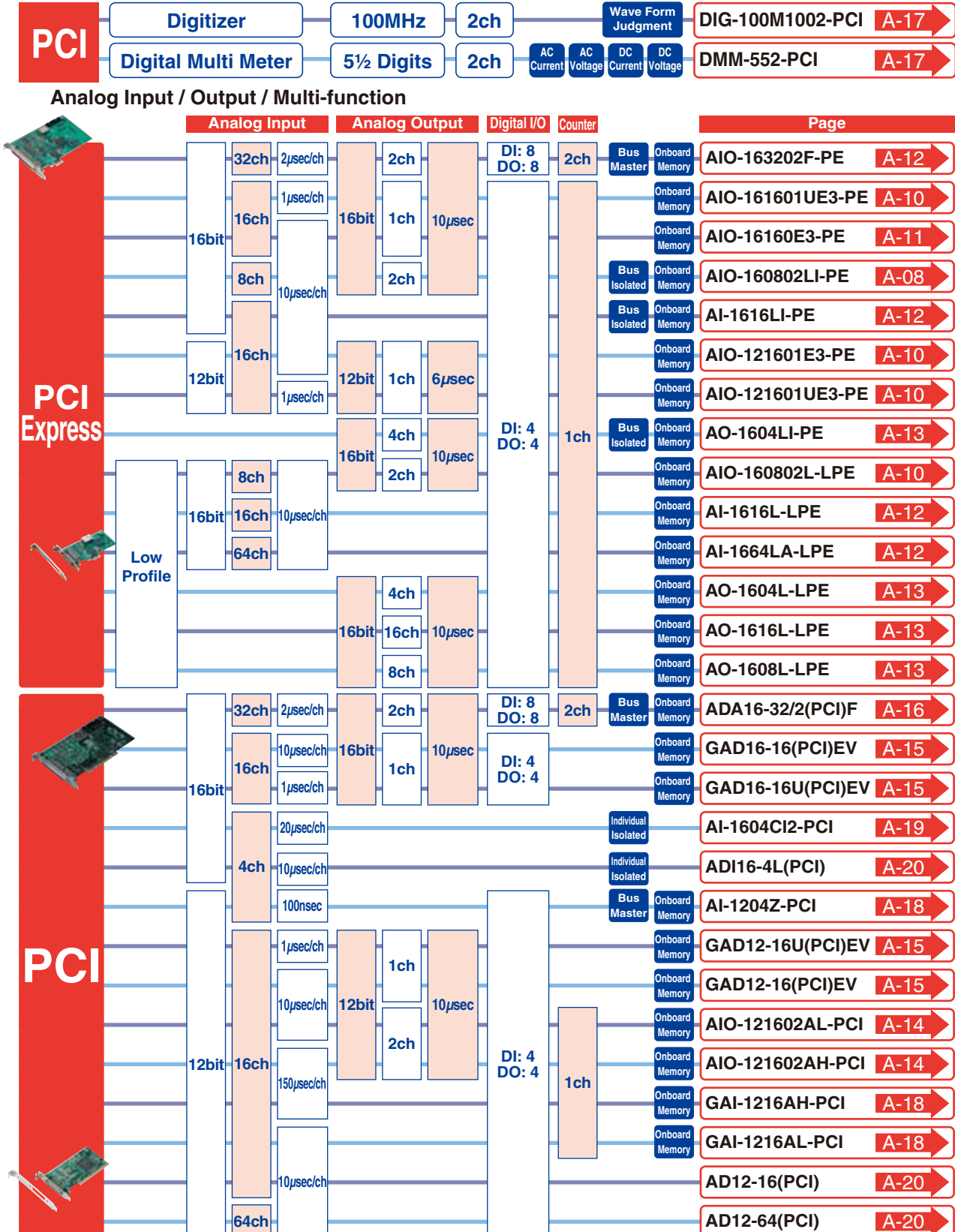
## Product Lineup

You can choose from a variety of models according to your desired bus, I/O points, and onboard functions.

### cTEST Series

CONTEC provides system solution for test and measurement in laboratories and plants.

"cTEST" consists of various high-functional boards and dedicated software for inspection. Moreover CONTEC provides integrated signal controller and special purpose software to support FPGA level programming of your inspection equipment.



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

A-02

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

**PCI**



For more information or to arrange to have a board calibrated, please contact your local CONTEC distributor or sales office.





## Tips for product selection

### Input / Output channels

In determining the number of channels needed, both the sensor or source of a signal and the number of actuators must be taken into consideration. In addition, there are two wiring methods (single-end and differential) that can be used with these boards.

#### Single end

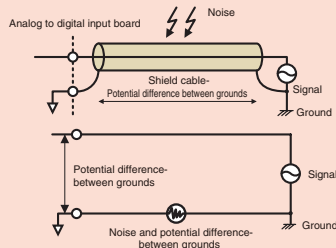
Single-end connections use 2 lines - signal and ground. They then measure the voltage of the signal source.  
(See figure below)

#### Advantages

- Requires only two lines for one signal source
- Allows two times more channels per board than differential

#### Disadvantages

- Measurement results can be skewed by the potential difference between grounds
- Signal is easily influenced by external electrical noise.



#### Differential input

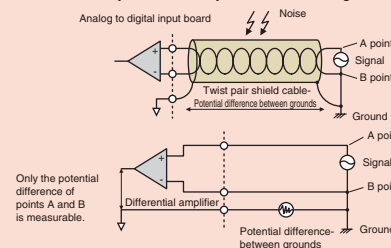
Differential connections use a total of three lines - two signal and one ground. The signal source voltage is monitored through differences in ground potential, point potential, ground and point B measurements and the signal source potential. (See figure below)

#### Advantages

- Potential difference between ground signal source doesn't influence the measurement results.
- Measurement results are not easily influenced by external electrical noise.

#### Disadvantages

- Requires three lines for one signal source.
- Allows only half as many channels as single - ended input



### Resolution

Analog input resolution indicates to what extent approximation (quantization) of the signal can be achieved whereas analog output resolution indicates to what extent data (digital signals) can be expressed as analog signals. Correspondent performance is as follows-  
12 bit (general purpose I/O): a possible  $2^{12}$  (4096) resolution - i.e. with an input range of 0 to 10V,  $10/4096 \approx$  approx. 2.44mV minimum unit.  
16 bit (high precision type): a possible  $2^{16}$  (65536) resolution-i.e. with an input range of 0 to 10V,  $10/65536 \approx$  approx. 0.15mV minimum unit.  
"Conversion precision" indicates the rate of possible error

### Conversion speed

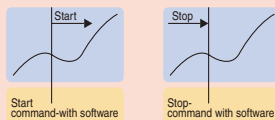
Analog input conversion speed is the time necessary for input voltage or current to be converted into data (digital signals). Analog output conversion speed is the time required before voltage or current specified by the data (digital signals) can be output. The true minimum clock speed is affected by a variety of factors including operating system, drivers and firmware processing. Boards with onboard memory, deliver high speed input/output without being affected by background processing.

### Trigger

A variety of control conditions for setting the start/stop of the signal conversion are possible

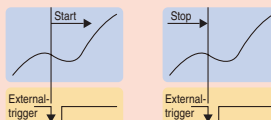
#### Soft

Start/stop controlled by software.



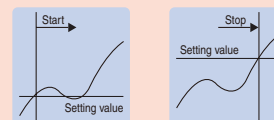
#### External

Start/stop controlled via external (digital) signals



#### Level

Start/Stop controlled by signal change of a specified channel. (Each condition can be set.)

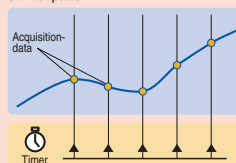


### Clock

Timings available for synchronizing the signal conversion

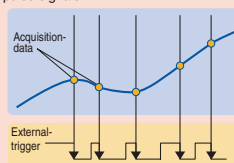
#### Internal

Essential for time series processing. An onboard cycle setting timer enables synchronization of data conversion to the timer pattern



#### External

Essential for synchronizing with an external device. An external clock input terminal allows conversion to be done in synch with external pulse signals.

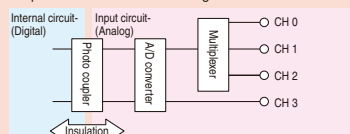


### Isolation

Built-in circuit Isolation

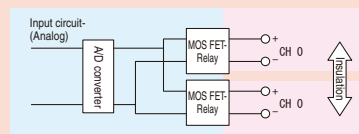
#### Bus

Isolation the host computer and the external input/output circuit by using a photo coupler and isolation amplifier. By blocking electrical disturbance, it is suited for use in application where noise is likely to cause interference or when the computer is susceptible to malfunction or damage.



#### Channel

Independent input/output channel Isolation using photo couplers and isolation amplifiers to prevent channel-to-channel interference. It is suited for use in applications where connected devices have different ground levels.



#### Analog I/O

#### Digital I/O

#### Serial Communication

#### GPIO Communication

#### Motion Controller

#### Counter

#### USB Remote I/O

#### F&E Ethernet IO

#### Bus Expansion

#### Accessories

#### Cables

## A-04

#### Lineup

#### Measurement Products

#### F series Feature

#### L series Feature

#### E series Feature

#### PCI Express

#### PCI

#### ISA

#### PCMCIA

#### Card Bus

#### USB

# Analog I/O

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

## CONTEC DAQ Solution Products



### Graph Display and Logging

Available for Free Download

Ships with supported products



# C-LOGGER

for Windows Vista/  
XP / 2000 / Server2003

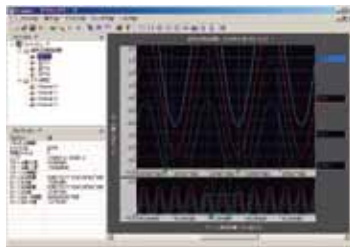
P-06

#### 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.

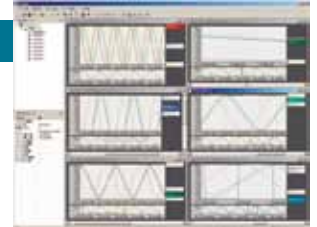
#### Dual-graph display - full-scale and zoom

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.



#### 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.



#### File viewer - Property viewer

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



## CONTEC's Complete Lineup of Multi-

Support Events Controller &amp; Bus Master Transfer

### Multi-function F Series

A-07

C-LOGGER

MATLAB

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

## Now Available for FREE Download - ActiveX Express Edition

Development Support Tool for Measurement Programs [ActiveX component]  
ACX-PAC(W32)-Express Edition is now available for free download

Analog I/O

Digital I/O

Motion Control

ACX-PAC(W32)-Express Edition is a development support tool for measurement programs for use with CONTEC's measurement & control devices. When used in a development environment (i.e. Visual Basic) the ActiveX component (OCX) enables data collection and signal output by adding several lines of code.

ACX-PAC(W32)-Express Edition can be downloaded from: <http://www.contec.com/acxpacee/>

ACX-PAC(W32)-Express Edition is ideal for end-users with little programming experience. It provides basic and easy-to-use methods / events for device control from CONTEC's ACX-PAC(W32)-Commercial Edition. Commercial Edition Functions that are NOT available in the Express Edition include:

- Trigger and Interrupt functions are disabled
- DMA transfer is not supported
- Sampling using onboard or buffer memory in analog I/O is not supported
- Can only be used with devices that are set-up with the API-AIO(WDM) driver. Devices that use API-AIO(98/PC) or API-DIO(98/PC) are not supported.
- Screen display components (graphs, switches), calculation, File I/O and True Type Fonts are not included

A-05

Lineup

Measurement  
Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

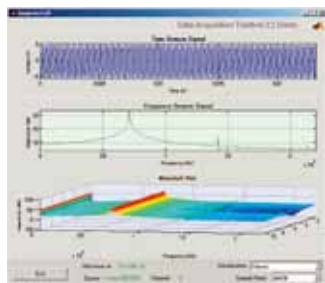
## The Best Measurement, Analysis and Data Acquisition Devices

### MATLAB Analysis

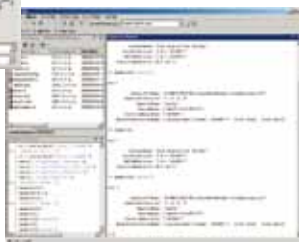
MATLAB-compliant data acquisition library

## ML-DAQ

Available for Free Download



CONTEC analog I/O devices are recommended by MATLAB. With ML-DAQ, CONTEC's DAQ boards can be used with MATLAB Data Acquisition Toolbox.

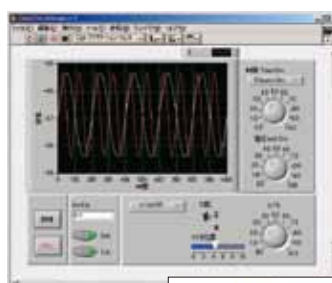


### LabVIEW Data Acquisition

LabVIEW-compliant data acquisition library

## VI-DAQ

Available for Free Download



CONTEC analog I/O devices support LabVIEW. VI-DAQ enables CONTEC's DAQ boards to be used with LabVIEW-Standard Data Acquisition VI.



## function Analog Input/Output Devices

### L Series

A-08



USB

## USB I/O Terminal USB Module

LabVIEW



16MB Data Memory, expansion accessories

### Intelligent E series

C-LOGGER

MATLAB

LabVIEW

- Option of 12 or 16bit, 1μsec to 10μsec converter, PCI
- 16ch analog inputs, 1ch analog output, digital I/O
- I/O range settings
- Optional 16ch expansion, sampling boards

A-09



### Terminals, Cables and Accessories

Buffers, amplifiers



BNC Terminals



Alligator Clip cables



Terminal Units



Visit our website



CONTEC DAQ Solution

<http://www.contec.com/daq/>

Analog I/O

Digital I/O

Serial  
Communication

GPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&EIT Ethernet IO

Bus Expansion

Accessories

Cables

A-06

Lineup

Measurement  
Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

## Analog I/O

## Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

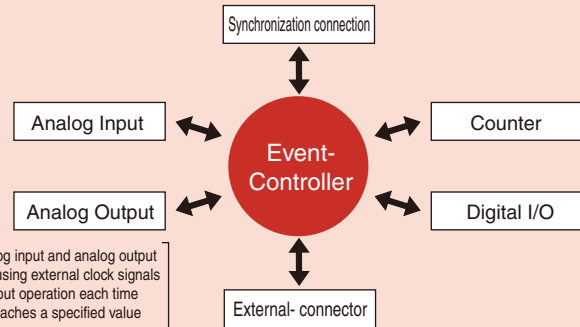
## Features of CONTEC's F series

## 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.



Arrows indicate the flow of control signals. Major control signals include operation start, operation stop and clock signals.

Ex.1: Conducting both analog input and analog output with the same timing using external clock signals  
Ex.2: Starting the analog input operation each time the counter reading reaches a specified value

## 3. Bus master transfer and complex data input

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 to 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 an 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

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

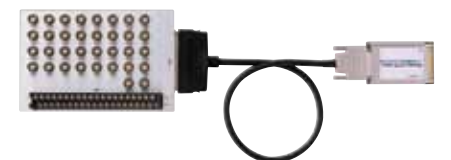
■ BNC terminal unit  
ATP-32F■ Alligator Clip cable  
BNC-W60■ BNC cable  
BNC-B100 (1m)  
BNC-B200 (2m)  
BNC-B300 (3m)■ Terminal unit  
EPD-96A

## Example 1



ADA16-32/2(PCI)F + PCB96PS-0.5P  
(Cable with connectors on both sides)  
+ ATP-32F (BNC terminal)

## Example 2



ADA16-32/2(CB)F + ADC-68M/96F + ATP-32F

A-07

Lineup

Measurement  
Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB



## 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  
 ◎ADA16-8/2(LPCI)L  
 ◎ADA16-8/2(LPCI)L  
 ◎AI-1616L-LPE  
 ◎AD16-16(LPCI)L  
 ◎AIO-160802LI-LPE  
 ◎AI-1616LI-LPE  
 ◎ADI16-16(LPCI)L  
 ◎AI-1664LA-LPE  
 ◎AD16-64(LPCI)LA  
 ◎AO-1604-LPE  
 ◎AO-1608-LPE  
 ◎AO-1616-LPE  
 ◎DA16-4(LPCI)L  
 ◎DA16-8(LPCI)L  
 ◎DA16-16(LPCI)L  
 ◎AO-1604LI-PE  
 ◎DAI16-4(LPCI)L

	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
Isolated	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
	16-bit Analog Input		Digital I/O	Counter
	16-bit Analog Input		Digital I/O	Counter
Isolated	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
Isolated	16-bit Analog Input		Digital I/O	Counter
Isolated	16-bit Analog Input		Digital I/O	Counter
	16-bit Analog Input		Digital I/O	Counter
	16-bit Analog Input		Digital I/O	Counter
	16-bit Analog Input	16-bit Analog Output	Digital I/O	Counter
		16-bit Analog Output	Digital I/O	Counter
		16-bit Analog Output	Digital I/O	Counter
		16-bit Analog Output	Digital I/O	Counter
		16-bit Analog Output	Digital I/O	Counter
		16-bit Analog Output	Digital I/O	Counter
		16-bit Analog Output	Digital I/O	Counter
Isolated		16-bit Analog Output	Digital I/O	Counter
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 ADA16-8/2(CB) are compatible with one another both in their functions and pin-out. Due to their high versatility, a system created on a desktop PC can be replaced by a system created on a laptop with no modifications.

### 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

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

#### BNC terminal for Analog I/O

ATP-8L



#### Alligator Clip cable

BNC-W60



#### BNC cable

BNC-B100  
 BNC-B200  
 BNC-B300



#### M3 terminal

EPD-50A



#### Example 1



ADA16-8/2(LPCI)L +  
 PCB50PS-0.5P (Cable with connectors on both sides) +  
 ATP-8L (BNC terminal)

#### Example 2



ADA16-8/2(CB)L +  
 ADC-68M/50M (68-pin to 50-pin conversion cable) +  
 EPD-50A (M3 terminal)

#### Analog I/O

Digital I/O

Serial

Communication

GPIO

Communication

Motion Controller

Counter

USB Remote I/O

F&EIT Ethernet IO

Bus Expansion

Accessories

Cables

## A-08

Lineup

Measurement  
Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Intelligent E series

Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&E Ethernet IO

Bus Expansion

Accessories

Cables

## 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,

### 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

### 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

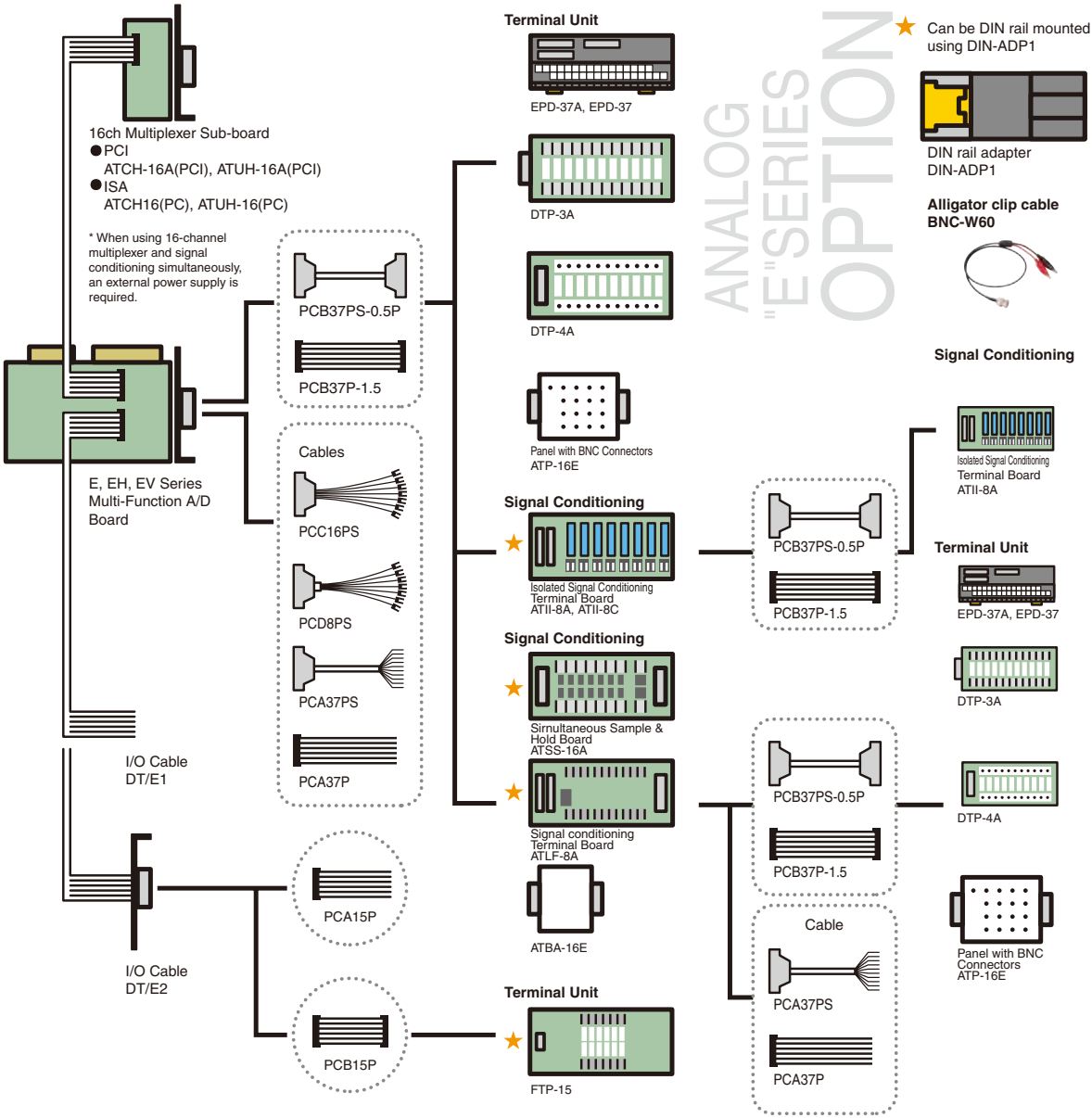
#### ● Concurrent sampling

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



## A-09

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB



## Analog I/O

## PCI Express

37-pin  
D-SUBAnalog Input  
16chAnalog Output  
1chDigital I/O  
4/4Counter  
1chE  
seriesMemory  
on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

16ch Multiplexer Sub-Board  
**ATCH-16A(PCI)**  
Can add 16 single-ended or 8 differential inputs.100KSPS 12Bit Analog I/O Board for PCI Express  
**AIO-121601E3-PE**

E series

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

## PCI Express

37-pin  
D-SUBAnalog Input  
16chAnalog Output  
1chDigital I/O  
4/4Counter  
1chE  
seriesHigh  
SpeedMemory  
on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

16ch Multiplexer Sub-Board  
**ATUH-16A(PCI)**  
Can add 16 single-ended or 8 differential inputs.1MSPS 12Bit Analog I/O Board for PCI Express  
**AIO-121601UE3-PE**

E series

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

## PCI Express

Low  
Profile50-pin  
Mini-RibbonAnalog Input  
8chAnalog Output  
2chDigital I/O  
4/4Counter  
1chL  
seriesHigh  
PrecisionMemory  
on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

Non-isolation type high-precision AIO board (Low Profile size) for PCI Express  
**AIO-160802L-LPE**

L series

- On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals
- Buffer memory enables background processing to be executed independently of the software
- Features software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

Model	AIO-121601E3-PE	AIO-121601UE3-PE	AIO-160802L-LPE
Channels	16 single-ended, 8 differential (Supports up to 32 single-ended, 16 differential input with channel multiplexer sub board)		8 single-ended 16 single-ended
Range	Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , $\pm 1.25V$ ; Unipolar: $0 \sim +10V$ , $0 \sim +5V$ , $0 \sim +2.5V$ , $0 \sim +1.25V$ (jumper or software selectable)	Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ ; Unipolar: $0 \sim +10V$ , $0 \sim +5V$ (jumper selectable)	Bipolar: $\pm 10V$
Impedance	1M $\Omega$ or more		
Resolution	12bit		16bit
Conversion Speed	10 $\mu$ sec/ch (Max.)	1 $\mu$ sec/ch (Max.)	10 $\mu$ sec/ch (Max.)
Conversion Accuracy	$\pm 2LSB$ (at $\pm 10V$ , $\pm 5V$ , $0 \sim +10V$ , $0 \sim +5V$ Input), $\pm 4LSB$ (at $\pm 2.5V$ , $\pm 1.25V$ , $0 \sim +2.5V$ , $0 \sim +1.25V$ input)	$\pm 3LSB$	$\pm 5LSB$
Buffer Memory	16M data		1k-word
Channels	1ch		2ch
Range	Bipolar: $\pm 10V$ , $\pm 5V$ ; Unipolar: $0 \sim +10V$ (jumper selectable)		Bipolar: $\pm 10V$
Rating	$\pm 5mA$		-
Impedance	1M $\Omega$ or more		1 $\Omega$ or less
Resolution	12bit		16bit
Conversion Speed	6 $\mu$ sec/ch (Max.)		10 $\mu$ sec (Max.)
Conversion Accuracy	$\pm 1/2LSB$ *1		$\pm 5LSB$
Buffer Memory	-		1k-word
Trigger	Software command, Input data comparison or External TTL-level Input		-
Input	4 Non-isolated TTL-level input (Common use or counter input is jumper selectable),		4 LVTTTL level (positive logic)
Output	4 Non-isolated TTL-level output (Common use or counter output is jumper selectable)		4 LVTTTL level (positive logic)
Channels	-		1ch
Counting System	-		32-bit Up count
Max. count	-		32-bit (binary data)
Interrupts	1 level		
I/O Address	Occupies 32 ports		Occupies 64 ports
Power Consumption (Max.)	+3.3V 1500mA *3	+3.3V 1200mA *3	3.3VDC 400mA, 12VDC 200mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a x1 / 169.33(L)x110.18(H)		PCI Express Base Specification Rev.1.0a x1 / 121.69(L)x67.90(H)
Connector	37-pin female D-type Screw Lock #4-40UNC, DCLC-J37SAF-20L9E [JAE] or equivalent 16-pin Pin Header connector, PS-16SEN-D4P1-1C [JAE] or equivalent DTP-3A *4, DTP-4A *4, ATP-16E *4, ATBA-16E *4, FTP-15 *5, EPD-37A *4 *6, EPD-37 *4, ATSS-16A *4 *7, ATII-8C *4, ATCH-16A(PCI) *8, ATUH-16A(PCI) *9, ATLF-8A *4		10250-52A2JL [3M] or equivalent
Options	Accessories	ATBA-8L *10, ATBA-16L *10, EPD-50A *10, ATP-8L *10	
Cables / Connectors	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, PCC16PS-1.5/3, PCD8PS-1.5/3, PCA15P, PCB15P, DT/E1, DT/E2, CN5-D37M		PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P

Note: \*1: If operating temperature becomes close to 0°C or 50°C,  $\pm 0.1\%$  LSB non-linearity error may occur. \*2: When using a signal source with a high-speed built-in operational amplifier \*3: The power consumption of the board will exceed if an external device requires supplying of +5VDC from the CN1 or CN2 connectors. \*4: Requires optional cable PCB37Px. (0.5m is recommended) \*5: Requires optional cables DT-E3 and PCB15P \*6: The screw-up terminal block is used, whose screw does not falling off. \*7: External power supply is required. \*8: Only for AIO-161601E3-PE, AIO-121601E3-PE \*9: Only for AIO-161601UE3-PE, AIO-121601UE3-PE. \*10: Requires optional cable PCB50PS-0.5P or PCB50PS-1.5P.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## Analog I/O

## Digital I/O

Serial  
Communication  
GPIO  
Communication

## Motion Controller

## Counter

## USB Remote I/O

## F&amp;E/T Ethernet IO

## Bus Expansion

## Accessories

## Cables

## A-10

## Lineup

Measurement  
Products

## F series Feature

## L series Feature

## E series Feature

## PCI Express

## PCI

## ISA

## PCMCIA

## Card Bus

## USB

Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

PCI Express

50-pin Mini-Ribbon	Analog Input 8ch	Analog Output 2ch	Digital I/O 4/4	Counter 1ch	L series	High Precision	Memory on Board
Windows Driver	Linux Driver	C-LOGGER	MATLAB	LabVIEW			



Isolated 16-bit Analog I/O Board for PCI Express  
AIO-160802LI-PE

- Isolation between PC signal and external analog / digital signals
- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Can set the output voltage to 0V at power-on forcibly
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board ADAI16-8/2(LPCI)JL

L series

PCI Express

37-pin D-SUB	Analog Input 16ch	Analog Output 1ch	Digital I/O 4/4	Counter 1ch	E series	High Precision	Memory on Board
Windows Driver	Linux Driver	C-LOGGER	MATLAB	LabVIEW			



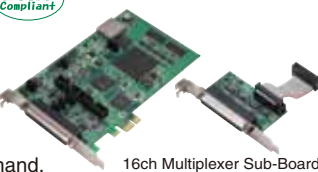
100KSPS 16Bit Analog I/O Board for PCI Express  
AIO-161601E3-PE

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

E series

PCI Express

37-pin D-SUB	Analog Input 16ch	Analog Output 1ch	Digital I/O 4/4	Counter 1ch	E series	High Precision	High Speed	Memory on Board
Windows Driver	Linux Driver	C-LOGGER	MATLAB	LabVIEW				



1MSPS 16Bit Analog I/O Board for PCI Express  
AIO-161601UE3-PE

- 16M data buffer memory (FIFO or RING buffer)
- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

E series

A-11

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	AIO-160802LI-PE	AIO-161601E3-PE	AIO-161601UE3-PE
Channels	8 single-ended	16 single-ended, 8 differential (Supports up to 32 single-ended, 16 differential input with channel multiplexer sub board)	
Analog Input	Range Bipolar: $\pm 10V$ Impedance 1M $\Omega$ or more Resolution 16bit Conversion Speed 10 $\mu$ sec/ch (Max.) Conversion Accuracy $\pm 16LSB$ <sup>*1,2</sup> Buffer Memory 1K word	Bipolar: $\pm 10V$ , $\pm 5V$ ; Unipolar: 0~+10V, 0~+5V (jumper selectable)     -	
Analog Output	Channels 2ch Range Bipolar: $\pm 10V$ Rating $\pm 5mA$ Impedance 1 $\Omega$ or less Resolution 16bit Conversion Speed 10 $\mu$ sec (Max.) Conversion Accuracy $\pm 5LSB$ Buffer Memory 1K word	1ch Bipolar: $\pm 10V$ ; Unipolar: 0~+10V (jumper selectable)     $\pm 3LSB$ <sup>*1</sup> 16M data	
Trigger	-	Software command, Input data comparison or External TTL-level Input	
Digital I/O	Input 4 Non-isolated TTL-level input (positive logic) Output 4 Non-isolated TTL-level output (positive logic) Channels 1ch	4 Non-isolated TTL-level input (Common use or counter input is jumper selectable), 4 Non-isolated TTL-level output (Common use or counter output is jumper selectable) -	
Counter	Counting System 32-bit Up count Max. count 32-bit (binary data)	- -	
Interrupts	1 level		
I/O Address	Occupies 64 ports	Occupies 32 ports	
Power Consumption (Max.)	3.3VDC 820mA	+3.3V 1500mA <sup>*3</sup>	+3.3V 2000mA <sup>*3</sup>
Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a $\times 1 / 169.33(L) \times 110.18(H)$	PCI Express Base Specification Rev.1.0a $\times 1 / 169.33(L) \times 110.18(H)$	
Connector	10250-52A2JL [3M] or equivalent	37-pin female D-type Screw Lock #4-40UNC, DCLC-J37SAF-20L9E [JAE] or equivalent 16-pin Pin Header connector, PS-16SEN-D4P1-1C [JAE] or equivalent DTP-3A <sup>*4</sup> , DTP-4A <sup>*4</sup> , ATP-16E <sup>*4</sup> , ATBA-16E <sup>*4</sup> , FTP-15 <sup>*5</sup> , EPD-37A <sup>*4,6</sup> , EPD-37 <sup>*4</sup> , ATSS-16A <sup>*4,7</sup> , ATII-8C <sup>*4</sup> , ATCH-16A(PCI) <sup>*8</sup> , ATUH-16A(PCI) <sup>*9</sup> , ATLF-8A <sup>*4</sup>	
Options	Accessories EPD-50A <sup>*10</sup> , ATBA-8L <sup>*10</sup> , ATBA-16L <sup>*10</sup> , ATP-8L <sup>*10</sup> Cables / Connectors GPCB50PS [PCB50PS] -0.5P/1.5P, PCA50PS-0.5P/1.5P	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, PCC16PS-1.5/3, PCD8PS-1.5/3, PCA15P, PCB15P, DT/E1, DT/E2, CN5-D37M	

Note: <sup>\*1</sup>: If operating temperature becomes close to 0°C or 50°C,  $\pm 0.1\%$  LSB non-linearity error may occur. <sup>\*2</sup>: When using a signal source with a high-speed built-in operational amplifier  
<sup>\*3</sup>: The power consumption of the board will exceed if an external device requires supplying of +5VDC from the CN1 or CN2 connectors.  
<sup>\*4</sup>: Requires optional cable PCB37Px. (0.5m is recommended) <sup>\*5</sup>: Requires optional cables DT-E3 and PCB15P  
<sup>\*6</sup>: The screw-up terminal block is used, whose screw does not falling off. <sup>\*7</sup>: External power supply is required. <sup>\*8</sup>: Only for AIO-161601E3-PE, AIO-121601E3-PE  
<sup>\*9</sup>: Only for AIO-161601UE3-PE, AIO-121601UE3-PE. <sup>\*10</sup>: Requires optional cable PCB50PS-0.5P or PCB50PS-1.5P.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## Analog I/O

## PCI Express

96-pin  
Half PitchAnalog Input  
32chAnalog Output  
2chDigital I/O  
8/8Counter  
2ch

F series

High Precision

High Speed

Memory on Board

Bus Master

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

Bus master transfer/multi-functions Analog I/O board for PCI Express  
AIO-163202F-PE

F series

- Event Controller for diverse sampling control
- Bus Master Transfer alleviates the load on host computer's CPU
- 64k data buffer memory enables background processing



## PCI Express

Low Profile

50-pin  
Mini-RibbonAnalog Input  
16chAnalog Output  
-Digital I/O  
4/4Counter  
1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Driver

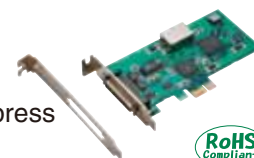
C-LOGGER

MATLAB

Non-isolation type high-precision Analog input board(Low Profile size) for PCI Express  
AI-1616L-LPE

L series

- On-board control mechanism provides analog input / output, timed input / output and input / output that is synchronized with external signals
- Buffer memory enables background processing to be executed independently of the software
- Features Software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)



## PCI Express

50-pin  
Mini-RibbonAnalog Input  
16chAnalog Output  
-Digital I/O  
4/4Counter  
1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

Isolated 16-bit Analog Input Board for PCI Express  
AI-1616LI-PE

L series

- Isolation between PC signal and external analog / digital signals
- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board ADI16-16(LPCI)L



## PCI Express

Low Profile

68-pin  
0.8mm PitchAnalog Input  
64chAnalog Output  
-Digital I/O  
4/4Counter  
1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

100KSPS 16-bit Analog Input Board (Low Profile)  
AI-1664LA-LPE

L series

- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board AD16-64(LPCI)LA
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)



Model	AIO-163202F-PE	AI-1616L-LPE	AI-1616LI-PE	AI-1664LA-LPE
Analog Input	Channels	32 single-ended, 16 differential	16 single-ended	16 single-ended
	Range	Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ or Unipolar: $0 \sim +10V$ , $0 \sim +5V$ , $0 \sim +2.5V$	Bipolar: $\pm 10V$	Bipolar: $\pm 10V$
	Impedance	1M $\Omega$ or more		
	Resolution	16bit		
	Conversion Speed	2 $\mu$ sec/ch (Max.)	10 $\mu$ sec/ch (Max.)	
	Conversion Accuracy <sup>*1</sup>	$\pm 5LSB$	$\pm 5LSB$ <sup>*2</sup>	$\pm 5LSB$ <sup>*2</sup>
Analog Output	Buffer Memory	64k-word FIFO or 64k-word RING	1k word	
	Channels	2ch	-	
	Range	Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , $\pm 1.25V$ or Unipolar: $0 \sim +10V$ , $0 \sim +5V$ , $0 \sim +2.5V$	-	
	Impedance	1 $\Omega$ or less	-	
	Resolution	16bit	-	
	Conversion Speed	10 $\mu$ sec (Max.)	-	
Digital I/O	Conversion Accuracy	$\pm 3LSB$	-	
	Buffer Memory	64K-word FIFO or 64K-word RING	-	
	Input	8 LVTTTL level (positive logic)	4 LVTTTL level (positive logic)	4 LVTTTL level (positive logic)
	Output	8 LVTTTL level (positive logic)	4 LVTTTL level (positive logic)	4 LVTTTL level (positive logic)
	Channels	2ch	1ch	
	Counting System	32-bit Up count		
Counter	Max. count	32-bit (binary data)		
	Interrupts	1 level		
I/O Address		Occupies 1x64 ports, 1x256 ports	Occupies 64 ports	
Power Consumption (Max.)		3.3VDC 500mA, 12VDC 300mA	3.3VDC 400mA, 12VDC 120mA	3.3VDC 580mA
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a x1 / 169.33(L) x 110.18(H)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L) x 67.90(H)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L) x 110.18(H)
Connector		PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	10250-52A2JL [3M] or equivalent	68-pin 0.8mm Pitch connector: HDRA-E68W1LFDL-SL [HONDA] or equivalent
Options	Accessories	ATBA-32F <sup>*3</sup> , ATBA-8F <sup>*3</sup> , ATP-8 <sup>*3</sup> , ATP-32F <sup>*3</sup> , DTP-64(PC) <sup>*3</sup> , EPD-96A <sup>*3</sup> , EPD-96 <sup>*3</sup>	ATBA-8L <sup>*4</sup> , ATBA-16L <sup>*4</sup> , EPD-50A <sup>*4</sup> , ATP-8L <sup>*4</sup>	EPD-50A <sup>*4</sup> , ATBA-8L <sup>*4</sup> , ATBA-16L <sup>*4</sup> , ATP-8L <sup>*4</sup>
	Cables / Connectors	PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P, PCA96P-1.5, PCB96P-1.5, CN5-H96F	GPCB50PS [PCB50PS] -0.5P/1.5P, PCA50PS-0.5P/1.5P	PCA68PSJ-0.5P/1.5P, PCA68PS-0.5P/1.5P, ADC-68M/96F

Note: <sup>\*1</sup>: When using a signal source with a high-speed built-in operational amplifier <sup>\*2</sup>: If operating temperature becomes close to 0°C or 50°C,  $\pm 0.1\%$  LSB non-linearity error may occur. <sup>\*3</sup>: Requires use of optional cable PCB96PS. (0.5m is recommended) <sup>\*4</sup>: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P. <sup>\*5</sup>: Maximum of 8 analog input channels available <sup>\*6</sup>: Able to use up to four digital inputs, four digital outputs and one counter I/O input <sup>\*7</sup>: Optional AC adapter POA200-20 is required. <sup>\*8</sup>: Maximum of 8 analog input channels are available. <sup>\*9</sup>: Maximum of 8 analog input channels and 2 analog output channels available <sup>\*10</sup>: Requires optional cable ADC-68M/96F. <sup>\*11</sup>: Requires optional cable PCB68PS-0.5P or PCB68PS-1.5P. <sup>\*12</sup>: When using both CN1 and CN2 connectors simultaneously, 2 cables and 2 accessory panels are required. <sup>\*13</sup>: It can be used among CNA channel 0-7 or CNB channel 32-39

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

## A-12

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

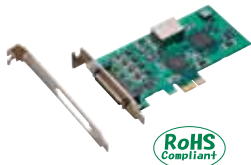
## PCI Express

Low Profile	50-pin Mini-Ribbon	Analog Input -	Analog Output 4ch	Digital I/O 4/4	Counter 1ch	L series	High Precision	Memory on Board
Windows Driver		Linux Driver		C-LOGGER	MATLAB			

### Non-isolation type high-precision Analog output board (Low Profile size) AO-1604L-LPE

- On-board control mechanism provides analog input / output, timed input / output and input / output synchronized with external signals
- Buffer memory enables background processing to be executed independently of the software
- Features Software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

L series



## PCI Express

50-pin Mini-Ribbon	Analog Input -	Analog Output 4ch	Digital I/O 4/4	Counter 1ch	L series	High Precision	Memory on Board
Windows Driver		Linux Driver		C-LOGGER	MATLAB	LabVIEW	

### 100KSPS 16-bit Analog Input Board for PCI Express(Low Profile) AO-1604LI-PE

- Isolation between PC signal and external analog / digital signals
- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Can set the output voltage to 0V at power-on forcibly
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board DA16-4(LPCI)L

L series



## PCI Express

Low Profile	50-pin Mini-Ribbon	Analog Input -	Analog Output 8ch	Digital I/O 4/4	Counter 1ch	L series	High Precision	Memory on Board
Windows Driver		Linux Driver		C-LOGGER	MATLAB		LabVIEW	

### 100KSPS 16-bit 8ch Analog Output Board for PCI Express(Low Profile) AO-1608L-LPE

- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board DA16-8(LPCI)L
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

L series



## PCI Express

Low Profile	50-pin Mini-Ribbon	Analog Input -	Analog Output 16ch	Digital I/O 4/4	Counter 1ch	L series	High Precision	Memory on Board
Windows Driver		Linux Driver		C-LOGGER	MATLAB	LabVIEW		

### 100KSPS 16-bit 16ch Analog Output Board for PCI Express(Low Profile) AO-1616L-LPE

- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- 1K data buffer memory (FIFO or RING buffer)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board DA16-16(LPCI)L
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

L series



## A-13

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	AO-1604L-LPE	AO-1604LI-PE	AO-1608L-LPE	AO-1616L-LPE
Analog Output	Channels	4ch		16ch
	Range	Bipolar: ±10V		
	Impedance	1Ω or less		
	Resolution	16bit		
	Conversion Speed	10μsec (Max.)		
Counter	Conversion Accuracy <sup>*1</sup>	±5LSB		
	Buffer Memory	1K word		
	Max. count	32-bit (binary data)		
Digital I/O	Input	4 LVTTTL level (positive logic)	4 Non-isolated TTL-level input (positive logic)	4 Non-isolated TTL-level input (positive logic)
	Output	4 LVTTTL level (positive logic)	4 Non-isolated TTL-level output (positive logic)	4 Non-isolated TTL-level output (positive logic)
Interrupts	Channels	1ch		
	Counting System	32-bit Up count		
I/O Address	Max. count	32-bit (binary data)		
	Interrupts	1 level		
Power Consumption (Max.)	I/O Address	Occupies 64 ports		
	Power Consumption (Max.)	33.3VDC 400mA, 12VDC 250mA	3.3VDC 1150mA	3.3VDC 240mA, 12VDC 300mA
Bus / Dimensions (mm)	Power Consumption (Max.)	33.3VDC 400mA, 12VDC 250mA	3.3VDC 1150mA	3.3VDC 280mA, 12VDC 380mA
	Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a x1 / 121.69(L)×67.90(H)	PCI Express Base Specification Rev.1.0a x1 / 169.33(L)×110.18(H)	PCI Express Base Specification Rev.1.0a x1 / 121.69(L)×67.90(H)
Connector	Connector	10250-52A2JL [3M] or equivalent		10250-52A2JL [3M] or equivalent
	Accessories	EPD-50A <sup>*4</sup> , ATP-8L <sup>*2</sup>	EPD-50A <sup>*2</sup>	EPD-50A <sup>*2</sup>
Options	Cables / Connectors	PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P	GPCB50PS[PCB50PS]-0.5P/1.5P, PCA50PS-0.5P/1.5P	GPCB50PS[PCB50PS]-0.5P/1.5P, PCA50PS-0.5P/1.5P

Note:

<sup>\*1</sup>: Requires use of optional cable PCB50PS-0.5P or PCB50PS-1.5P  
<sup>\*2</sup>: Maximum of 8 analog input channels and 2 analog output channels available

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.



## Analog I/O

PCI

96-pin  
Half PitchAnalog Input  
16chAnalog Output  
1chDigital I/O  
8/8Counter  
2chMemory  
on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

## 100KSPS 12Bit Analog I/O Board for PCI

## AIO-121601M-PCI

- Supports Analog I/O, Digital I/O and Counter Input functions
- 256k data buffer memory enables background processing.
- The start/end of sampling can be performed by software command, Input data comparison or and external TTL-level Input
- Counter Input is compatible with both single phase and two phase
- Supports synchronous operation with the other boards with synchronous connector
- Compatible with SC series Signal Conditioner



Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

PCI

37-pin  
D-SUBAnalog Input  
16chAnalog Output  
2chDigital I/O  
4/4Counter  
1chMemory  
on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

## 12-bits Analog I/O Board(High Gain) for PCI

## GAIO-121602AH-PCI

## [AIO-121602AH-PCI]

- The various setting of input range enables the high-precision measurement
- 1K data buffer memory (FIFO or RING buffer)
- Digital filtering function to prevent input error caused by external signal chattering
- Features software-based calibration function

A series



PCI

37-pin  
D-SUBAnalog Input  
16chAnalog Output  
2chDigital I/O  
4/4Counter  
1chMemory  
on Board

Windows Driver

Linux Driver

C-LOGGER

MATLAB

LabVIEW

## 12-bits Analog I/O Board(Low Gain) for PCI

## GAIO-121602AL-PCI

## [AIO-121602AL-PCI]

- The various setting of input range enables the high-precision measurement
- 1K data buffer memory (FIFO or RING buffer)
- Digital filtering function to prevent input error caused by external signal chattering
- Features software-based calibration function

A series

Analog IO signal  
converter board  
SC-AIO1604GSignal converter  
enclosure (4 slots)  
ESC-4

Model	AIO-121601M-PCI	GAIO-121602AH-PCI	GAIO-121602AL-PCI	
Analog Input	Channels	16 single-ended		
	Range	Bipolar: $\pm 10V$	Bipolar: $\pm 10V, \pm 1V, \pm 0.1V, \pm 0.01V$ ; Unipolar: $0 \sim +10V, 0 \sim +1V, 0 \sim +0.1V, 0 \sim +0.01V$	Bipolar: $\pm 10V, \pm 5V, \pm 2.5V, \pm 1.25V$ ; Unipolar: $0 \sim +10V, 0 \sim +5V, 0 \sim +2.5V, 0 \sim +1.25V$
	Impedance	1M $\Omega$ or more		
	Resolution	12bit		
	Conversion Speed	10 $\mu$ sec/ch (Max.)	150 $\mu$ sec/ch (Max.)	10 $\mu$ sec/ch (Max.)
	<sup>*1</sup> 12 <sup>*4</sup> Conversion Accuracy	$\pm 2LSB$	$\pm 2LSB (\pm 10V, \pm 1V, 0 \sim +10V, 0 \sim +1V),$ $\pm 5LSB (\pm 0.1V, 0 \sim +0.1V),$ $\pm 10LSB (\pm 0.01V, 0 \sim +0.01V)$	$\pm 2LSB (\pm 10V, \pm 5V, 0 \sim +10V, 0 \sim +5V),$ $\pm 3LSB (\pm 2.5V, 0 \sim +2.5V),$ $\pm 5LSB (\pm 1.25V, 0 \sim +1.25V)$
Analog Output	Buffer Memory	256K data (FIFO or RING buffer)	1K word	
	Channels	1ch	2ch	
	Range	Bipolar: $\pm 10V$		
	Impedance	1 $\Omega$ or less		
	Resolution	12bit		
	Conversion Speed	10 $\mu$ sec (Max.)		
Digital I/O	Conversion Accuracy	$\pm 1LSB$		
	Buffer Memory	256K data (FIFO or RING buffer)	1k-word	
	Input	8 Non-isolated TTL-level input (positive logic)	4 Non-isolated TTL-level input (positive logic)	
Counter	Output	8 Non-isolated TTL-level output (positive logic)	4 Non-isolated TTL-level output (positive logic)	
	Channels	2ch	1ch	
Interrupts	Counting System	32-bit Up count		
	Max. count	32-bit (binary data)		
I/O Address		1 level		
		Occupies 1 x 64 ports, 1 x 256 ports	Occupies 64 ports	
Power Consumption (Max.)	5VDC 680mA	5VDC 600mA		
Bus / Dimensions (mm)	PCI (32bit, 33MHz or 3.3V <sup>*3</sup> ) / 176.41(L) $\times$ 105.68(H)			
Connector		PCR-96LMD+ [HONDA Tsushin Kogyo] or equivalent	CN1(AIO): 37-pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent CN2(DIO): Box Header 30-pin, PS-30PE-D4TIPNI [JAE] or equivalent	
		EPD-96 <sup>*6</sup> , EPD-96A <sup>*6</sup> , SC-AIO1604G <sup>*7</sup> , ESC-4	EPD-37A <sup>*5</sup> , EPD-37 <sup>*5</sup> , DTP-3A <sup>*5</sup> , DTP-4A <sup>*5</sup> ,	
Options	Accessories			
	Cables / Connectors	PCA96PS-0.5P, PCA96PS-1.5P, PCB96PS-0.5P, PCB96PS-1.5P, PCA96P-1.5, PCB96P-1.5, CN5-H96F	PCA37P-1.5, PCA37PS-0.5P/1.5P, PCB37P-1.5, PCB37PS-0.5P/1.5P, CN5-D37M	

Note:

\*1: If operating temperature becomes close to 0°C or 50°C,  $\pm 0.1\%$  LSB non-linearity error may occur. \*2: When using a signal source with a high-speed built-in operational amplifier.

\*3: This board requires +5V power supply from an expansion slot (it does not work on a machine with a +3.3V power supply only).

\*4: Accuracy value of bipolar setting. When unipolar setting applied, the value becomes twice. \*5: Requires optional cable PCB37Px. (0.5m is recommended)

\*6: Requires optional cable PCB96Px. (0.5m is recommended) \*7: Requires optional enclosure ESC-4

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

A-14

Lineup

Measurement  
Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

### PCI

37-pin D-SUB

Analog Input 16ch

Analog Output 1ch

Digital I/O 4/4

Counter —

E series

Memory on Board

CE

Windows Driver

Linux Driver

C-LOGGER

LabVIEW

MATLAB

Non-isolated high performance analog input board for PCI

**GAD12-16(PCI)EV**  
**[AD12-16(PCI)EV]**

- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

E series

16ch Multiplexer Sub-Board  
**ATCH-16A(PCI)**  
Can add 16 single-ended or 8 differential inputs

RoHS Compliant

### PCI

37-pin D-SUB

Analog Input 16ch

Analog Output 1ch

Digital I/O 4/4

Counter —

E series

High Speed

Memory on Board

CE

Windows Driver

Linux Driver

C-LOGGER

LabVIEW

MATLAB

Non-isolated high speed high performance analog input board for PCI

**GAD12-16U(PCI)EV**  
**[AD12-16U(PCI)EV]**

- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

E series

16ch Multiplexer Sub-Board  
**ATUH-16A(PCI)**  
Can add 16 single-ended or 8 differential inputs

RoHS Compliant

### PCI

37-pin D-SUB

Analog Input 16ch

Analog Output 1ch

Digital I/O 4/4

Counter —

E series

High Precision

Memory on Board

CE

Windows Driver

Linux Driver

C-LOGGER

LabVIEW

MATLAB

Non-isolated high performance analog input board for PCI

**GAD16-16(PCI)EV**  
**[AD16-16(PCI)EV]**

- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

E series

16ch Multiplexer Sub-Board  
**ATCH-16A(PCI)**  
Can add 16 single-ended or 8 differential inputs

RoHS Compliant

### PCI

37-pin D-SUB

Analog Input 16ch

Analog Output 1ch

Digital I/O 4/4

Counter —

E series

High Precision

High Speed

Memory on Board

CE

Windows Driver

Linux Driver

C-LOGGER

LabVIEW

MATLAB

Non-isolated type high speed high performance analog input board for PCI

**GAD16-16U(PCI)EV**  
**[AD16-16U(PCI)EV]**

- A variety of accessories can extend functions
- The start/end of sampling can be performed by software command, Input data comparison or external TTL-level Input
- Features software-based calibration function

E series

16ch Multiplexer Sub-Board  
**ATUH-16A(PCI)**  
Can add 16 single-ended or 8 differential inputs

RoHS Compliant

## A-15

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

Model	GAD12-16(PCI)EV	GAD12-16U(PCI)EV	GAD16-16(PCI)EV	GAD16-16U(PCI)EV
Channels	16 single-ended, 8 differential (Supports up to 32 single-ended, 16 differential input with channel multiplexer sub board)			
Range	±10V, ±5V, ±2.5V, ±1.25V, 0~+1.25V, 0~+2.5V, 0~+5V, 0~+10V (jumper selectable)			
Impedance	1MΩ or more			
Resolution	12bit			
Conversion Speed	10μsec/ch (Max.)			
Conversion Accuracy <sup>*3</sup>	±2LSB (at ±10V, ±5V, 0~+10V, 0~+5V, Input), ±4LSB (at ±2.5V, ±1.25V, 0~+2.5V, 0~+1.25V input)			
Channels	1ch			
Range	±10V, ±5V, 0~+10V			
Rating	±5mA			
Impedance	1Ω or less			
Resolution	12bit			
Conversion Speed	6μsec (Max.)			
Conversion Accuracy <sup>*1</sup>	±1/2LSB			
Input	4 Non-isolated TTL-level input (Common use or counter input is jumper selectable),			
Output	4 Non-isolated TTL-level output (Common use or counter output is jumper selectable)			
Trigger	Software command, Input data comparison or External TTL-level Input			
Interrupts	1 level			
I/O Address	Occupies 32 ports			
Power Consumption (Max.)	5VDC 1000mA			
Bus / Dimensions (mm)	PCI (32bit, 33MHz or 3.3V <sup>*4</sup> ) / 176.4(L)×105.68(H)			
Connector	CN1(AIO): 37pin female D-type Screw Lock #4-40UNC, DCLC-J37SAF-20L9E [JAE] or equivalent, CN2(DIO)16pin box header connector, PS-16SEN-D4P1-1C [JAE] or equivalent			
Options	Accessories DTP-3A*5, DTP-4A*5, ATP-16*5, ATBA-16*5, FTP-15*6, EPD-37A*5*7, EPD-37*5, ATSS-16A*5*8, ATIL-8A*5, ATCH-16A(PCI)*11, ATUH-16A(PCI)*12 Cables / Connectors PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, PCC16PS-1.5/3, PCD8PS-1.5/3, PCA15P, PCB15P, DT/E1, DT/E2, CN5-D37M			

Note:

- \*1: If operating temperature becomes close to 0°C or 50°C, ±0.1% LSB non-linearity error may occur. \*2: When using a signal source with a high-speed built-in operational amplifier  
 \*3: An error of about 0.02% of the maximum range value may occur when ±5V bipolar or 0~+5V unipolar input was selected.  
 \*4: The power consumption of the board will exceed if an external device requires supplying of +5VDC from the CN1 or CN2 connectors.  
 \*5: Requires optional cable PCB37Px. (0.5m is recommended) \*6: Requires optional cables DT-E3 and PCB15P \*7: The screw-up terminal block is used, whose screw does not falling off.  
 \*8: External power supply is required. \*9: Requires optional cables DT/E2 \*10: PCB15P is a cable for FTP-15 terminal panel.  
 \*11: Only for GAD16-16(PCI)EV, GAD12-16(PCI)EV \*12: Only for GAD16-16U(PCI)EV, GAD12-16U(PCI)EV.

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.



## Analog I/O

**PCI** Low Profile 50-pin Mini-Ribbon Analog Input 8ch Analog Output 2ch Digital I/O 4/4 Counter 1ch L series High Precision Memory on Board CE

Windows Driver Linux Diver C-LOGGER MATLAB LabVIEW

### Non-isolated Low price high precision analog I/O board for Low Profile PCI ADA16-8/2(LPCI)L

- On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals
- 1k data buffer memory enables background processing
- Features software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

L series



## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

**PCI** Low Profile 50-pin Mini-Ribbon Analog Input 8ch Analog Output 2ch Digital I/O 4/4 Counter 1ch L series High Precision Memory on Board

Windows Driver Linux Diver C-LOGGER MATLAB LabVIEW

### Isolated Low price high precision analog I/O board for Low Profile PCI ADA16-8/2(LPCI)L

- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Isolation between PC signal and external analog / digital signals
- On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals
- 1k data buffer memory enables background processing.
- Features software-based calibration function

L series



**PCI** 96-pin Half Pitch Analog Input 32ch Analog Output 2ch Digital I/O 8/8 Counter 2ch F series High Precision High Speed Memory on Board Bus Master CE

Windows Diver Linux Diver C-LOGGER MATLAB LabVIEW

### Bus master transfer / multi functions AIO board for PCI ADA16-32/2(PCI)F

- Event Controller for diverse sampling control
- Bus Master Transfer alleviates the load on host computer's CPU
- 64k data buffer memory enables background processing

F series



Model	ADA16-8/2(LPCI)L	ADA16-8/2(LPCI)L	ADA16-32/2(PCI)F	
Isolation type	-	Bus isolation	-	
Channels	8 single-ended		32 single-ended, 16 differential	
Range	Bipolar: $\pm 10V$		Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ or Unipolar: $0 \sim +10V$ , $0 \sim +5V$ , $0 \sim +2.5V$	
Impedance	1M $\Omega$ or more			
Resolution	16bit			
Conversion Speed	10 $\mu$ sec/ch (Max.)		2 $\mu$ sec/ch (Max.)	
Conversion Accuracy <sup>*1</sup>	$\pm 5LSB$	$\pm 16LSB$	$\pm 5LSB$	
Buffer Memory	1k-word		64k-word FIFO or 64k-word RING	
Channels	2ch			
Range	Bipolar: $\pm 10V$		Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ , $\pm 1.25V$ or Unipolar: $0 \sim +10V$ , $0 \sim +5V$ , $0 \sim +2.5V$	
Impedance	1 $\Omega$ or less			
Resolution	16bit			
Conversion Speed	10 $\mu$ sec (Max.)			
Conversion Accuracy <sup>*1</sup>	$\pm 3LSB$	$\pm 5LSB$	$\pm 3LSB$	
Buffer Memory	1k-word		64K-word FIFO or 64K-word RING	
Input	4 TTL level (positive logic)		8 TTL level (positive logic)	
Output	4 TTL level (positive logic)		8 TTL level (positive logic)	
Channels	1ch		2ch	
Counting System	32-bit Up count			
Max. count	32-bit (binary data)			
Interrupts	1 level			
I/O Address	Occupies 64 ports		Occupies 1x64 ports, 1x256 ports	
Power Consumption (Max.)	5VDC 380mA	5VDC 680mA	5VDC 1100mA	
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V <sup>*2</sup> ) / 121.69(L) $\times$ 63.41(H)		PCI (32bit, 33MHz, 5V or 3.3V <sup>*2</sup> ) / 176.41(L) $\times$ 105.68(H)	
Connector	10250-52A2JL [3M] or equivalent		PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	
Accessories	ATBA-8L <sup>*3</sup> , ATBA-16L <sup>*3</sup> , ATP-8L <sup>*3</sup> , EPD-50A <sup>*3</sup>		ATBA-32F <sup>*3</sup> , ATBA-8F <sup>*3</sup> , ATP-8 <sup>*3</sup> , ATP-32F <sup>*3</sup> , DTP-64(PC) <sup>*3</sup> , EPD-96A <sup>*3</sup> , EPD-96 <sup>*3</sup>	
Cables / Connectors	PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P		PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P, PCA96P-1.5, PCB96P-1.5, CN5-H96F	

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: Able to use up to four digital inputs, four digital outputs and one counter I/O input

\*7: Requires use of optional cable PCB68PS

\*8: Requires use of optional cable PCB96PS. (0.5m is recommended)

\*2: +5V power must be supplied from PCI bus slot.

\*4: Maximum of 8 analog input channels available

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## A-16

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O

Digital I/O

Serial Communication

GPB Communication

Motion Controller

Counter

USB Remote I/O

F&ET Ethernet IO

Bus Expansion

Accessories

Cables

PCI

BNC

Analog Input 2ch

Analog Output -

Digital I/O -

Counter -

High-speed Conversion

Memory on Board

Simultaneous Sampling

Windows Driver

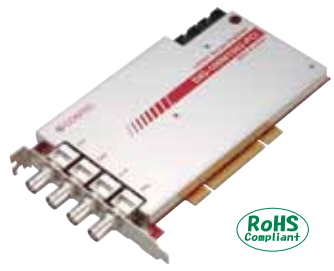
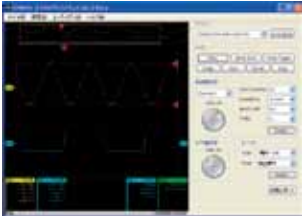
Front Panel Application

Mask Editor

## Digitizer Board with Wave Form Judgement

### DIG-100M1002-PCI

- Break free from visual inspection. Automatically determine pass / fail
- Windows® based "Front Panel" application software allows it to be used like an Oscilloscope or for Wave Pattern Analysis
- Up to 100MHz 2ch continuous simultaneous sampling
- Supports a variety of input signals and start/stop sampling triggers
- Features 50Ω BNC connector which is widely used for high speed analog signal transmission

RoHS Compliant

Front Panel Application

PCI

BNC

Analog Input 2ch

Analog Output -

Digital I/O 4/4

Counter -

High Precision

Memory on Board

Simultaneous Sampling

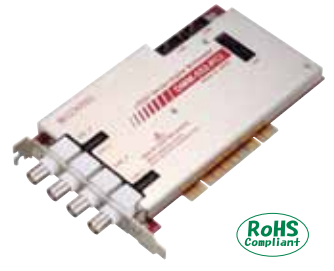

Windows Driver

Front Panel Application

## High Precision Digital Multi Meter Board

### DMM-552-PCI

- Contribute to miniaturizing and cost down of inspection equipment with high precision digital multi meter feature in to a PC
- Windows® based "Front Panel" application software allows it to be used like a Voltage/Current/Resister tester
- Eliminate data communication delay by direct connection into a PC
- Up to 5½ digits 2 individual channels allows to be free from potential difference
- Synchronous Control Connector supports real time operation with the other I/O boards of CONTEC

RoHS Compliant

Front Panel Application

## A-17

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	DIG-100M1002-PCI	DMM-552-PCI
Input Channels	2ch simultaneous sampling	2ch simultaneous sampling
Input Range	At 1MΩ Impedance setting: 40mVpk [±20mV], 100mVpk [±50mV], 200mVpk [±100mV], 400mVpk [±200mV], 1Vpk [±500mV], 2Vpk [±1V], 4Vpk [±2V], 10Vpk [±5V], 20Vpk [±10V], 40Vpk [±20V] At 50Ω Impedance setting: 40mVpk [±20mV], 100mVpk [±50mV], 200mVpk [±100mV], 400mVpk [±200mV], 1Vpk [±500mV], 2Vpk [±1V], 4Vpk [±2V], 10Vpk [±5V]	DC Voltage: 300V, 100V, 10V, 1V, 100mV AC Voltage: 300V, 30V, 3V, 300mV Resistance (CH1 only): 10MΩ, 1MΩ, 100kΩ, 10kΩ, 1kΩ, 100Ω DC Current: 3A, 1A, 100mA, 10mA AC Current: 3A, 300mA, 30mA
Analog Input	Input Impedance 1MΩ ±1% in parallel with 19pF typ. or 50Ω ±2% selectable	[10V, 1V, 100mV range] 10MΩ ±2% or >10GΩ (selectable) [300V, 100V range] 10MΩ±2% [100mA, 30mA, 10mA range] Less than 5.5Ω [3A, 1A, 300mA range] Less than 0.5Ω
	Resolution 10bit	24bit
	Conversion Speed 100MSPS	1500SPS [0.67ms]
	Accuracy Within ±0.3%	5½ digits with 100ms integration time. About 18bits equivalency
	Buffer Memory 32M data	4k data, shared by both channel
Digital I/O	Input Channels -	4 Non-isolated LVTTTL level input (positive logic)
	Output Channels -	4 Non-isolated open collector output (negative logic)
	Maximum rating -	30VDC 40mA per channel
	Response Speed -	Within 200nsec (depends on pull-up resistance)
Interrupt	Error & each events, 1 interrupt request signal as INTA	Error & each events, 1 interrupt request signal as INTA
I/O Address	Occupies 1 x 64 ports and 1 x 256 ports	Occupies 1 x 64 ports
Power Consumption (Max.)	5VDC 1.9A (Max.) - 3.3VDC 0.1A (Max.)	5VDC 1000mA (Max.)
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L) x 105.68(H)	PCI (32bit, 33MHz, 5V) / 176.41(L) x 105.68(H)
Connector	BNC (Characteristic impedance 50Ω)	Analog Input (CH0_V, CH0_I, CH1_V, CH1_I): BNC B-901(W) [INSERT ENTERPRISE] or equivalent Digital Input / output (CN7): 16-pin male header PS-16PE-D4T1-B1 [JAE] or equivalent
Accessories	-	FTP-15 <sup>1</sup>
Options	Cables / Connectors BNC-B100, BNC-B200, BNC-300	PCB15PS-0.5P, 1.5P <sup>2</sup> , PCB15P-1.5 <sup>2</sup> , PCA15P-1.5, DT-E3, DT/E1, BNC-W60, BNC-B100, BNC-B200, BNC-300

Note:

<sup>1</sup>: Requires DT-E3 and PCB15P-1.5 cables.<sup>2</sup>: Requires DT-E3 cable.<sup>3</sup>: +5V power must be supplied from PCI bus slot.As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

## Analog I/O

**PCI** BNC Analog Input 4ch Analog Output - Digital I/O 4/4 Counter - High-speed Conversion Memory on Board Simultaneous Sampling

Windows Driver C-LOGGER MATLAB LabVIEW

## 10MSPS 12Bit Analog Input Board for PCI

## AI-1204Z-PCI

- 4ch simultaneous sampling at maximum conversion speed of 10MS/s(100nsec)per channel
- Synchronous Control Connectors supports the synchronous operation of multiple boards
- Mass buffer memory (32M Word) and the Bus Master Transfer function enables High-speed and long-time continuous data collection
- Features BNC connectors for the analog input terminal



## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

**PCI** 37-pin D-SUB Analog Input 16ch Digital I/O 4/4 Counter 1ch Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

## 12-bits Analog Input Board(High Gain) for PCI

## GAI-1216AH-PCI

## [AI-1216AH-PCI]

- The various setting of input range enables the high-precision measurement
- 1K data buffer memory (FIFO or RING buffer)
- Digital filtering function to prevent input error caused by external signal chattering
- Features software-based calibration function

A series



**PCI** 37-pin D-SUB Analog Input 16ch Digital I/O 4/4 Counter 1ch Memory on Board

Windows Driver Linux Driver C-LOGGER MATLAB LabVIEW

## 12-bits Analog Input Board(Low Gain) for PCI

## GAI-1216AL-PCI

## [AI-1216AL-PCI]

- High-precision measurement can be achieved by various setting of input range
- 1K data buffer memory (FIFO or RING buffer)
- Digital filtering function to prevent input error caused by external signal chattering
- Features software-based calibration function

A series



Model	AI-1204Z-PCI	GAI-1216AH-PCI	GAI-1216AL-PCI	
Channels	4 single-ended	16 single-ended	16 single-ended	
Range	[When 50Ω terminal setting disabled] Bipolar: ±10V, ±5V, ±2.5V, ±1.25V; Unipolar: 0~+10V, 0~+5V, 0~+2.5V [When 50Ω terminal setting enabled] Bipolar: ±5V, ±2.5V, ±1.25V; Unipolar: 0~+5V, 0~+2.5V	Bipolar: ±10V, ±1V, ±0.1V, ±0.01V; Unipolar: 0~+10V, 0~+1V, 0~+0.1V, 0~+0.01V	Bipolar: ±10V, ±5V, ±2.5V, ±1.25V; Unipolar: 0~+10V, 0~+5V, 0~+2.5V, 0~+1.25V	
Impedance	1MΩ or more, 50Ω ±1% (when 50Ω terminal setting)	1MΩ or more		
Resolution	12bit			
Conversion Speed	100nsec (Max.)	150μsec/ch (Max.)	10μsec/ch (Max.)	
Conversion Accuracy <sup>*2</sup>	±4LSB (±10V), ±6LSB (0~+10V, ±5V), ±8LSB (0~+5V, ±2.5V), ±10LSB (0~+2.5V, ±1.25V)	±2LSB (±10V, ±1V, 0~+10V, 0~+1V), ±5LSB (±0.1V, 0~+0.1V), ±10LSB (±0.01V, 0~+0.01V)	±2LSB (±10V, ±5V, 0~+10V, 0~+5V), ±3LSB (±2.5V, 0~+2.5V), ±5LSB (±1.25V, 0~+1.25V)	
Buffer Memory	32M word	1K word		
Digital I/O	Input 4 Non-isolated TTL-level input (positive logic) Output 4 Non-isolated TTL-level output (positive logic)			
Counter	Channels - Counting System - Max. count -	1ch 32-bit Up count 32-bit (binary data)		
Interrupts	Error & each events, 1 interrupt request signal as INTA	1 level		
I/O Address	Occupies 1 x 64 ports and 1 x 256 ports	Occupies 64 ports		
Power Consumption (Max.)	5VDC 2500mA	5VDC 450mA	5VDC 400mA	
Bus / Dimensions (mm)	PCI (32bit, 33MHz 5V or 3.3V <sup>*3</sup> ) / 176.41(L)×105.68(H)			
Connector	CN1(AIO): BNC connector, DB-414K [INSERT ENTERPRISE] or equivalent; CN2(DIO): 16pin box-header connector	CN1(AIO): 37-pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent CN2(DIO): Box Header 30-pin, PS-30PE-D4TIPNI [JAE] or equivalent		
Options	Accessories FTP-15 <sup>*4</sup> Cables / Connectors For Analog: BNC-B100, BNC-B200, BNC-B300; For Digital: DT-E3, DT/E1, PCA15P-1.5 <sup>*5</sup> , PCB15P-1.5 <sup>*6</sup>	EPD-37A <sup>*7</sup> , EPD-37 <sup>*7</sup> , DTP-3A <sup>*7</sup> , DTP-4A <sup>*7</sup> PCA37P-1.5, PCA37PS-0.5P/1.5P, PCB37P-1.5, PCB37PS-0.5P/1.5P, CN5-D37M		

Note:

<sup>\*1</sup>: If operating temperature becomes close to 0°C or 50°C, ±0.1% LSB non-linearity error may occur.<sup>\*2</sup>: When using a signal source with a high-speed built-in operational amplifier<sup>\*3</sup>: This board requires power supply at +5 V from an expansion slot (it does not work on a machine with a +3.3V power supply only).<sup>\*4</sup>: Requires optional cables DT/E3 and PCB15P-1.5. <sup>\*5</sup>: Optional cables DT/E3 is required. <sup>\*6</sup>: PCB15P is a cable for FTP-15 terminal panel.<sup>\*7</sup>: Requires optional cable PCB37Px. (0.5m is recommended) <sup>\*8</sup>: The screw-up terminal block is used, whose screw does not falling off.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## A-18

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

PCI

37-pin D-SUB

Analog Input 16ch

Digital I/O 8/8

Windows Driver

LabVIEW

### Unisolated Analog Input Board for PCI

**GAI-1216B-RB1-PCI**  
**[AI-1216B-RB1-PCI]**

- Analog input: ±10V range, 16 12-bit single end, 20μsec/ch conversion speed
- Perform AD conversion at each software command
- 8 TTL-level digital input, 8 TTL-level digital output
- Windows Driver Library bundled

B series



PCI

37-pin D-SUB

Analog Input 16ch

Digital I/O 8/8

Windows Driver

LabVIEW

### Unisolated Analog Input Board for PCI

**GAI-1216B-RU1-PCI**  
**[AI-1216B-RU1-PCI]**

- Analog input: 0~10V range, 16 12-bit single end, 20μsec/ch conversion speed
- Perform AD conversion at each software command
- 8 TTL-level digital input, 8 TTL-level digital output
- Windows Driver Library bundled

B series



PCI

37-pin D-SUB

Analog Input 4ch

Individual Isolated

High Precision

Windows Driver

Linux Driver

LabVIEW

### Isolated Analog Input Board for PCI

**AI-1604CI2-PCI**

- Individual isolation among the bus lines to PCs, the channels with photocouplers, and even between the signals of the both
- The start/stop of sampling can be performed at arbitrary fixed intervals by software command or the internal sampling clock on the board or an external sampling clock signal



## A-19

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	GAI-1216B-RB1-PCI		GAI-1216B-RU1-PCI	AI-1604CI2-PCI	
Analog Input	Channels	16 single-ended		4 single-ended	
	Range	Bipolar: ±10V		Unipolar: 0~+10V	
	Impedance	1MΩ or more		1MΩ or more (Voltage input, Power on)	
	Resolution	12bit		16bit	
	Conversion Speed	20μsec/ch (Max.)		1kΩ or more (Voltage input, Power off)	
	Conversion Accuracy <sup>*1,2</sup>	±3LSB		±32LSB (±10V), ±64LSB (0~+10V, ±5V), ±64LSB (0~+5V), ±80LSB (4~20mA)	
External trigger signal	-		Opto-Isolated input (for sink current output)		
Start trigger	Software command		Software command, External trigger		
Stop trigger	-		End-count, External trigger, Software command		
Isolation type	-		Channel isolation		
Timer	-		500~1,073,741,824,000 nsec (selectable in 250nsec intervals)		
Digital I/O	Input	8 TTL-level input (positive logic)		-	
	Output	8 TTL-level output (positive logic)		-	
Interrupts	1 level				
I/O Address	Occupies 32 ports				
Power Consumption (Max.)	+5V 200mA		+5V 1100mA		
Bus / Dimensions (mm)	PCI (32bit, 33MHz 5V or 3.3V <sup>*3</sup> ) / 121.69(L)×88.00(H)		PCI (32bit, 33MHz 5V or 3.3V <sup>*3</sup> ) / 176.41(L)×106.68(H)		
Connector	37-pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent				
Accessories	EPD-37A <sup>*4,5</sup> , EPD-37 <sup>*4</sup> , DTP-3A <sup>*4</sup> , DTP-4A <sup>*4</sup>				
Options	Cables /	PCA37P-1.5, PCA37PS-0.5P/1.5P, PCB37P-1.5, PCB37PS-0.5P/1.5P,			
	Connectors	CN5-D37M			

Note:

<sup>\*1</sup>: If operating temperature becomes close to 0°C or 50°C, ±0.1% LSB non-linearity error may occur.

<sup>\*2</sup>: When using a signal source with a high-speed built-in operational amplifier (only for AI-1216B-RB1-PCI, AI-1216B-RU1-PCI)

<sup>\*3</sup>: This board requires power supply at +5 V from an expansion slot (it does not work on a machine with a +3.3V power supply only).

<sup>\*4</sup>: Requires optional cable PCB37P-1.5 or PCB37PS-0.5P/1.5P

<sup>\*5</sup>: The screw-up terminal block is used, whose screw does not falling off.

## Analog I/O

**PCI** 96-pin Half Pitch Analog Input 16ch Analog Output — Digital I/O 4/4 Counter — CE

Windows Driver Linux Driver LabVIEW

### 16Ch/12Bit Analog Input Board for PCI AD12-16(PCI)

- Sampling Control function enables data input via onboard program timer or an external clock
- Independent programmable timer and TTL-level external trigger



**PCI** 37-pin D-SUB Analog Input 16ch Analog Output — Digital I/O 4/4 Counter — Bus Isolated Memory on Board CE

Windows Driver Linux Driver LabVIEW

### Isolated Multi-Function Analog Input Board for PCI ADI12-16(PCI)

- Isolation between PC signal and external analog / digital signals
- 256KB data buffer memory (FIFO or ring buffer)
- Variety of triggers available for starting/stopping data input.
- 16 single-ended or 8 differential inputs (Current input = 8 max)



**PCI** 96-pin Half Pitch Analog Input 64ch Analog Output — Digital I/O 4/4 Counter — CE

Windows Driver Linux Driver LabVIEW

### Multi-channel Analog Input Board for PCI AD12-64(PCI)

- Sampling Control function enables data input via onboard program timer or an external clock
- Independent programmable timer and TTL-level external trigger



**PCI** 37-pin D-SUB Analog Input 4ch Analog Output — Digital I/O — Counter — Individual Isolated High Precision Small Signal

Windows Driver Linux Driver LabVIEW

### Isolated Small-Signal Analog Input Board for PCI ADI16-4L(PCI)

- Independent isolated channels allow different ground levels for individual input
- Measures low level voltage with discontinuity detection circuit for thermocouple input
- Onboard temperature sensor can be used for cold-junction reference during thermocouple measurement



Model	AD12-16(PCI)	ADI12-16(PCI)	AD12-64(PCI)	ADI16-4L(PCI)
Channels	16 single-ended, 8 differential	16 single-ended, 8 differential	64 single-ended, 32 differential	4 differential
Range	±10V, ±5V, ±2.5V, ±1.25V, 0~+10V, 0~+5V, 0~+2.5V, 0~+1.25V (each channel is settable by software)	±10V, ±5V, ±2.5V, ±1.25V, 0~+10V, 0~+5V, 0~+2.5V, 0~+1.25V, 4-20mA	±10V, ±5V, ±2.5V, ±1.25V, 0~+10V, 0~+5V, 0~+2.5V, 0~+1.25V (each channel is settable by software)	±1.25V, ±0.125V, 0~+2.5V, 0~+0.25V
Impedance	1MΩ or more	Voltage input: 1MΩ or more, Current input: 250	1MΩ or more	
Analog Input Resolution	12bit			16bit
Conversion Speed	10μsec/ch (Max.)	20μsec/ch (Max.)	10μsec/ch (Max.)	10msec/ch (Max.)
Conversion Accuracy	±10V, ±5V, 0~+10V, 0~+5V: ±2LSB, ±2.5V, ±1.25V, 0~+2.5V: ±4LSB, 0~+1.25V: ±8LSB	±2LSB (±10V, ±5V, 0~+10V, 0~+5V), ±4LSB (±2.5V, ±1.25V, 0~+2.5V, 0~+1.25V), ±3LSB (4-20mA)	±10V, ±5V, 0~+10V, 0~+5V: ±2LSB, ±2.5V, ±1.25V, 0~+2.5V: ±4LSB, 0~+1.25V: ±8LSB	±15LSB
Digital trigger	-	1 opto-isolated input (share one of digital input)	-	-
Conversion start trigger	-	Software command, Analog level, External digital input	-	-
Conversion stop trigger	-	Storage complete/Software/Converted data comparison/Insulated external input digital signal	-	-
Trigger	1 TTL level input	-	1 TTL level input	1 opto-isolated input (for sink current output)
Isolation type	-	Bus isolation	-	Individual isolation
Timer	0.5μsec-17min (selectable in 250nsec intervals)	-	0.5μsec-17min (selectable in 250nsec intervals)	0.5μsec-17min (selectable in 250nsec intervals)
Digital I/O Input	General I/O: Input 4	4 opto-isolated input (for sink current output), 4 Opto-Isolated Open Collector Output (Current sinking type)	General I/O: Input 4	-
Digital I/O Output	Output 4 (TTL positive logic)	-	Output 4 (TTL positive logic)	-
Interrupts	Request Events: 8 modes, Request Levels: One interrupt request signal as INTA	Request Events: 13 modes, Request Levels: One interrupt (Enable or Disable is selectable)	Request Events: 8 modes, Request Levels: One interrupt request signal as INTA	-
I/O Address	Occupies 32 ports	Occupies 16 ports	Occupies 32 ports	-
Power Consumption (Max.)	5VDC 700mA	5VDC 1200mA	5VDC 700mA	5VDC 1200mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V) / 176.41(L) × 106.68(H)	-	-	-
Connector	PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	CN1(AIO): 37-pin female D-type CN2(DIO): 16-pin male Header	PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	37-pin female D-type
Options Accessories	EPD-96A <sup>8</sup> , EPD-96 <sup>8</sup>	ATBA-16E <sup>5</sup> , ATLF-8 <sup>4,5</sup> , ATIL-8A <sup>4,5</sup> , ATP-16 <sup>5</sup> , DTP-3A <sup>5</sup> , DTP-4A <sup>5</sup> , EPD-37A <sup>5</sup> , EPD-37, FTP-15 <sup>6</sup>	EPD-96A <sup>8</sup> , EPD-96 <sup>8</sup>	DTP-3A <sup>5</sup> , DTP-4A <sup>5</sup> , EPD-37A <sup>5</sup> , EPD-37 <sup>5</sup>
Options Cables / Connectors	PCA96P-1.5, PCB96P-1.5, PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P <sup>5</sup> , CN5-H96F	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, PCA15P, PCB15P <sup>7</sup> , DT/E1, DT/E2, PCC16PS, PCD8PS, CN5-D37M	PCA96P-1.5, PCB96P-1.5, PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P, CN5-H96F	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5-D37M

Note:

\*1: At 4-20mA current loop mode, x1 input gain can be used.

\*3: Actual conversion speed depends upon operating system and drivers.

\*5: Requires use of optional cable PCB37P or PCB37PS

\*7: PCB15P is a cable for FTP-15 terminal panel.

\*2: When using a signal source with a high-speed built-in operational amplifier

\*4: External power supply is required.

\*6: Requires use of optional cable DT/E2 and PCB15P

\*8: Requires use of optional cable PCB96P or PCB96PS

## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

## A-20

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB



# Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&EIT Ethernet IO
Bus Expansion
Accessories
Cables

PCI

Low Profile

50-pin Mini-Ribbon

Analog Input16ch

Analog Output-

Digital I/O4/4

Counter1ch

L series

High Precision

Memory on Board

CE

Windows Driver

Linux Diver

C-LOGGER

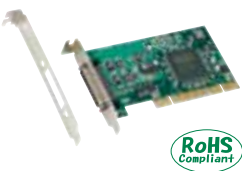
MATLAB

LabVIEW

## Non-isolated low price high precision analog input board for Low Profile PCI AD16-16(LPCI)L

- On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals
- 1k data buffer memory enables background processing
- Features software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

L series



PCI

Low Profile

50-pin Mini-Ribbon

Analog Input16ch

Analog Output-

Digital I/O4/4

Counter1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Diver

C-LOGGER

MATLAB

LabVIEW

## Isolated Low price high precision analog input board for Low Profile PCI ADI16-16(LPCI)L

- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Isolation between PC signal and external analog / digital signals
- On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals
- 1k data buffer memory enables background processing.
- Features software-based calibration function

L series



PCI

Low Profile

68-pin 0.8mm Pitch

Analog Input64ch

Analog Output-

Digital I/O4/4

Counter1ch

L series

High Precision

Memory on Board

CE

Windows Driver

Linux Diver

C-LOGGER

MATLAB

LabVIEW

## Non-isolated high precision analog input board for Low Profile PCI AD16-64(LPCI)LA

- 64ch single-ended or 32ch differential inputs
- On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals
- Features software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)

L series



## A-21

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	AD16-16(LPCI)L	ADI16-16(LPCI)L	AD16-64(LPCI)LA	
Analog Input	Isolation type	-	Bus isolation	-
	Channels	16 single-ended	8 single-ended	64 single-ended or 32 differential
	Range	Bipolar: ±10V		
	Impedance	1MΩ or more		
	Resolution	16bit		
	Conversion Speed	10μsec/ch (Max.)		
	Conversion Accuracy <sup>1</sup>	±5LSB	±16LSB	±5LSB
Digital I/O	Buffer Memory	1k-word		
	Input	4 TTL level (positive logic)		
	Output	4 TTL level (positive logic)		
Counter	Channels	1ch		
	Counting System	32-bit Up count		
	Max. count	32-bit (binary data)		
Interrupts	Interrupts	1 level		
	I/O Address	Occupies 64 ports		
	Power Consumption (Max.)	5VDC 260mA	5VDC 400mA	5VDC 450mA
	Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V <sup>2</sup> ) / 121.69(L)×63.41(H)		
Options	Connector	10250-52A2JL [3M] or equivalent		HDRA-E68W1LFD-T-SL [HONDA Tsushin Kogyo] or equivalent
	Accessories	ATBA-8L <sup>3</sup> 4, ATBA-16L <sup>3</sup> , ATP-8L <sup>3</sup> 4, EPD-50A <sup>3</sup>	ATBA-8L <sup>3</sup> 4, ATBA-16L <sup>3</sup> , ATP-8L <sup>3</sup> 4, EPD-50A <sup>3</sup>	ATP-32F <sup>5</sup> 6, ATP-8 <sup>5</sup> 6, DTP-64(PC) <sup>5</sup> 6, EPD-68A <sup>6</sup> 7, EPD-96A <sup>5</sup> 6, EPD-96 <sup>5</sup> 6
	Cables / Connectors	PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P		GPCA68PS [PCA68PS] -0.5P/1.5P, PCB68PS-0.5P/1.5P, ADC-68M/96F

Note:

\*1: When using a signal source with a high-speed built-in operational amplifier

\*2: +5V power must be supplied from PCI bus slot.

\*3: Requires use of optional cable PCB50PS-0.5P/1.5P

\*4: Maximum of 8 analog input channels available

\*5: Optional cable ADC-68M/96F is required.

\*6: AD16-64(LPCI)LA requires two cables and accessories each for two connectors.

\*7: Requires use of optional cable PCB68PS



## Analog I/O

PCI

37-pin  
D-SUBAnalog Output  
4chIndividual  
IsolatedHigh  
Precision

Windows Driver

Linux Driver

LabVIEW

Isolated Analog Output Board for PCI  
AO-1604CI2-PCI

- Individual isolation among the bus lines to PCs, the channels with photocouplers, and even between the signals of the both
- Digital signals of the specified channel or all the channels can be converted to analog voltages simultaneously
- The start/stop of sampling can be performed at arbitrary fixed intervals by software command or the internal sampling clock on the board or an external sampling clock signal
- Features on-board relay to control voltage output

RoHS  
Compliant

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

PCI

37-pin  
D-SUB

Analog Input

Analog Output  
4ch

Digital I/O

Counter



Windows Driver

Linux Driver

LabVIEW

Non-isolated PCI Multi-channel Analog Output Board  
DA12-4(PCI)

- 4 channels for converting digital signals to analog voltages simultaneously
- Updates output voltage through use of on-board and external sampling clock
- Features output voltage reset by powering on

Pb  
Reduced

PCI

37-pin  
D-SUB

Analog Input

Analog Output  
8ch

Digital I/O

Counter



Windows Driver

Linux Driver

LabVIEW

Digital to Analog Output  
DA12-8(PCI)

- 8 channels for converting digital signals to analog voltages simultaneously
- Updates output voltage through use of on-board and external sampling clock
- Features output voltage reset by powering on

Pb  
Reduced

PCI

37-pin  
D-SUB

Analog Input

Analog Output  
16ch

Digital I/O

Counter



Windows Driver

Linux Driver

LabVIEW

Non-isolated PCI Multi-channel Analog Output Board  
DA12-16(PCI)

- 16 channels for converting digital signals to analog voltages simultaneously
- Updates output voltage through use of on-board and external sampling clock
- Features output voltage reset by powering on

Pb  
Reduced

A-22

Model	AO-1604CI2-PCI		DA12-4(PCI)	DA12-8(PCI)	DA12-16(PCI)
Analog Output	Channels	4ch		8	16
	Range	Bipolar: ±10V; Unipolar: 0~+10V; 0~20mA (jumper setting per channel)	±10V, ±5V, 0~+10V (each channel software selectable)		
	Rating	±5mA (Voltage output) ±10V, 0~+10V, 500Ω (Current output)	±5mA		
	Impedance	10Ω or less (Voltage output)			
	Resolution	16bit	12bit		
	Conversion Speed	20μsec (Max.)	10μsec/ch (Max.)		
	Conversion Accuracy	±5LSB (±10V, 0~+10V), ±15LSB (0~20mA)	±3LSB		
External trigger signal	Opto-Isolated input (for sink current output)		-		
Trigger	-		1 TTL level input		
Isolation type	Individual isolation		-		
Timer	500~1,073,741,824,000 nsec (selectable in 250nsec intervals)		0.5μsec~17min (selectable in 250nsec intervals)		
Interrupts	1 level		Request Events: 8 modes, Request Levels: 1		
I/O Address	Occupies 32 ports		Any 32-byte boundary		
Power Consumption (Max.)	+5V 2400mA		5VDC 600mA	5VDC 800mA	5VDC 1400mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V) / 176.4(L) × 106.68(H)				
Connector	37-pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent				
Options	Accessories	EPD-37A <sup>*2</sup> , EPD-37 <sup>*2</sup> , DTP-3A <sup>*2</sup> , DTP-4A <sup>*2</sup>	DTP-3A <sup>*2</sup> , DTP-4A <sup>*2</sup> , EPD-37A <sup>*2</sup> , EPD-37 <sup>*2</sup> , ATP-16 <sup>*2</sup>		
	Cables / Connectors	PCA37P-1.5, PCA37PS-0.5P/1.5P, PCB37P-1.5, PCB37PS-0.5P/1.5P, CN5-D37M	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, PCC16PS, CN5-D37M		

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

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

Lineup

Measurement  
Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

PCI

Low Profile

50-pin Mini-Ribbon

Analog Input -

Analog Output 4ch

Digital I/O 4/4

Counter 1ch

L series

High Precision

Memory on Board

CE

Windows Driver

Linux Diver

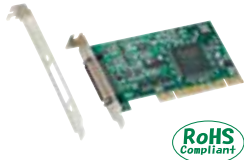
MATLAB

LabVIEW

## Non-isolated Low price high precision analog output board for Low Profile PCI DA16-4(LPCI)L

- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- On-board control mechanism provides analog output, timed output and output that is synchronized with external signals
- 1k data buffer memory enables background processing.
- Features output voltage reset by powering on

L series



PCI

Low Profile

50-pin Mini-Ribbon

Analog Input -

Analog Output 4ch

Digital I/O 4/4

Counter 1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Diver

MATLAB

LabVIEW

## Isolated Low price high precision analog output board for Low Profile PCI DAI16-4(LPCI)L

- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Isolation between PC signal and external analog / digital signals
- On-board control mechanism provides analog output, timed output and output that is synchronized with external signals
- 1k data buffer memory enables background processing.
- Features software-based calibration function

L series



PCI

Low Profile

50-pin Mini-Ribbon

Analog Input -

Analog Output 8ch

Digital I/O 4/4

Counter 1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Diver

MATLAB

LabVIEW

## Non-isolated high precision multi-channel analog output board for Low Profile PCI DA16-8(LPCI)L

- On-board control mechanism provides analog output, timed output and output that is synchronized with external signals
- Filter function can simplify the connection of external signal
- Features software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Plug-ins for the dedicated libraries, the board also supports MATLAB and LabVIEW

L series



PCI

Low Profile

50-pin Mini-Ribbon

Analog Input -

Analog Output 16ch

Digital I/O 4/4

Counter 1ch

L series

High Precision

Memory on Board

Windows Driver

Linux Diver

MATLAB

LabVIEW

## Non-isolated high precision multi-channel analog output board for Low Profile PCI DA16-16(LPCI)L

- On-board control mechanism provides analog output, timed output and output that is synchronized with external signals
- Filter function can simplify the connection of external signal
- Features software-based calibration function
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Plug-ins for the dedicated libraries, the board also supports MATLAB and LabVIEW

L series






## A-23

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model		DA16-4(PCI)	DA16-4(LPCI)L	DA16-8(LPCI)L	DA16-16(LPCI)L
Analog Output	Channels	4ch		8	16
	Range	Bipolar: ±10V			
	Impedance	1Ω or less			
	Resolution	16bit			
	Conversion Speed	10μsec (Max.)			
	Conversion Accuracy	±3LSB		±5LSB	
	Buffer Memory	1k-word			
Digital I/O	Input	4 TTL level (positive logic)			
	Output	4 TTL level (positive logic)			
	Channels	1ch			
Counter	Counting System	32-bit Up count			
	Max. count	32-bit (binary data)			
Isolation type		-	Bus Isolation	-	
Interrupts		1 level			
I/O Address		Occupies 64 ports			
Power Consumption (Max.)		5VDC 440mA	5VDC 800mA	5VDC 850mA	5VDC 1100mA
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×63.41(H)		
Connector		10250-52A2JL [3M] or equivalent			
Options	Accessories	ATP-8L, EPD-50A		EPD-50A	ATP-8L, EPD-50A
	Cables / Connectors	PCB50PS-0.5P/1.5P, PCA50PS-0.5P/1.5P			
Note:		*1: When using a signal source with a high-speed built-in operational amplifier *2: +5V power must be supplied from PCI bus slot. *3: Requires use of optional cable PCB50PS-0.5P/1.5P *4: Maximum of 2 analog output channels available			

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

# Analog I/O

ISA	Model	16Ch/12Bit Analog Multi-Function I/O Board for ISA	High-Speed Multi-Function Analog Input Board for ISA	High-Resolution Multi-Function Analog Input Board for ISA
		AD12-16(PC)EH	AD12-16U(PC)EH	AD16-16(PC)EH
				
SPECIFICATIONS				
Input channels		16 single-ended or 8 differential		
Output channels		1		
Resolution		12bit		16 bit
Input specifications	Range	±10V, 0~10V	±2.5V, ±5V, 0~5V, 0~10V	±5V, ±10V, 0~5V, 0~10V
	Gain	x1, x2, x4, x8 (software selectable)	-	
	Conversion speed	10μsec/ch (Max.)	1μsec/ch (Max.)	10μsec/ch (Max.)
	Conversion accuracy *1	±2LSB (x1, x2), ±4LSB (x4, x8)	±3LSB	±5LSB
	Impedance	1MΩ or more		
Output specifications	Range	±5V, ±10V, 0~10V		±10V, 0~10V
	Rating	Drive current ± 5mA (Max.)		
	Conversion speed	6μsec/ch		13μsec/ch
	Conversion accuracy *1	±1/2LSB		±2LSB
	Impedance	1Ω or less		
Trigger	Start Trigger: 3 modes, Stop Trigger: 4 modes			
Timer	2~7 × 10 <sup>13</sup> μsec			
Digital I/O	Gernal DI/O: 4 TTL level input, 4 TTL level output (positive logic), Sampling Control DIO: 3 TTL level input, 1 TTL level output (positive logic)			
Interrupts	Request Events	Up to 16 events		
	Request Levels	One of IRQ 5, 7, 9, 10, 11, 12 or 15		
I/O address	Any 16-byte boundary			
Power consumption	5VDC 800mA (max)		5VDC 1700mA (max)	5VDC 1000mA (max)
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)
Connectors	CN1(AIO): 37-pin female D-type CN2(DIO): 16-pin male header			
Options	Accessories	DTP-3A*2, DTP-4A*2, EPD-37A*2, EPD-37*2, ATSS-16*2, ATII-8A*2, ATLF-8*2, FTP-15*3, ATP-16E*5, ATCH-16(PC)		DTP-3A*2, DTP-4A*2, EPD-37A*2, EPD-37*2, ATSS-16*2, ATII-8A*2, ATLF-8*2, FTP-15*3, ATP-16E*5, ATUH-16(PC)
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, PCA15P *4, PCB15P *4, PCC16PS, PCD8PS, DT/E1, DT/E2		
CE mark	○		○	○

\*1: Conversion Accuracy: Value is linearity error at 25°C.

\*3: Requires use of optional cable DT/E2 and PCB15P

\*5: Requires use of optional cable PCB37P-0.5P or PCB37PS-1.5P

\*2: Requires use of optional cable PCB37P or PCB37PS

\*4: Optional PCB15P cable is required when using FTP-15 terminal panel.

## 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.

### ATCH-16(PC)

#### For use with

AD12-16(PC)EH  
AD16-16(PC)EH



### ATUH-16(PC)

#### For use with

AD12-16U(PC)EH  
AD16-16U(PC)EH



## Analog I/O

### Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&E Ethernet IO

Bus Expansion

Accessories

Cables

## A-24

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&eT Ethernet IO

Bus Expansion

Accessories

Cables



Model

Isolated Low Price  
Analog Input Board  
for ISA

ADI12-8CL(PC)H



High-Speed  
General-purpose Analog  
Input Board for ISA

AD12-16(PC)



Isolated High-Speed  
General-purpose Analog  
Input Board for ISA

ADI12-16(PC)



SPECIFICATIONS

Input channels		8ch	16 single-ended or 8 differential	16 single-ended or 8 differential
Resolution		12bit		
Input specifications	Range	0~5V, 1~5V, 0~20mA, 4~20mA	±5V,±10V, 0~10V	±10V, ±5V, 0~10V, 4~20mA
	Gain	-		
	Conversion speed	1200μsec/ch	20μsec/ch	25μsec/ch
	Conversion Accuracy *1	±3LSB	±2LSB	±3LSB
Trigger	Impedance	1MΩ or more (Current input: 250Ω)	1MΩ or more	1MΩ or more (Current input: 250Ω)
		1 opto-isolated input (share 1 of digital input)	1 TTL level	1 opto-isolated input (shared signal of Rising-edge or digital input)
Isolation type		Individual isolation	-	Bus isolation
Timer		-	2~7×10 <sup>13</sup> μsec	-
Digital I/O		2 opto-isolated input (Negative logic)4 opto-isolated Open Collector Output (Negative logic)	1 TTL level input/output (Negative logic)	2 opto-isolated input, 4 opto-isolated output (Negative logic)
Interrupts	Request Causes	External trigger / Conversion end	External trigger / Timer / Conversion end	External trigger or A/D Conversion end
	Request Level	One of IRQ 3~7, 9~12, 14 or 15	One of IRQ 3~7, 9	One of IRQ 3~7, 9~12, 14 or 15
I/O address		Any 4-byte boundary	Any 16-byte boundary	Any 4-byte boundary
Power consumption (Max.)		5VDC 500mA	5VDC 700mA	5VDC 850mA
Bus / Dimensions (mm)		AT Bus / 163.0(L)×122.0(H) viz. 6.5"(L)×4.75"(H)	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)
Connector		37-pin female D-type		
Options	Accessories	DTP-3A*2, DTP-4A*2, EPD-37A*2, EPD-37*2		
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS		
CE marking		-	○	○

\*1: Conversion Accuracy: A value in the table is linearity error at 25°C.

\*2: Requires use of optional cable PCB37P or PCB37PS

A-25

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB



Model

High-Speed  
General-purpose Analog  
Output Board for ISA

DA12-4(PC)



Isolated Low Price  
Analog Output Board  
for ISA

DAI12-4C(PC)



Low-cost Analog  
Output Board for ISA

DA12-8L(PC)





SPECIFICATIONS

Input channels		-		
Output channels		4ch		8ch
Resolution		12bit		
Output specification	Output range	±5V, ±10V, 0~10V	0~5V, 4~20mA	±5V, ±10V, 0~10V, 4~20mA (1ch)
	Output rating	±5mA	±5mA (voltage output)	
	Conversion speed	5μsec/ch	24μsec/ch	10μsec/ch
	Conversion Accuracy *1	±1LSB	±2LSB	±1LSB
Trigger	Output Impedance	1Ω or less	1Ω or less (voltage output)	
		1 TTL level input	-	-
Isolation type		-	Bus isolation	-
Timer		2~7 × 10 <sup>13</sup> μsec	-	-
Digital I/O		1 TTL level input/output (Negative logic)	2 opto-isolated input, 4 opto-isolated output (Negative logic)	4 TTL level input/output (Positive logic)
Interrupt	Request Causes	External trigger / Timer	-	-
	Request Level	One of IRQ 3~7, 9	-	-
I/O address		Any 16-byte boundary	Any 4-byte boundary	Any 4-byte boundary
Power consumption (Max.)		5VDC 1200mA		5VDC 830mA
Bus / Dimensions (mm)		XT Bus / 143.0(L) × 107.0(H)	AT Bus / 163.0(L) × 122.0(H)	
Connector		37-pin female D-type		
Option	Accessories	DTP-3A*2, DTP-4A*2, EPD-37A*2, EPD-37*2		
	Cables / Connector	PCA37P, PCB37P, PCA37PS, PCB37PS		
CE marking		○	○	○

\*1: Conversion Accuracy: A value in the table is linearity error at 25°C.

\*2: Requires use of optional cable PCB37P or PCB37PS.

# Analog I/O

ISA	Model	Isolated Low Price Analog Output Board for ISA	High Precision Analog Output Board for ISA
		DAI12-8C(PC)	DA16-4D(PC)
			
SPECIFICATIONS			
Input channels		-	
Output channels		8ch	4ch
Resolution		12bit	16 bit
Output specification	Output range	0~5V, 4~20mA	±10V, 0~10V
	Output rating	±5mA (voltage output)	
	Conversion speed	24μsec/ch	13μsec/ch
	Conversion Accuracy *1	±2LSB	±1LSB
		Output Impedance	1Ω or less (voltage output)
Trigger		-	
Isolation type		Bus isolation	-
Timer		-	
Digital I/O		2 opto-isolated inpout, 4 opto-isolated output (Negative logic)	-
Interrupt	Request Causes	-	DMA Transmission end
	Request Level	-	One of IRQ 3~7, 9~12, 14 or 15
I/O address		Any 4-byte boundary	Any 8-byte boundary
Power consumption (Max.)		5VDC 1600mA	5VDC 980mA
Bus / Dimensions (mm)		AT Bus / 163.0(L) × 122.0(H)	
Connector		37-pin female D-type	
Option	Accessories	DTP-3A*2, DTP-4A*2, EPD-37A*2, EPD-37*2	
	Cables / Connector	PCA37P, PCB37P, PCA37PS, PCB37PS	
CE marking		○	○

\*1: Conversion Accuracy: A value in the table is linearity error at 25°C.

\*2: Requires use of optional cable PCB37P or PCB37PS.

## Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&E Ethernet IO

Bus Expansion

Accessories

Cables

## A-26

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

PCMCIA

37-pin D-SUB

Analog Input 8ch

Analog Output 2ch

Digital I/O 4/4

Counter -

Memory on Board

CE

Windows DriverLabVIEW

8 Channels Analog to Digital Input

AD12-8(PM)

8 single-ended analog input, and 16,384 words FIFO memory

Sampling Clock selectable between internal and external clock



BNC Alligator Clip on one side  
BNC-W60



BNC Terminal Unit for Analog I/O (8ch)  
ATP-8



\*Please visit our website for more details.

Card Bus

68-pin 0.8mm Pitch

Analog Input 8ch

Analog Output 2ch

Digital I/O 4/4

Counter 1ch

L series

High Precision

Memory on Board

Windows DriverLinux DriverC-LOGGERMATLABLabVIEW

Non-isolation type low price high-precision AIO card for CardBus

ADA16-8/2(CB)L

On-board control mechanism provides analog input / output, timed input / output and input/output that is synchronized with external signals

1k data buffer memory enables background processing.

Features software-based calibration function



Soon to be RoHS-compliant  
\*This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

Card Bus

68-pin 0.8mm Pitch

Analog Input 32ch

Analog Output 2ch

Digital I/O 4/4

Counter 1ch

F series

High Precision

High Speed

Memory on Board

Bus Master

CE

Windows DriverLinux DriverC-LOGGERMATLABLabVIEW

Bus master transfer / multi functions AIO card for CardBus

ADA16-32/2(CB)F

Event Controller for diverse sampling control

Bus Master Transfer alleviates the load on host computer's CPU

64k data buffer memory enables background processing



Soon to be RoHS-compliant  
\*This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

\* Optional cable ADC-68M/96F is required.

A-27
Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	AD12-8(PM)
Analog Input	Channels 8 single-ended
	Range -10V~+10V
	Impedance 20kΩ or more
	Resolution 12bit
	Conversion Speed 10μsec/ch (Max.)
Analog Output	Buffer Memory 16,384 words (FIFO type)
	Internal Clock 10,000nsec~104,857,600nsec (selectable in 100nsec intervals)
	External Clock Input 1 TTL level (falling edge)
	Simultaneous Sampling 1 TTL level
	Control Output 1 TTL level
Digital I/O	Channels 2
	Range 0V~+4.095V
	Resolution 12bit
	Conversion Speed 16μsec (Max.)
	Maximum Drive 5mA
Interrupts	Input 4 TTL (positive logic)
	Output 4 TTL (positive logic)
	One of IRQ 3~7, 9~12, 14 or 15
	I/O Address Any 16-byte boundary
	Power Consumption (Max.) 5VDC 100mA
Options	Bus / Dimensions (mm) PCMCIA Rel.2.0/JEIDA 4.1 upper / TYPE II
	Connector 37-pin female D-type
	Accessories DTP-3A <sup>1</sup> , DTP-4A <sup>1</sup> , EPD-37A <sup>1</sup> , EPD-37 <sup>1</sup> , ATP-8 <sup>1</sup>
	Cables / Connectors PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5-D37M
	Note: *1: Requires use of optional cable PCB37P-0.5P or PCB37PS-1.5P

Model	ADA16-8/2(CB)L	ADA16-32/2(CB)F
Analog Input	Channels 8 single-ended	32 single-ended, 16 differential
	Range Bipolar: ±10V	
	Impedance 1MΩ or more	
	Resolution 16bit	
	Conversion Speed 10μsec/ch (Max.)	2μsec/ch (Max.)
Analog Output	Conversion Accuracy <sup>1</sup> ±5LSB	
	Buffer Memory 1k-word	64k-word FIFO or 64k-word RING
	Channels 2ch	
	Range Bipolar: ±10V	
	Impedance 1Ω or less	
Digital I/O	Resolution 16bit	
	Conversion Speed 10μsec (Max.)	
	Conversion Accuracy ±3LSB	
	Buffer Memory 1k-word	64k-word FIFO or 64k-word RING
	Input 4 LVTTTL level (positive logic)	
Counter	Output 4 LVTTTL level (positive logic)	
	Channels 1ch	
	Counting System 32-bit Up count	
	Max. count 32-bit (binary data)	
Interrupts	1 level	
	I/O Address Any 64-byte boundary	64 ports×1, 256 ports×1 occupation
	Power Consumption (Max.) 3.3VDC 500mA	3.3VDC 600mA
	Bus / Dimensions (mm) PC Card Standard compliant CardBus / TYPE II	PC Card Standard compliant CardBus / TYPE II
Options	Connector 68-pin 0.8mm Pitch	
	Accessories ATBA-8L <sup>2</sup> , ATBA-16L <sup>2</sup> , ATP-8L <sup>2</sup> , EPD-50A <sup>2</sup> , EPD-68A <sup>3</sup>	ATBA-32F <sup>4,7</sup> , ATBA-8F <sup>4,5,7</sup> , ATP-8 <sup>4,5,6</sup> , ATP-32F <sup>4</sup> , DTP-64(PC) <sup>4</sup> , EPD-68A <sup>8</sup> , EPD-96A <sup>4</sup> , EPD-96 <sup>4</sup>
	Cables / Connectors PCA50PS-0.5P/1.5P, ADC-68M/50M, PCB68PS-0.5P/1.5P	PCA68PS-0.5P/1.5P, PCA68PS-0.5P/1.5P, ADC-68M/96F
	Note: *1: When using a signal source with a high-speed built-in operational amplifier	
	*2: Optional cable ADC-68M/50M is required.	*3: Requires use of optional cable PCB68PS

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



## Analog I/O

**USB 2.0** 96-pin Half Pitch Analog Input 32ch Analog Output 2ch Digital I/O 8/8 Counter 2ch Memory on Board

Windows Driver C-LOGGER MATLAB LabVIEW

500Ks/sec USB 2.0 Analog I/O unit with DI/O, counter and event controller.

**GAIO-163202FX-USB**  
[AIO-163202FX-USB]

L series

Fixing bracket for X series USB I/O units  
**BRK-USB-X**



- Event Controller for diverse sampling control
- Bus Master Transfer alleviates the load on host computer's CPU
- Features USB hub function which supports up to 4 USB units
- Connector compatible with ADA16-32/2(PCI)F and AIO-163202F-PE



## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

**USB 2.0** Analog Input 8ch Analog Output 2ch Digital I/O 4/4 Counter - High Precision Memory on Board

Windows Driver C-LOGGER MATLAB LabVIEW

High-precision analog I/O terminal for USB2.0

**GAIO-160802AY-USB**  
[AIO-160802AY-USB]

14 pin screw-type terminal connector (6 in one) CN6-Y14



Fixing bracket for Y series USB I/O units  
**BRK-USB-Y**



- Eight 16-bit analog input channels, 2 16-bit analog output channels, 4 LVTTTL digital inputs, 4 LVTTTL digital outputs
- Bus-powered for convenience and portability
- On-board 1k-Word data buffer memory (FIFO or Ring buffer)
- Analog input adjustable via software, no jumper settings required, information depending on user's environment
- Screw-type connectors for easy wiring



**USB 2.0** Analog Input 8ch Analog Output - Digital I/O 4/4 Counter - High Precision Memory on Board

Windows Driver C-LOGGER MATLAB LabVIEW

High precision analog input terminal for USB2.0

**GAI-1608AY-USB**  
[AI-1608AY-USB]

14 pin screw-type terminal connector (6 in one) CN6-Y14



Fixing bracket for Y series USB I/O units  
**BRK-USB-Y**



- Eight 16-bit analog input channels, 4 LVTTTL digital inputs, 4 LVTTTL digital outputs
- Bus-powered for convenience and portability
- On-board 1k-Word data buffer memory (FIFO or Ring buffer)
- Analog input adjustable via software, no jumper settings required, information depending on user's environment
- Screw-type connectors for easy wiring



Model	GAIO-163202FX-USB	AIO-160802AY-USB	AI-1608AY-USB
Analog Input	Channels	32 single-ended, 16 differential	8 single-ended
	Range	Bipolar: $\pm 10V$ , $\pm 5V$ , $\pm 2.5V$ Unipolar: 0~10V, 0~5V, 0~2.5V	Bipolar: $\pm 10V$
	Impedance	1M $\Omega$ or more	
	Resolution	16bit	
	Conversion Speed	2 $\mu$ sec/ch (Max.)	10 $\mu$ sec/ch (Max.)
	Conversion Accuracy	$\pm 5LSB$	$\pm 12LSB$
	Buffer Memory	128K data (FIFO or RING buffer)	1k-word
Analog Output	Channels	2ch	-
	Range	Bipolar: $\pm 10V$	-
	Impedance	1 $\Omega$ or less	-
	Resolution	16bit	-
	Conversion Speed	10 $\mu$ sec (Max.)	-
	Conversion Accuracy	$\pm 3LSB$	$\pm 12LSB$
	Buffer Memory	128K data (FIFO or RING buffer)	1k word
Digital I/O	Input	8 Non-isolated TTL-level input (positive logic)	4 LVTTTL level (positive logic)
	Output	8 Non-isolated TTL-level output (positive logic)	4 LVTTTL level (positive logic)
Counter	Channels	2ch	-
	Counting System	32bit Up count	-
	Max. count	32-bit (binary data)	-
USB Speed	12Mbps <Full Speed>, 480Mbps <High Speed>		
Power Consumption (Max.)	5VDC 1200mA (AC Adaptor is bundled)	5VDC 450mA	5VDC 400mA
Bus / Dimensions (mm)	USB Specification 2.0/1.1 / 180(W) $\times$ 140(D) $\times$ 34(H) (excluding protrusions)		
Connector	PCR-96LMD+ [HONDA Tsushin Kogyo] or equivalent		
Included Cable	USB cable 1.8m		
Options	Accessories	ATBA-32F <sup>7</sup> , ATBA-8F <sup>7</sup> , ATP-8 <sup>7</sup> , ATP-8 <sup>7</sup> , EPD-96A <sup>7</sup> , EPD-96 <sup>7</sup> , BRK-USB-X	BRK-USB-Y, CN6-Y14
	Cables / Connectors	PCA96PS-0.5P, PCA96PS-1.5P, PCB96PS-0.5P, PCB96PS-1.5P, PCA96P-1.5, PCB96P-1.5, CN5-H96F	-

Note:

\*1: This numerical displays the conversion speed for A/D converter. The minimum executable sampling cycle depends on the operating condition

\*2: You cannot use both the DI00 / DI01 / DI02-pin of digital input feature and the external start / stop signal / external clock input simultaneously.

\*3: Each input accept TTL (5VDC) level signals. \*4: The USB transfer speed depends on the host PC environment used (OS and USB host controller).

\*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.

\*6: If operating temperature becomes close to 0°C or 50°C,  $\pm 0.1\%$  LSB non-linearity error may occur.

\*7: Requires use of optional cable PCB96PS. (0.5m is recommended)

\*8: Optional AC adaptor POA200-20 is required.

\*9: Maximum of 8 analog input channels available

\*10: Able to use up to four digital inputs, four digital outputs and one counter I/O input

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## A-28

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# Analog I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

USB 2.0

Analog Input4Analog Output-Digital I/O-Counter-Bus Isolated

Windows Driver

CE

## Input Module for Pt100 Temperature Sensors for USB2.0

**GPTI-4(USB)**  
**[PTI-4(USB)]**

- IEC/JIS-compliant platinum resistance temperature sensor (Pt100, JPt100) can be used.
- Supports acquisition of resistance and temperature, averaging and alarm output for temperature measurement
- Expansion of input channels possible with use of extension modules (5 sets max.)
- Sample development and utility debugging software included



## A-29

Lineup
Measurement Products
F series Feature
L series Feature
E series Feature
PCI Express
PCI
ISA
PCMCIA
Card Bus
USB

Model	PTI-4(USB)
Channels	4
Compatible Platinum RTD	Pt100 (JIS C1604-1997, IEC 751 1983), JPt100 (JIS C1604-1989)
Wiring Method	3-lead type, 4-lead type
Temperature Measurement Range	Pt100: -200~850°C, JPt100: -200~510°C
Accuracy	Temperature 0~50°C ±0.3°C Temperature 15~35°C ±0.15°C <sup>*1</sup>
Resolution	0.01°C
Conversion Speed	Selectable from 150 ms/40 ms/5 ms per channel
Output Current for Temperature Detection	1mA
Isolation type	Across platinum RTD & power supply: Photocoupler isolation Across platinum RTD input channel: No isolation
Connector	FK-MC0.5/9-ST-2.5 [PHOENIX CONTACT]
Number of Writes to Flash ROM	100,000 (Max.)
USB Speed	12Mbps (Full Speed), 480Mbps (High Speed)
Power Consumption (Max.)	5VDC(±5%) 800mA <sup>*2</sup>
Dimensions (mm)	50.4(W)×64.7(D)×94.0(H) (Exclusive of any protrusions)
Weight (main unit)	200g
Included AC adapter (POA-AD22)	AC90~264V, DC5.0V±5% 2.0A (Max.), Cable length: 1.4m
Included Cable	an 1.8m USB cable
Software	-
Applicable Module	PTI-4(FIT)GY
Options	POA200-20, POW-AD13GY, POW-AD22GY, POW-DD10GY, POW-DD43GY <sup>*3</sup>
Note:	<sup>*1</sup> : When conversion speed is set to 150ms <sup>*2</sup> : Please use attached AC adapter or optional power supply unit. <sup>*3</sup> : Please refer to P-04 or visit our web site for the details of the Applicable Module.

## Analog I/O

**USB 2.0**

Analog Input: 8ch | Analog Output: — | Digital I/O: — | Counter: — | Bus: Isolated | Memory: on Board | CE

Windows Driver | LabVIEW

### Isolated Analog Input Module for USB

#### ADI12-8(USB)GY

- Onboard 256K data memory
- Screwless connectors for easy wiring - no special tools needed
- Expansion of input channels possible with use of extension modules (3 sets max)
- Sample development and utility debugging software included



## Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

**USB 2.0**

Analog Input: 4ch | Analog Output: — | Digital I/O: — | Counter: — | Bus: Isolated | Memory: on Board | CE

Windows Driver | LabVIEW

### Isolated high precision analog input module for USB2.0

#### ADI16-4(USB)

- Onboard 256K data memory
- Voltage input and current input are both supported.
- Expansion of input channels possible with use of extension modules (3 sets max)
- Sample development and utility debugging software included



**USB 2.0**

Analog Input: — | Analog Output: 4ch | Digital I/O: — | Counter: — | Bus: Isolated | Memory: on Board | CE

Windows Driver | LabVIEW

### Isolated Analog Output Module for USB2.0

#### DAI12-4(USB)GY

- Able to store 256K of conversion data and output desired wave form cyclically.
- Screwless connectors for easy wiring - no special tools needed
- Expansion of output channels possible with use of extension modules (3 sets max.)
- Sample development and utility debugging software included



**USB 2.0**

Analog Input: — | Analog Output: 4ch | Digital I/O: — | Counter: — | Bus: Isolated | Memory: on Board | CE

Windows Driver | LabVIEW

### Isolated High precision Analog Output Module for USB2.0

#### DAI16-4(USB)

- Able to store 256K of conversion data and output desired wave form cyclically.
- Screwless connectors for easy wiring - no special tools needed
- Expansion of output channels possible with use of extension modules (3 sets max.)
- Sample development and utility debugging software included



Model	ADI12-8(USB)GY		ADI16-4(USB)	DAI12-4(USB)GY	DAI16-4(USB)
Isolation type	Bus Isolation				
Input channels	8 differential		4 differential	-	
Output channels	-			4ch	
Resolution	12bit		16bit	12bit	16bit
Input Range	Voltage	Bipolar: $\pm 10V$ , $\pm 5V$ ; Unipolar: 0 to $+10V$ , 0 to $+5V$ (common range setting of all channels)	Bipolar: $\pm 10V$	-	
	Current	-	0~20mA	-	
Output Type	-			Voltage / Current (bus signal isolated)	
Output Range	Voltage	-		Bipolar: $\pm 10V$ , $\pm 5V$ Unipolar: 0~ $+10V$ , 0~ $+5V$ (Current output: 5mA)	Bipolar: $\pm 10V$ (Current output: 5mA)
	Current	-		0~20mA	
Conversion Accuracy	$\pm 3LSB$		Voltage Range: $\pm 8LSB$ , Current Range: $\pm 20LSB$	Voltage Output: $\pm 3LSB$ , Current Output: $\pm 5LSB$	Voltage Output: $\pm 18LSB$ , Current Output: $\pm 18LSB$
Conversion Speed (Max.)	Channels $\times 10\mu sec/ch + 20\mu sec^{*3}$		Voltage Input: Channels $\times 10\mu sec/ch + 20\mu sec^{*3}$ , Current Input: Channels $\times 40\mu sec/ch + 20\mu sec^{*3}$	Voltage Output: $10\mu sec^{*4}$ , Current Output: $20\mu sec^{*4}$	
Buffer Memory	256K data (262,144 data)				
Sampling Timer	10 $\mu sec$ ~1,073,741,824 $\mu sec$				
Connector	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]	FK-MC1.5/12-ST-3.81 [PHOENIX CONTACT]
USB Speed	12Mbps <Full Speed>, 480Mbps <High Speed>				
Power Consumption (Max.)	5VDC 650mA <sup>*1</sup>		5VDC 600mA <sup>*1</sup>	5VDC 700mA <sup>*1</sup>	5VDC 800mA <sup>*1</sup>
Dimensions (mm)	50.4(W) $\times$ 64.7(D) $\times$ 94.0(H)				
Weight (main unit)	100g				
Included AC Adapter (POA-AD22)	AC90~264V, DC5.0V $\pm$ 5%, 2.0A(Max.), Cable length: approx. 1.4m				
Included cable length	USB cable 1.8m				
Options	Applicable Module <sup>*2</sup>	ADI12-8(FIT)GY	ADI16-4(FIT)GY	DAI12-4(FIT)GY	DAI16-4(FIT)GY
	Applicable Power Supply <sup>*2</sup>	POA200-20, POW-AD13GY, POW-AD22GY, POW-DD10GY, POW-DD43GY			

Note:

\*1: Please use attached AC adapter or optional power supply unit. \*2: Please visit our web site for the details of the Applicable Module.

\*3: This numerical indicates the conversion speed for A/D converter.

[ADI16-4(USB)] The minimum executable sampling cycle is from approx. 200 $\mu$ sec (single channel sampling) to 1msec (16 channel sampling), depends on internal processing time of this module.[ADI12-8(USB)GY] The minimum executable sampling cycle is from approx. 600 $\mu$ sec (single channel sampling) to 2msec (32 channel sampling), depends on internal processing time of this module.

\*4: This numerical indicates the settling time of D/A converter.

[DAI16-4(USB)] The minimum executable output cycle is from approx. 200 $\mu$ sec (single channel sampling) to 1msec (16 channel sampling), depends on internal processing time of this module.[DAI12-4(USB)GY] The minimum executable output cycle is from approx. 400 $\mu$ sec (single channel sampling) to 1msec (16 channel sampling), depends on internal processing time of this module.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

## A-30

Lineup

Measurement Products

F series Feature

L series Feature

E series Feature

PCI Express

PCI

ISA

PCMCIA

Card Bus

USB

# B

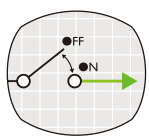
## Digital Input/ Output

### DIGITAL I/O

Interface boards that provide computers with digital signal I/O functions.

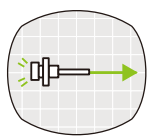
They monitor the status (ON/OFF) of relays, operating switches and measurement devices as well as controlling (ON/OFF) lamps, 7-segment display units and relays.

These boards can also be used as an interface for conducting digital communication with controllers such as PLC or microcomputers.



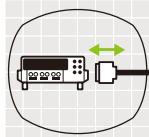
**Application**  
Monitoring status of contact points and switches

**Description**  
Inputs ON/OFF signals



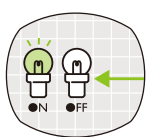
**Application**  
Measurements of individual sensors

**Description**  
Inputs BCD / binary data



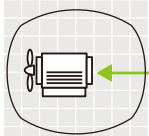
**Application**  
Connecting with measurement devices / controllers

**Description**  
Controls BCD / binary data



**Application**  
Controlling Relays / lamps

**Description**  
Outputs ON/OFF signals



**Application**  
Motor control

**Description**  
Controls BCD / binary data

### Pictograms

#### Bus Specifications

##### PCI Express

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

##### PCI

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

##### USB 2.0

Product is USB standard compliant and can be used in the computer equipped with USB2.0/1.1 ports. Supports USB2.0 high-speed mode(480Mbps).

##### Card Bus

Product supports Cardbus that is a 32-bit PC card standard bus.

##### PCMCIA

Product supports 16-bit PC card standard.

#### Board Size

**Low Profile**

Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

#### Supported Connectors

**100-pin**  
0.8mm Pitch

**68-pin**  
0.8mm Pitch

**37-pin**  
D-SUB

**96-pin**  
Half Pitch

**50-pin**  
Mini-Ribbon

Indicates the number of pins and shapes of connectors used for external connection. The supported cables and accessories will vary depending on these specifications.

CONTEC provides a wide variety of cables and accessories to suit your needs.

Cables with connectors on both ends  
Accessories (Terminal block, etc.)

**J-01**

Cables with a connector on one end  
Connector set

**K-01**

#### I/O Points

**Digital input**  
nnn

Maximum number of input channels

**Digital output**  
mmmm

Maximum number of output channels

**Bi-direct**  
XX

Maximum number of points(bits) that can be input / output

#### Supported softwares

##### Windows Driver

API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

##### Linux Driver

API-TOOL Drivers for Linux are provided. The license-free driver software (both development and runtime) that provide commands to interface boards or cards using module-style device drivers and the shared library.

##### LabVIEW

VI-DAQ, a VI library for use with National Instruments' LabVIEW can be downloaded from our Web site. With function format similar to that of LabVIEW's "Data Acquisition VI", VI-DAQ set-up is not complicated therefor simplifying device operation.

For the details, please visit: <http://www.contec.com/mldaq/>

#### Points

##### Isolated

I/O interface and internal logical circuits are insulated by Opto-couplers and relay contacts in order to prevent electrical interference with the PC. Requires additional power to drive external circuits.

##### High Voltage

I/O interface supports high-voltage circuits [those exceeding 24VDC]. Some have an output interface that supports AC.

##### Non-isolated

I/O interface and internal logical circuits are not insulated. These respond at a higher speed than insulated devices.

##### Hi-Speed Opto-coupler

Uses a high-speed Opto-coupler that enables a response of 1μ to 5μsec.

##### Power On board

A power source is integrated on the device in order to drive input circuit Opto-couplers and I/O circuits. These are useful when additional power sources aren't available.

##### Digital Filter

Disables level (ON/OFF) changes that take place faster than the set value and prevents incorrect input due to noise and chattering.

##### Negative Common

I/O interface supports a current sourcing circuit. It is called "negative common" because the common polarity is reverse to that of a current sinking circuit.

##### Surge Protection

Output interface is equipped with a Zener diode that prevents damage and / or malfunction due to a surge in voltage and incoming current.

##### Non polarity

I/O interface supports both current sinking circuit and current sourcing circuit.

##### Surge & Overcurrent Protection

Output interface is equipped with both a Zener diode which prevents damage and / or malfunction due to a surge in voltage and incoming current and a policing switch which guards against damage due to any current overages.

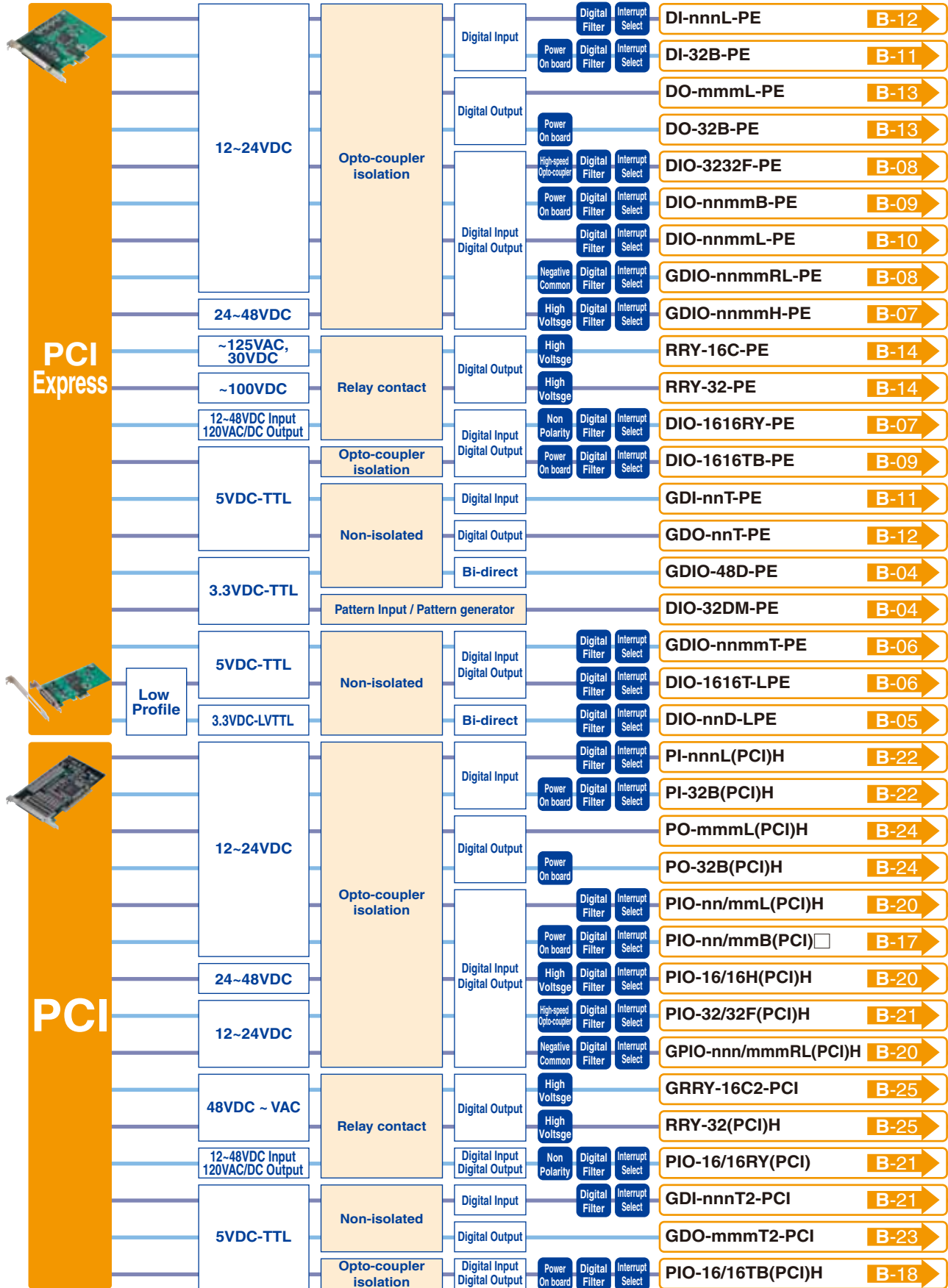
##### Interrupt Select

Interrupt request to PC is selectable from rising (Low to High) or falling (High to Low).

## Digital I/O

## Product Lineup

You can choose from a variety of models according to your desired bus, I/O points and I/O type.



Analog I/O

Digital I/O

B-02

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB





## Digital I/O

PCI Express

96-pin  
Half PitchBi-direct  
32Non-  
isolatedDigital  
Filter

Windows Driver

Linux Driver

32Ch High Speed Bi-directional TTL-Level  
Digital I/O Board for PCI Express  
**DIO-32DM-PE**

- 32 signals (configurable as 32 input signals, 16 I/O signals or 32 output signals)
- Stores digital signals at a sampling rate of 20 MHz - capable of detecting patterns (pattern input) and being used as a 20 MHz digital pattern generator (pattern output)
- Equipped with sync signal control connection. By using a sync signal cable, multiple boards can operate in sync with one another.



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

PCI &amp; PCI Express

96-pin  
Half PitchBi-direct  
48Non-  
isolatedDigital  
Filter

Windows Driver

Linux Driver

Non-isolated Bi-directional TTL-Level  
Digital I/O Board for PCI Express  
**GDIO-48D-PE**

- 48-point (TTL-level, Positive logic) bi-directional digital I/O, i8255 Mode 0-compatible
- All input signals (Max. 48 points) can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux is provided
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-48D(PCI)



Model	DIO-32DM-PE	GDIO-48D-PE	
Input channels	-		
Output channels	-		
I/O channels	32	48	
Input specifications	Type	LVTTL level (74LV245A or equivalent) (positive logic) *Compatible with 5V TTL level input	TTL-level (Positive logic)
	Signal Level	3.3VDC	5VDC
	Interrupts	Errors and various factors, one interrupt request line as INTA	48 interrupt signals combine to one interrupt request signal as INTA
	Resistance	-	Pull-up 10kΩ
Output specifications	Type	LVTTL level (74LV245A or equivalent) (positive logic)	TTL-level (Positive logic)
	Rating	3.3VDC 8mA	5VDC IOL=24mA, IOH=-15mA
	Response Time (Max.)	50nsec (max)	200nsec
Internal Power	-		
Wiring Distance	1.5m (max)	1.5m (depending on wiring environment)	
I/O Address	Occupies 2 : any 32- and 64-byte boundary	Occupies 32 ports	
Power Consumption (Max.)	3.3V 400mA	3.3VDC 1000mA (Max.)	
Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a x1 / 176.41(L) x 106.68(H)	PCI Express Base Specification Rev. 1.0a x1 169.33 (L) x 110.18(H)	
Connector	Sync. Section: 2 x PS-10PE-D4L1-B1 [JAE] or equivalent Digital Section: PCR-96LMD [HONDA] or equivalent	CN1: 96pin female half-pitch PCR-96LMD [HONDA Tsushin Kogyo] or equivalent CN2, CN3: 50pin box header connector PS-50PE-D4T1-B1A[JAE] or equivalent	
	Accessories	EPD-96A, EPD-96, DTP-64(PC), DICT-96S, DICT-96F	
Options	Cables / Connectors	PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCA96P-1.5, PCB96P-1.5, CN5-H96F	
		PCB96P-1.5, GPCB96PS[PCB96PS]-0.5P/1.5P, PCA96P-1.5P, PCA96PS-0.5P/1.5P, PCA50J-1.5, CN5-H96F	

B-04

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

Low  
Profile68-pin  
0.8mm PitchBi-direct  
48Non  
IsolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

### Non-isolated Bi-directional TTL-Level Digital I/O Board for PCI Express Low Profile DIO-48D-LPE

- 48-point bidirectional digital I/O i8255 Mode 0-compliant
- 200nsec high-speed response with non-isolated LVTTTL level I/O.
- All 48 input signals can be used as interrupts, allow/forbid interrupts and select interruption trigger edge in bit unit.
- Digital filtering function to prevent input error caused by noise and/or chattering.
- Input/output switching can be set via application software
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Equipped with function equivalent to those of PCI bus-compatible board PIO-48D(PCI), PIO-48D(LPCI)H and CardBus-compliant PIO-48D(CB)H
- Connector pin assignment when using cable DIO-68M/96F is compatible with that of PIO-48D(PCI)when using PCB96P-\*\* and PCB96PS-\*\*P series(optional cables).



## PCI & PCI Express

Low  
Profile68-pin  
0.8mm PitchBi-direct  
96Non-  
IsolatedDigital  
Filter

Windows Driver

Linux Driver

### Non-isolated Bi-directional TTL-Level Digital I/O Board for PCI Express Low Profile GDIO-96D-LPE

[DIO-96D-LPE]

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 96-point (TTL-level, Positive logic) bidirectional digital I/O i8255 Mode 0-compliant
- All input signals (Max. 96 points) can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux is provided



## PCI Express

37-pin  
D-SUBInput  
16Output  
16Non  
IsolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

### Non-isolated Digital I/O board for PCI Express GDIO-1616T-PE

[DIO-1616T-PE]

- 16 TTL-level input, 16 open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16T(PCI)H



B-05

Model	DIO-48D-LPE	GDIO-96D-LPE	GDIO-1616T-PE	
Input channels	-		16	
Output channels	-		16	
I/O channels	48 (all available for interrupts)	96	-	
Input specifications	Type	LVTTL level (positive logic)	LVTTL-level (Positive logic)	TTL-level (Negative logic)
	Signal Level	3.3VDC	5VDC	5VDC
	Interrupts	48 interrupt signals combine to one interrupt request signal as INTA	96 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	33Ω	-	Pull-up: 10kΩ
	Type	LVTTL level (positive logic)	LVTTL-level (Positive logic)	Open collector (Negative logic)
	Rating	3.3VDC I <sub>OL</sub> =8mA I <sub>OH</sub> =-8mA	5VDC I <sub>OL</sub> =24mA, I <sub>OH</sub> =-15mA	30VDC 40mA
Response Time (Max.)	Within 200nsec	200nsec		
Internal Power	-			
Wiring Distance	Approx. 1.5m (depending on wiring environment)	1.5m (depending on wiring environment)	1.5m	
I/O Address	Any 32-byte boundary	Occupies 32 ports	Any 32-byte boundary	
Power Consumption (Max.)	3.3VDC 300mV	3.3VDC 300mA (Max.)	3.3VDC 300mA	
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×67.90(H)			PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×110.18(H)
Connector	68 pin 0.8mm pitch connector: HDRA-E68LFD+ [HONDA TSUSHIN KOGYO CO., LTD.] or equivalent		68-pin 0.8mm pitch: HDRA-E68W1LFD+ [HONDA Tsushin Kogyo] or equivalent	37-pin female D-type: DCLC-J37SAF-20L9 [JAE] or equivalent
	Accessories DTP-64 (PC), EPD-96 EPD-68A		EPD-96A, EPD-96, DTP-64(PC), EPD-68A, DICT-96S, DICT-96F	
Options	Cables / Connectors DIO-68M/96F, PCA68PS-0.5P, PCA68PS-1.5P		GPCA68PS [PCA68PS] -0.5P/1.5P, PCB68PS-0.5P/1.5P, DIO-68M/96F	
			DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5-D37M	

## Digital I/O

## PCI Express

Low Profile

50-pin  
Mini-RibbonInput  
16Output  
16Non  
IsolatedDigital  
Filter

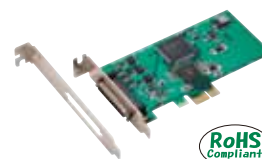
Windows Driver

Linux Driver

LabVIEW

Non-isolated Digital I/O board for  
PCI Express Low profile  
**DIO-1616T-LPE**

- 16 TTL level input, 16 open collector output
- All input signals can be used as interrupts, allow/forbid interrupts and select interruption trigger edge in bit unit.
- Digital filtering function to prevent input error caused by noise and/or chattering
- Low Profile PCI - compliant (includes bracket for use in standard PCI slot)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16T(LPCI)H



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

96-pin  
Half PitchInput  
32Output  
32Non  
IsolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Non-isolated Digital I/O board for  
PCI Express  
**GDIO-3232T-PE**  
**[DIO-3232T-PE]**

- 32 TTL-level input, 32 open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32T(PCI)H



## PCI Express

100-pin  
0.8mm PitchInput  
64Output  
64Non  
IsolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Non-isolated Digital I/O board for  
PCI Express  
**GDIO-6464T-PE**  
**[DIO-6464T-PE]**

- 64 TTL-level input, 64 open collector output
- 16 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering



## B-06

Model	DIO-1616T-LPE	GDIO-3232T-PE	GDIO-6464T-PE	
Input channels	16 (all available for interrupts)	32	64 (1 common every 16 channels)	
Output channels	16	32	64 (1 common every 16 channels)	
I/O channels	-			
Input specifications	Type	TTL level input (Negative logic)	TTL-level (Negative logic)	TTL-level (Negative logic)
	Signal Level	5VDC		
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	10kΩ (1 TTL load)	Pull-up: 10kΩ	10kΩ (1 TTL load)
	Type	Open collector (Negative logic)		
	Rating	30VDC 40mA		30VDC 40mA (per channel)
Response Time (Max.)	Within 200nsec	200nsec	within 200nsec (depending on Pull-up Resistance value)	
Internal Power	-			
Wiring Distance	Approx. 1.5m (depending on wiring environment)	1.5m	1.5m (depending on wiring environment)	
I/O Address	Any 32-byte boundary			
Power Consumption (Max.)	3.3VDC 300mV	3.3VDC 300mA	3.3VDC 800mA	
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×67.90(H)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×110.18(H)		
Connector	50-Pin Mini-Ribbon Connector: 10250-52A2JL [3M] or equivalent	96-pin female half-pitch: PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch x2: HDRA-E100W1LFD17EC-SL+ [HONDA Tsushin Kogyo] or equivalent	
Options	Accessories	EPD-50A, DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32 (PC)E	EPD-96, DTP-64(PC), CM-64(PC)E, EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CCB-96	EPD-100A, EPD-96A, EPD-96, DTP-64(PC), CCB-96, CM-64(PC)E, EPD-37A, EPD-37, DTP-3A, DTP-4A
	Cables / Connectors	PCB50PS, PCA50PS, PCE50/37PS-0.5P	PCA96P-1.5, PCB96P-1.5, PCA96PS-0.5P/1.5P, PCB96PS-0.5P/1.5P, PCB96WS-1.5P, CN5-H96F	PCB100PS-0.5/1.5, PCB100/96PS-1.5, PCA100P-1.5, PCB100WS-1.5

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

# Digital I/O

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

37-pin  
D-SUBInput  
16Output  
16

Isolated

High  
VoltageDigital  
FilterNon-  
Polar

Windows Driver

Linux Driver

### High-voltage Non-polarity Isolated Digital I/O Board for PCI Express DIO-1616RY-PE

- 16 opto-isolated input (for both current sink and current source output), 16 solid state relay output
- Supports high-voltage input range: 12 to 48VDC, output: 120VAC/VDC
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-16/16RY(PCI)



## PCI Express

37-pin  
D-SUBInput  
16Output  
16

Isolated

High  
VoltageDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

### Opto-Isolated Digital I/O for PCI Express GDIO-1616H-PE [DIO-1616H-PE]

- 16 opto-isolated input , 16 opto-isolated open collector output
- All input points can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-16/16H(PCI)H



## PCI Express

96-pin  
Half PitchInput  
32Output  
32

Isolated

High  
VoltageDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

### Opto-Isolated Digital I/O for PCI Express GDIO-3232H-PE [DIO-3232H-PE]

- 32 opto-isolated input , 32 opto-isolated open collector output
- All input points can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-32/32H(PCI)H



B-07

Model	DIO-1616RY-PE	GDIO-1616H-PE	GDIO-3232H-PE
Input channels	16 (all available for interrupts)	16 (all available for interrupts) (1 common)	32 (all available for interrupts) (1 common every 16 channels)
Output channels	16 (1 common )	16 (1 common)	32 (1 common every 16 channels)
Input specifications	Type	Opto-Isolated (for sink current output / current source output)	
	Signal Level	12 ~ 24VDC (±10%) or 24 ~ 48VDC (±10%)	24 ~ 48VDC (±10%)
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA
	Resistance	3kΩ<12~24VDC>, 6kΩ<24~48VDC>	15kΩ
Output specifications	Type	Solid state Relay	Opto-Isolated Open Collector (Current sinking type) (Negative logic)
	Rating	120V AC/DC 100mA	60VDC 100mA (per channel)
Response Time (Max.)	Input: 200μsec, Output: 1.0msec		
Internal Power	-		
Wiring Distance	50m (depending on wiring environment)		
I/O Address	Occupies 32 ports		
Power Consumption (Max.)	5VDC 550mA	3.3VDC 310mA	3.3VDC 400mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×105.68(H)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)
Connector	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent		
Options	Accessories	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, DICT-37S, DICT-37F	ACX-PAC(W32) EPD-37A, EPD-37, DTP-3A, DTP-4A, DICT-37S, DICT-37F
	Cables / Connectors	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.



## Digital I/O

## PCI Express

37-pin  
D-SUBInput  
16Output  
16

Isolated

Negative  
CommonDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

Negative-Common Opto-Isolated  
Digital I/O for PCI Express

**GDIO-1616RL-PE**  
**[DIO-1616RL-PE]**

- 16 opto-isolated input , 16 opto-isolated output
- All input points can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board GPIO-16/16RL(PCI)H



## PCI Express

96-pin  
Half PitchInput  
32Output  
32

Isolated

Negative  
CommonDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

Negative-Common Opto-Isolated  
Digital I/O for PCI Express

**GDIO-3232RL-PE**  
**[DIO-3232RL-PE]**

- 32 opto-isolated input , 32 opto-isolated output
- All input points can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board GPIO-32/32RL(PCI)H



## PCI Express

96-pin  
Half PitchInput  
32Output  
32

Isolated

High Speed  
Opto couplerDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

High-speed isolated digital I/O  
board for PCI Express

**DIO-3232F-PE**

- 32 opto-isolated input , 32 opto-isolated open collector output with the high speed of 5 μsec
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32F(PCI)H



Model	GDIO-1616RL-PE		GDIO-3232RL-PE	DIO-3232F-PE
Input channels	16 (all available for interrupts) (1 common)		32 (all available for interrupts) (1 common every 16 channels)	32 (1 common every 16 channels)
Output channels	16 (1 common )		32 (1 common every 16 channels)	32 (1 common every 16 channels)
Input specifications	Type	Opto-Isolated (for source current output) (Negative logic)		Opto-Isolated (for sink current output) (Negative logic)
	Signal Level	12 ~ 24VDC (±10%)		12 ~ 24VDC
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	4.7kΩ		2.2kΩ
Output specifications	Type	Opto-Isolated Open Collector (Current sourcing type) (Negative logic)		Opto-Isolated Open Collector (Current sinking type) (Negative logic)
	Rating	35VDC 100mA (per channel)		
Response Time (Max.)	within 200μsec			5μsec
Internal Power	-			
Wiring Distance	50m (depending on wiring environment)			
I/O Address	Occupies 32 ports			Any 32-byte boundary
Power Consumption (Max.)	3.3VDC 350mA		3.3VDC 400mA	3.3VDC 500mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×105.68(H)		PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)	
Connector	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent		96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent
Options	Accessories	EPD-37A, EPD-37, DTP-3A, DTP-4A, DICT-37S, DICT-37F	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CCB-96, DICT-37S, DICT-37F, DICT-96S, DICT-96F	DTP-3A, DTP-4A, DTP-64(PC), EPD-37A, EPD-37, EPD-96A, EPD-96, CCB-96, CM-32(PC)E, CM-64(PC)E
	Cables / Connectors	PCA37P, PCB37P, PCB37PS, PCA37PS, CN5-D37M	PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

Analog I/O

Digital I/O

Serial Communication

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

B-08

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

37-pin  
D-SUBInput  
16Output  
16

Isolated

Power On  
BoardDigital  
FilterSurge & Overcurrent  
Protection

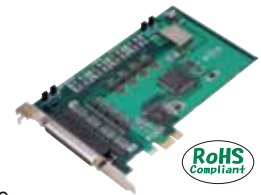
Windows Driver

Linux Driver

LabVIEW

Isolated Digital I/O board for PCI Express with built-in power supply  
**DIO-1616B-PE**

- 16 opto-isolated input , 16 opto-isolated open collector output
- On-board power supply (12VDC 240mA) to drive the input circuit opto coupler
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16B(PCI)H

RoHS  
Compliant

## PCI Express

96-pin  
Half PitchInput  
32Output  
32

Isolated

Power On  
BoardDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

Isolated Digital I/O board for PCI Express with built-in power supply  
**DIO-3232B-PE**

- 32 opto-isolated input , 32 opto-isolated open collector output
- On-board power supply (12VDC 240mA) to drive the input circuit opto coupler
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32B(PCI)H

RoHS  
Compliant

## PCI Express

37-pin  
D-SUBInput  
16Output  
16

Isolated

Power On  
BoardDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Digital I/O Board with High-Speed Opto-Isolation for PCI Express  
**DIO-1616TB-PE**

- 16 opto-isolated TTL-level input, 16 opto-isolated TTL-level output
- On-board battery (5VDC 600mA) to drive the input circuit photocoupler
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16TB(PCI)H

RoHS  
Compliant

B-09

Model	DIO-1616B-PE	DIO-3232B-PE	DIO-1616TB-PE	
Input channels	16 (1 common every 16 channels)	32 (1 common every 16 channels)	16 (1common )	
Output channels	16 (1common )	32 (1 common every 16 channels)	16 (1common )	
Input specifications	Type	Opto-Isolated (for sink current output) (Negative logic)		Opto-isolated TTL-level (Negative logic)
	Signal Level	12 ~ 24VDC (±10%)		5VDC
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	All interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	4.7kΩ		1.1kΩ
	Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)		Opto-Isolated TTL-level (Negative logic)
	Rating	35VDC 100mA (per channel)		5VDC avg. 6.4mA (4 TTL load) per channel
Response Time (Max.)	within 200μsec		1μsec	
Internal Power	-		5VDC 600mA	
Wiring Distance	50m		50m (depending on wiring environment)	
I/O Address	Any 32-byte boundary			
Power Consumption (Max.)	3.3VDC 350mA, 12VDC 350mA (On-board) 3.3VDC 350mA (External)	3.3VDC 400mA, 12VDC 350mA (On-board) 3.3VDC 400mA (External)	3.3VDC 550mA, 12VDC 350mA (On-board) 3.3VDC 550mA (External)	
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)			
Connector	37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent EPD-96A, EPD-96, DTP-64(PC) CM-64(PC)E, DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E, CCB-96	37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	
Options	Accessories	DTP-3A, DTP-4A, EPD-37A, EPD-37 , CM-32(PC)E	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E	
	Cables / Connectors	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	

## Digital I/O

## PCI Express

100-pin  
0.8mm PitchInput  
64Output  
64

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

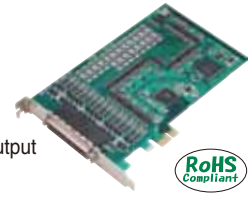
Windows Driver

Linux Driver

LabVIEW

Isolation Digital I/O board for  
PCI Express  
**DIO-6464L-PE**

- 64 opto-isolated input , 64 opto-isolated open collector output
- 16 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-64/64L(PCI)H



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

96-pin  
Half PitchInput  
32Output  
32

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

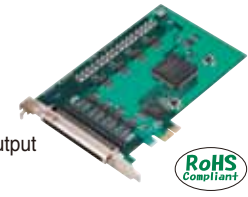
Windows Driver

Linux Driver

LabVIEW

Isolated Digital I/O board for  
PCI Express  
**DIO-3232L-PE**

- 32 opto-isolated input , 32 opto-isolated open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-32/32L(PCI)H



## PCI Express

37-pin  
D-SUBInput  
16Output  
16

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

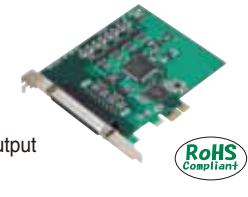
Windows Driver

Linux Driver

LabVIEW

Isolated Digital I/O board for  
PCI Express  
**DIO-1616L-PE**

- 16 opto-isolated input , 16 opto-isolated open collector output
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PIO-16/16L(PCI)H



## B-10

Model	DIO-6464L-PE	DIO-3232L-PE	DIO-1616L-PE	
Input channels	64 (1 common every 16 channels)	32 (all available for interrupts)	16 (all available for interrupts)	
Output channels	64 (1 common every 16 channels)	32 (1common )	16 (1common )	
Type	Opto-Isolated (for sink current output) (Negative logic)			
Signal Level	12 ~ 24VDC (±10%)			
Input specifications	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA	
Resistance	4.7kΩ			
Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)			
Rating	35VDC 100mA (per channel)			
Response Time (Max.)	within 200μsec			
Internal Power	-			
Wiring Distance	50m (depending on wiring environment)	50m		
I/O Address	Any 32-byte boundary			
Power Consumption (Max.)	3.3VDC 600mA	3.3VDC 400mA	3.3VDC 350mA	
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)			
Connector	100-pin 0.8mm female half-pitch x2: HDRA-E100W1LFD1EC-SL+ (HONDA Tsushin Kogyo) or equivalent	96-pin female half-pitch: PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent	37-pin female D-type: DCLC-J37SAF-20L9 [JAE] or equivalent	
Options	Accessories DTP-3A, DTP-4A, DTP-64(PC), EPD-96A, EPD-96, CCB-96, CM-64(PC)E	EPD-96A, EPD-96, DTP-64(PC), CM-64(PC)E, DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E, CCB-96	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E	
Cables / Connectors	PCB100PS, PCB100/96PS, PCA100P, PCB100WS	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M	

Notes

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;ET Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

37-pin  
D-SUBInput  
32Non-  
isolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Non-isolated digital input  
board for PCI Express

**GDI-32T-PE**  
**[DI-32T-PE]**

- 32 TTL-level input
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux bundled

RoHS  
Compliant

## PCI Express

96-pin  
Half PitchInput  
64Non-  
isolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Non-isolated digital input  
board for PCI Express

**GDI-64T-PE**  
**[DI-64T-PE]**

- 64 TTL-level input
- 32 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux bundled

RoHS  
Compliant

## PCI Express

100-pin  
0.8mm PitchInput  
128Non-  
isolatedDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Non-isolated digital input  
board for PCI Express

**GDI-128T-PE**  
**[DI-128T-PE]**

- 128 TTL-level input
- 16 input signals combine to one interrupt as INTA
- Fast response time (within 200nsecs)
- Digital filtering function to prevent input error caused by noise and/or chattering

RoHS  
Compliant

## PCI Express

37-pin  
D-SUBInput  
32

Isolated

Power  
On BoardDigital  
Filter

Windows Driver

Linux Driver

LabVIEW

Opto-Isolation Digital Input for PCI  
Express(On-board Power Supply)

**GDI-32B-PE**  
**[DI-32B-PE]**

- 32 opto-isolated input (for sink current output)
- On-board battery (12VDC 240mA) to drive the input circuit photocoupler
- All input points can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PI-32B(PCI)H

RoHS  
Compliant

B-11

Model	GDI-32T-PE	GDI-64T-PE	GDI-128T-PE	GDI-32B-PE
Input channels	32 (1 common)	64 (1 common)	128 (1 common)	32 (all available for interrupts) (1 common every 16 channels)
Output channels	-	-	-	-
Input specifications	Type	TTL-level (Negative logic)		Opto-Isolated (for sink current output) (Negative logic)
	Signal Level	5VDC		12 ~ 24VDC (±10%)
	Interrupts	32 interrupt signals combine to one interrupt request signal as INTA		16 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	Pull-up 10kΩ (1 TTL load)		4.7kΩ
	Type	-		-
	Rating	-		-
Response Time (Max.)	within 200nsec	200 nsec		within 200μsec
	Internal Power	5VDC, Current sum of 16 Vcc pin is 2A(Max.)		12VDC 240mA
	Wiring Distance	1.5m (depending on wiring environment)		50m (depending on wiring environment)
I/O Address	Occupies 32 ports	5VDC 200mA / 3.3VDC 400mA		Occupies 32 ports
	Power Consumption (Max.)	5VDC 200mA / 3.3VDC 300mA		Internal: 3.3VDC 350mA, 12VDC 350mA; External: 3.3VDC 350mA
	Bus / Dimensions (mm)	PCI(32bit,33MHz,5V or 3.3V)/121.69(L)×105.68(H) / PCI Express Base Specification Rev. 1.0a ×1 / 121.69(L)×105.68(H)		PCI Express Base Specification Rev. 1.0a ×1 / 169.33(L) ×110.18(H)
Connector	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent	96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent		37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent
	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, DICT-37S, DICT-37F	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96, DICT-37S, DICT-37F, DICT-96S, DICT-96F		EPD-100A, EPD-96A, EPD-96, EPD-37A, EPD-37, DTP-64(PC), DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96, DICT-37S, DICT-37F, DICT-96S, DICT-96F
	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F		PCA100P, PCB100PS, PCB100WS, PCB100/96PS
Options	Accessories	-		EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, DICT-37S, DICT-37F
	Cables / Connectors	-		PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.



## Digital I/O

## PCI Express

37-pin  
D-SUBInput  
32

Isolated

Digital  
Filter

Windows Driver

Linux Driver

LabVIEW

Isolated Digital Input board  
for PCI Express  
**DI-32L-PE**

- 32 opto-isolated input
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PI-32L(PCI)H

RoHS  
Compliant

## PCI Express

96-pin  
Half PitchInput  
64

Isolated

Digital  
Filter

Windows Driver

Linux Driver

LabVIEW

Isolated Digital Input board  
for PCI Express  
**DI-64L-PE**

- 64 opto-isolated input
- 32 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PI-64L(PCI)H

RoHS  
Compliant

## PCI Express

100-pin  
0.8mm PitchInput  
128

Isolated

Digital  
Filter

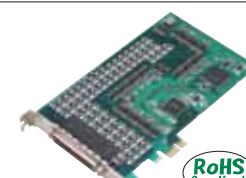
Windows Driver

Linux Driver

LabVIEW

Isolated Digital Input board  
for PCI Express  
**DI-128L-PE**

- 128 opto-isolated input
- 16 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PI-128L(PCI)H

RoHS  
Compliant

## PCI Express

37-pin  
D-SUBOutput  
32Non-  
isolated

Windows Driver

Linux Driver

LabVIEW

Non-isolated digital output  
board for PCI Express  
**GDO-32T-PE**  
**[DO-32T-PE]**

- 32 open collector output
- Driver library for Windows/Linux bundled

RoHS  
Compliant

B-12

Model	DI-32L-PE	DI-64L-PE	DI-128L-PE	GDO-32T-PE
Input channels	32 (1 common every 16 channels)	64 (1 common every 16 channels)	128 (1 common every 16 channels)	-
Output channels	-	-	-	32 (1 common)
Input specifications	Type	Opto-Isolated (for sink current output) (Negative logic)		-
	Signal Level	12 ~ 24VDC (±10%)		-
	Interrupts	32 interrupt signals combine to one interrupt request signal as INTA		16 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	4.7kΩ		Pull-up 10kΩ (1 TTL load)
	Type	-		Open Collector (Negative logic)
	Rating	-		30VDC 40mA (per channel)
Response Time (Max.)	200μsec			within 200nsec (according to Pull-up resistance)
Internal Power	-			
Wiring Distance	50m (depending on wiring environment)			1.5m (depending on wiring environment)
I/O Address	Any 32-byte boundary			Occupies 32 ports
Power Consumption (Max.)	3.3VDC 350mA			5VDC 200mA / 3.3VDC 550mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L) x110.18(H)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L) x110.18(H)		PCI(32bit, 33MHz, 5V or 3.3V) / 121.69(L) x 105.68(H) / PCI Express Base Specification Rev. 1.0a x1 / 121.69(L) x 105.68(H)
Connector	37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch x2: HDRA-E100W1LFD11EC-SL+ [HONDA Tsushin Kogyo] or equivalent	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent
Options	Accessories	EPD-96A, EPD-96, DTP-64(PC), CM-64(PC)E, EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CCB-96	DTP-3A, DTP-4A, DTP-64(PC), EPD-37A, EPD-37, EPD-100A, EPD-96A, EPD-96, CCB-96, CM-64(PC)E	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, DICT-37S, DICT-37F
	Cables / Connectors	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F	PCA37P-1.5, PCA37PS-0.5P/1.5P, PCB37P-1.5, PCB37PS-0.5P/1.5P, CN5-D37M

Analog I/O

Digital I/O

Serial

Communication

GPIO

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB



# Digital I/O

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;ET Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

96-pin  
Half PitchOutput  
64Non-  
isolated

Windows Driver

Linux Driver

LabVIEW

Non-isolated digital output  
board for PCI Express

**GDO-64T-PE**  
[DO-64T-PE]

- 64 open collector output
- Driver library for Windows/Linux bundled



## PCI Express

100-pin  
0.8mm PitchOutput  
128Non-  
isolated

Windows Driver

Linux Driver

LabVIEW

Non-isolated digital output  
board for PCI Express

**GDO-128T-PE**  
[DO-128T-PE]

- 128 TTL-level output
- Fast response time (within 200nsecs)
- Driver library for Windows/Linux bundled



## PCI Express

37-pin  
D-SUBOutput  
32

Isolated

Power  
On BoardDigital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

Opto-Isolation Digital Output for  
PCI Express(On-board Power Supply)  
**DO-32B-PE**

- 32 opto-isolated open collector output (Current sinking type)
- On-board battery (12VDC 240mA) to drive the input circuit photocoupler
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PO-32B(PCI)H



## PCI Express

37-pin  
D-SUBOutput  
32

Isolated

Surge & Overcurrent  
Protection

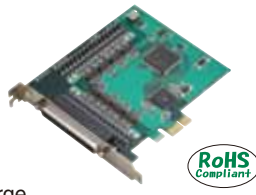
Windows Driver

Linux Driver

LabVIEW

Isolated Digital Output board  
for PCI Express  
**DO-32L-PE**

- 32 opto-isolated open collector output
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PO-32L(PCI)H



B-13

Model	GDO-64T-PE	GDO-128T-PE	DO-32B-PE	DO-32L-PE
Input channels	-	-	-	-
Output channels	64 (1 common)	128 (1 common)	16 (all available for interrupts)	32 (1 common every 16 channels)
Input specifications	Type	-	-	-
	Signal Level	-	-	-
	Interrupts	-	-	-
Output specifications	Resistance	Pull-up 10kΩ (1 TTL load)	-	47kΩ
	Type	Open Collector (Negative logic)	-	Opto-Isolated Open Collector (Current sinking type) (Negative logic)
	Rating	30VDC 40mA (per channel)	-	35VDC 100mA (per channel)
Response Time (Max.)	within 200nsec (according to Pull-up resistance)	200 nsec	within 200μsec	200μsec
Internal Power	-	5VDC, Current sum of 16 Vcc pin is 2A(Max.)	12VDC 240mA	-
Wiring Distance	1.5m (depending on wiring environment)	Approx. 1.5m (according to cable)	50m (depending on wiring environment)	-
I/O Address	Occupies 32 ports	-	-	Any 32-byte boundary
Power Consumption (Max.)	5VDC 310mA / 3.3VDC 800mA	5VDC 500mA / 3.3VDC 1400mA	Internal: 3.3VDC 380mA, 12VDC 350mA; External: 3.3VDC 380mA	3.3VDC 450mA
Bus / Dimensions (mm)	PCI(32bit,33MHz,5V or 3.3V)/121.69(L)×105.68(H) / PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×105.68(H)	HDRA-E100W1L-FDT1EC-SL	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×110.18(H)
Connector	96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	[HONDA Tsushin Kogyo] or equivalent	37pin female D-type, DCLC- J37SAF-20L9E [JAE] or equivalent	37-pin female D-type: DCLC- J37SAF-20L9E [JAE] or equivalent
Options	Accessories	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96, DICT-37S, DICT-37F, DICT-96S, DICT-96F	EPD-100A, EPD-96A, EPD-96, EPD-37A, EPD-37, DTP-64(PC), DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96, DICT-37S, DICT-37F, DICT-96S, DICT-96F	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, DICT-37S, DICT-37F
	Cables / Connectors	PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F	PCA100P, PCB100PS, PCB100WS, PCB100/96PS	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M

## Digital I/O

## PCI Express

96-pin  
Half PitchOutput  
64

Isolated

Surge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

Isolated Digital Output board  
for PCI Express  
DO-64L-PE

- 64 opto-isolated open collector output
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PO-64L(PCI)H

RoHS  
Compliant

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express

100-pin  
0.8mm PitchOutput  
128

Isolated

Surge & Overcurrent  
Protection

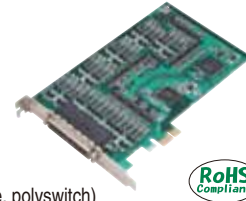
Windows Driver

Linux Driver

LabVIEW

Isolation Digital Output board  
for PCI Express  
DO-128L-PE

- 128 opto-isolated open collector output
- Output transistor has built-in circuit protection (voltage surge, zener diode, polyswitch)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board PO-128L(PCI)H

RoHS  
Compliant

## PCI Express

37-pin  
D-SUBOutput  
16

Isolated

High Voltage

Non polarity

Windows Driver

Linux Driver

Independent Common Reed Relay Contact-point  
Digital Output Board for PCI Express  
RRY-16C-PE

- 16 individual common reed relay outputs
- Output ratings: up to 125VAC/30VDC - 2A / channel
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board GRRY-16C2-PCI & RRY-16C(PCI)H

RoHS  
Compliant

## PCI Express

37-pin  
D-SUBOutput  
32

Isolated

High Voltage

Non polarity

Windows Driver

Linux Driver

Reed Relay Contact-point Digital  
Output Board for PCI Express  
RRY-32-PE

- 32 reed relay outputs
- Output ratings: up to 100VAC/VDC and 500mA per channel, 1A per common (max) for total of 8 points and 10VA (10W)
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board RRY-32(PCI)H

RoHS  
Compliant

B-14

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

Model	DO-64L-PE	DO-128L-PE	RRY-16C-PE	RRY-32-PE
Input channels	-	-	-	-
Output channels	64 (1 common every 16 channels)	128 (1 common every 16 channels)	16	32
Type	-	-	-	-
Signal Level	-	-	-	-
Interrupts	-	-	-	-
Resistance	47kΩ	-	-	-
Type	Opto-Isolated Open Collector (Current sinking type) (Negative logic)	-	Reed Relay Contact (1-make contact)	-
Rating	35VDC 100mA (per channel)	-	-	-
Maximum Power	-	-	125V(Max.)	-
Maximum Switching Current	-	-	2A	-
Contact Resistance	-	-	30mΩ or less	100V(DC)
Life Expectancy	-	-	Min. 20 million times (Switching Freq. 180 times/min)	0.5A
Response Time (Max.)	200μsec	-	7msec	150mΩ or less
Internal Power	-	-	-	Min. 200 million times
Wiring Distance	50m (depending on wiring environment)	-	-	1msec
I/O Address	Any 32-byte boundary	-	Occupies 32 ports	-
Power Consumption (Max.)	3.3VDC 350mA	3.3VDC 600mA	3.3VDC 1100mA	3.3VDC 900mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)		PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×110.18(H)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)×110.18(H)
Connector	96-pin female half-pitch: PCR-E96LMD+ [HONDA Tsushin Kogyo] or equivalent	100-pin 0.8mm female half-pitch x2: HDRA-E100W1LFD1TEC-SL+ [HONDA Tsushin Kogyo] or equivalent	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent	
Accessories	EPD-96A, EPD-96, DTP-64(PC), CM-64(PC)E, EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CCB-96	DTP-3A, DTP-4A, DTP-64(PC), EPD-37A, EPD-37, EPD-100A, EPD-96A, EPD-96, CCB-96, CM-64(PC)E	EPD-37A, EPD-37, DTP-3A, DTP-4A, DICT-37S, DICT-37F	
Cables / Connectors	PCB96PS, PCB96P, PCA96PS, PCA96P, PCB96WS, CN5-H96F	PCB100PS, PCB100/96PS, PCA100P, PCB100WS	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	

# Digital I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&E/T Ethernet IO
Bus Expansion
Accessories
Cables

PCI

96-pin Half Pitch

Bi-direct 32

Non-isolated

Bus Master

CE

Windows Driver

Linux Driver

## 32Ch Bi-directional TTL-Level Digital I/O Board for PCI GPIO-32DM(PCI)

- 32 signals(configurable as 32 input signals, 16 I/O signals or 32 output signals)
- Stores digital signals at a sampling rate of 20 MHz - capable of detecting patterns (pattern input) and being used as a 20 MHz digital pattern generator (pattern output)
- Equipped with sync signal control connection. By using a sync signal cable, multiple boards can operate in sync with one another.

API-PAC(W32) [API Function Library]

### Functions

#### Bus Master Transfer

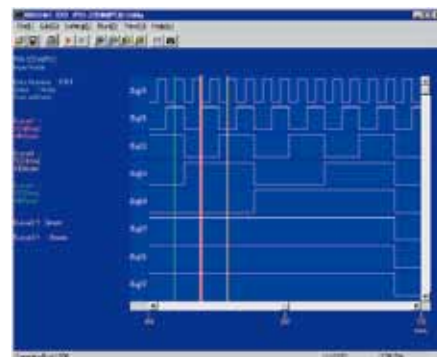
Utilizing Bus Master, the data transfer rate between the PC and CONTEC's GPIO-32/32DM(PCI) board is 80MB / sec. (133MB /sec. -max) without putting additional burden on the host computer's CPU.

#### Synchronization Control

The board is equipped with a synchronization control connector to allow easy inter-board synchronization. 16 boards (max) can be interconnected (including the master).

#### Pattern Input / Output

The GPIO-32DM(PCI) stores digital signals at a sampling rate of 20 MHz and is capable of detecting patterns (pattern input). It can also be used as a 20 MHz digital pattern generator (pattern output).



PCI

96-pin Half Pitch

Bi-direct 48

Non-isolated

Digital Filter

Windows Driver

Linux Driver

## TTL-Level Bi-directional Digital I/O board for PCI GDIO-48D2-PCI

- 48-point (TTL-level, Positive logic) bi-directional digital I/O, i8255 Mode 0-compatible
- All input signals (Max. 48 points) can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux is provided
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-48D(PCI)

GDIO-48D2-PCI



## B-15

Model	GPIO-32DM(PCI)	GDIO-48D2-PCI	
Input channels	-		
Output channels	-		
I/O channels	32	48	
Input specifications	Type	TTL level (positive logic)	
	Signal Level	5VDC	
	Interrupts	Errors and various factors, one interrupt request line as INTA	48 interrupt signals combine to one interrupt request signal as INTA
	Resistance	10kΩ	Pull-up 10kΩ
Output specifications	Type	TTL level (positive logic)	TTL-level (Positive logic)
	Rating	5VDC 24mA	5VDC IOL=24mA, IOH=-15mA
	Response Time (Max.)	50nsec (max)	200nsec
	Internal Power	-	
	Wiring Distance	1.5m (max)	1.5m (depending on wiring environment)
	I/O Address	Occupies 2 : any 32- and 64-byte boundary	Occupies 32 ports
	Power Consumption (Max.)	5VDC 700mA (max)	5VDC 600mA
	Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×106.68(H)	
Connector	Sync. Section: PS-10PE-D4L1-B1 [JAE] or equivalent × 2	CN1: 96pin female half-pitch PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	
	Digital Section: PCR-96LMD [HONDA] or equivalent	CN2, CN3: 50pin box header connector PS-50PE-D4T1-B1A[JAE] or equivalent	
Options	Accessories	EPD-96, DTP-64(PC)	EPD-96A, EPD-96, DTP-64(PC), DICT-96S, DICT-96F
	Cables / Connectors	PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCA96P-1.5, PCB96P-1.5, CN5-H96F	PC866P-1.5, GPC866PS[PCB96PS]-0.5P/1.5P, PCA96P-1.5P, PCA96PS-0.5P/1.5P, PCA50J-1.5, CN5-H96F

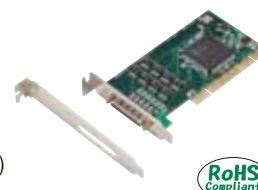
## Digital I/O

**PCI** Low Profile 68-pin 0.8mm Pitch Bi-direct 48 Non-Isolated Digital Filter

Windows Driver Linux Driver LabVIEW

### Bi-directional Digital I/O Board for Low Profile PCI PIO-48D(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 48-point bi-directional digital I/O i8255 Mode 0-compliant
- 200nsec high-speed response with non-Isolated TTL level I/O
- All 48 input points can be used as interrupts
- Digital filter and interrupt trigger edge can be set via software

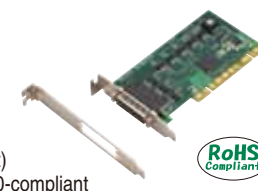


**PCI** Low Profile 68-pin 0.8mm Pitch Bi-direct 96 Non-Isolated Digital Filter

Windows Driver Linux Driver

### Bi-directional Digital I/O Board for Low Profile PCI GDIO-96D2-LPCI [DIO-96D2-LPCI]

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 96-point (TTL-level, Positive logic) bi-directional digital I/O i8255 Mode 0-compliant
- All input signals (Max. 96 points) can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux is provided



**PCI** 37-pin D-SUB Input 16 Output 16 Non-Isolated Digital Filter

Windows Driver Linux Driver LabVIEW

### TTL-Level type digital input and output board for PCI GDIO-1616T2-PCI [PIO-16/16T(PCI)H]

- 16 TTL-Level input, 16 TTL-Level output (Max. 40mA sink current)
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-16/16T(PCI)

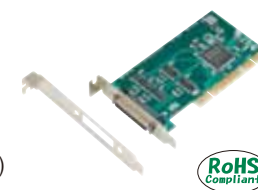


**PCI** Low Profile 50-pin Mini-Ribbon Input 16 Output 16 Non-Isolated Digital Filter

Windows Driver Linux Driver LabVIEW

### TTL Level Digital I/O Board for Low Profile PCI PIO-16/16T(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 16 TTL input, 16 open collector output (40mA sink current max.)
- All input signals can be used as interrupts
- Digital filter and interrupt trigger edge can be set via software



## B-16

Model	PIO-48D(LPCI)H	GDIO-96D2-LPCI	GDIO-1616T2-PCI	PIO-16/16T(LPCI)H
Input channels	-		16	
Output channels	-		16	
I/O channels	48	96	-	
Type	TTL level (positive logic)		TTL-level (negative logic)	
Signal Level	5VDC			
Interrupts	48 interrupt signals combine to one interrupt request signal as INTA	96 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA	
Resistance	33kΩ	-	Pull-up:10kΩ	
Type	TTL level (positive logic)		Open Collector (negative logic)	
Rating	5VDC IOL=24mA, IOH=-15mA		30VDC 40mA (per channel)	30VDC 40mA
Response Time (Max.)	200nsec		200μsec	200nsec
Internal Power	-			
Wiring Distance	1.5m	1.5m (depending on wiring environment)	Approx. 1.5m (according to cable)	1.5m
I/O Address	Any 32-byte boundary	Occupies 32 ports	Occupies 32 ports	
Power Consumption (Max.)	5VDC 600mA	5VDC 950mA	5VDC 200mA	5VDC 100mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×63.41(H)		PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×63.41(H)
Connector	68-pin 0.8mm pitch connector: HDRA-E68LFDT+ [HONDA Tsushin Kogyo] or equivalent	68-pin 0.8mm pitch: HDRA-E68W1LFDT+ [HONDA Tsushin Kogyo] or equivalent	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent	50-Pin Mini-Ribbon Connector 10250-52A2JL [3M] or equivalent
Accessories	DTP-64(PC), EPD-96, EPD-68A	EPD-96A, EPD-96, DTP-64(PC), EPD-68A	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E	EPD-50A, EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E
Cables / Connectors	DIO-68M/96F, PCA68PS-0.5P/1.5P, PCB68PS-0.5P/1.5P	GPCA68PS [PCA68PS] -0.5P/1.5P, PCB68PS-0.5P/1.5P, DIO-68M/96F	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P/1.5P, CN5-D37M	PCA50PS-0.5P/1.5P, PCB50PS-0.5P, 1.5P, PCE50/37PS-0.5P

Analog I/O

Digital I/O

Serial Communication

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&E/T Ethernet IO
Bus Expansion
Accessories
Cables

PCI

96-pin  
Half Pitch

Input  
32

Output  
32

Non-Isolated

Digital Filter

Windows Driver

Linux Driver

LabVIEW

TTL-Level type digital input and output board for PCI

**GDIO-3232T2-PCI**  
**[PIO-32/32T(PCI)H]**

- 32 TTL-level input, 32 TTL-level output
- Digital filtering function to prevent input error caused by noise and/or chattering
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board PIO-32/32T(PCI)



PCI

100-pin  
0.8mm Pitch

Input  
64

Output  
64

Non-Isolated

Digital Filter

Windows Driver

Linux Driver

LabVIEW

TTL-Level type digital input and output board for PCI

**GDIO-6464T2-PCI**  
**[DIO-6464T2-PCI]**

- 64 TTL-level input, 64 TTL-level output
- 16 input signals combine to one interrupt as INTA
- Fast response time (within 200nsecs)



PCI

37-pin  
D-SUB

Input  
16

Output  
16

Isolated

Digital Filter

Power on Board

Surge & Overcurrent Protection

CE

Windows Driver

Linux Diver

LabVIEW

Isolated Digital I/O Board for PCI (Internal power supply)

**PIO-16/16B(PCI)H**

- On-board power supply (12VDC 240mA) to drive the input/output circuit opto coupler
- Fast response time (within 200μsecs.)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



## B-17

Model	GDIO-3232T2-PCI	GDIO-6464T2-PCI	PIO-16/16B(PCI)H
Input channels	32	64	16
Output channels	32	64	16
Input specifications	Type	TTL-level (negative logic)	
	Signal Level	5VDC	
	Interrupts	32 interrupt signals combine to one interrupt request signal as INTA	64 interrupt signals combine to one interrupt request signal as INTA
	Resistance	Pull-up:10kΩ	Pull-up: 10kΩ (1TTL load)
Output specifications	Type	Open Collector (negative logic)	
	Rating	30VDC 40mA (per channel)	
Response Time (Max.)	200μsec		35VDC 100mA
Internal Power	-		12VDC 240mA
Wiring Distance	Approx. 1.5m (according to cable)		50m
I/O Address	Occupies 32 ports		Occupies 32 ports
Power Consumption (Max.)	5VDC 350mA		5VDC 450mA / 3.3VDC 800mA
Bus / Dimensions (mm)	PCI(32bit,33MHz,5V or 3.3V) / 121.69(L)×105.68(H)		PCI(32bit,33MHz,5V or 3.3V) / 121.69(L)×105.68(H) / PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×105.68(H)
Connector	96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent		37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent
Options	Accessories		EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CCB-96, CM-32(PC)E, CM-64(PC)E
	Cables / Connectors		PCB96P-1.5P, GPCB96PS[PCB96PS]-0.5P/1.5P, PCA96P-1.5P, PCA96PS-0.5P/1.5P, CN5-H96F
			PCA100P, PCB100PS, PCB100WS, PCB100/96PSS



## Digital I/O



### Isolated Digital I/O Board for Low Profile PCI (Internal power supply) PIO-16/16B(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- On-board power supply (12VDC 125mA) to drive the input/output circuit photocoupler
- Fast response time (within 200μsecs)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

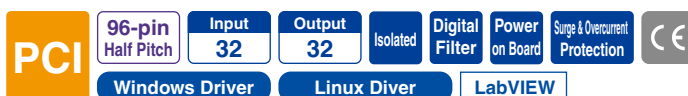
USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables



### Isolated Digital I/O Board for PCI (Internal power supply) PIO-32/32B(PCI)V

- On-board power supply (12VDC 240mA) to drive the input/output circuit opto coupler
- Digital filter and interrupt trigger edge can be set via software
- Output ratings can handle up to 35VDC and 100mA per channel
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



### High-Speed Isolated TTL-Level Digital I/O Board for PCI (Internal power supply) PIO-16/16TB(PCI)H

- 16 opto-isolated TTL digital input, 16 opto-isolated TTL digital output
- Features high-speed photo coupler 1μsec (max) response time
- Connector pin assignment compatible with PIO-16/16TB(PC)
- All input signals can be used as interrupt



B-18

Model	PIO-16/16B(LPCI)H	PIO-32/32B(PCI)V	PIO-16/16TB(PCI)H	
Input channels	16	32	16	
Output channels	16	32	16	
Input specifications	Type	Opto-Isolated (for sink current output)		Opto-Isolated TTL (negative logic)
	Signal Level	12~24VDC		5VDC
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	4.7kΩ		1.1kΩ
	Type	Opto-Isolated Open Collector (Current sinking type)		Opto-Isolated TTL (Negative Logic)
	Rating	35VDC 100mA		5VDC 6.4mA
Response Time (Max.)	200μsec		1μsec	
Internal Power	12VDC 125mA		5VDC 400mA	
Wiring Distance	50m		5m	
I/O Address	Any 32-byte boundary	Occupies 32 ports		Any 32-byte boundary
Power Consumption (Max.)	5VDC 100mA (External Power supply), 5VDC 600mA (On-board Power supply)		5VDC 200mA (External), 5VDC 1050mA (On-board)	
	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×63.41(H)		PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	
Bus / Dimensions (mm)	50-Pin Mini-Ribbon Connector 10250-52A2JL [3M] or equivalent		PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	
Connector	50-Pin Mini-Ribbon Connector 10250-52A2JL [3M] or equivalent		37-pin female D-type DCL-J37SAF-20L9 [JAE] or equivalent	
Options	Accessories	EPD-50A, EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E		DTP-3A, DTP-4A, CM-32(PC)E
	Cables / Connectors	PCA50PS, PCB50PS, PCE50/37PS-0.5P		PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

PCI

37-pin  
D-SUBInput  
16Output  
16

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

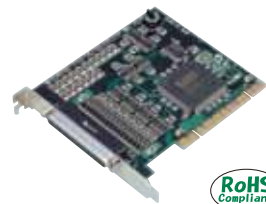
Windows Driver

Linux Driver

LabVIEW

## Digital I/O Board with Opto-Isolation for PCI GDIO-1616L2-PCI [PIO-16/16L(PCI)H]

- 16 opto-isolated input, 16 opto-isolated open collector output
- Fast response time (within 200μsecs.) / Power saving design
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



PCI

Low  
Profile50-pin  
Mini-RibbonInput  
16Output  
16

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

## Isolated Digital I/O Board for Low Profile PCI PIO-16/16L(LPCI)H

- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)
- 16 opto-isolated input, 16 opto-isolated open collector output
- Fast response time (within 200μsecs)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



PCI

96-pin  
Half PitchInput  
32Output  
32

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

## Digital I/O Board with Opto-Isolation for PCI GDIO-3232L2-PCI

- 32 opto-isolated input, 32 points opto-isolated open collector output
- Fast response time (within 200μsecs.) / Power saving design
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



PCI

100-pin  
0.8mm PitchInput  
64Output  
64

Isolated

Digital  
FilterSurge & Overcurrent  
Protection

Windows Driver

Linux Driver

LabVIEW

## Isolated Digital I/O Board for PCI

## GPIO-64/64L(PCI)H [PIO-64/64L(PCI)H]

- 128 I/O on a PCI short-size board
- Digital filtering function to prevent input error caused by noise and/or chattering
- 16 interrupts featuring Digital Filter Function
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Optional Conversion cables (100-pin to 96-pin half pitch) available



B-19

Model	GDIO-1616L2-PCI		PIO-16/16L(LPCI)H	GDIO-3232L2-PCI	GPIO-64/64L(PCI)H
Input channels	16			32	64
Output channels	16			32	64
Input specifications	Type	Opto-Isolated (for sink current output)			
	Signal Level	12~24VDC			
	Interrupts	16 interrupt signals combine to oneinterrupt request signal as INTA		32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA
	Resistance	4.7kΩ			
Output specifications	Type	Opto-Isolated Open Collector (current sinking type)			
	Rating	35VDC 100mA			
Response Time (Max.)	200μsec				
Internal Power	-				
Wiring Distance	50m				
I/O Address	Occupies 32 ports			Occupies 32 ports	
Power Consumption (Max.)	5VDC 200mA		5VDC 100mA	5VDC 250mA	5VDC 500mA
Bus / Dimensions (mm)	PCI(32bit, 33MHz, 5Vor3.3V)/ 121.69(L)×105.68(H)		PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×63.41(H)	PCI(32bit, 33MHz, 5Vor3.3V)/ 176.41(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×106.68(H)
Connector	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent		50-Pin Mini-Ribbon Connector 10250-52A2JL [3M] or equivalent	96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent
Options	Accessories	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E	EPD-50A, EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CCB-96	DTP-64(PC), EPD-100A, EPD-96A, EPD-96, CM-64(PC)E, CCB-96, DTP-3A, DTP-4A, EPD-37A, EPD-37
	Cables / Connectors	PCA37P,PCB37P,PCA37PS, PCB37PS,CN5-D37M	PCA50PS, PCB50PS, PCE50/37PS-0.5P	PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F	PCA100P, PCB100/96PS, PCB100WS

## Digital I/O

**PCI** 37-pin D-SUB Input 16 Output 16 Isolated Negative Common Digital Filter Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

Isolated Current-Source type

Digital I/O Board for PCI

**GPIO-16/16RL(PCI)H**

**[PIO-16/16RL(PCI)H]**

- 16 opto-isolated input (source current output)
- 16 opto-isolated output (Current sourcing type)
- Fast response time (within 200μsecs.)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



**PCI** 96-pin Half Pitch Input 32 Output 32 Isolated Negative Common Digital Filter Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

Isolated Current-Source type

Digital I/O Board for PCI

**GPIO-32/32RL(PCI)H**

**[PIO-32/32RL(PCI)]**

- 32 opto-isolated input (source current output)
- 32 opto-isolated output (Current sourcing type)
- Fast response time (within 200μsecs.)
- All input signals can be used as interrupts
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



**PCI** 37-pin D-SUB Input 16 Output 16 Isolated High Voltage Digital Filter Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

Isolated Digital I/O Board for PCI

**PIO-16/16H(PCI)H**

- Supports high voltage (24 to 48VDC) input/output.
- Due to its 16-point common configuration, each common supports different external power source.
- Speedier response time of 200μsec or less is achieved.
- All the input signal points can be used as interrupt input.
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



**PCI** 96-pin Half Pitch Input 32 Output 32 Isolated High Voltage Digital Filter Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

Isolated Digital I/O Board for PCI

**PIO-32/32H(PCI)H**

- Supports high voltage (24 to 48VDC) input/output.
- Due to its 16-point common configuration, each common supports different external power source.
- Speedier response time of 200μsec or less is achieved.
- All the input signal points can be used as interrupt input.
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



Model	GPIO-16/16RL(PCI)H		GPIO-32/32RL(PCI)H		PIO-16/16H(PCI)H		PIO-32/32H(PCI)H		
Input channels	16		32		16		32		
Output channels	16		32		16		32		
Input specifications	Type	Opto-Isolated (for souce current output)			Opto-Isolated (for sink current output)				
	Signal Level	12~24VDC			24~48VDC (±10%)				
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA		32 interrupt signals combine to one interrupt request signal as INTA		16 interrupt signals combine to one interrupt request signal as INTA		32 interrupt signals combine to one interrupt request signal as INTA	
	Resistance	4.7kΩ			15kΩ				
Output specifications	Type	Opto-Isolated Open Collector (Current sourcing type)			Opto-Isolated Open Collector (Current sinking type)				
	Rating	35VDC 100mA			60VDC 100mA				
Response Time (Max.)	200μsec								
Internal Power	-								
Wiring Distance	50m								
I/O Address	Occupies 32 ports								
Power Consumption (Max.)	5VDC 150mA		5VDC 200mA		5VDC 150mA		5VDC 200mA		
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L) × 105.68(H)		PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L) × 105.68(H)		PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L) × 105.68(H)		PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L) × 105.68(H)		
Connector	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent		37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent		
Options	Accessories	DTP-3A, DTP-4A, EPD-37A, EPD-37		EPD-37A, EPD-37, EPD-96A, EPD-96, DTP-64(PC), CCB-96		EPD-37A, EPD-37		EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, CCB-96	
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M		PCA96P, PCB96P, PCA96PS, PCB96PS, CN5-H96F		PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M		PCA96P, PCB96P, PCA96PS, PCB96PS, CN5-H96F	

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

B-20

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

Digital I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

PCI

96-pin Half Pitch

Input 32

Output 32

Isolated

Hi-Speed opto coupler

Digital Filter

Windows Driver

Linux Diver

LabVIEW

High Speed Isolated Digital I/O Board for PCI  
PIO-32/32F(PCI)H

- Features High-speed opto coupler with 5μsecs (max) response time
- Digital filter and interrupt trigger edge can be set via software
- Connector pin assignment compatible with PIO-32/32F(PCI)



PCI

37-pin D-SUB

Input 16

Output 16

Isolated

High Voltage

Digital Filter

Non polarity

Windows Driver

Linux Diver

LabVIEW

High-voltage, Non-polarity Isolated  
Digital I/O Board for PCI  
PIO-16/16RY(PCI)

- 16 semiconductor relay output
- Input/output supports both current sink and current source output
- Supports high-voltage input range - 12 to 48VDC / output - 120VAC/VDC
- All input signals can be used as a interrupt
- Digital filtering function to prevent input error caused by noise and/or chattering



PCI

37-pin D-SUB

Input 32

Non-isolated

Digital Filter

Windows Driver

Linux Driver

LabVIEW

TTL-Level digital input board for PCI  
GDI-32T2-PCI  
[DI-32T2-PCI]

- 32 TTL-level input
- All input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux bundled



PCI

96-pin Half Pitch

Input 64

Non-isolated

Digital Filter

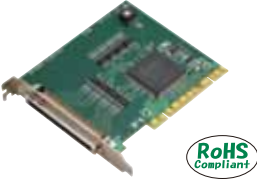
Windows Driver

Linux Driver

LabVIEW

TTL-Level digital input board for PCI  
GDI-64T2-PCI  
[DI-64T2-PCI]

- 64 TTL-level input
- 32 input signals can be used as interrupts
- Digital filtering function to prevent input error caused by noise and/or chattering
- Driver library for Windows/Linux bundled



B-21

Model	PIO-32/32F(PCI)H	PIO-16/16RY(PCI)	GDI-32T2-PCI	GDI-64T2-PCI
Input channels	32	16	32 (1 common)	64 (1 common)
Output channels	32	16	-	-
Input specifications	Type	Opto-Isolated (for sink current output)	Opto-Isolated (for sink/source current output)	TTL-level (negative logic)
	Signal Level	12~24VDC	12~24VDC, 24~48VDC Each point can be set.	5VDC
	Interrupts	32 interrupt signals combine to one interrupt request signal as INTA	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	2.2kΩ	3kΩ <12~24VDC>, 6kΩ <24~48VDC>	Pull-up:10kΩ(1 TTL load)
	Type	Opto-Isolated Open Collector (Current sinking type)	Semiconductor Relay	-
	Rating	35VDC 50mA	120VAC/VDC 100mA	-
Response Time (Max.)	5μsec	Input: 200μsec Output: 1.0msec	200nsec	-
Internal Power	-	-	-	-
Wiring Distance	50m	-	1.5m (depending on wiring environment)	-
I/O Address	Occupies 32 ports	-	-	-
Power Consumption (Max.)	5VDC 400mA	-	5VDC 200mA	5VDC 200mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×105.68(H)	96pin female half-pitch: PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent
Options	Accessories	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E, DTP-64(PC), EPD-96A, EPD-96, CM-64(PC)E	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96
	Cables / Connectors	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	-



## Digital I/O

**PCI** 100-pin 0.8mm Pitch Input 128 Non-Isolated Digital Filter

Windows Driver Linux Driver LabVIEW

TTL-Level digital input board for PCI

### GDI-128T2-PCI [DI-128T2-PCI]

- 128 TTL-level input
- 16 input signals combine to one interrupt as INTA
- Fast response time (within 200nsecs)
- Digital filtering function to prevent input error caused by noise and/or chattering



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

**PCI** 37-pin D-SUB Input 32 Isolated Power on Board Digital Filter

Windows Driver Linux Driver LabVIEW

Isolated Digital Input Board for PCI (Internal power supply)

### PI-32B(PCI)H

- On-board power supply (12VDC 240mA) to drive the input circuit opto coupler
- Fast response time (within 200µsecs)
- All input signals can be used as a interrupt
- Digital filter and interrupt trigger edge can be set via software



**PCI** 37-pin D-SUB Input 32 Isolated Digital Filter

Windows Driver Linux Driver LabVIEW

Isolated Digital Input Board for PCI

### PI-32L(PCI)H

- 32 opto-isolated for superb noise resistance (12 to 24VDC)
- Fast response time (within 200µsecs) / Power saving design
- All input signals can be used as a interrupt
- Digital filter and interrupt trigger edge can be set via software



**PCI** 96-pin Half Pitch Input 64 Isolated Digital Filter

Windows Driver Linux Driver LabVIEW

Isolated Digital Input Board for PCI

### GDI-64L2-PCI [PI-64L(PCI)H]

- 64 opto-isolated for superb noise resistance (12 to 24VDC)
- Fast response time (within 200µsec)/Power saving design
- 32 input signals can be used as interrupts
- Digital filter and interrupt trigger edge can be set via software



Model	GDI-128T2-PCI	PI-32B(PCI)H	PI-32L(PCI)H	GDI-64L2-PCI
Input channels	128 (1 common)	32		64
Output channels	-			-
Input specifications	Type	TTL-level (negative logic)	Opto-Isolated (for sink current output)	Opto-Isolated (for sink current output)
	Signal Level	5VDC	12~24VDC	12~24VDC
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA	32 interrupt signals combine to one interrupt request signal as INTA
	Resistance	Pull-up:10kΩ(1 TTL load)	4.7kΩ	
Output specifications	Type	-		
	Rating	-		
Response Time (Max.)	200 nsec	200µsec		
Internal Power	-	12VDC 240mA	-	
Wiring Distance	1.5m (depending on wiring environment)	50m		
I/O Address	Occupies 32 ports			Occupies 32 ports
Power Consumption (Max.)	5VDC 350mA	5VDC 300mA (External), 5VDC 1200mA (On-board)	5VDC 200mA	5VDC 250mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)
Connector	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		96pin female half-pitch: PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent
Options	Accessories	EPD-100A, EPD-96A, EPD-96, EPD-37A, EPD-37, DTP-64(PC), DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96
	Cables / Connectors	PCA100P, PCB100PS, PCB100WS, PCB100/96PS	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M	PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F

B-22

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB



# Digital I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&ET Ethernet IO
Bus Expansion
Accessories
Cables

PCI

100-pin  
0.8mm Pitch

Input  
128

Isolated

Digital Filter

CE

Windows Driver

Linux Driver

LabVIEW

### Isolated Digital Input Board for PCI

**GPI-128L(PCI)H**  
**[PI-128L(PCI)H]**

- 128 inputs on a PCI short-size board
- Fast response time (within 200μsecs)/Power saving design
- 16 input signals can be used as interrupt
- Digital filter and interrupt trigger edge can be set via software
- Optional Conversion cables (100-pin to 96-pin half pitch) available



PCI

37-pin  
D-SUB

Output  
32

Non-isolated

Windows Driver

Linux Driver

LabVIEW

### TTL-Level type digital output board for PCI

**GDO-32T2-PCI**  
**[DO-32T2-PCI]**

- 32 open collector output
- Driver library for Windows/Linux bundled



PCI

96-pin  
Half Pitch

Output  
64

Non-isolated

Windows Driver

Linux Driver

LabVIEW

### TTL-Level digital output board for PCI

**GDO-64T2-PCI**  
**[DO-64T2-PCI]**

- 64 open collector output
- Driver library for Windows/Linux bundled



PCI

100-pin  
0.8mm Pitch

Output  
128

Non-isolated

Windows Driver

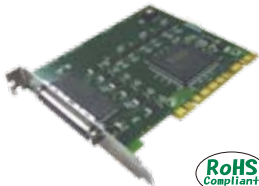
Linux Driver

LabVIEW

### TTL-Level type digital output board for PCI

**GDO-128T2-PCI**  
**[DO-128T2-PCI]**

- 128 TTL-level output
- Fast response time (within 200nsecs)
- Driver library for Windows/Linux bundled



## B-23

Model	GPI-128L(PCI)H	GDO-32T2-PCI	GDO-64T2-PCI	GDO-128T2-PCI
Input channels	128	-	-	-
Output channels	-	32 (1 common)	64 (1 common)	128 (1 common)
Input specifications	Type	Opto-Isolated (for sink current output)	-	-
	Signal Level	12~24VDC	-	-
	Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	-	-
	Resistance	4.7kΩ	Pull-up 10kΩ (1 TTL load)	-
Output specifications	Type	-	Open Collector (Negative logic)	-
	Rating	-	30VDC 40mA (per channel)	-
Response Time (Max.)	200μsec	200nsec (depends on Pull-up resistance)	-	200 nsec
Internal Power	12VDC 240mA	-	-	-
Wiring Distance	50m	1.5m (depending on wiring environment)	-	1.5m (depending on wiring environment)
I/O Address	Occupies 32 ports	-	-	-
Power Consumption (Max.)	5VDC 500mA	5VDC 200mA	5VDC 310mA	5VDC 500mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	PCI(32bit,33MHz,5V or 3.3V)/121.69(L)×105.68(H)	-	-
Connector	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent	37pin female D-type, DCLC-J37SAF-20L9E [JAE] or equivalent	96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent
Options	Accessories	DTP-64(PC), EPD-96, EPD-96A, EPD-100A, CCB-96, CM-64(PC)E, DTP-3A, DTP-4A, EPD-37A, EPD-37	EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E	EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96
	Cables / Connectors	PCA100P, PCB100/96PS, PCB100PS, PCB100WS	PCA37P-1.5, PCA37PS-0.5P/1.5P, PCB37P-1.5, PCB37PS-0.5P/1.5P, CN5-D37M	PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F

## Digital I/O

**PCI** 37-pin D-SUB Output 32 Isolated Power on Board Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

### Isolated Digital Output Board for PCI (Internal power supply) PO-32B(PCI)H

- On-board power supply (12VDC 240mA) to drive the output circuit opto coupler
- Fast response time (within 200μsecs.)
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

**PCI** 37-pin D-SUB Output 32 Isolated Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

### Isolated Digital Output Board for PCI PO-32L(PCI)H

- 32 opto-isolated open collector output (35VDC, 100mA)
- Fast response time (within 200μsecs.)
- Output transistor has built-in circuit protection (voltage surge, overcurrent)

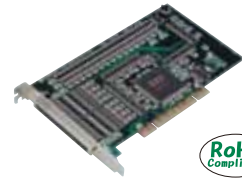


**PCI** 96-pin Half Pitch Output 64 Isolated Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

### Isolated Digital Output Board for PCI GDO-64L2-PCI [PO-64L(PCI)H]

- 64 opto-isolated open collector output (35VDC, 100mA)
- Fast response time (within 200μsecs.)
- Output transistor has built-in circuit protection (voltage surge, overcurrent)



**PCI** 100-pin 0.8mm Pitch Output 128 Isolated Surge & Overcurrent Protection CE

Windows Driver Linux Driver LabVIEW

### Isolated Digital Output Board for PCI GPO-128L(PCI)H [PO-128L(PCI)H]

- 128 outputs on a PCI short-size board
- Fast response time (within 200μsecs.)
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Optional Conversion cables (100-pin to 96-pin half pitch) available



B-24

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

Model	PO-32B(PCI)H	PO-32L(PCI)H	GDO-64L2-PCI	GPO-128L(PCI)H
Input channels	-			
Output channels	32		64	128
Input specifications	Type	-		
	Signal Level	-		12~24VDC
	Interrupts	-		
	Resistance	-		
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)		
	Rating	35VDC 100mA		
Response Time (Max.)	200μsec			
Internal Power	12VDC 240mA	-		
Wiring Distance	50m			
I/O Address	Occupies 32 ports			
Power Consumption (Max.)	5VDC 300mA (External), 5VDC 1200mA (On-board)	5VDC 200mA	5VDC 250mA	5VDC 500mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L) × 105.68(H)	
Connector	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent		96pin female half-pitch: PCR-96LMD [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1L-FDT1EC-SL [HONDA Tsushin Kogyo] or equivalent
Options	Accessories	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E		EPD-96A, EPD-96, DTP-64(PC), EPD-37A, EPD-37, DTP-3A, DTP-4A, CM-32(PC)E, CM-64(PC)E, CCB-96, DTP-100A, CCB-96, CM-64(PC)E, DTP-3A, DTP-4A, EPD-37A, EPD-37
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS, CN5-D37M		PCA96P, GPCB96PS[PCB96PS], PCB96P, PCA96PS, GPCB96WS[PCB96WS], CN5-H96F, PCB100PS, PCB100WS

# Digital I/O

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&EIT Ethernet IO
Bus Expansion
Accessories
Cables

PCI

37-pin D-SUB

Output 16

Isolated

High Voltage

Non Polarity

Windows Driver

Linux Driver

LabVIEW

Individual Common Reed Relay Contact Digital Output Board for PCI

## GRRY-16C2-PCI [RRY-16C2-PCI]

- 16 individual common reed relay outputs
- Output ratings: up to 125VAC/30VDC - 2A / channel
- Functions, Connector pin and Signal assignments are compatible with the PCI-compliant board RRY-16C(PCI)H



PCI

37-pin D-SUB

Output 32

Isolated

High Voltage

Non polarity

Windows Driver

Linux Diver

LabVIEW

Reed Relay Contact Digital Output Board for PCI

## RRY-32(PCI)H


- 32 reed relay outputs
- Output ratings can handle up to 100VAC/VDC and 500mA per channel, 1A per common (max) for total of 8 points and 10VA (10W)
- Connector pin assignment is compatible with RRY-32(PC)



Model	GRRY-16C2-PCI	RRY-32(PCI)H
Input channels	-	-
Output channels	16	32
Type	Reed Relay Contact (1-make contact)	
Rating	-	
Maximum Power	125V(AC), 30V(DC)	100VA(AC), 100W(DC)
Maximum Switching Current	2A (Max.)	0.5A (Max.)
Contact Resistance	30mΩ or less	100mΩ or less
Life Expectancy	More than 20 million times (180/min)	More than 200 million times
Response Time (Max.)	7msec	1msec
Internal Power	-	
Wiring Distance	-	
I/O Address	Occupies 32 ports	
Power Consumption (Max.)	5VDC 550mA	5VDC 1050mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L) × 105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×105.68(H)
Connector	37-pin female D-type DCLC-J37SAF-20L9 [JAE] or equivalent	
Options	Accessories	EPD-37A, EPD-37, DTP-3A, DTP-4A
	Cables / Connectors	PCA37P,PCB37S,PCA37PS,PCB37PS,CN5-D37M

## B-25

Lineup
PCI Express
PCI
Compact PCI
ISA
PCMCIA
Card Bus
USB

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

PCI

CE

## Parallel Port 2 Printer Ports for PCI PRN-2(PCI)



LPT Driver for Windows© XP/NT/Me/98/95

### SPECIFICATIONS

Channels	2ch
Communication standard	IEEE-1284
Communication mode	Compatibility, Nibble, Byte, EPP, ECP
Hardware Specifications	TTL level (+5V)
Controller	ST78C236CJ44(EXAR) or equivalent
Reference clock	24MHz (Reference clock of on-chip LSI)
Wiring distance	5m max
Interrupts	1 level
I/O address	16 ports (control port) + (8 ports + 4 ports) × 2
Supply voltage	5VDC (±5%)
Power consumption	5VDC 150mA (max)
Dimensions (mm)	121.69(L) × 106.68(H)

- FEATURES
- Provides 2 interface channels IEEE 1284 / Centronics - compliant
  - Supports 5 modes of IEEE-1284 (Compatibility, Nibble, Byte, EPP, ECP) user selectable dependant on OS and device
  - Up to 16 PRN-2(PCI) boards can be used at the same time under Windows NT 4.0, and Only one board can be used under Windows XP/2000/Me/98/95

Connector	DHA-RP36-R13AN [DDK] or equivalent
Options	
Software	-
Accessories	-
Cables / Connector	PRN-CB105



36-pin Micro Ribbon Conversion Cable  
PRN-CB105 (5m)

# Digital I/O

Compact  
**PCI**

96-pin  
Half Pitch

Input  
32

Output  
32

Isolated

Digital  
Filter

Windows Driver

LabVIEW

## Opto-Isolated Digital I/O board for Compact PCI PIO-32/32L(CPCI)

- 32 opto-isolated input, 32 points opto-isolated open collector output
- Digital filter and interrupt trigger edge can be set via software
- Connector pin assignment compatible with PIO-32/32L(PC)



Compact  
**PCI**

96-pin  
Half Pitch

Input  
64

Isolated

Digital  
Filter

Windows Driver

LabVIEW

## Opto-Isolated Digital Input board for Compact PCI PI-64L(CPCI)

- 64 opto-isolated input with superb noise resistance (12 to 24VDC)
- Digital filter and interrupt trigger edge can be set via software
- Connector pin assignment compatible with PI-64L(PCI)



Compact  
**PCI**

96-pin  
Half Pitch

Output  
64

Isolated

Windows Driver

LabVIEW

## Opto-Isolated Digital Output board for Compact PCI PO-64L(CPCI)

- 64 opto-isolated open collector output (35VDC, 100mA)
- Provides information on the state of the current output data without affecting that data
- Connector pin assignment compatible with PO-64L(PCI)



Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

B-26

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA


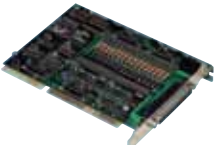

Card Bus

USB

Model	PIO-32/32L(CPCI)	PI-64L(CPCI)	PO-64L(CPCI)	
Input channels	32	64	-	
Output channels	32	-	64	
I/O Circuit	Signal Level	12~24VDC (±15%) (4mA/12V~8mA/24V per point)		12~24VDC (±15%)
	Internal Power	-		
Input specifications	Type	Opto-Isolated (for sink current output)		-
	Interrupts	4 interrupt signals combine to one interrupt request signal as INTA		-
	Resistance	3kΩ		
Output specifications	Type	Opto-Isolated Open Collector (Current sinking type)	-	Opto-Isolated Open Collector (Current sinking type)
	Rating	35VDC 100mA	-	35VDC 100mA
Expansion Function	-			
Response Time (Max.)	1msec			
Wiring Distance	50m (Max.)			
I/O Address	Occupies 32 ports			
Power Consumption (Max.)	5VDC 300mA			
Bus / Dimensions (mm)	Compact PCI / 3U × 4HP			
Connector	96-pin Half Pitch (male)			
Options	Accessories	DTP-3A, DTP-4A, DTP-64(PC), EPD-96A, EPD-96, CM-32(PC)E, CM-64(PC)E, CCB-96		
	Cables / Connectors	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS		

# Digital I/O




Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&EIT Ethernet IO
Bus Expansion
Accessories
Cables

ISA	Model	Bi-directional with Buffer Digital I/O Board for ISA	Isolated Current-Source type Digital I/O Board for ISA	TTL-Level Digital I/O Board for ISA
		PIO-48D(PC)	PIO-16/16RL(PC)	PIO-16/16T(PC)H
				
	SPECIFICATIONS			
	Input channels	48	16	
	Output channels		16	
	I/O Circuit	Signal level 5VDC	12~24VDC	5VDC
		Internal power -		
	Input specifications	Type TTL-level	Opto-Isolated (for source current output)	TTL-level
		Interrupt Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9
		Resistance 10kΩ	3KΩ	10kΩ
	Output specifications	Type TTL-level with Buffer	Opto-Isolated (current sourcing type)	Open collector output (negative logic), TTL
		Rating 5VDC 24mA	35VDC 150mA	5VDC 40mA
	Expansion function	-		
	Response time (Max.)	200nsec	1msec	200nsec
	Wiring Distance	1.5m	50m	1.5m
	I/O address	Occupies 8 ports	Occupies 2 ports	
	Power consumption (Max.)	5VDC 1.25A	5VDC 350mA	5VDC 550mA
	Bus / Dimensions (mm)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA XT 143.0(L) × 107.0(H) / 5.5"(L) × 4.25"(H)
	Connector	50-pin header (male) × 2	37-pin female D-type	
	Option	Accessories STP-50H(98), SCP-50H(98), PSD-50(98)J	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1	DTP-3(PC), DTP-4(PC), EPD-37 *1, EPD-37A *1, CM-32(PC)E *1
		Cables / Connector PCA50J	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P
	CE marking	○	○	○

\*1: Requires use of optional cable PCB37P or PCB37PS.  
\*2: Requires use of optional cable PCB96W or PCB96WS.  
\*3: Requires use of optional cable PCB96P or PCB96PS.

## B-27

Lineup
PCI Express
PCI
Compact PCI
ISA
PCMCIA
Card Bus
USB

ISA	Model	Isolated Current-Source type Digital I/O Board for ISA	TTL-Level Digital I/O Board for ISA	Isolated Digital I/O Board for ISA (Internal power supply)
		PIO-32/32RL(PC)	PIO-32/32T(PC)	PIO-16/16B(PC)H
				
	SPECIFICATIONS			
	Input channels	32		16
	Output channels	32		16
	I/O Circuit	Signal level 12~24VDC	5VDC	12~24VDC
		Internal power -		12VDC 250mA
	Input specifications	Type Opto-Isolated (for source current output)	TTL-level	Opto-Isolated (for sink current output)
		Interrupt Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15		Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15
		Resistance 3KΩ	10kΩ	3KΩ
	Output specifications	Type Opto-Isolated (current sourcing type)	TTL Open collector	Opto-Isolated Open Collector (current sinking type)
		Rating 35VDC 150mA	30VDC 40mA	35VDC 100mA
	Expansion function	Yes		-
	Response time (Max.)	1msec	200nsec	1msec
	Wiring Distance	50m	1.5m	30m
	I/O address	Occupies 4 ports (general) Occupies 16 ports (optional)		Occupies 2 ports
	Power consumption (Max.)	5VDC 150mA	5VDC 250mA	5VDC 50mA (External)5VDC 800mA (On-board)
	Bus / Dimensions (mm)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)
	Connector	96-pin half pitch connector (male)		37-pin female D-type
	Option	Accessories DTP-3A*2, DTP-4A*2, DTP-64(PC)*3, EPD-96 *3, EPD-96A *3,	DTP-3A *1, DTP-4A *1, DTP64(PC) *3, EPD-96A *3, EPD-96 *3, CCB-96 *3, CM-32(PC)E *2, CM-64(PC)E *3	DTP-3A*1, DTP-4A*1, EPD-37*1, EPD-37A*1, CM-32(PC)E*1
		Cables / Connector PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS	PCA96P-1.5, PCB96P-1.5, PCB96W-1.5, PCA96PS-0.5/1.5, PCB96PS-0.5/1.5, PCB96WS-1.5P	PCA37P, PCB37P, PCA37PS, PCB37PS
	CE marking	○	○	○

\*1: Requires use of optional cable PCB37P or PCB37PS.  
\*2: Requires use of optional cable PCB96W or PCB96WS.  
\*3: Requires use of optional cable PCB96P or PCB96PS.



## Digital I/O

Analog I/O

Digital I/O

Serial

Communication

GPIB

Communication

Motion Controller

Counter




USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion




Accessories

Cables

ISA	Model	Isolated Digital I/O Board for ISA		High-Speed Isolated TTL-Level Digital I/O Board for ISA (Internal power supply)
		PIO-16/16L(PC)V	PIO-32/32L(PC)	PIO-16/16TB(PC)
				
SPECIFICATIONS				
Input channels		16	32	16
Output channels		16	32	16
I/O Circuit	Signal level	12~24VDC		5VDC
	Internal power	-		5VDC 250mA
Input specifications	Type	Opto-Isolated (for sink current output)		Opto-Isolated TTL (negative logic)
	Interrupts	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15
	Resistance	3KΩ		1.1kΩ
Output specifications	Type	Opto-Isolated Open Collector (current sinking type)		Opto-Isolated TTL (negative logic)
	Rating	35VDC 100mA	35VDC 150mA	5VDC 6.4mA
Expansion function		-	Yes	-
Response time (Max.)		1msec		1μsec
Wiring Distance		50m		5m
I/O address		Occupies 4 ports	Occupies 8 ports (general) Occupies 16 ports (optional)	Occupies 4 ports
Power consumption (Max.)		5VDC 50mA	5VDC 180mA	5VDC 550mA (External), 5VDC 1010mA (On-board)
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)		
Connector		37-pin female D-type	96-pin half pitch connector (male)	37-pin female D-type
Options	Accessories	DTP-3A*1, DTP-4A*1, EPD-37*1, EPD-37A*1, CM-32(PC)E*1	DTP-3A*2, DTP-4A*2, DTP-64(PC)*3, EPD-96*3, EPD-96A*3, CCB-96*3, CM-32(PC)E*2, CM-64(PC)E*3	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC), CM-32(PC)E*1
		Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS
	CE marking	○	○	○

# Digital I/O


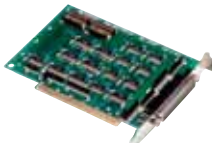

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
F&EIT Ethernet IO
Bus Expansion
Accessories
Cables

ISA	Model	Isolated Current-Source type Digital Input Board for ISA	Isolated Digital Input Board, Onboard DC12V PS for ISA	Isolated Digital Input Board for ISA
		PI-32RL(PC)	PI-32B(PC)H	PI-32L(PC)V
				
SPECIFICATIONS				
Input channels		32		
Output channels		-		
I/O Circuit	Signal level	12~24VDC		
	Internal power	-	12VDC 250mA	-
Input specifications	Type	Opto-Isolated (for source current output)	Opto-Isolated (for sink current output)	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15
	Interrupt	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15		
	Resistance	3kΩ		
Output specifications	Type	-		
	Rating	-		
Expansion function		-		
Response time (Max.)		1msec		
Wiring Distance		50m	30m	50m
I/O address		Occupies 4 ports		
Power consumption (Max.)		5VDC 300mA	5VDC 50mA (External) 5VDC 800mA (On-board)	5VDC 50mA
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)
Connector		37-pin female D-type		
Option	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC)E*1	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC)E*1
	Cables / Connector	PCA37P, PCB37P, PCA37PS, PCB37PS		
CE marking		○	○	○

\*1: Requires use of optional cable PCB37P or PCB37PS.  
\*2: Requires use of optional cable PCB96W or PCB96WS.  
\*3: Requires use of optional cable PCB96P or PCB96PS.

## B-29

Lineup
PCI Express
PCI
Compact PCI
ISA
PCMCIA
Card Bus
USB

ISA	Model	Isolated Digital Input Board for ISA		TTL-Level Digital Output Board for ISA	
		PI-64L(PC)		PO-32T(PC)H	
					
					
				PO-64T(PC)	
SPECIFICATIONS					
Input channels		64		-	
Output channels		-		32	
I/O Circuit	Signal level	12~24VDC		5VDC	
	Internal power	-			
Input specifications	Type	Opto-Isolated (for sink current output)		-	
	Interrupt	Can use 4 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15		-	
	Resistance	3kΩ		-	
Output specifications	Type	-		Open collector output (negative logic), TTL	
	Rating	-		5VDC 40mA	
Expansion function		Yes		30VDC 40mA	
Response time (Max.)		1msec		200nsec	
Wiring Distance		50m		1.5m	
I/O address		Occupies 8 ports (general) Occupies 16 ports (optional)		Occupies 4 ports Occupies 16 ports (optional)	
Power consumption (Max.)		5VDC 100mA		5VDC 550mA	
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)		ISA XT 143.0(L) × 107.0(H) / 5.5"(L) × 4.25"(H)	
Connector		96-pin half pitch connector (male)		37-pin female D-type	
Option	Accessories	DTP-3A*2, DTP-4A*2, DTP-64(PC)*3, EPD-96A*3, EPD-96*3, CCB-96*3, CM-32(PC)E*2, CM-64(PC)E*3		DTP-3A*2, DTP-4A*2, EPD-37A*1, EPD-37*1, CM-32(PC)E*1	
	Cables /	PCA96P, PCB96P, PCB96W,		PCA37P-1.5, PCB37P-1.5,	
	Connector	PCA96PS, PCB96PS, PCB96WS		PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P	
CE marking		○		○	

\*1: Requires use of optional cable PCB37P or PCB37PS.  
\*2: Requires use of optional cable PCB96W or PCB96WS.  
\*3: Requires use of optional cable PCB96P or PCB96PS.

## Digital I/O

Analog I/O

Digital I/O

Serial

Communication

GPIB

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

B-30

Lineup

PCI Express

PCI




Compact PCI

ISA

PCMCIA

Card Bus



USB

ISA	Model	High Speed Isolated TTL-Level Digital Output Board for ISA (Internal power supply)	Isolated Current-Source type Digital Output Board for ISA	Isolated Digital Output Board for ISA (Internal power supply)
		PO-32TB(PC)H	PO-32RL(PC)	PO-32B(PC)H
				
SPECIFICATIONS				
Input channels		-	-	
Output channels		32	32	
I/O Circuit	Signal level	5VDC	12~24VDC	
	Internal power	-	-	+12VDC 250mA
Input specifications	Type	-	-	
	Interrupts	Can use 2 interrupt lines simultaneously from IRQ 3~7, 9~12, 14 and 15	-	
	Resistance	-	-	
Output specifications	Type	Opto-Isolated TTL (negative logic)	Opto-Isolated (current sourcing type)	(current sinking type)
	Rating	5VDC 6.4mA	35VDC 150mA	35VDC 100mA
Expansion function		-	-	
Response time (Max.)		1μsec	1msec	
Wiring Distance		5m	50m	30m
I/O address		Occupies 4 ports	Occupies 4 ports	Occupies 4 ports
Power consumption (Max.)		5VDC 440mA (External), 5VDC 900mA (On-board)	5VDC 300mA	5VDC 50mA (External) 5VDC 800mA (On-board)
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)
Connector		37-pin female D-type	37-pin female D-type	
Options	Accessories	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC)E*1	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1	DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC)E*1
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA37P, PCB37P, PCA37PS, PCB37PS	PCA37P, PCB37P, PCA37PS, PCB37PS
	CE marking	○	○	○

\*1: Requires use of optional cable PCB37P or PCB37PS.

\*2: Requires use of optional cable PCB96W or PCB96WS.

\*3: Requires use of optional cable PCB96P or PCB96PS.

ISA	Model	Isolated Digital Output Board for ISA	
		PO-32L(PC)V	PO-64L(PC)
			
SPECIFICATIONS			
Input channels		-	
Output channels		32	64
I/O Circuit	Signal level	12~24VDC	
	Internal power	-	
Input specifications	Type	-	
	Interrupts	-	
	Resistance	-	
Output specifications	Type	Opto-Isolated Open Collector (current sinking type)	
	Rating	35VDC 100mA	35VDC 150mA
Expansion function		-	Yes
Response time (Max.)		1msec	
Wiring Distance		50m	
I/O address		Occupies 4 ports	Occupies 8 ports (general) Occupies 16 ports (optional)
Power consumption (Max.)		5VDC 50mA	5VDC 250mA
Bus / Dimensions (mm)		ISA AT Bus / 163.0(L) × 122.0(H) viz. 6.5"(L) × 4.75"(H)	
Connector		37-pin female D-type	96-pin half pitch connector (male)
Accessories		DTP-3A*1, DTP-4A*1, EPD-37A*1, EPD-37*1, CM-32(PC)E*1	DTP-3A*2, DTP-4A*2, DTP-64(PC)*3 EPD-96*3, EPD-96A*3, CCB-96*3, CM-32(PC)E*2, CM-64(PC)E*3
	Cables / Connectors	PCA37P, PCB37P, PCA37PS,PCB37PS	PCA96P, PCB96P, PCB96W, PCA96PS, PCB96PS, PCB96WS
CE marking		○	○

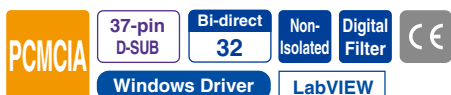
\*1: Requires use of optional cable PCB37P or PCB37PS.

\*2: Requires use of optional cable PCB96W or PCB96WS.

\*3: Requires use of optional cable PCB96P or PCB96PS.



## Digital I/O



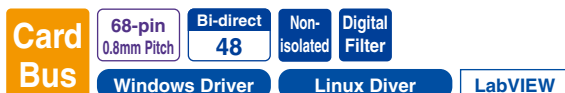
## High Speed TTL-Level Digital I/O for PC-Card PIO-32D(PM)

- Groups can be either input or output (user selectable) i.e. card can support different configurations, including 16 input /16 output; all 32 as input or all 32 as output
- High-speed response with non-isolated TTL level I/O
- All input signals (Max. 32 points) can be used as interrupts

Connection cable included



\*This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.



## Bi-directional Digital I/O Card for CardBus PIO-48D(CB)H

- 48-point bi-directional digital I/O i8255 Mode 0 - compliant
- 200nsec high-speed response with non-Isolated LVTTTL level I/O
- Equipped with functions equivalent to those of PCI bus-compatible board PIO-48D(PCI)
- All input signals (Max. 48 points) can be used as interrupts



\* This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

Optional cable  
DIO-68M/96F

Model	PIO-32D(PM)	PIO-48D(CB)H	
Input channels	-		
Output channels	-		
I/O channels	32	48	
Input specifications	Type	TTL level (negative logic)	LVTTL level (positive logic)
	Signal Level	5VDC	3.3VDC
	Interrupts	32 interrupt input signals are arranged into a signal output of interrupt signal INTA. An interrupt is generated at the falling edge (HIGH to LOW) or rising edge (LOW to HIGH), which is set by software.	48 interrupt input signals are arranged into a signal output of interrupt signal INTA. An interrupt is generated at the falling edge (HIGH to LOW) or rising edge (LOW to HIGH), which is set by software.
	Resistance	Pull-up 100kΩ	-
Output specifications	Type	TTL level (positive logic)	-
	Rating	IOL=6mA, IOH=-2mA	IOL=8mA, IOH=-8mA
Response Time (Max.)	200nsec		
Internal Power	-		
Wiring Distance	1.5m (Max.)		
I/O Address	Occupies 8bit × 16port	Occupies 8bit × 32port	
Power Consumption (Max.)	5VDC 200mA	3.3V 120mA	
Bus / Dimensions (mm)	PCMCIA Rel.2.1/JEIDA 4.2 upper / TYPE II	PC Card Standard CardBus / 85.6(W) × 54.0(D) × 5.0(H) TYPE II	
Connector	37-pin female D-type	68-pin 0.8mm Pitch	
Options	Software	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E	EPD-68A, DTP-64(PC), EPD-96A, EPD-96
	Cables / Connectors	PCA37P-1.5, PCB37P-1.5, PCA37PS-0.5P/1.5P, PCB37PS-0.5P/1.5P, CN5D37M	DIO-68M/96F, PCA68PS-0.5P/1.5P, PCB68PS-0.5P/1.5P

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

B-32

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB



# Digital I/O

- Analog I/O
- Digital I/O
- Serial Communication
- GPIO Communication
- Motion Controller
- Counter
- USB Remote I/O
- F&ET Ethernet IO
- Bus Expansion
- Accessories
- Cables

## Card Bus

37-pin  
D-SUB

Input  
16

**Output**  
**16**

Isolated

**Digital Filter**

Surge & Over  
Protect

Current on

## Windows Driver

## Linux Diver

## LabVIEW

# Isolated Digital I/O Card for CardBus PIO-16/16L(CB)H

- The connector pin-out is compatible with PIO-16/16L(PCI)H, PIO-16/16L(PCI) and PIO-16/16L(PM).
- Fast response time (within 200  $\mu$ sec)
- Featuring a 16-point configuration, each common corresponds to a different external power source
- All input signals can be used as interrupts



\* This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

**PCMCIA**

37-pin  
D-SUB

Input  
16

**Output**  
**16**

Isolated

**Digital Filter**

Surge Protection

## Windows Driver

## LabVIEW

## Isolated Digital I/O Card for PC Card PIO-16/16L(PM)

- Connector pin assignment compatible with PIO-16/16L(PCI)H, PIO-16/16L(PCI), PIO-16/16L(PC)V
- Digital filter can be applied to input signals
- All 16 input signals can be used as interrupts



\*This card cannot be used with another card requiring external connections when used on a PC with 2 TYPEII PC card slots. For simultaneous use, the other card must be a PC card (excluding memory card) that does not require an external connector.

**B-33**

Lineup	Model	PIO-16/16L(CB)H	PIO-16/16L(PM)	
	Input channels	16 channels share one common (all available for interrupts)		
PCI Express	Output channels	16 (1 common)		
	I/O channels	-		
PCI	Input specifications	Type	Opto-Isolated (for sink current output)(negative logic)	
		Signal Level	12~24VDC (±10%)	12~24VDC
Compact PCI		Interrupts	16 interrupt signals combine to one interrupt request signal as INTA	
		Resistance	4.7kΩ	3kΩ
ISA	Output specifications	Type	Opto-Isolated Open Collector (Current sinking type) (negative logic)	
		Rating	35VDC 100mA	
PCMCIA		Response Time (Max.)	200μsec	1msec
Card Bus	Internal Power	-		
	Wiring Distance	50m (Max.)		
USB	I/O Address	Occupies 8-bit × 32-port	Occupies 8bit × 16port	
	Power Consumption (Max.)	3.3V 200mA	5VDC 200mA	
	Bus / Dimensions (mm)	PC Card Standard CardBus / TYPE II	PCMCIA Rel.2.1/JEIDA 4.2 upper / TYPE II	
	Connector	37-pin female D-type DCL-J37SAF-20L9 [JAE] or equivalent		
	Options	Accessories	DTP-3A, DTP-4A, EPD-37A, EPD-37, CM-32(PC)E	
		Cables /	PCA37P, PCB37P, PCA37PS,	
		Connectorss	PCB37PS, CN5-D37M	

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

## Digital I/O

USB  
2.0Bi-direct  
24  
Non-Isolated

Windows Driver

LabVIEW

Non-isolated bi-directional digital I/O terminal for USB2.0

**GDIO-24DY-USB**  
**[DIO-24DY-USB]**14 pin screw-type  
terminal connector  
(6 in one)  
CN6-Y14Fixing Bracket  
for Y series  
USB terminals  
GBRK-USB-Y

- 24 bi-directional digital I/O (eight channels, three groups)
- Non-isolated LVTTTL level I/O (positive logic)
- USB2.0/USB1.1-compliant, high-speed (480Mbps)
- Bus-powered for convenience and portability
- Input/output switching can be set via application software
- Screw-type connectors for easy wiring

USB cable included

USB  
2.0Input  
8  
Output  
8  
Non-Isolated

Windows Driver

Digital I/O Terminal for USB2.0

**GDIO-0808TY-USB**  
**[DIO-0808TY-USB]**14 pin screw-type  
terminal connector  
(6 in one)  
CN6-Y14Fixing Bracket  
for Y series  
USB terminals  
GBRK-USB-Y

- 8 TTL-level inputs, 8 open collector outputs
- USB2.0/USB1.1-compliant, Bus-powered for convenience and portability
- I/O transistor has built-in zener diode for voltage surge protection
- Screw-type connectors for easy wiring

USB cable included

USB  
2.0Input  
16  
Output  
16  
Isolated  
Digital  
Filter  
Power  
On board  
Surge & Overcurrent  
Protection

Windows Driver

LabVIEW

X series Isolated Digital I/O Unit for USB with on-board Power Supply

**GDIO-1616BX-USB**Fixing bracket for  
X series USB I/O units  
BRK-USB-X

- On-board power supply (12VDC 240mA) to drive the input/output circuit opto coupler
- 16 input signals can be used as interrupts
- USB hub feature supports up to 4 CONTEC USB unit
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Advanced compatibility with GDIO-1616B-PE, PIO-16/16B(PC)H

USB cable included

USB  
2.0Input  
16  
Output  
16  
Isolated  
High  
Voltage  
Digital  
Filter  
Non  
Polarity

Windows Driver

LabVIEW

X series High Voltage Non-Polarity Isolated Digital I/O Unit for USB

**GDIO-1616RYX-USB**Fixing bracket for  
X series USB I/O units  
BRK-USB-X

- 16 Opto-Isolated input (for sink/source current output), 16 solid state relay output
- Supports high-voltage input range - 12 to 48VDC / output - 120VAC/VDC
- 16 input signals can be used as interrupts
- USB hub feature supports up to 4 CONTEC USB unit.
- Digital filtering function to prevent input error caused by noise and/or chattering
- Advanced compatibility with GDIO-1616RY-PE and GPIO-1616RY(PC)I

USB cable included



Model	GDIO-24DY-USB	GDIO-0808TY-USB	DIO-1616BX-USB	DIO-1616RYX-USB
Input channels	-	8 (1 common)	16 channels (1 common)	
Output channels	-	8 (1 common)	16 channels (1 common)	
I/O channels	24	-	-	
Input specifications	Type	LVTTTL level (positive logic)	TTL-level (Negative logic)	Opto-Isolated (for sink current output)
	Signal Level	3.3VDC	5VDC	Opto-Isolated (for sink/source current output)
	Interrupts	-	-	16 interrupt signals combine to one interrupt request signal as INTA
Output specifications	Resistance	33Ω	10kΩ (1 TTL load)	4.7kΩ
	Type	LVTTTL level (positive logic)	Open Collector (negative logic)	Opto-Isolated Open Collector (Current sinking type)
	Rating	3.3VDC 8mA	28VDC 40mA (per channel)	35VDC 100mA
Response Time (Max.)	200nsec	Input: 200nsec, Output: 200nsec (according to the Pull-up resistor)	Within 200μsec	120VAC/DC 100mA
Internal Power	-			
Wiring Distance	1.5m (Max.)	1.5m (depending on wiring environment)	50m	
USB speed	12Mbps <Full speed>, 480Mbps <High speed>			
Power Supply	-		Self-power / Bus power	
Power Consumption (Max.)	5VDC 250mA	5VDC 300mA	5VDC 400mA	5VDC 500mA
Dimensions (mm)	64(W)×62(D)×24(H) (exclusive of protrusions)		180(W) × 140(D) × 34(H) (Excluding protrusions)	
Connector	14-pin (screw-terminal) plug header		96pin half-pitch connector [male]PCR-E96LMD+ [mfd. by HONDA TSUSHIN KOGYO CO., LTD.] or equivalent	37-pin D-SUB connector [female] DCLC-J37SAF-20L9E [mfd. by JAE] or equivalent
Weight (main unit)	70g (Not including the USB cable, attachment)		300g (Excluding USB cable and attachments)	
Included cable Length	USB cable 1.8m			
Options	Accessories	GBRK-USB-Y	DTP-3C, DTP-4C, DTP-64A, EPD-37A, EPD-96A, EPD-96, CCB-96, CM-64(PC)E, POA200-20, BRK-USB-X	
	Cables / Connectors	CN6-Y14	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F	

Analog I/O

Digital I/O

Serial

Communication

GPIO

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

B-34

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;ET Ethernet IO

Bus Expansion

Accessories

Cables

**USB  
2.0**
**Input  
8**
**Output  
8**
**Isolated**
**Surge & Overcurrent  
Protection**
**Windows Driver**
**LabVIEW**

USB cable included



## Isolated Digital I/O Terminal for USB2.0

**GDIO-0808LY-USB**  
**[DIO-0808LY-USB]**

 14 pin screw-type  
terminal connector  
(6 in one)  
**CN6-Y14**

 Fixing Bracket  
for Y series  
USB terminals  
**GBRK-USB-Y**


- 8 opto-isolated inputs, 8 opto-isolated open collector outputs (Output ratings can handle up to 35VDC and 100mA per channel)
- USB2.0/USB1.1-compliant, high-speed (480Mbps)
- Bus-powered for convenience and portability
- USB and I/O interface are opto-isolated to prevent noises
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Screw-type connectors for easy wiring

**USB  
2.0**
**Input  
8**
**Output  
8**
**Isolated**
**CE**
**Windows Driver**
**LabVIEW**

USB cable included



## Isolated Digital I/O Module for USB2.0

**GDIO-8/8(USB)GY**

- On-board trigger monitoring (Digital Input)
- Transistor Output that is designed to work with large capacities, 24VDC, 150mA (max) per channel (Drives LED display directly)
- 2 Screw-less connectors for easy wiring - no special tools needed
- I/O channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

**USB  
2.0**
**Input  
8**
**Output  
8**
**Isolated**
**Digital Filter**
**Surge & Overcurrent  
Protection**
**Windows Driver**
**LabVIEW**

USB cable included



## X series Isolated Digital I/O Unit for USB

**GDIO-1616LX-USB**

 Fixing bracket for  
X series USB I/O units  
**BRK-USB-X**


- 16 Opto coupler input and 16 open collector output
- All input signals can be used as interrupts- USB hub feature supports up to 4 CONTEC USB unit.
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Advanced compatibility with DIO-1616L-PE, GDIO-1616L2-PCI, PIO-16/16B(PCI)H

**B-35**

Model	GDIO-0808LY-USB	GDIO-8/8(USB)GY	GDIO-1616LX-USB	
Input channels	8 (1 common)	8	16 channels (1 common)	
Output channels	8 (1 common)	8	16 channels (1 common)	
Input specifications	Type	Opto-Isolated (for sink current output, negative logic)	Opto-Isolated (for sink current output)	
	Signal Level	12~24VDC (±10%)	12~24VDC	-
	Interrupts	-	16 interrupt signals combine to one interrupt request signal as INTA	
Output specifications	Resistance	4.7kΩ	3kΩ	4.7kΩ
	Type	Opto-Isolated Open Collector (current sinking type, negative logic)	Opto-Isolated Open Collector (current sinking type)	
	Rating	35VDC 100mA per point	12~24VDC 150mA	35VDC 100mA
Response Time (Max.)	300μ sec	1msec	Within 200μsec	
Wiring Distance	50m (Max.)	50m		
USB speed	12Mbps <Full speed>, 480Mbps <High speed>			
Power Supply	-		Self-power / Bus power	
Power Consumption (Max.)	5VDC 250mA	5VDC 450mA	5VDC 300mA	
Dimensions (mm)	64(W)×62(D)×24(H) (exclusive of protrusions)	50.4(W) × 64.7(D) × 94.0(H)	180(W) × 140(D) × 34(H) (Excluding protrusions)	
Connector	14-pin (screw-terminal) plug header	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]	37-pin D-SUB connector (female)DCLC-J37SAF-20L9E [mfd. by JAE] or equivalent	
Weight (main unit)	70g (Not including the USB cable, attachment)	100g	300g (Excluding USB cable and attachments)	
Included cable Length	USB cable 1.8m			
Options	Accessories	GBRK-USB-Y	EPD-37A, DTP-3C, DTP-4C, CM-32(PC)E, POA200-20, BRK-USB-X	
	Cables / Connectors	CN6-Y14	-	PCB37P, PCB37PS, PCA37P, PCA37PS, CN5-D37M
	Applicable Modules	-	DIO-8/8(FIT)GY	-
	Applicable Power Supplies	-	POW-AD13GY, POW-AD22GY, POW-AD25GY, POW-DD10GY, POW-DD43GY	-
	Applicable Adapters	-	POA200-20	-

## Digital I/O

USB  
2.0Input  
16Output  
16

Isolated

Windows Driver

LabVIEW

USB cable included



## Isolated Digital I/O Module for USB2.0

## GDIO-16/16(USB)

- On-board trigger monitoring (Digital Input)
- Transistor Output that is designed to work with large capacities: 12~24V, 150mA (max.) per channel; 36~48V, 50mA (max.) per channel (Drives LED display directly)
- Screw-less connectors for easy wiring
- I/O channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

USB  
2.0Input  
32Output  
32

Isolated

Digital Filter

Surge &amp; Overcurrent Protection

Windows Driver

LabVIEW

USB cable included



## X series Multi Channel Isolated Digital I/O Unit for USB

## GDIO-3232LX-USB

- 32 Opto coupler input and 32 open collector output
- 16 input signals can be used as interrupts
- USB hub feature supports up to 4 CONTEC USB unit.
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Advanced compatibility with DIO-3232L-PE, GDIO-3232L2-PCI and PIO-32/32L(PCI)H

Fixing bracket for  
X series USB I/O units  
BRK-USB-X

USB  
2.0Input  
64Output  
64

Isolated

Digital Filter

Surge &amp; Overcurrent Protection

Windows Driver

LabVIEW

USB cable included



## X series High Density Isolated Digital I/O Unit for USB

## DIO-6464LX-USB

- High density 64 Opto coupler input and 64 open collector output
- 16 input signals can be used as interrupts
- USB hub feature supports up to 4 CONTEC USB unit.
- Digital filtering function to prevent input error caused by noise and/or chattering
- Output transistor has built-in circuit protection (voltage surge, overcurrent)
- Advanced compatibility with GPIO-64/64L(PCI)H and DIO-6464L-PE

Fixing bracket for  
X series USB I/O units  
BRK-USB-X



Model	DIO-16/16(USB)	GDIO-3232LX-USB	DIO-6464LX-USB
Input channels	16	32 channels (1 common in 16 channels unit)	64 channels (1 common in 16 channels unit)
Output channels	16	32 channels (1 common in 16 channels unit)	64 channels (1 common in 16 channels unit)
Input specifications	Type	Opto-Isolated (for high sink/source current output)	
	Signal Level	12~24VDC	
	Interrupts	-	32 interrupt signals combine to one interrupt request signal as INTA
	Resistance	3kΩ	4.7kΩ
Output specifications	Type	Opto-Isolated Open Collector (current sinking type)	
	Rating	12~48VDC: 150mA per point (12~24V), 50mA per point (36~48V)	35VDC 100mA
Response Time (Max.)	1msec	Within 200μsec	
Wiring Distance	50m		
USB speed	12Mbps <Full speed>, 480Mbps <High speed>		
Power Supply	-	Self-power / Bus power	Self-power
Power Consumption (Max.)	5VDC 450mA	5VDC 400mA	5VDC 550mA
Dimensions (mm)	50.4(W) × 64.7(D) × 94.0(H)	180(W) × 140(D) × 34(H) (Excluding protrusions)	
Connector	FMC 1.5/18-ST-3.5 (PHOENIX CONTACT)	96pin half-pitch connector [male]PCR-E96LMD+ [mfd. by HONDA TSUSHIN KOGYO CO., LTD.] or equivalent	HDRA-E100W1LFD1T1EC-SL+ [HONDA TSUSHIN KOGYO CO., LTD.] or equivalent
Weight (main unit)	100g	300g (Excluding USB cable and attachments)	
Included cable Length	USB cable 1.8m		
Options	Accessories	GBRK-USB-Y	DTP-3C, DTP-4C, DTP-64A, EPD-37A, EPD-96A, EPD-96, CCB-96, CM-64(PC)E, POA200-20, BRK-USB-X
	Cables / Connectors	-	PCA96P, PCB96P, PCA96PS, PCB96PS, PCB96WS, CN5-H96F
	Applicable Modules	DIO-16/16(FIT)GY	-
	Applicable Power Supplies	POW-AD13GY, POW-AD22GY, POW-AD25GY, POW-DD10GY, POW-DD43GY	-
	Applicable Adapters	POA200-20	-

Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

B-36

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB

# Digital I/O

Analog I/O

Digital I/O

Serial Communication

 GPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;ET Ethernet IO

Bus Expansion

Accessories

Cables

**USB**  
2.0

 Input  
16    Non-  
isolated

Windows Driver

USB cable included

## Digital Input Terminal for USB2.0 GDI-16TY-USB

 14 pin screw-type  
terminal connector  
(6 in one)  
**CN6-Y14**

 Fixing Bracket  
for Y series  
USB terminals  
**GBRK-USB-Y**


- 16 TTL-level inputs
- USB2.0/USB1.1-compliant, Bus-powered for convenience and portability
- Input transistor has built-in zener diode for voltage surge protection
- Screw-type connectors for easy wiring


**USB**  
2.0

 Input  
16    Isolated    CE

Windows Driver

LabVIEW

USB cable included

## Isolated Digital Input Module for USB2.0 DI-16(USB)GY

- On-board trigger monitoring
- 2 Screw-less connectors for easy wiring - no special tools needed
- Input channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included


**USB**  
2.0

 Input  
32    Isolated

Windows Driver

LabVIEW

USB cable included

## Isolated Digital Input Module for USB2.0 DI-32(USB)

- On-board trigger monitoring
- Screw-less connectors for easy wiring
- Input channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included



B-37

Model	GDI-16TY-USB	DI-16(USB)GY	DI-32(USB)	
Input channels	16 (1 common)	16	32	
Output channels	-			
Input specifications	Type	TTL-level (Negative logic)	Opto-Isolated (for sink/source current output)	
	Signal Level	5VDC	12~24VDC	
	Resistance	10kΩ (1 TTL load)	3kΩ	
Output specifications	Type	-		
	Rating	-		
Response Time (Max.)	200nsec	1msec*1		
Wiring Distance	1.5m (depending on wiring environment)	50m		
USB speed	12Mbps <Full speed>, 480Mbps <High speed>	12Mbps <Full speed>, 480Mbps <High speed>		
Power Consumption (Max.)	5VDC 300mA	5VDC 450mA		
Dimensions (mm)	64(W)×62(D)×24(H) (exclusive of protrusions)	50.4(W) × 64.7(D) × 94.0(H)		
Connector	14-pin (screw-terminal) plug header	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]	FMC 1.5/18-ST-3.5 [PHOENIX CONTACT]	
Weight (main unit)	70g (excluding the USB cable, attachment)	100g		
Included cable Length	USB cable 1.8m			
Options	Accessories	GBRK-USB-Y		
	Cables / Connectors	CN6-Y14	-	
	Applicable Modules	-	DI-16(FIT)GY	DI-32(FIT)GY
	Applicable Power Supplies	-	POW-AD13GY, POW-AD22GY, POW-AD25GY, POW-DD10GY, POW-DD43GY	
	Applicable Adapters	-	POA200-20	



## Digital I/O

**USB 2.0**

Output 16 Non-isolated

Windows Driver

### Digital Output Terminal for USB2.0 GDO-16TY-USB [DO-16TY-USB]

14 pin screw-type  
terminal connector  
(6 in one)  
CN6-Y14



Fixing Bracket  
for Y series  
USB terminals  
GBRK-USB-Y



- 16 open collector outputs
- USB2.0/USB1.1-compliant, Bus-powered for convenience and portability
- Output transistor has built-in zener diode for voltage surge protection
- Screw-type connectors for easy wiring

USB cable included



Analog I/O

Digital I/O

Serial  
Communication

GPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&EIT Ethernet IO

Bus Expansion

Accessories

Cables

**USB 2.0**

Output 16 Isolated

Windows Driver LabVIEW

### Isolated Digital Output Module for USB2.0 DO-16(USB)GY

- Transistor Output that is designed to work with large capacities, 24VDC, 150mA (max) per channel (Drives LED display directly)
- 2 Screw-less connectors for easy wiring - no special tools needed
- Output channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

USB cable included



**USB 2.0**

Output 32 Isolated

Windows Driver LabVIEW

### Isolated Digital Output Module for USB2.0 DO-32(USB)

- Transistor Output that is designed to work with large capacities: 12~24V, 150mA (max.) per channel; 36~48V, 50mA (max.) per channel (Drives LED display directly)
- Screw-less connectors for easy wiring
- Output channels can be expanded by use of extension modules (3 modules - max)
- Sample development and utility debugging software included

USB cable included



B-38

Model	GDO-16TY-USB	DO-16(USB)GY	DO-32(USB)	
Input channels	-			
Output channels	16 (1 common)	16	32	
Type	-			
Input specifications	Signal Level -			
Resistance	-			
Type	Open Collector (negative logic)	Opto-Isolated Open Collector (current sinking type)		
Rating	28VDC 40mA (per channel)	12~24VDC 150mA	12~48VDC: 150mA per point (12~24V), 50mA per point (36~48V)	
Response Time (Max.)	200nsec (according to the Pull-up resistor)	1msec		
Wiring Distance	1.5m (depending on wiring environment)	50m		
USB speed	12Mbps <Full speed>, 480Mbps <High speed>	12Mbps <Full speed>, 480Mbps <High speed>		
Power Consumption (Max.)	5VDC 350mA	5VDC 450mA		
Dimensions (mm)	64(W)×62(D)×24(H) (exclusive of protrusions)	50.4(W) × 64.7(D) × 94.0(H)		
Connector	14-pin (screw-terminal) plug header	FK-MC 0.5/9-ST-2.5 [PHOENIX CONTACT]	FMC 1.5/18-ST-3.5 [PHOENIX CONTACT]	
Weight (main unit)	70g (excluding the USB cable, attachment)	100g		
Included cable Length	USB cable 1.8m			
Accessories	GBRK-USB-Y	-		
Cables / Connectors	CN6-Y14	-		
Applicable Modules	-	DO-16(FIT)GY	DO-32(FIT)GY	
Applicable Power Supplies	-	POW-AD13GY, POW-AD22GY, POW-AD25GY, POW-DD10GY, POW-DD43GY		
Applicable Adapters	-	POA200-20		

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

Lineup

PCI Express

PCI

Compact PCI

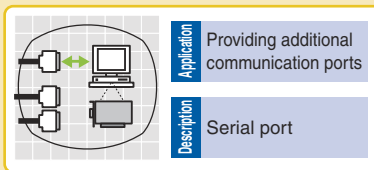
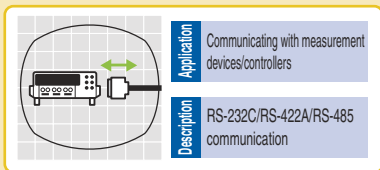
ISA

PCMCIA

Card Bus

USB

## SERIAL COMMUNICATIONS



Provides PC with RS-232C/422/485 serial communication ports.

Used as a communication interface with measurement devices, barcode readers, industrial AV equipment, UPS, printers and modems which are equipped with RS-232C/422A/485 serial communication port.

### Pictograms

#### Bus Specifications

PCI Express

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

USB 2.0

Product is USB standard compliant and can be used in the computer equipped with USB2.0/1.1 ports. Supports USB2.0 high-speed mode (480Mbps).

PCI

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

Card Bus

Product supports Cardbus that is a 32-bit PC card standard bus.

#### Supported Connectors

78-pin D-SUB

37-pin D-SUB

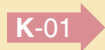
9-pin D-SUB

44-pin D-SUB

25-pin D-SUB

CONTEC provides a wide variety of cables and accessories to suit your needs, such as Branch cables for 9-pin/25-pin D-SUB, etc.

Cables and connectors



Indicates the number of pins and shapes of connectors used for external connection. The supported cables and accessories will vary depending on these specifications.

#### Supported softwares

##### Windows Driver

Includes Standard COM driver for Windows.

##### Linux Driver

Standard COM driver for Linux COM Setup Disk is also included.

#### ■ Standard COM Driver / COM Setup Disk

Software for installing serial communication board in the operating system. Serial communication devices installed using COM Setup Disk will be recognized as standard PC serial ports (COM1, COM2...) when using Windows or Linux. Commercial applications that support serial ports can then be used.

#### Board Size

Low Profile

Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

#### Communication standard / Number of channels

RS-232C Xch

Equipped with the indicated number of RS-232Ccompliant ports

RS-422A/485 Xch

Equipped with the indicated number of RS-422A and RS-485 - compliant

#### Maximum transfer speed

XXX bps

Maximum transfer speed that can be set

#### Points

Individual Isolated

Features electric isolation between each channel as well as between communication lines and the PC. This prevents damage and malfunction from both signal interference between channels and communication line noise.

Surge Protection

All communication lines are equipped with surge protection circuits to prevent damage and malfunction caused by incoming voltage and current surges.

C-01

Lineup

PCI Express

PCI

ISA

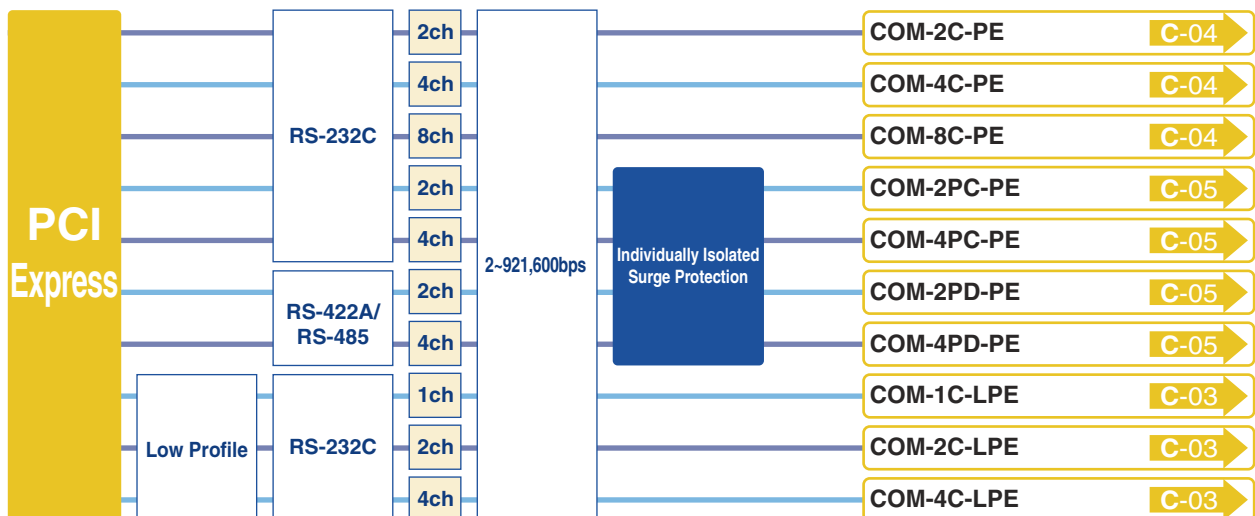
Card Bus

PCMCIA

USB

## Product Lineup

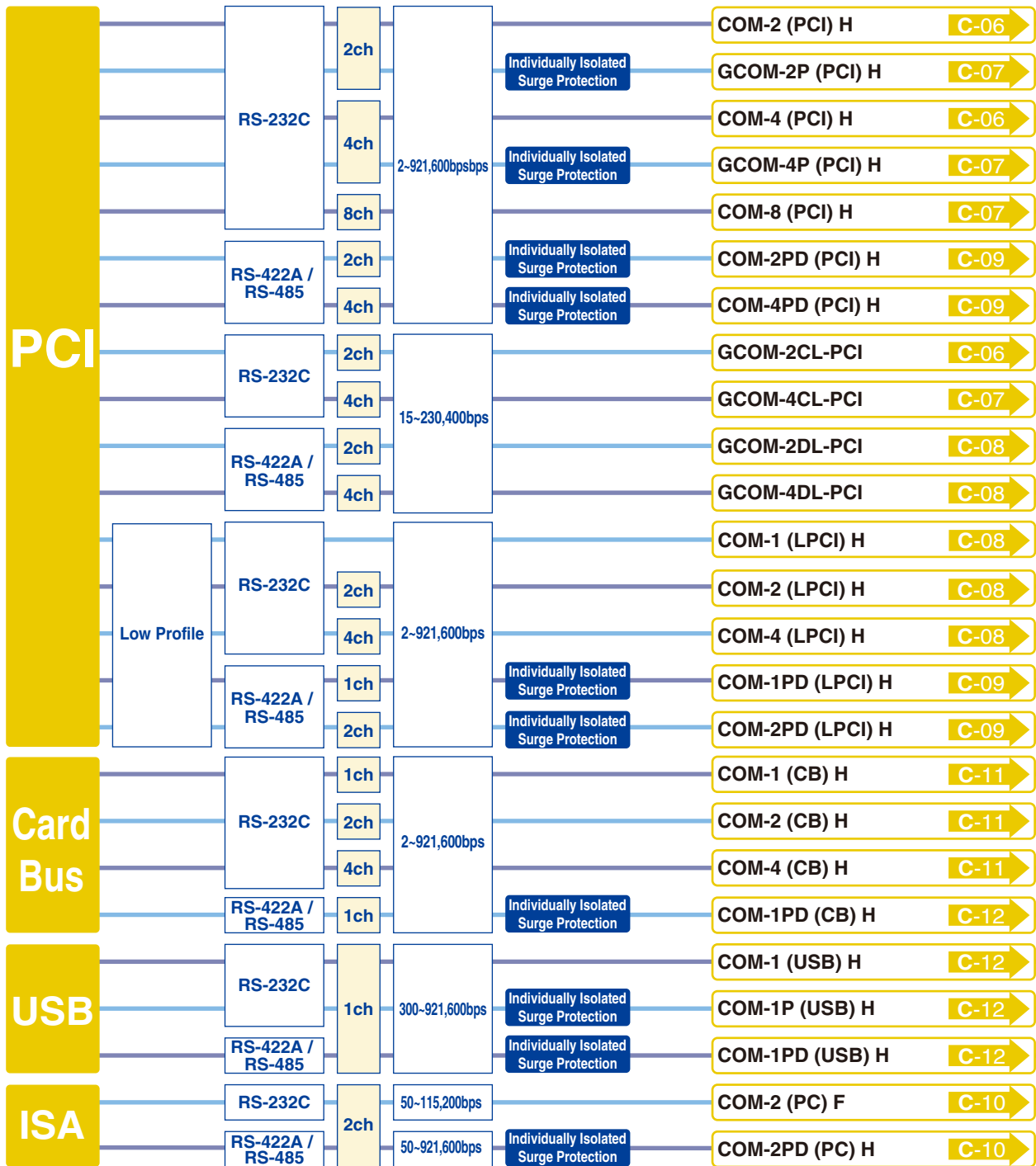
You can choose from a variety of models according to your desired bus, communication standard and number of channels.



# Serial Communication

## Product Lineup

You can choose from a variety of models according to your desired bus, communication standard and number of channels.



Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables

C-02

Lineup

PCI Express

PCI

ISA

Card Bus

PCMCIA

USB

# Serial Communication

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

## PCI Express

Low Profile

9-pin D-SUB

RS-232C  
1ch

921.6K bps

CE

Windows Driver

Linux Driver

RS-232C Serial I/O board Low Profile size 1ch type for PCI Express

### COM-1C-LPE

- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)
- 9-pin D-type male connector
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



## PCI Express

Low Profile

44-pin D-SUB

RS-232C  
2ch

921.6K bps

CE

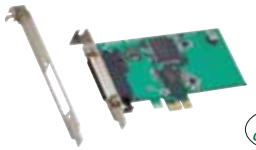
Windows Driver

Linux Driver

RS-232C Serial I/O board Low Profile size 2ch type for PCI Express

### COM-2C-LPE

- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



## PCI Express

Low Profile

44-pin D-SUB

RS-232C  
4ch

921.6K bps

CE

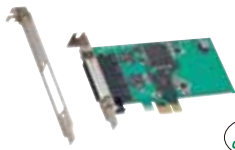
Windows Driver

Linux Driver

RS-232C Serial I/O board Low Profile size 4ch type for PCI Express

### COM-4C-LPE

- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



## C-03

Lineup
PCI Express
PCI
ISA
Card Bus
PCMCIA
USB

Model		COM-1C-LPE	COM-2C-LPE	COM-4C-LPE		
Interface type		RS-232C (Async.)				
Number of Channels		1ch	2ch	4ch		
Speed		2~921,600bps*1*2				
Data type		5/6/7/8 Bit, 1/1.5/2 Stop Bit				
Parity Check		even, odd, non-parity				
Controller		162850 compliant (FIFO buffer: I/O 128-byte per channel)				
Interrupts		1 *3				
Wiring Distance		15m (Max.)				
Isolation type		-				
Isolation voltage		-				
I/O Address		Occupies 32 ports				
Power Consumption (Max.)		3.3VDC 300mA		3.3VDC 350mA		
Bus / Dimensions (mm)		PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)×67.90(H)				
Included cable length		-				
Connector		9-pin D-type male connector: DELC-J9PAF-20L9 [JAE] or equivalent	44-pin D-type female connector: 103A-44FGTBBB3 [COXOC] or equivalent			
Options	Software	API-PAC(W32) , ACX-PAC(W32)				
	Accessories	-				
	Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F	PCE44/9P2S, CN5-D44M	PCE44/9P4S, CN5-D44M		

Notes:

\*1: Selectable speed, 15~921,600bps, using Standard COM Drive Software Setup and API-PAC(W32)

\*2: Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.

\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from four channels.

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

# Serial Communication

## PCI Express

9-pin  
D-SUB×2RS-232C  
2ch921.6K  
bps

Windows Driver

Linux Driver

RS-232C Serial I/O board for  
PCI Express  
**GCOM-2C-PE**  
**[COM-2C-PE]**

- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- 9-pin D-type male connector



Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

## PCI Express

37-pin  
D-SUBRS-232C  
4ch921.6K  
bps

Windows Driver

Linux Driver

RS-232C Serial I/O board for  
PCI Express  
**GCOM-4C-PE**  
**[COM-4C-PE]**

- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- 4 port 9-pin D-type connector cable bundled (GCOM-4C-PE only)



## PCI Express

78-pin  
D-SUBRS-232C  
8ch921.6K  
bps

Windows Driver

Linux Driver

RS-232C Serial I/O board for  
PCI Express  
**GCOM-8C-PE**  
**[COM-8C-PE]**

- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel



## C-04

Model	GCOM-2C-PE	GCOM-4C-PE	GCOM-8C-PE	
Interface type	RS-232C (Async.)			
Number of Channels	2ch	4ch	8ch	
Speed	2~921,600bps <sup>*1*2</sup>			
Data type	5/6/7/8 Bit, 1/1.5/2 Stop Bit <sup>*1</sup>			
Parity Check	even, odd, non-parity <sup>*1</sup>			
Controller	162850 compliant (FIFO buffer: I/O 64 bytes per channel)			
Interrupts	1 <sup>*3</sup>			
Wiring Distance	15m (Max.)			
Isolation type	-			
Isolation Voltage	-			
I/O Address	Occupies 32 ports		Occupies 64 ports	
Power Consumption (Max.)	3.3VDC 350mA			
Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a x1 / 121.69(L)×110.18(H)			
Included cable length	-	0.25m (GPCE37/9PS)		
Connector	9-pin male D-type: DELC-J9PAF-20L9E [JAE] or equivalent	37-pin female D-type:DCLC-J37SAF-20L9E [JAE] or equivalent	78-pin female D-type: DV11603G4 [FOXCONN] or equivalent	
Software	API-PAC(W32), ACX-PAC(W32)			
Options	Accessories	-	GCCU-78F/25M[CCU-78F/25M] <sup>*4</sup>	GCCU-78F/25M[CCU-78F/25M] <sup>*5</sup>
Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F	PCE37/25PS, RSS-78M/37M, CN5-D37M	PCE78/9PS, GRSS-78M[RSS-78M] PCF78/25PS, CN5-D78M	

Note:

<sup>\*1</sup>: Software selectable speed, which can become 15~921,600bps when using the Standard COM Driver Software [COM Setup Disk] and the Driver Library [API-PAC(W32)]

<sup>\*2</sup>: The data transmission at high speed may not be performed normally owing to the environment, including the type of the connected devices and the length of the connected cables

<sup>\*3</sup>: A single interrupt signal "INTA" is output as a collection of interrupt input signals from all channels

<sup>\*4</sup>: Requires use of optional cable RSS-78M/37M

<sup>\*5</sup>: Requires use of optional cable RSS-78M

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

Lineup

PCI Express

PCI

ISA

Card Bus

PCMCIA

USB



# Serial Communication

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

C-05

Lineup
PCI Express
PCI
ISA
Card Bus
PCMCIA
USB

PCI Express

9-pin D-SUB×2

RS-232C 2ch

921.6K bps

Individual Isolated

Surge Protection

Windows Driver

Linux Driver



2ch RS-232C Isolated Serial I/O

Board for PCI Express

GCOM-2PC-PE

[COM-2PC-PE]

- Functions as a standard COM port in Windows or Linux
- Channels individually isolated signals are surge protected
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- 9-pin D-type male connector



PCI Express

37-pin D-SUB

RS-232C 4ch

921.6K bps

Individual Isolated

Surge Protection

Windows Driver

Linux Driver



4ch RS-232C Isolated Serial I/O

Board for PCI Express

GCOM-4PC-PE

[COM-4PC-PE]

- Functions as a standard COM port in Windows or Linux
- Channels individually isolated signals are surge protected
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- 4 port 9-pin D-type connector cable bundled (GCOM-4PC-PE only)



PCI Express

9-pin D-SUB×2

RS-422A/485 2ch

921.6K bps

Individual Isolated

Surge Protection

Windows Driver

Linux Driver



2ch RS-422A/485 Isolated Serial I/O

Board for PCI Express

GCOM-2PD-PE

[COM-2PD-PE]

- Functions as a standard COM port in Windows or Linux
- Channels individually isolated signals are surge protected
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel



PCI Express

37-pin D-SUB

RS-422A/485 4ch

921.6K bps

Individual Isolated

Surge Protection

Windows Driver

Linux Driver



4ch RS-422A/485 Isolated Serial I/O

Board for PCI Express

GCOM-4PD-PE

[COM-4PD-PE]

- Functions as a standard COM port in Windows or Linux
- Channels individually isolated signals are surge protected
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- 4 port 9-pin D-type connector cable bundled (GCOM-4PD-PE only)



Model	GCOM-2PC-PE		GCOM-4PC-PE	GCOM-2PD-PE	GCOM-4PD-PE
Interface type	RS-232C (Async.)			RS-422A/RS-485(Async.), Full-duplex or Half-duplex communication mode	
Number of Channels	2ch		4ch	2ch	4ch
Speed	2~921,600bps**12				
Data type	5/6/7/8 Bit, 1/1.5/2 Stop Bit*1				
Parity Check	even, odd, non-parity*1				
Controller	162850 compliant (FIFO buffer: I/O 64 bytes per channel)				
Interrupts	1*3				
Wiring Distance	15m (Max.)			1200m (Max.)	
Isolation type	Channel Isolation & Bus Isolation				
Isolation Voltage	Channel Isolation: 1000VDC, Bus Isolation: 1000VDC		Channel Isolation: 500VDC, Bus Isolation: 1000VDC	Channel Isolation: 1000VDC, Bus Isolation: 1000VDC	Channel Isolation: 500VDC, Bus Isolation: 1000VDC
I/O Address	Occupies 32 ports				
Power Consumption (Max.)	3.3VDC 950mA		3.3VDC 1600mA	3.3VDC 1100mA	3.3VDC 1600mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a x1 / 121.69(L)×110.18(H)		PCI Express Base Specification Rev.1.0a x1 / 169.33(L)×110.18(H)	PCI Express Base Specification Rev.1.0a x1 / 121.69(L)×110.18(H)	PCI Express Base Specification Rev.1.0a x1 / 169.33(L)×110.18(H)
Included cable length	-		0.25m (GPCE37/9PS)	-	0.25m (GPCE37/9PS)
Connector	pin male D-type: DELC-J9PA 20L9E [JAE] or equivalent		37-pin female D-type:DCLC-J37SAF-20L9E [JAE] or equivalent	9-pin male D-type: DELC-J9PAF 20L9E [JAE] or equivalent	37-pin female D-type:DCLC-J37SAF-20L9E [JAE] or equivalent
Options	Software	API-PAC(W32) , ACX-PAC(W32)			
	Accessories	-		GCCU-78F/25M[CCU-78F/25M]*4	
	Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F		PCE37/25PS, RSS-78M/37M, CN5-D37M	CN5-D9F


Note:

\*1: Software selectable speed, which can become 15~921,600bps when using the Standard COM Driver Software [COM Setup Disk] and the Driver Library [API-PAC(W32)]

\*2: The data transmission at high speed may not be performed normally owing to the environment, including the type of the connected devices and the length of the connected cables

\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from all channels.

\*4: Requires use of optional cable RSS-78M/37M.

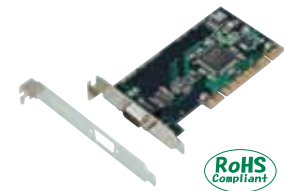
As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

# Serial Communication



## RS-232C Serial I/O Board 1ch type for Low Profile PCI **COM-1C2-LPCI**

- Low Profile PCI-compliant (Standard-size bracket included)
- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)
- 9-pin D-type male connector



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables



## 2Ch RS-232C Communication Board for PCI **GCOM-2C2-PCI**

- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 9-pin D-type male connector
- 128-byte FIFO buffer (both transmission and reception)



## Non-isolated RS-232C 2ch Serial I/O board for PCI **GCOM-2CL-PCI**

- ±15KV, ESD Overcurrent/Surge protected
- Functions as a standard COM board when used under Windows
- Up to 16 boards can be added with settings of COM1~256
- 64-byte FIFO buffer (both transmission and reception)



## 4Ch RS-232C Communication Board for PCI **GCOM-4C2-PCI**

- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)
- 4 port 9-pin D-type connector cable bundled (GCOM-4C2-PCI only)



C-06

Model	COM-1C2-LPCI	GCOM-2C2-PCI	GCOM-2CL-PCI	GCOM-4C2-PCI
Interface type	RS-232C (Async.)			
Number of Channels	1ch	2ch		4ch
Speed	2-921,600bps *1*2		15~230,400bps *1*2	2-921,600bps *1*2
Data type	5/6/7/8 Bits, 1/1.5/2 Stop Bits			
Parity Check	Even, Odd, Non-parity			
Controller	162850 compliant (FIFO buffer: I/O 128-byte per channel)		XR17C152 compliant (FIFO buffer: I/O 64-byte per channel)	162850 compliant (FIFO buffer: I/O 128-byte per channel)
Interrupts	1*3			
Wiring Distance	15m (Max.)			
Isolation type	-			
Isolation Voltage	-			
Memory Address	-			
I/O Address	Occupies 32 ports		Occupies 1024 bytes	-
Power Consumption (Max.)	3.3VDC 100mA (JP1: 1, 2), 5VDC 100mA (JP1: 2, 3)		5VDC 100mA	3.3VDC 150mA (JP1: 1, 2), 5VDC 150mA (JP1: 2, 3)
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / <sup>4</sup> 121.69(L)×63.41(H)	PCI (32bit, 33MHz, 5V or 3.3V) / <sup>4</sup> 121.69(L)×105.68(H)	PCI (32bit, 33MHz, 5V) / 121.69(L)×88.00(H)	PCI (32bit, 33MHz, 5V or 3.3V) / <sup>4</sup> 121.69(L)×105.68(H)
Connector	9-pin D-type male connector: DELC-J9PAF-20L9 [JAE] or equivalent, 2031-2-9-P [gallant] or equivalent			37-pin female D-type: DCLC-J37SAF-20L9E [JAE] or equivalent
Options	Software	API-PAC(W32) , ACX-PAC(W32)		
	Accessories	-		
	Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F		GCCU-78F/25M[CCU-78F/25M] <sup>5</sup> GPCE37/9PS bundled, PCE37/25PS, RSS-78M/37M, CN5-D37M

Note:

\*1: Software selectable speed, which can become 15~921,600bps when using the Standard COM Driver Software [COM Setup Disk] and the Driver Library [API-PAC(W32)].

\*2: The data transmission at high speed may not be performed normally owing to the environment, including the type of the connected devices and the length of the connected cables.

\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from all channels.

\*4: Power voltage is set by jumper. (5VDC or 3.3VDC).

\*5: Requires use of optional cable RSS-78M/37M.

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

# Serial Communication

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

PCI

37-pin D-SUB

RS-232C 4ch

230.4K bps

Windows Driver

Non-isolated RS-232C 4ch  
Serial I/O board for PCI  
**GCOM-4CL-PCI**  
**[COM-4CL-PCI]**

- ±15KV, ESD Overcurrent/Surge protected
- Functions as a standard COM board when used under Windows
- Up to 16 boards can be added with settings of COM1~256
- 64-byte FIFO buffer (both transmission and reception)



PCI

78-pin D-SUB

RS-232C 8ch

921.6K bps

CE

Windows DriverLinux Driver

8Ch RS-232C Communication  
Board for PCI  
**GCOM-8C2-PCI**  
**[COM-8(PCI)H]**

- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)



PCI

9-pin D-SUB x2

RS-232C 2ch

921.6Kbps

Individual Isolated

Surge Protection

CE

Windows DriverLinux Driver

2Ch Isolated RS-232C  
Serial I/O Board for PCI  
**GCOM-2P(PCI)H**  
**[COM-2P(PCI)H]**

- Channels individually isolated/ signals are surge protected
- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- 9-pin D-type male connector



PCI

37-pin D-SUB

RS-232C 4ch

921.6Kbps

Individual Isolated

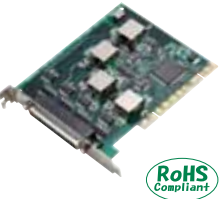
Surge Protection

CE

Windows DriverLinux Driver

4Ch Isolated RS-422A/485  
Interface Board for PCI  
**GCOM-4P(PCI)H**  
**[COM-4P(PCI)H]**

- Channels individually isolated / signals are surge protected
- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel



C-07

Model	GCOM-4CL-PCI	GCOM-8C2-PCI	GCOM-2P(PCI)H	GCOM-4P(PCI)H
Interface type	RS-232C (Async.)		RS-232C (Async. & Isolated)	
Number of Channels	4ch	8ch	2ch	4ch
Speed	15~230,400bps *1*2	2-921,600bps		
Data type	5/6/7/8 Bits, 1/1.5/2 Stop Bits			
Parity Check	Even, Odd, Non-parity			
Controller	XR17C154 compliant (FIFO buffer: I/O 64-byte per channel)	162850 compliant (FIFO buffer: I/O 128-byte per channel)		
Interrupts	1*3			
Wiring Distance	15m (Max.)			
Isolation type	-		Individual isolation, Bus isolation	
Isolation Voltage	-		Individual isolation: 1000VDC, Bus isolation: 1000VDC	Individual isolation: 500VDC, Bus isolation: 1000VDC
Memory Address	Occupies 2048 bytes	-		
I/O Address	-	Occupies 64 ports	Occupies 32 ports	
Power Consumption (Max.)	5VDC 120mA	3.3VDC 250mA (JP1: 1,2), 5VDC 250mA (JP1: 2,3)	5VDC 600mA	5VDC 1000mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V) / 121.69(L)×88.00(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×105.68(H)		
Attachment	DRV-PAC(W32), GPCE37/9PS included	DRV-PAC(W32)	API-PAC(W32)	
Connector	37-pin female D-type: 2031-2-37-S [gallant] or equivalent	78-pin female D-type: DV11603G4 [FOXCONN] or equivalent	9-pin D-type male connector: DELC-J9PAF-20L9 [JAE] or equivalent	37-pin female D-type:DCLC-J37SAF-20L9E [JAE] or equivalent
Software	API-PAC(W32) , ACX-PACK(W32)			
Options	AccessoriesGCCU-78F/25M[CCU-78F/25M]*5	GCCU-78F/25M[CCU-78F/25M]*6	-	
Cables / Connectors	PCE37/25PS, RSS-78M/37M, CN5-D37M	PCE78/9PS, GRSS-78M[RSS-78M] PCE78/25PS, CN5-D78M	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F	PCE37/9PS, PCE37/25PS, CN5-D37M

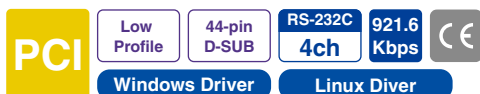
Note: \*1: Software selectable speed, which can become 15~921,600bps when using the Standard COM Driver Software [COM Setup Disk] and the Driver Library [API-PAC(W32)].  
\*2: The data transmission at high speed may not be performed normally owing to the environment, including the type of the connected devices and the length of the connected cables.  
\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from all channels.  
\*4: Power voltage is set by jumper. (5VDC or 3.3VDC). \*5: Requires use of optional cable RSS-78M/37M.  
\*6: Requires use of optional cable RSS-78M.

# Serial Communication



## 2Ch RS-232C Serial I/O Board for Low Profile PCI COM-2(LPCI)H

- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)



## 4Ch RS-232C Serial I/O Board for Low Profile PCI COM-4(LPCI)H

- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)



## 2ch Non-isolated RS-422A/485 Serial I/O board for PCI GCOM-2DL-PCI [COM-2DL-PCI]

- 2 RS-422A/RS485-compatible channels
- Functions as a standard COM board when used under Windows
- Up to 16 boards can be added with settings of COM1~256
- 64-byte FIFO buffer (both transmission and reception)



## 4ch Non-isolated RS-422A/485 Serial I/O board for PCI GCOM-4DL-PCI [COM-4DL-PCI]

- 4 RS-422A/RS485-compatible channels
- Functions as a standard COM board when used under Windows
- Up to 16 boards can be added with settings of COM1~256
- 64-byte FIFO buffer (both transmission and reception)



Model	COM-2(LPCI)H	COM-4(LPCI)H	GCOM-2DL-PCI	GCOM-4DL-PCI
Interface type	RS-232C (Async.)		RS-422A/RS-485 (Non-Isolated), Full-duplex or Half-duplex communication mode	
Number of Channels	2ch	4ch	2ch	4ch
Speed	2~921,600bps <sup>*1*2</sup>		15~230,400bps <sup>*1*2</sup>	
Data type	5/6/7/8 Bits, 1/1.5/2 Stop Bits			
Parity Check	even, odd, non-parity			
Controller	162850 compliant (FIFO buffer: I/O 128 bytes per channel)		XR17C152 compliant (FIFO buffer: I/O 64-byte per channel)	XR17C154 compliant (FIFO buffer: I/O 64-byte per channel)
Interrupts	1 <sup>*3</sup>			
Wiring Distance	15m (Max.)		1200m (Max.)	
Isolation type	-			
Isolation Voltage	-			
Memory Address	-		Occupies 1024 bytes	Occupies 2048 bytes
I/O Address	Occupies 32 ports		-	
Power Consumption (Max.)	5VDC 100mA		5VDC 340mA	5VDC 640mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 121.69(L)×63.41(H)		PCI(32bit,33MHz,5V)/ 119.91(L) × 88.00(H)	PCI(32bit,33MHz,5V)/ 119.91(L) × 105.68(H)
Connector	44-pin D-type female connector: 103A-44FGTBBB3 [COXOC] or equivalent		9-pin D-type male connector: DELC-J9PAF-20L9 [JAE] or equivalent	37-pin D-type female connector: DCLC-J37SAF-20L9 [JAE] or equivalent
Software	API-PAC(W32) , ACX-PAC(W32)			
Options	Accessories -			
Cables / Connectors	PCE44/9P2S, CN5-D44M	PCE44/9P4S, CN5-D44M	CN5-D9F	GPCE37/9PS bundled, CN5-D37M

Note:

\*1: Selectable speed, 15~921, 600bps, using Standard COM Drive Software Setup and API-PAC(W32)

\*2: Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.

\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from four channels.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables

C-08

Lineup

PCI Express

PCI

ISA

Card Bus

PCMCIA

USB

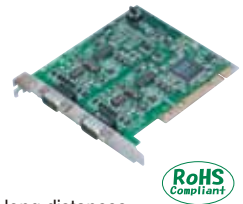


# Serial Communication

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

2Ch Isolated RS-422A/485  
Communication Board for PCI  
**GCOM-2PD2-PCI**  
**[COM-2PD(PCI)H]**

- 2 RS-422A/RS485-compatible channels
- On-board isolated circuit provides safe communication, even over long distances
- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)



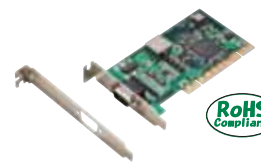
4Ch Isolated RS-422A/485  
Communication Board for PCI  
**GCOM-4PD2-PCI**  
**[COM-4PD(PCI)H]**

- 4 RS-422A/RS485-compatible channels
- On-board isolated circuit provides safe communication, even over long distances
- Functions as a standard COM port in Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)



1ch Isolated RS-422A/485 Serial I/O  
Board for Low Profile PCI  
**COM-1PD(LPCI)H**

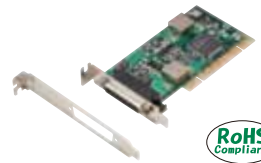
- 1 RS-422A/RS485-compatible channels
- On-board isolated circuit provides safe communication, even over long distances
- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1~256
- 128-byte FIFO buffer (both transmission and reception)
- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)



PCI Low Profile 44-pin D-SUB RS-422A/485 921.6 Kbps Individual Isolated Surge Protection Windows Driver Linux Driver

2ch Isolated RS-422A/485 Serial I/O  
Board for Low Profile PCI  
**COM-2PD(LPCI)H**

- 2 RS-422A/RS485-compatible channels
- On-board isolated circuit provides safe communication, even over long distances
- Functions as a standard COM board when used under Windows or Linux
- Up to 16 boards can be added with settings of COM1-256
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Low Profile PCI-compliant (includes bracket for use in standard PCI slot)



C-09

[illegible]

Model	GCOM-2PD2-PCI	GCOM-4PD2-PCI	COM-1PD(LPCI)H	COM-2PD(LPCI)H
Interface type	RS-422A/RS-485 (Isolated), Full-duplex or Half-duplex communication mode			
Number of Channels	2ch	4ch	1ch	2ch
Speed	2~921,600bps *1*2			
Data type	5/6/7/8 Bits, 1/1.5/2 Stop Bits			
Parity Check	Even, Odd, Non-parity			
Controller	162850 compliant (FIFO buffer: I/O 128-byte per channel)			
Interrupts	1 *3			
Wiring Distance	1200m (Max.)			
Isolation type	Individual isolation, Bus isolation		Bus Isolation	Channel Isolation & Bus Isolation
Isolation Voltage	Individual isolation: 1000VDC, Bus isolation: 1000VDC	Individual isolation: 500VDC, Bus isolation: 1000VDC	Bus Isolation: 300VDC	Channel Isolation: 300VDC, Bus Isolation: 300VDC
I/O Address	Occupies 32 ports			
Power Consumption (Max.)	5VDC 550mA	5VDC 950mA	5VDC, Terminator OFF: 200mA / Terminator ON: 300mA	5VDC, Terminator OFF: 300mA / Terminator ON: 550mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 4	121.69(L)x105.68(H)	PCI (32bit, 33MHz, 5V or 3.3V) / 4	121.69(L)x63.41(H)
Connector	9-pin D-type male connector: DELC-J9PAF-20L9 [JAE] or equivalent	37-pin female D-type:DCLC- J37SAF-20L9E [JAE] or equivalent	9-pin D-type male connector: DELC-J9PAF-20L9 [JAE] or equivalent	44-pin D-type female connector: 103A-44FGTBBB3 [COXOC] or equivalent
Options	Software Accessories	API-PAC(W32) , ACX-PAC(W32)	-	
	Cables / Connectors	CN5-D9F	GPCE37/9PS bundled, PCE37/25PS, RSS-78M/37M. CN5-D37M	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F. CN5D9F
				PCE44/9P2S, CN5-D44M

Note:

\*1: Selectable speed, 15-921,600bps, using Standard COM Drive Software Setup and API-PAC(W32)

\*2: Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.

\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from four channels

\*4: This board requires power supply at +5 V from an expansion slot (it does not work on a machine with a +3.3V power supply alone).

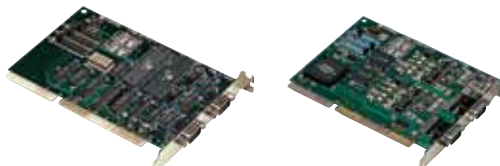
\*5: Optional cable RSS-78M/37M is required.

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.





# Serial Communication

ISA	Model	2Ch RS-232C Serial I/O Board for ISA	2Ch Isolated RS-422/485 Interface Board for ISA
		COM-2(PC)F	COM-2PD(PC)H
			
SPECIFICATIONS			
Interface type		RS-232C	RS-422A, RS-485
Channels		2ch	
Access Speed		50~115,200bps	50~921,600bps
Data type		5/6/7/8 Bit, 1/1.5/2 Stop Bit	
Parity check		even, odd, non-parity	
Controller		16550 compliant	
Interrupts		Compatible mode: Two of IRQ 3~7, 9~12, 14 or 15 Enhanced mode: One of IRQ 3~7, 9~12, 14 or 15	
Wiring distance		15m (Max.)	1.2km (Max.)
Isolation type		-	Bus isolation
Isolation Voltage		-	1000VDC
I/O address		Occupies 16 ports	
Power consumption (Max.)		5VDC 420mA, +12VDC 60mA, -12VDC 50mA	5VDC 480mA
Connector		9-pin male D-type: DELC-J9PAF-20L9[JAE] or equivalent	
Bus / Dimensions (mm)		AT Bus / 163.0(L) × 107.0(H)	AT Bus / 163.0(L) × 122.0(H)
Options	Software	API-PAC(W32) , ACX-PAC(W32)	
	Accessories	-	
	Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F	RSS-9M/F, RSS-25M/9F, CN5-D9F
CE mark		○	○

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables

C-10

Lineup

PCI Express

PCI

ISA

Card Bus

PCMCIA

USB

# Serial Communication

Analog I/O
Digital I/O
Serial Communication
GPIB Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

Card Bus

9-pin D-SUB 1ch RS-232C 921.6K bps

Windows Driver Linux Driver

## 1Ch RS-232C Serial I/O Card for CardBus COM-1(CB)H

- Functions as a standard COM board
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Maximum 2pcs. can be mounted on the same PC

Connection cable included



Card Bus

9-pin D-SUBx2 2ch RS-232C 921.6K bps

Windows Driver Linux Driver

## 2Ch RS-232C Serial I/O Card for CardBus COM-2(CB)H

- Functions as a standard COM board
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Maximum 2pcs. can be mounted on the same PC

Connection cable included



Card Bus

9-pin D-SUBx4 4ch RS-232C 921.6K bps

Windows Driver Linux Driver

## 4Ch RS-232C Serial I/O Board for CardBus COM-4(CB)H

- Functions as a standard COM board
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Maximum 2pcs. can be mounted on the same PC

Connection cable included



## C-11

PCMCIA

9-pin D-SUBx2 2ch RS-232C 115.2K bps

Windows Driver Linux Driver

## 2Ch RS-232C Serial I/O Card for PC-Card COM-2(PM)

- Functions as a standard COM board when used under Windows XP/2000/Me/98 or Linux
- 16-byte FIFO buffer (both transmission and reception) provided for each channel



Lineup
PCI Express
PCI
ISA
Card Bus
PCMCIA
USB

Model	COM-1(CB)H	COM-2(CB)H	COM-4(CB)H	COM-2(PM)
Interface type	RS-232C(Async.)			
Number of Channels	1ch	2ch	4ch	2ch
Speed	2~921,600bps			
Data type	5/6/7/8 Bit, 1/1.5/2 Stop Bit			
Parity Check	even, odd, non-parity			
Controller	162850 compliant (FIFO buffer: I/O 128 bytes per channel)			16550 compliant (I/O buffer: 16Byte)
Interrupts	1			
Wiring Distance	15m (Max.)			
Isolation type	-			
Isolation Voltage	-			
I/O Address	Occupies 32 ports			
Power Consumption (Max.)	3.3VDC 100mA		3.3VDC 200mA	Occupies 16 ports
Bus / Dimensions (mm)	PC Card Standard CardBus / Type II			5VDC 170mA
Included cable length	250mm			PCMCIA Rel.2.0/JEIDA 4.1 upper/ TYPE II
Connector	9-pin D-type male connector: DELC-J9PAF-20L9[JAE] or equivalent			
Options	Software	API-PAC(W32) , ACX-PAC(W32)		
	Accessories	-		
	Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F		

Note: \*1: Selectable speed, 15~921,600bps, using Standard COM Drive Software Setup and API-PAC(W32)  
\*2: Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.  
\*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from four channels.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

# Serial Communication

## Card Bus

9-pin D-SUB	RS-422A/485 1ch	921.6K bps	Individual Isolated	Surge Protection
Windows Driver		Linux Driver		

### Isolated RS-422A/485 Serial I/O Card for CardBus COM-1PD(CB)H

- Functions as a standard COM board
- On-board isolated circuit provides safe communication, even over long distances
- 128-byte FIFO buffer (both transmission and reception) provided for each channel
- Maximum 2pcs. can be mounted on the same PC

Connection cable included



Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

## USB 2.0

9-pin D-SUB	RS-232C 1ch
Windows Driver	

### RS-232C Micro Converter for USB2.0 COM-1(USB)H

- 128byte transmission and 384byte reception
- Functions as a standard COM board
- 9-pin D-SUB connector (female) is used allowing direct connection with modem  
The attached gender-changer enables connection with 9-pin D-SUB connector (female) cable (\* Installed in the factory setting)



## USB 2.0

9-pin D-SUB	RS-232C 1ch	Individual Isolated	Surge Protection
Windows Driver			

### Isolated RS-232C Micro Converter for USB2.0 COM-1P(USB)H

- 128byte transmission and 384byte reception
- Functions as a standard COM board
- Port is isolated from PC and protected against surge
- 9-pin D-SUB connector (female) is used allowing direct connection with modem  
The attached gender-changer enables connection with 9-pin D-SUB connector (female) cable (\* Installed in the factory setting)



## USB 2.0

9-pin D-SUB	RS-422A/485 1ch	Individual Isolated	Surge Protection
Windows Driver			

### Isolated RS-422A/485 Micro Converter for USB2.0 COM-1PD(USB)H

- 9-pin D-SUB connector (male) is used allowing connection with 9-pin D-SUB connector (female) cable.
- 128byte transmission and 384byte reception
- Functions as a standard COM board
- Port is isolated from PC and protected against surge



## C-12

Lineup

PCI Express

PCI

ISA

Card Bus

PCMCIA

USB

Model	COM-1PD(CB)H	COM-1(USB)H	COM-1P(USB)H	COM-1PD(USB)H
Interface type	RS-422A/RS-485 (Async.&Isolated)	RS-232C (Async.)		RS-422A/485 (Async.)
Number of Channels	1ch	1		
Speed	2~921,600bps	300~921,600bps		
Data type	5/6/7/8 Bit, 1/1.5/2 Stop Bit			
Parity Check	even, odd, non-parity			
Controller	162850 compliant (FIFO buffer: I/O 128 bytes per channel)	FT232BM (FIFO buffer: 128-byte transmission, 384-byte reception)		
Interrupts	1	-		1200m (Max.)
Wiring Distance	1200m (Max.)	15m (Max.)		
Isolation type	Bus Isolation	-	Bus Isolation	
Isolation Voltage	300VDC	-	300VDC	
I/O Address	Occupies 32 ports	-		
Operation guaranteed voltage	-	5V±5%		
Power Consumption (Max.)	3.3VDC 100mA	5VDC 50mA	5VDC 280mA	5VDC 350mA
Bus / Dimensions (mm)	PC Card Standard CardBus / Type II	USB Specification 1.1/2.0/ 78.3(W)×20.5(D)×36.5(H), 91.0(W)×20.5(D)×36.5(H) (when gender changer connecting)		USB Specification 1.1 / 2.0/ 68.3 (W)×20.5(D)×36.5(H)
Included cable length	250mm	-		
Connector	9-pin D-type male connector: DELC-J9PAF-20L9(JAE) or equivalent	USB: USB A connector RS-232C: 9-pin male D-type connector (female)		USB: USB A connector RS-422A/485: 9-pin male D-type connector
Software	API-PAC(W32) , ACX-PAC(W32)			
Options	Accessories -	-		
Cables / Connectors	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9F, CN5-D9F	RSS-9M/F, RSC-9F, RSS-25M/9F, RSC-25F/9M, RSC-25F/9F, CN5-D9M, CN5-D9F		CN5-D9M, CN5-D9F

#### Note:

\*1: Selectable speed, 15/300~921,600bps, using Standard COM Drive Software Setup and API-PAC(W32)  
 \*2: Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.  
 \*3: A single interrupt signal "INTA" is output as a collection of interrupt input signals from four channels.

\*1: Data transmission at high speed is dependent upon the environment including the type and status of connected equipment, cabling and operable environment.  
 \*2: Software Selectable  
 \*3: It doesn't correspond to Low-power Bus-powered Function (4.4V operation).

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

● Gender changer

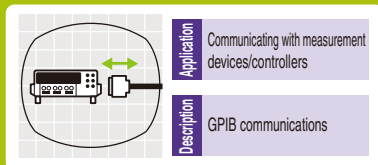
The interface connector of this product is a 9 pin D-SUB (female) connector. The product is shipped with the gender changer attached to the interface connector. When connecting the product with a screw-locked (female) cable, leave the gender changer attached to the connector. When connecting the product to a device having a 9 pin D-SUB (male) connector using a straight cable, remove the gender changer and connect the product directly to the device.  
 <COM-1(USB)H, COM-1P(USB)H included>

## D

# GPIB Communications

## GPIB COMMUNICATIONS

Provides PC with GPIB-compliant communication port(s). These can be used as the communication interface for measurement devices equipped with GPIB communication ports as well as various other controllers.



### Pictograms

#### Bus Specifications

##### PCI Express

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

##### PCI

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

##### Card Bus

Product supports Cardbus that is a 32-bit PC card standard bus.

##### USB 2.0

Product is USB standard compliant and can be used in the computer equipped with USB2.0/1.1 ports. Supports USB2.0 high-speed mode(480Mbps).

##### Compact PCI

Product is Compact PCI - compliant and can be used in the computer equipped with Compact PCI 3U expansion slot.

#### Board Size

##### Low Profile

Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

#### Supported softwares

##### Windows Driver

API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

##### Linux Driver

API-TOOL Drivers for Linux are provided. The license-free driver software (both development and runtime) that provide commands to interface boards or cards using module-style device drivers and the shared library.

##### LabVIEW

API-GPLV(W32) allows CONTEC's GPIB communication modules to be operated under National Instrument's LabVIEW. Installation of this software allows you to develop and operate programs with LabVIEW using our GPIB communication devices.

This driver is set-up similar to National Instrument's API function and can also be used on other programming languages such as Microsoft's Visual Basic.

#### Points

##### XX byte/s

Maximum transfer speed.

##### FIFO Memory

You can transmit/receive data using the onboard FIFO memory. Since the communication is controlled by the board, high-speed communication can be achieved regardless of computer CPU speed.

##### Timer

Built-in application timer provides precise time monitoring in Windows.

##### Bus Analyzer

Onboard memory allows analysis of the status change of all lines on the GPIB cable. (Max. 64K data reception)

##### Bus Master

Bus master transfer allows the transfer of large amounts of data between the PC and board without putting an additional load on CPU.

### Cable connection

GPIB standard limits the number of cables and cable length.

- (1) Up to 15 devices can be connected to a computer because it is responsible for coordinating bus traffic.
- (2) Cable length: 20m between controller and a one device or 2m between each device, whichever is less.

### Options for GPIB

GPIB cable  
GPCN-T02  
[PCN-T02] (2m)  
GPCN-T04  
[PCN-T04] (4m)



The exclusive connection cable is of high electricity resistance and reliability that is compatible with GPIB.

GPIB connector  
CN-GP/C

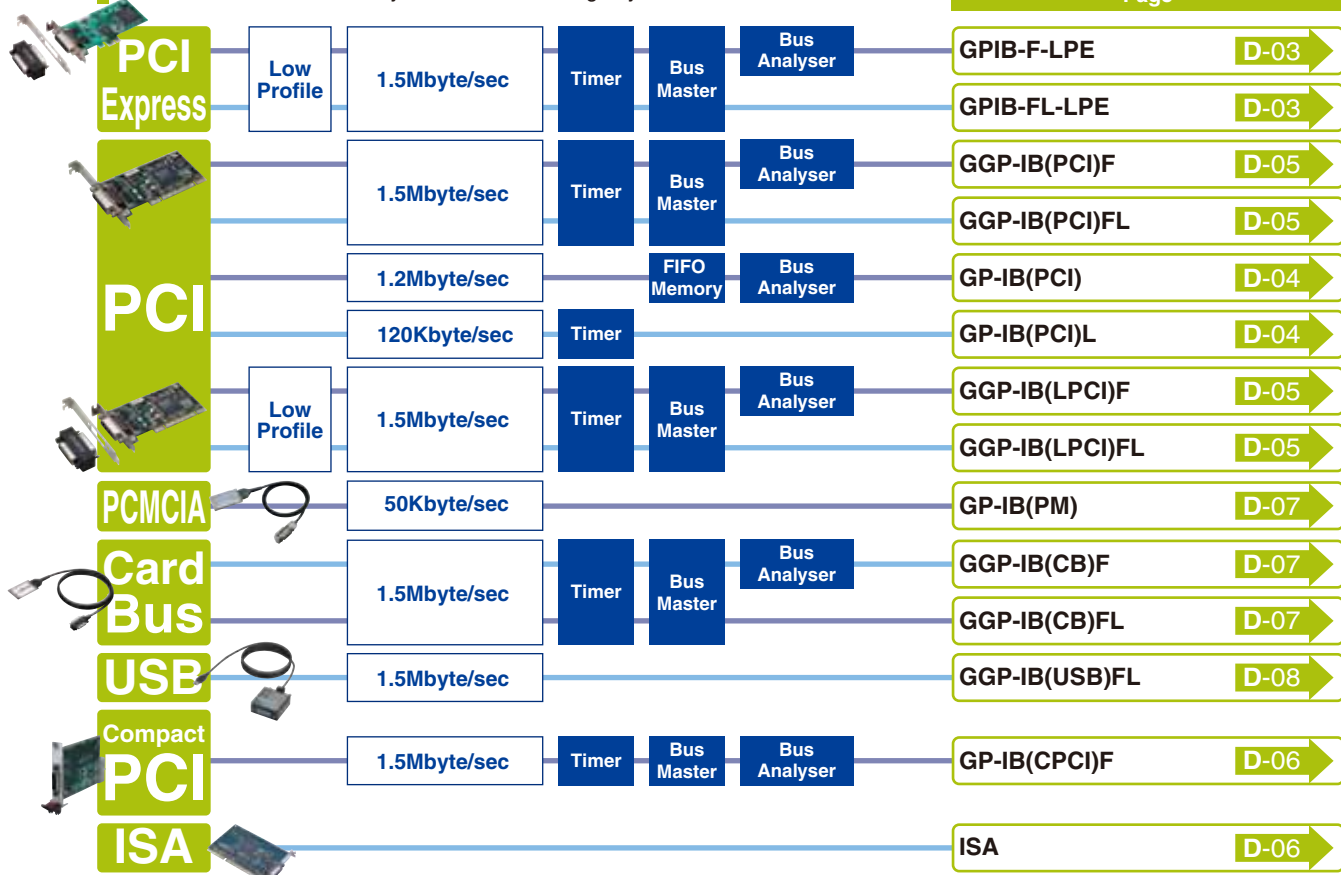
The connector adapter is best to be equipped in high noisy environments such as on the Extension Slot of PC or cable from an adjoining board.



# GPIB Communication

## Product Lineup

You can choose from a variety of models according to your desired bus.



## Features of GPIB F Series - High-functionality / High speed

CONTEC's new series of GPIB communication boards are IEEE-488.2 compliant and feature bus master high-speed data transmission and GPIB bus analysis. The major features and functions of this series include:

- PCI Express : GPIB-F-LPE, GPIB-FL-LPE
- PCI : GGP-IB(LPCI)F, GGP-IB(LPCI)FL, GGP-IB(PCI)F, GGP-IB(PCI)FL
- Compact PCI : GP-IB(CPCI)F
- CardBus : GGP-IB(CB)F, GGP-IB(CB)FL
- USB : GGP-IB(USB)FL

### 1. 1.5Mbyte/sec - Maximum transfer speed

CONTEC's GPIB F Series devices can communicate at a maximum transfer speed of 1.5Mbyte/sec.

### 2. Bus master transfer [Exclusive of GP-IB(USB)FL]

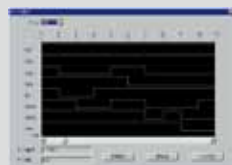
Bus master transfer allows bulk data to be transferred between the computer and board with no additional load on the CPU.

### 3. 2Kbyte FIFO for both transmission and reception

2Kbyte FIFO is provided for handling transmissions and receptions, furthering high-speed transmission of both small and large size data. High-speed transmission is also possible using interface message with FIFO.

### 4. GPIB bus analyzer

[Exclusive of GP-IB(PCI/LPCI/CB/USB)FL, GPIB-FL-LPE]  
F Series boards [excluding GPIB (PCI)FL], are capable of not only analyzing the signals that run along the GPIB bus but also of conducting a signal analysis while GPIB communication is in progress.



### 5. High-precision timer

A high-precision application timer is built-in enabling precise time monitoring under Windows.

### 6. Reliable, long-term availability

These boards feature a high-speed GPIB controller (compatible with PD7210 & up) developed by CONTEC assuring reliable long-term availability.

### 7. Diagnosis program

System configuration support is provided by a diagnosis program. This program can conduct hardware operation checks (interrupt / I/O access) and basic communication tests (between PC & external devices).

### 8. Line monitoring

Able to read total control line (IFC, ATN, SRQ, REN, EOI, DAV, NRFD, NDAC) status as well as latch data.  
Also capable of reading data line (DIO1 - DIO8) status.  
[GP-IB(PCI/LPCI/CB/USB)FL, GPIB-FL-LPE can monitor control line only.]

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables

D-02

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

USB



# GPIB Communication

Analog I/O
Digital I/O
Serial Communication
GPIB Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

## PCI Express

Low Profile

F series

1.5M byte/s

Timer

Bus Analyzer

Bus Master

CE

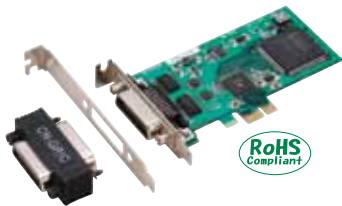
Windows Driver

Linux Diver

LabVIEW

### High-performance & High-speed GPIB Interface Board (Low Profile Size) for PCI Express GPIB-F-LPE

- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability
- CN-GP/C (GPIB connector adaptor) included
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



## PCI Express

Low Profile

F series

1.5M byte/s

Timer

Bus Master

CE

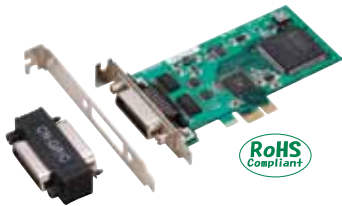
Windows Driver

Linux Diver

LabVIEW

### High-speed GPIB Interface Board (Low Profile Size) for PCI Express GPIB-FL-LPE

- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability
- CN-GP/C (GPIB connector adaptor) included
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



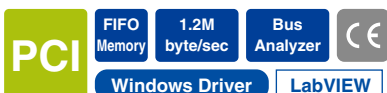
## D-03

Lineup
PCI Express
PCI
Compact PCI
ISA
PCMCIA
Card Bus
USB

Model	GPIB-F-LPE	GPIB-FL-LPE	
Interface type	IEEE-488.1, IEEE-488.2		
Number of Channels	1		
Speed	1.5Mbyte/sec (Max.)		
Data type	8 parallel lines, 3 handshake lines		
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more		
Interrupts	1		
I/O Address	Any of 128-byte boundary		
Wiring Distance <sup>*1</sup>	4m (Max.)		
Total cable length <sup>*1</sup>	20m (Max.)		
Connectable Devices <sup>*1</sup>	15		
Power Consumption (Max.)	3.3VDC 600mA		
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)x67.90(H)		
Included cable length	-		
Connector	24-pin Ribbon Connector: 555139-1 [AMP] or equivalent		
Options	Software	-	
	Accessories	CN-GP/C <sup>*2</sup>	
	Cables / Connectors	PCN-T02, PCN-T04	

<sup>\*1</sup>: For more detailed information, please see page D-01.  
<sup>\*2</sup>: CN-GP/C is standardly included with GPIB-FL-LPE and GPIB-F-LPE.

# GPIB Communication



## IEEE-488.2 GPIB Interface Board for PCI GP-IB(PCI)



- 1MB I/O FIFO provided to attain 1.2MB communication rate (max.)
- IEEE-488.1 / IEEE-488.2 - compliant
- GPIB Bus Analyzer function can monitor bus line data Requires use of API-PAC(W32)
- Equipped with GPIB controller developed by CONTEC assuring reliable, long-term availability



## Low Price IEEE-488.2 GPIB Interface Board for PCI GP-IB(PCI)L



- IEEE-488.1 / IEEE-488.2 -compliant
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability
- GPIB control timer enables high-precision time management
- Monitors GPIB bus line supports IFC (latch function provided), SRQ and ATN

Analog I/O

Digital I/O

Serial Communication

**GPIB Communication**

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables

**D-04**

Lineup

PCI Express

**PCI**

Compact PCI

ISA

PCMCIA

Card Bus

USB

Model	GP-IB(PCI)	GP-IB(PCI)L	
Interface type	IEEE-488.1, IEEE-488.2		
Number of Channels	1		
Speed	1.2Mbyte/sec (Max.)	120Kbyte/sec (Max.)	
Data type	8 parallel lines, 3 handshake lines		
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more		
Interrupts	1		
I/O Address	Occupies 16 ports	Occupies 32 ports	
Wiring Distance <sup>*1</sup>	4m (Max.)		
Total cable length <sup>*1</sup>	20m (Max.)		
Connectable Devices <sup>*1</sup>	15		
Power Consumption (Max.)	5VDC 970mA	5VDC 300mA	
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V) / 121.69(L)×106.68(H)		
Included cable length	-		
Connector	24-pin Ribbon Connector 555139-1 [AMP] or equivalent	24-pin Ribbon Connector 555139-1 [AMP]	
Options	Accessories	CN-GP/C	
	Cables / Connectors	PCN-T02, PCN-T04	

<sup>\*1</sup>: For more detailed information, please see page D-01.

# GPIB Communication

- Analog I/O
- Digital I/O
- Serial Communication
- GPIO Communication**
- Motion Controller
- Counter
- USB Remote I/O
- Ethernet Remote I/O
- Bus Expansion
- Accessories
- Cables

PCI F series 1.5M byte/s Timer Bus Analyzer Bus Master CE Windows Driver Linux Diver LabVIEW

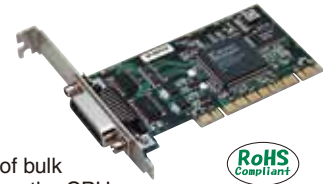
## High-performance & High-speed

## GPIB Interface Board for PCI

GGP-IB(PCI)F

**[GP-IB(PCI)F]**

- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability



PCI F series 1.5M byte/s Timer Bus Master CE Windows Driver Linux Driver LabVIEW

## Low Price & High-speed IEEE-488.2

## GPIB Interface Board for PCI

GGP-IB(PCI)FL

**[GP-IB(PCI)FL]**

- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability



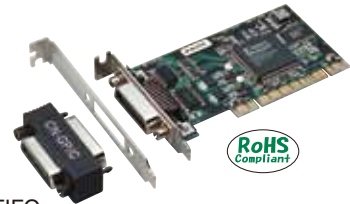
The logo for the PCI F series 1.5M byte/s Timer Bus Analyzer Bus Master CE. It features a green 'PCI' label, a 'Low Profile' badge, an 'F series' badge, a '1.5M byte/s' badge, a 'Timer' badge, a 'Bus Analyzer' badge, a 'Bus Master' badge, and a 'CE' mark. Below these are three compatibility badges: 'Windows Driver', 'Linux Diver', and 'LabVIEW'.

High-performance high-speed GPIB  
communication board for Low Profile PCI

GGP-IB(LPCI)F

[GP-IB(LPCI)F]

- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability
- CN-GP/C (GPIB connector adaptor) included
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



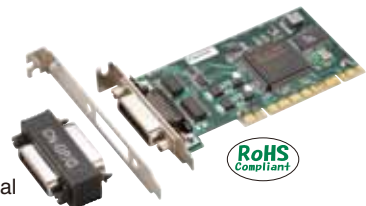
PCI F 1.5M byte/s Timer Bus Master CE Windows Driver Linux Diver LabVIEW

Low-price high-speed GPIB communication board for Low Profile PCI

GGP-IB(LPCI)FL

[GP-IB(LPCI)FL]

- Bus Master provides high-speed transfer
- of bulk data without applying any additional
- load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability
- CN-GP/C (GPIB connector adaptor) included
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



Model	GGP-IB(PCI)F	GGP-IB(PCI)FL	GGP-IB(LPCI)F	GGP-IB(LPCI)FL
Interface type	IEEE-488.1, IEEE-488.2			
Number of Channels	1			
Speed	1.5Mbyte/sec (Max.)			
Data type	8 parallel lines, 3 handshake lines			
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more			
Interrupts	1			
I/O Address	Occupies 128 ports			
Wiring Distance*1	4m (Max.)			
Total cable length*1	20m (Max.)			
Connectable Devices*1	15			
Power Consumption (Max.)	5VDC 400mA			
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V*2) / 121.69(L)×63.41(H)			
Included cable length	-			
Connector	24-pin Ribbon Connector: 555139-1 [AMP] or equivalent			
Options	Accessories	CN-GP/C*3		
	Cables / Connectors	PCN-T02, PCN-T04		

\*1: For more detailed information, please see page D-01.

\*2: +5V power must be supplied from PCI bus slot.

\*3: CN-GP/C is standardly included with GP-IB(LPCI)FL and GP-IB(LPCI)F.

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

[illegible]

# GPIB Communication

**Compact  
PCI**
**F  
series**
**1.5M  
byte/s**
**Timer**
**Bus  
Analyzer**
**Bus  
Master**
**Windows Driver**
**Linux Driver**
**LabVIEW**

## High-performance high-speed GPIB communication board for Compact PCI GP-IB(CPCI)F



- IEEE-488.1 / IEEE-488.2 -compliant
- 1.5Mbyte/sec transmission speed (max)
- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability
- 3U×4HP -compliant slot

Model	GP-IB(CPCI)F	
Interface type	IEEE-488.1, IEEE-488.2	
Number of Channels	1	
Speed	1.5Mbyte/sec (Max.)	
Data type	8 parallel lines, 3 handshake lines	
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more	
Interrupts	1	
I/O Address	Occupies 128ports	
Wiring Distance*1	4m (Max.)	
Total cable length *1	20m (Max.)	
Connectable Devices*1	15	
Power Consumption (Max.)	5VDC 400mA	
Bus / Dimensions (mm)	CompactPCI / 3U×4HP	
Included cable length	-	
Connector	24-pin Ribbon Connector, IEEE-488 receptacle	
Options	Accessories	CN-GP/C
	Cables / Connectors	PCN-T02, PCN-T04

\*1: For more detailed information, please see page D-01.

Analog I/O
Digital I/O
Serial Communication
<b>GPIB Communication</b>
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

ISA	Model	Low Price IEEE-488.2 GPIB Interface Board for ISA GP-IB(PC)L
SPECIFICATIONS		
Interface type	IEEE488.1, IEEE488.2	
Channels	1	
Speed	<DMA mode> 400Kbyte/sec (Max.)	
Data type	8 parallel lines, 3 handshake lines	
Signal Logic	Negative logic: <Low level> 0.8V or less <High level> 2.0V or more	
DMA Channels	CH1~CH3 (software selectable)	
Controller chip	CONTEC original FPGA (μPD7210C compatible)	
Interrupts	1 (software selectable)	
I/O address	Occupies 32ports	
Wiring Distance	4m (Max.)	
Total cable length	20m (Max.)	
Connectable devices	15 (Max.)	
Power consumption (Max.)	5VDC 350mA	
Connector	555139-2 [AMP] or equivalent	
Bus / Dimensions (mm)	ISA AT Bus / 163.0(L)×107.0(H)	
	Software	API-PAC(W32)
Options	Accessories	CN-GP/C
	Cables / Connectors	PCN-T02, PCN-T04
CE marking	○	

**D-06**

Lineup
PCI Express
PCI
<b>Compact PCI</b>
<b>ISA</b>
PCMCIA
Card Bus
USB

# GPIB Communication

Analog I/O
Digital I/O
Serial Communication
<b>GPIB Communication</b>
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

PCMCIA

50K byte/sec

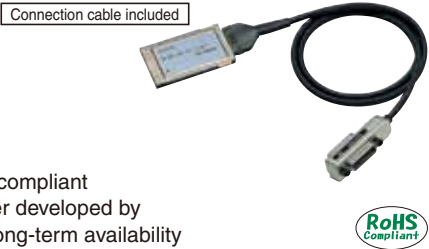
CE

Windows Driver

LabVIEW

## PCMCIA Card for GPIB GP-IB(PM)

- IEEE-488.1 and IEEE-488.2 compliant
- Equipped with GPIB controller developed by CONTEC assuring reliable, long-term availability



Card Bus

F series

1.5M byte/s

Timer

Bus Master

CE

Windows Driver

Linux Diver

LabVIEW

## Low price High-speed type GPIB communication card for CardBus GGP-IB(CB)FL [GP-IB(CB)FL]

- IEEE-488.1 / IEEE-488.2 -compliant
- 1.5Mbyte/sec transmission speed (max)
- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability



Card Bus

F series

1.5M byte/s

Timer

Bus Analyzer

Bus Master

CE

Windows Driver

Linux Diver

LabVIEW

## High-performance and high-speed type GPIB communication card for CardBus GGP-IB(CB)F [GP-IB(CB)F]

- IEEE-488.1 / IEEE-488.2 -compliant
- 1.5Mbyte/sec transmission speed (max)
- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability



D-07

Lineup
PCI Express
PCI
Compact PCI
ISA
<b>PCMCIA</b>
<b>Card Bus</b>
USB

Model	GP-IB(PM)	GGP-IB(CB)FL	GGP-IB(CB)F	
Interface type	IEEE-488.1, IEEE-488.2			
Number of Channels	1			
Speed	50Kbyte/sec (Max.)	1.5Mbyte/sec (Max.)		
Data type	8 parallel lines, 3 handshake lines			
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more			
Interrupts	One of IRQ3~7, 9~12, 14 or 15	1		
I/O Address	Occupies 16ports	Occupies 128ports		
Wiring Distance*1	4m (Max.)			
Total cable length*1	20m (Max.)*2			
Connectable Devices*1	15	15		
Power Consumption (Max.)	5VDC 100mA	5VDC 400mA		
Bus / Dimensions (mm)	PCMCIA Rel.2.0/JEIDA 4.1 upper/ Type II	PC Card Standard CardBus / TYPE II		
Included cable length	2.0m			
Connector	24-pin Ribbon Connector	24-pin Ribbon Connector: RC40-24RR [HIROSE] or equivalent		
Options	Accessories	CN-GP/C	CN-GP/C	
	Cables / Connectors	PCN-T02, PCN-T04	PCN-T02, PCN-T04	

\*1: For more detailed information, please see page D-01.  
\*2: Including cables

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



# GPIB Communication

**USB  
2.0**
**F**  
series

**1.5M**  
byte/s


Windows Driver

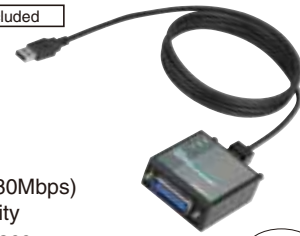
LabVIEW

Low Price High-Speed GPIB Communication  
Micro Converter for USB2.0

**GGP-IB(USB)FL**  
**[GP-IB(USB)FL]**

- USB2.0/USB1.1-compliant, high-speed (480Mbps)
- Bus-powered for convenience and portability
- Direct GPIB communication via USB interface
- USB cable can be attached firmly to the main unit by using a USB cable attachment.
- LED display enables GPIB communication monitoring (Listner mode, SRQ)
- Compact design that makes it ideal for use where space is limited

USB cable included



Analog I/O

Digital I/O

Serial  
Communication

**GPIB  
Communication**

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

**D-08**

Lineup

PCI Express

PCI

Compact PCI

ISA

PCMCIA

Card Bus

**USB**

Model	GGP-IB(USB)FL	
Interface type	IEEE-488.1, IEEE-488.2	
Number of Channels	1	
Speed	1.5Mbyte/sec (Max.)	
Data type	8 parallel lines, 3 handshake lines	
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more	
Interrupts	-	
I/O Address	-	
Wiring Distance <sup>*1</sup>	4m (Max.)	
Total cable length <sup>*1</sup>	20m (Max.) <sup>*2</sup>	
Connectable Devices <sup>*1</sup>	15	
Power Consumption (Max.)	5VDC 450mA	
Bus / Dimensions (mm)	USB Specification 1.1/2.0 / 62(W)×64(D)×24(H)	
Included cable length	1.8m	
Connector	24-pin Ribbon Connector, IEEE-488 plug	
Options	Accessories	CN-GP/C
	Cables / Connectors	PCN-T02, PCN-T04

<sup>\*1</sup>: For more detailed information, please see page D-01.

<sup>\*2</sup>: Excluding USB cables

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

# E Motion Controller

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

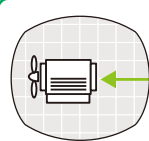
Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

## Motion Control



Application  
Description

Motion control

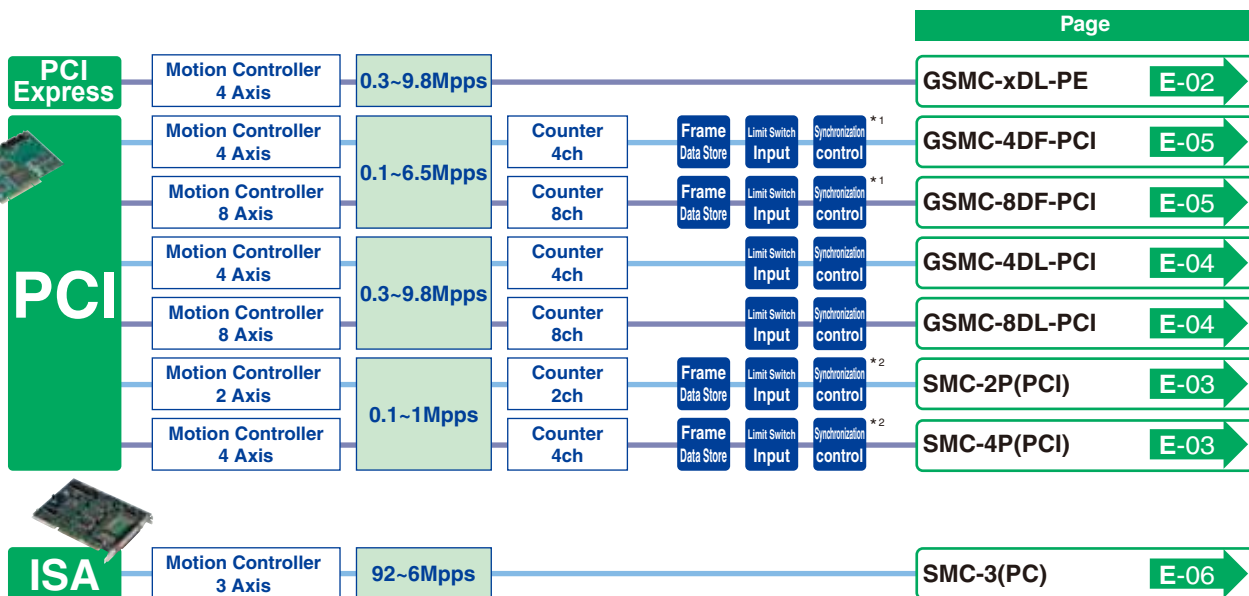
Pulse signal output

Enables PC controlled output of pulse train according to a specified pulse number and frequency.

Can automatically output control pulse which corresponds to operation parameters such as target position, speed and acceleration / deceleration rate. Limit input functions [required for positioning control] are also provided. For use with pulse-input type stepping motors or servo motors.

## Product Lineup

You can choose from a variety of interface boards according to your desired bus, I/O points and I/O type.



E-01

### Lineup

PCI Express

PCI

ISA

### Pictograms

#### Bus Specifications

**PCI Express**

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

**PCI**

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

#### Supported softwares

##### Windows Driver

API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

#### Supported Connectors

96-pin  
Half Pitch

100-pin  
0.8mm Pitch

The supported cables and accessories will vary depending on these specifications. Indicates the number of pins and shapes of connectors used for external connection.

CONTEC provides a wide variety of cables and accessories to suit your needs.

Cables with connectors on both ends Accessories (Terminal block, etc.)

J-01

Cables with a connector on one end Connector set

K-01

#### Number of Channels

Motor Control  
XXch

Maximum number of controllable channels

Counter  
XXch

Maximum number of input channels for pulse signals

#### Points

Frame Data Store

You can store a maximum of 1,000 frames [1 frame gathering information necessary for single positioning such as speed, acceleration/ deceleration rate and target position].

Limit Switch Input

Detects the stop point, deceleration point and origin point of the motor for high-level positioning control.

Synchronization control

Synchronization control for multiple simultaneous start/stop control commands is available. A bundled synchronization control cable makes it possible for synchronization control in up to 16 boards.

\*1: Compatible with both SMC-4DF-PCI and SMC-8DF-PCI type boards.

\*2: Only one type of board can be used with any single synchronization control cable.

# Motion Controller

**PCI Express**

100-pin  
D-SUB

Motion Controller  
4

Limit Switch  
Input

Synchronization  
control

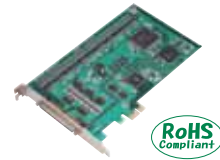
Windows Driver

LabVIEW

High-speed line driver output 4-Axis Motion  
Controller Board for PCI Express

**GSMC-4DL-PE**  
**[SMC-4DL-PE]**

- Stepping and servo motors are easily controlled in familiar Windows environments
- Enable to control Consecutive Movement, Target Location, ORG return, etc. by Fixed Speed, Beeline Acceleration/Deceleration
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Pulse output of up to 9.8Mbps is supported
- Override of Speed or Target Location in the movement is provided
- 7 General-purpose input per axis, 3 General-purpose output



Analog I/O

Digital I/O

Serial  
Communication

GPIO  
Communication

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

**PCI Express**

100-pin  
D-SUB

Motion Controller  
8

Limit Switch  
Input

Synchronization  
control

Windows Driver

LabVIEW

High-speed line driver output 8-Axis Motion  
Controller Board for PCI Express

**GSMC-8DL-PE**  
**[SMC-8DL-PE]**

- Stepping and servo motors are easily controlled in familiar Windows environments
- Enable to control Consecutive Movement, Target Location, ORG return, etc. by Fixed Speed, Beeline Acceleration/Deceleration
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Pulse output of up to 9.8Mbps is supported
- Override of Speed or Target Location in the movement is provided
- 7 General-purpose input per axis, 3 General-purpose output



Realtime OS: INtime can support. Please contact us for further information.

Model	GSMC-4DL-PE	GSMC-8DL-PE
Number of Axes	4	8
Output Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction) or 90°Phase Difference pulse (Lead/Lag)	
Signal type	Differential Line Driver output	
Pulse output	Pulse Rate 0.3~9.8Mbps	
H-level Voltage	2.5V~5.25V	
L-level Voltage	0V~0.5V	
Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)	
Output type	Differential, TTL-level, Open Collector	
Encoder input	Response 5MHz [Differential output: Two-phase input, Four twice, duty 50%]; Frequency 3MHz [TTL-level output: Two-phase input, Four twice, duty 50%]; 1MHz [Open Collector output: Two-phase input, Four twice, duty 50%]	
Resistance	150Ω (SW cut-able)	
Signals	3 signals/ch (ORG, +LIM, -LIM)	
Limit Switch input	Signal type Opto-isolated input (for sink current output)	
Input Resistance	4.7kΩ	
Signals	7 signals/ch	
General-purpose input	Signal type Opto-isolated input (for sink current output)	
Resistance	4.7kΩ	
Signals	3 signals/ch	
General-purpose output	Signal type Open Collector (Current sinking type) (software selectable positive/negative logic)	
Rating	50VDC 100mA per channel, 300mA per axis	
Controller Chip	PCL6143 [NPM] or equivalent	
Interrupts	1	
I/O Address	Occupies 128 ports	
Power Consumption (Max.)	3.3VDC 1500mA	3.3VDC 2100mA
Bus / Dimensions (mm)	PCI Express Base Specification Rev.1.0a x1 / 169.33(L)×110.18(H)	
Connector	HDRA-EC100LFD1+ [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1LFD1EC-SL+ [HONDA Tsushin Kogyo] or equivalent
Options	Software API-PAC(W32) , ACX-PAC(W32)	
Accessories	CCB-SMC2 <sup>*1</sup> *2 <sup>*3</sup> , EPD-100A <sup>*2</sup> *3 <sup>*4</sup>	
Cables / Connectors	PCB100PS, PCA100P	

Note:

- \*1: 100-pin 0.8mm pitch connector x1 → 37-pin D-SUB x4, 9-pin D-SUB x4  
 \*2: Requires use of optional cable PCB100PS  
 \*3: Cable and accessory are needed for each connector.  
 \*4: The screw-up terminal block is used, whose screw does not falling off.

As shown on the side of product's images, RoHS Compliant  is a CONTEC original marking for RoHS-compliant products.

**E-02**

Lineup

PCI Express

PCI

ISA

# Motion Controller

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

PCI

96-pin Half Pitch

Motion Controller2ch

Counter2ch

Frame Data Store

Limit Switch Input

Synchronization control

CE

Windows Diver



## 2-Axis Steper Motor Controller Board SMC-2P(PCI)

- Stepping and servo motors are easily controlled in familiar Windows environments
- Able to store 1000 frames - each frame carrying required information for single positioning sequence (i.e. speed, acceleration/deceleration rate, target location)
- Able to control multiple axis (max. 32) in synchronization
- Supporting linear interpolation control on several axis

PCI

96-pin Half Pitch

Motion Controller4ch

Counter4ch

Frame Data Store

Limit Switch Input

Synchronization control

CE

Windows Diver



## 4-Axis Steper Motor Controller Board SMC-4P(PCI)

- Stepping and servo motors are easily controlled in familiar Windows environments
- Able to store 1000 frames - each frame carrying required information for single positioning sequence (i.e. speed, acceleration/deceleration rate, target location)
- Able to control multiple axis (max. 64) in synchronization
- Supporting linear interpolation control on several axis

E-03

Lineup
PCI Express
PCI
ISA

Model		SMC-2P(PCI)	SMC-4P(PCI)	
Number of Channels		2	4	
Pulse output	Signal Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction)		
	Output type	Open collector (software selectable positive/negative logic)		
	Pulse Rate	0.1~1Mpps		
	Rating	35VDC 100mA		
Encoder input	Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)		
	Signal type	High-speed opto-isolated		
	Response Frequency	1MHz		
	Resistance	A,B: 220Ω / Z: 510Ω		
Limit Signal	Signals	3 signals/ch (ORG, +LIM, -LIM)		
	Signal type	Opto-isolated input (12~24VDC)		
	Input Resistance	3kΩ		
General -purpose input	Signals	7 signals/ch		
	Signal type	Opto-isolated (12~24VDC)		
General -purpose output	Resistance	IN1, IN3~IN7: 3k ; IN2: 1.8k		
	Signals	3 signals/ch		
	Signal type	Open collector		
	Rating	35VDC 100mA		
Controller Chip		PCL5014 [NPM]		
Interrupts		-		
I/O Address		Occupies 16 ports		
Power Consumption (Max.)		5VDC 800mA	5VDC 900mA	
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V) / 176.41(L) × 106.68(H)		
Connector		PCR-E96LMD [HONDA Tsushin Kogyo] or equivalent		
Options	Accessories	CCB-SMC <sup>*1</sup> , EPD-96 <sup>*1</sup> , EPD-96A <sup>*1</sup>		
	Cables / Connectors	PCA96P, PCA96PS, PCB96P, PCB96PS, CN5-H96F		

Note: <sup>\*1</sup>: Requires use of optional cable PCB96P or PCB96PS.

# Motion Controller



High-speed line driver output 4 axis  
motion control board for PCI

**GSMC-4DL-PCI**  
**[SMC-4DL-PCI]**

- Stepping and servo motors are easily controlled in familiar Windows environments
- Enable to control Consecutive Movement, Target Location, ORG return, etc. by Fixed Speed, Beeline Acceleration/Deceleration
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Pulse output of up to 9.8Mbps is supported
- Override of Speed or Target Location in the movement is provided



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables



High-speed line driver output 8 axis  
motion control board for PCI

**GSMC-8DL-PCI**  
**[SMC-8DL-PCI]**

- Stepping and servo motors are easily controlled in familiar Windows environments
- Enable to control Consecutive Movement, Target Location, ORG return, etc. by Fixed Speed, Beeline Acceleration/Deceleration
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Pulse output of up to 9.8Mbps is supported
- Override of Speed or Target Location in the movement is provided



Model	GSMC-4DL-PCI	GSMC-8DL-PCI
Number of Channels	4	8
Pulse output	Output Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction) or 90°Phase Difference pulse (Lead/Lag)
	Signal type	Differential Line Driver output
	Pulse Rate	0.3~9.8Mbps
	Rating	-
Encoder input	Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)
	Output type	Differential, TTL-level, Open Collector
	Response Frequency	5MHz [Differential output, duty: 50%]; 3MHz [TTL-level output, duty: 50%]; 1MHz [Open Collector output, duty: 50%]
	Resistance	150 (SW cut-able)
Limit Switch input	Signals	3 signals/ch (ORG, +LIM, -LIM)
	Signal type	Opto-isolated input (for sink current output)
	Input Resistance	4.7kΩ
General-purpose input	Signals	7 signals/ch
	Signal type	Opto-isolated input (for sink current output)
	Resistance	4.7kΩ
General-purpose output	Signals	3 signals/ch
	Signal type	Open Collector (Current sinking type) (software selectable positive/negative logic)
	Rating	50VDC; 100mA per channel, 300mA per axis
Controller Chip	PCL6143 [NPM] or equivalent	
Interrupts	1	
I/O Address	Occupies 128 ports	
Power Consumption (Max.)	5VDC 700mA	5VDC 1200mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×106.68(H)	
Connector	HDRA-EC100LFD+ [HONDA Tsushin Kogyo] or equivalent	HDRA-E100W1LFD+1EC-SL+ [HONDA Tsushin Kogyo] or equivalent
	Software	API-PAC(W32), ACX-PAC(W32)
Options	Accessories	CCB-SMC2 <sup>*1</sup> *2 <sup>*3</sup> , EPD-100A <sup>*2</sup> *3 <sup>*4</sup>
	Cables / Connectors	PCB100PS, PPCA100P

Note:

\*1: 100-pin 0.8mm pitch connector x1 → 37-pin D-SUB x4, 9-pin D-SUB x4

\*2: Requires use of optional cable PCB100PS

\*3: Cable and accessory are needed for each connector.

\*4: The screw-up terminal block is used, whose screw does not falling off.

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

E-04

Lineup

PCI Express

PCI

ISA



# Motion Controller

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

PCI

100-pin Half Pitch

Motion Controller 4ch

Frame Data Store

Limit Switch Input

Synchronization control

Windows Diver

LabVIEW



4 axis high-speed line driver output motion control board for PCI(high-performance version)  
**GSMC-4DF-PCI**  
**[SMC-4DF-PCI]**

- Stepping and servo motors are easily controlled in familiar Windows environments
- Diverse control, i.e. Target Location, ORG return, Linear/Circular Interpolation, S-type Acceleration/Deceleration, Frame consecutive movement, Synchronous Control, etc.
- Every axis can store 1024 frames without applying any additional load on the CPU
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Override of Speed or Target Location in the movement is provided
- Supporting multiple axis in synchronization to arrange the timing of operation beginning and stopping (SMC-4DF-PCI and SMC-8DF-PCI can be coextensively composited, and the boards of 16 pieces at the maximum can be synchronously operated)

## E-05

Lineup
PCI Express
PCI
ISA

PCI

100-pin Half Pitch

Motion Controller 8ch

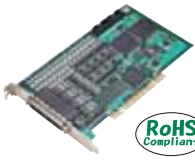
Frame Data Store

Limit Switch Input

Synchronization control

Windows Diver

LabVIEW



8 axis high-speed line driver output motion control board for PCI(high-performance version)  
**GSMC-8DF-PCI**  
**[SMC-8DF-PCI]**

- Stepping and servo motors are easily controlled in familiar Windows environments
- Diverse control, i.e. Target Location, ORG return, Linear/Circular Interpolation, S-type Acceleration/Deceleration, Frame consecutive movement, Synchronous Control, etc.
- Every axis can store 1024 frames without applying any additional load on the CPU
- Encoders compatible with Differential output, TTL-level output, Open collector output are provided
- Override of Speed or Target Location in the movement is provided
- Supporting multiple axis in synchronization to arrange the timing of operation beginning and stopping (SMC-4DF-PCI and SMC-8DF-PCI can be coextensively composited, and the boards of 16 pieces at the maximum can be synchronously operated)

Model	GSMC-4DF-PCI	GSMC-8DF-PCI	
Number of Channels	4	8	
Pulse output	Output Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction) or 90°Phase Difference pulse (Lead/Lag)	
	Signal type	Differential Line Driver output	
	Pulse Rate	0.1~6.5Mpps	
	Rating	20mA	
Encoder input	Signal Form	Single-phase (UP/DOWN/Z), Two-phase (A/B/Z)	
	Output type	Differential, TTL-level, Open Collector	
	Response	5MHz [Differential output, two-phase input, 4 twice, duty: 50%]; 3MHz [TTL-level output, two-phase input, 4 twice, duty: 50%];	
	Frequency	1MHz [Open Collector output, two-phase input, 4 twice, duty: 50%]	
Limit Switch input	Resistance	150 (SW cut-able)	
	Signals	3 signals/ch (ORG, +LIM, -LIM)	
	Signal type	Opto-isolated input (for sink current output)	
General-purpose input	Input Resistance	4.7kΩ	
	Signals	7 signals/ch	
	Signal type	Opto-isolated input (for sink current output)	
General-purpose output	Resistance	4.7kΩ	
	Signals	3 signals/ch	
	Signal type	Open Collector (Current sinking type) (software selectable positive/negative logic)	
Controller Chip	Rating	50VDC; 100mA per channel, 300mA per axis	
		PCL6045B [NPM] or equivalent	
Interrupts		1	
I/O Address		Occupies 128 ports	
Power Consumption (Max.)		5VDC 800mA	5VDC 1600mA
Bus / Dimensions (mm)		PCI (32bit, 33MHz, 5V or 3.3V) / 176.41(L)×106.68(H)	
Connector		HDRA-EC100LFD+ [HONDA	HDRA-E100W1LFD+1EC-SL+
		Tsushin Kogyo] or equivalent	[HONDA Tsushin Kogyo] or equivalent
Options	Software	API-PAC(W32) , ACX-PAC(W32)	
	Accessories	CCB-SMC2 <sup>*1*2*3</sup> , EPD-100A <sup>*2*3*4</sup>	
	Cables / Connectors	PCB100PS, PCA100P	
Note:		<sup>*1</sup> : 100-pin 0.8mm pitch connector ×1 → 37-pin D-SUB ×4, 9-pin D-SUB ×4 <sup>*2</sup> : Requires use of optional cable PCB100PS <sup>*3</sup> : Cable and accessory are needed for each connector. <sup>*4</sup> : The screw-up terminal block is used, whose screw does not falling off.	

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


## Motion Controller

ISA

Model

High-Speed 3 axis Stepping Motor Control

SMC-3(PC)



SPECIFICATIONS

Number of Channels		3
Pulse output	Signal Specifications	2-pulse (CW/CCW) or Common-pulse (Pulse/Direction)
	Output type	Open collector (software selectable positive/negative logic)
	Pulse Rate	92~6Mpps
Limit Signal	Signals	4 signals/ch (ORG, +LIM, -LIM, Slowdown)
	Signal type	Opto-isolated (12~24VDC)
	Input Resistance	3.3kΩ
General purpose input	Signals	2 signals/MPG (each MPG emergency stop option is jumper selectable)
	Signal type	Opto-isolated (12~24VDC)
	Resistance	3.3kΩ
General purpose output	Signals	2 signals/ch
	Signal type	Opto-isolated Open collector
	Rating	35VDC 200mA
Controller Chip		MPG1020 × 3 [MYCOM]
Interrupts		Pulse output stop or stop error (Can use 4 of IRQ3~7, 9~12, 14 or 15)
I/O Address		4 port occupation
Power Consumption (Max.)		5VDC 600mA
Bus / Dimensions (mm)		ISA / 163.0(L) × 122.0(H)
Connector		37-pin D-type female connector
Options	Accessories	DTP-3A, DTP-4A, EPD-37A, EPD-37
	Cables / Connectors	PCA37P, PCB37P, PCA37PS, PCB37PS
CE		O

- Analog I/O
- Digital I/O
- Serial Communication
- GPIB Communication
- Motion Controller**
- Counter
- USB Remote I/O
- Ethernet Remote I/O
- Bus Expansion
- Accessories
- Cables

[illegible]

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

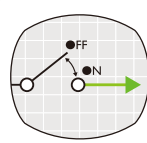
Ethernet  
Remote I/O

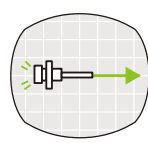
Bus Expansion

Accessories

Cables

## Counter


**Application**  
Counting ON/OFF of contact points and switches

**Description**  
Input of ON/OFF signals

**Application**  
Measurement of individual sensors

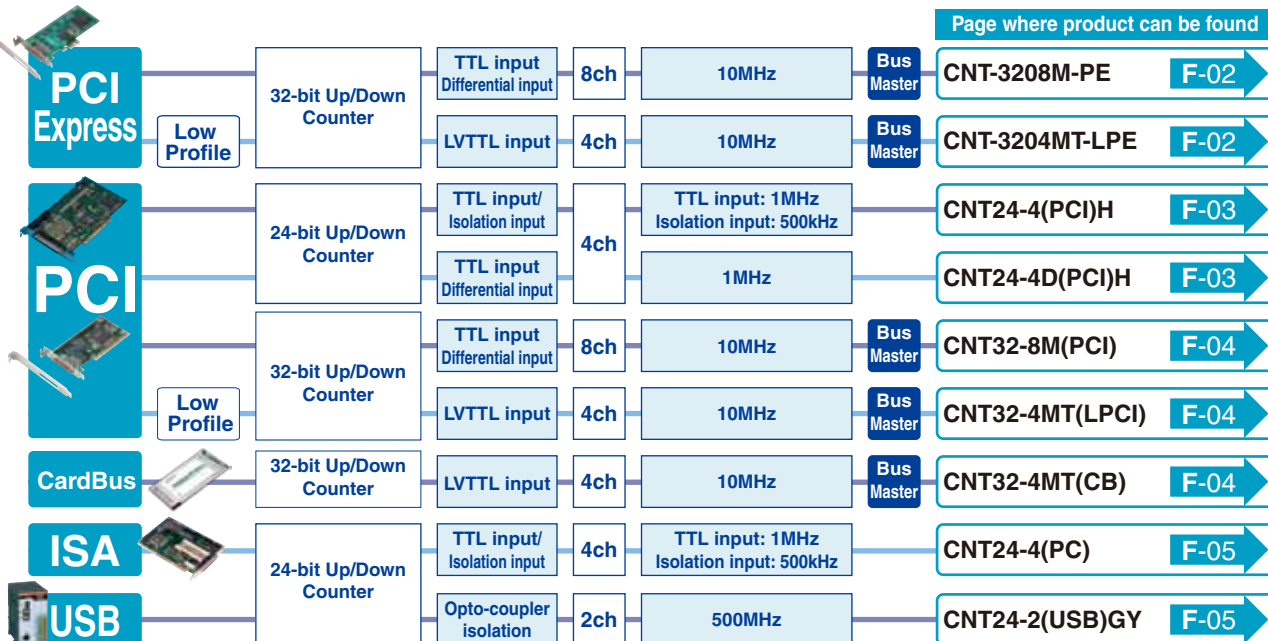
**Description**  
Input of pulse signal

These boards communicate pulse train input and pulse number count functions to the PC.

They calculate addition and/or subtraction of count values onboard and read out current count values when needed. They can connect to incremental rotary encoders, linear gauges, pulse-output type flowmeters or power meters.

## Product Lineup

You can choose from a variety of interface boards according to your desired bus, I/O points and I/O type.



F-01

## Pictograms

## Bus Specifications

**PCI Express**

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

**USB 2.0**

Product is USB standard compliant and can be used in the computer equipped with USB2.0/1.1 ports. Supports USB2.0 high-speed mode (480Mbps).

**PCI**

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

**Card Bus**

Product supports Cardbus that is a 32-bit PC card standard bus.

## Supported Connectors

**96-pin  
Half Pitch**
**37-pin  
D-SUB**

The supported cables and accessories will vary depending on these specifications. Indicates the number of pins and shapes of connectors used for external connection.

CONTEC provides a wide variety of cables and accessories to suit your needs.

Cables with connectors on both ends  
Accessories (Terminal block, etc.)

**J-01**

Cables with a connector on one end  
Connector set

**K-01**

## Supported softwares

## Windows Driver

API-TOOL Drivers for Windows are provided. The license-free driver software (both development and runtime) provides commands to interface boards or cards using Windows standard Win32API function (DLL).

## Linux Driver

API-TOOL Drivers for Linux are provided. The license-free driver software (both development and runtime) that provide commands to interface boards or cards using module-style device drivers and the shared library.

## LabVIEW

VI-DAQ, a VI library for use with National Instruments' LabVIEW can be downloaded from our Web site. With function format similar to that of LabVIEW's "Data Acquisition VI", VI-DAQ set-up is not complicated therefore simplifying device operation. For the details, please visit: <http://www.contec.com/mlda/>

## Board Size

**Low Profile**

Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

## Number of Channels

**Counter  
XXch**

Maximum number of input channels for pulse signals

## Points

**Differential Input**

A level input circuit in which differential receiver is used as input terminal. While it is not insulated from external circuit, it supports high-speed pulse input. Also noise-resistant, it allows for longdistance transfer.

**Isolated Input**

A current input circuit in which an opto-coupler (cathode side) is used as the input terminal. Isolated from external circuits, it can prevent electric disturbance.

**TTL Input**

A level-input circuit in which a TTL-IC (base) is used as the input terminal. While not isolated from external circuits, it enables high-speed pulse input.

**Digital Filter**

Delays the count processing by the specified length of time. By preventing incorrect counting induced by noise such as chattering, it ensures precise operation.

**Disconnection Detection**

During differential input, an error alarm is issued upon detection of a signal wire disconnection. (Status, interrupt, external output)

**Surge Protection**

The input interface is equipped with a Zener diode which prevents damage and malfunction induced by voltage surges and incoming current.

**Bus Master**

Large sampling data can be transferred promptly to PC memory without going through CPU.

## Counter

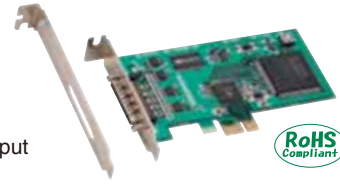
PCI  
ExpressLow  
Profile68-pin  
0.8mm PitchCounter  
4chTTL  
InputDigital  
FilterBus  
Master

Windows Driver

LabVIEW

Low Profile size High-speed up/down  
counter board for PCI Express  
**CNT-3204MT-LPE**

- 4-channel 32-bit up/down counter, LVTTTL input supported
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- High-speed data transfer achieved by using the bus master transfer feature
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board CNT32-4MT(LPCI) and CardBus-compliant board CNT32-4MT(CB)
- Can be converted into differential input interface by using differential/TTL input terminal (CTP-4D) and a connecting cable (CNT-68M/50M) both of which are sold separately

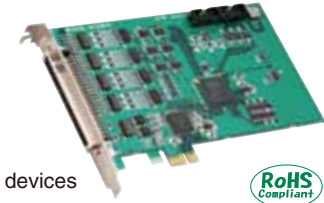
PCI  
Express96-pin  
D-SUBCounter  
8chDifferential  
InputTTL  
InputDigital  
FilterDisconnection  
DetectionBus  
Master

Windows Driver

LabVIEW

High-speed up/down counter  
board for PCI Express  
**CNT-3208M-PE**

- 8-channel 32-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- Disconnection can be detected at the time of differential input
- High-speed data transfer achieved by using the bus master transfer feature
- Synchronous Control Connectors enable the synchronous operation of the boards of 16 pieces at the maximum.
- Functions, Connector pin and Signal assignment is compatible with the PCI-compliant board CNT32-8M(PCI)



Differential / TTL  
Input Terminal  
**CTP-4D**



Optional Cable  
**CNT-68M/50M**

Model	CNT-3204MT-LPE	CNT-3208M-PE
Number of Channels	4ch	8ch
Counting System	32-bit Up/Down Counter (two-phase/single-phase/ single-phase with Gate Control)	
Input Signals	Phase A/UP: 1 pointx4ch; Phase B/DOWN: 1 pointx4ch; Phase Z/CLR: 1 pointx4ch	Phase A/UP: 1 pointx8ch; Phase B/DOWN: 1 pointx8ch; Phase Z/CLR: 1 pointx8ch; General input: 1 pointx8ch
Response Frequency (Max.)	10MHz (duty: 50%)	Differential input: 10MHz (duty: 50%) TTL level input: 10MHz (duty: 50%)
Timer	1~6553msec (selectable in 1msec intervals)	
Max. Count	32-bit binary data	
Input Specifications	LVTTTL level	TTL level: 1 TTL level load; Differential: input voltage range±7V
Interrupts	1 interrupt (factors: count mathch, count error, sampling factors, carry/borrow, timer)	1 interrupt (factors: count mathch, count error, sampling factors, SCC error, carry/borrow, timer)
I/O Address	32 portsx1, 64 portsx1 occupation	
Additional Function	Filter, Counter coincidence pulse output, Test pulse output	Filter, Counter coincidence pulse output, Test pulse output, Disconnection alarm output
Power Consumption (Max.)	3.3VDC, 450mA	3.3VDC, 1.8A
Bus / Dimensions (mm)	PCI Express Base Specification Rev. 1.0a x1 / 121.69(L)x67.90(H)	PCI Express Base Specification Rev. 1.0a x1 / 169.33(L)x110.18(H) CN1: 96-pin Half-pitch:PCR-E96LMD [HONDA Tsushin Kogyo]; CN2, CN3: PS-10PE-D4L1-B1 [JAE] or equivalent x2
Connector	HDRA-E68LFDT+ [HONDA Tsushin Kogyo] or equivalent	
Options	Software	API-PAC(W32) , ACX-PAC(W32)
	Accessories	CTP-4D <sup>1</sup> , EPD-50A <sup>2</sup> , EPD-68A <sup>3</sup>
	Cables / Connectors	CNT-68M/50M, PCA68PS-0.5P/1.5P, PCB68PS-0.5P/1.5P
		EPD-96A <sup>1</sup> , EPD-96 <sup>1</sup> , DTP-64(PC) <sup>1</sup> PCBPS-0.5P/1.5P, PCB96P-1.5, PCA96PS-0.5P/1.5P, PCA96P-1.5, CN5-H96F

Note:

<sup>1</sup>: Requires use of optional cable PCB96P or PCB96PS<sup>2</sup>: Requires use of optional cable CNT-68M/50M<sup>3</sup>: Requires use of optional cable PCB68PS

As shown on the side of product's images, RoHS Compliant is a CONTEC original marking for RoHS-compliant products.

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

F-02

Lineup

PCI Express

PCI

ISA

USB

# Counter

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

PCI

37-pin D-SUB

Counter 4ch

Isolated Input

TTL Input

Digital Filter

Windows Driver

Linux Driver

LabVIEW

## 4Ch 24Bit Up/Down Counter Board for PCI CNT24-4(PCI)H

- 4 channel, 24-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges (A maximum of 4 encoders can be connected)
- Equipped with a programmable timer
- Connector pin assignment compatible with CNT24-4(PCI)



PCI

96-pin Half Pitch

Counter 4ch

Differential Input

TTL Input

Digital Filter

Surge Protection

CE

Windows Driver

Linux Driver

LabVIEW

## 4Ch 24Bit Up/Down Counter Board for Difference Input for PCI CNT24-4D(PCI)H

- 4 channel, 24-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges (A maximum of 4 encoders can be connected)
- Equipped with a programmable timer
- Differential input area is equipped with a surge protection device
- Connector pin assignment compatible with CNT24-4D(PCI)



## F-03

Lineup
PCI Express
PCI
ISA
USB

Model	CNT24-4(PCI)H	CNT24-4D(PCI)H	
Number of Channels	4ch		
Counting System	24-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)		
Input Signals	Phase A/UP: 1 point×4ch, Phase B/DOWN: 1 point×4ch, Phase Z/CLR: 1 point×4ch, General input: 1 point×4ch		
Response Frequency (Max.)	TTL level input: 1MHz (duty: 50%) Opto-isolated input: 500kHz (duty: 50%)	Differential input: 1MHz (duty: 50%) TTL level input: 1MHz (duty: 50%)	
Timer	1msec~200sec		
Max. Count	24-bit binary data		
Input Specifications	TTL level: 1 TTL level load, Opto-isolated: DC5V~12V, Impedance: 220	TTL level: 1 TTL level load, Differential: input voltage range±7V	
Interrupts	One point generated when the count of each channel matches or the timer runs out of time.		
I/O Address	Occupies 32 ports		
Additional Function	Filter and Counter coincidence pulse output		
Power Consumption (Max.)	5VDC 250mA	5VDC 500mA	
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V**) / 176.41(L)×105.68(H)		
Connector	Opto-isolated input: DCLC-J37SAF-20L9 [JAE] or equivalent TTL level input: PS-30PE-D4TIPNI [JAE] or equivalent	PCR-E96LMD[HONDA Tsushin Kogyo] or equivalent	
Options	Softwear	API-PAC(W32) , ACX-PAC(W32) DTP-3A <sup>*2</sup> , DTP-4A <sup>*2</sup> , EPD-37A <sup>*2</sup> , EPD-37 <sup>*2</sup>	
	Accessories	DTP-3A <sup>*3</sup> , DTP-4A <sup>*3</sup> , EPD-37A <sup>*3</sup> , EPD-37 <sup>*3</sup> , EPD-96 <sup>*4</sup> , EPD-96A <sup>*4</sup> , DTP-64(PC) <sup>*4</sup> , CCB-96 <sup>*4</sup>	
	Cables / Connectorss	PCA37P, PCB37P, PCA37PS, PCA96P, PCB96P, PCA96PS, PCB37PS, DT/O, DT/B2, CN5-D37M, PCB96PS, PCB96WS, CN5-H96F	

Note:

\*1: Requires use of optional cable PCB96P or PCB96PS

\*2: Requires use of optional cable CNT-68M/50M

\*3: Requires use of optional cable PCB68PS



## Counter



### 4ch 32Bit High-Speed Up/Down Counter Board for Low Profile PCI (TTL Input) CNT32-4MT(LPCI)

- 4-channel 32-bit up/down counter, LVTTTL input supported
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- High-speed data transfer achieved by using the bus master transfer feature
- Can be converted into differential input interface by using differential/TTL input terminal (CTP-4D) and a connecting cable (CNT-68M/50M) both of which are sold separately
- Low Profile PCI -compliant (includes bracket for use in standard PCI slot)



### 32Bit High-Speed Up/Down Counter Board for PCI CNT32-8M(PCI)

- 8-channel, 32-bit up/down counter
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- Disconnection can be detected at the time of differential input
- When using the bus master transfer feature, data between the board and PC can be transferred at a speed of 80MB/sec (max.133MB/sec) with no additional load on the computer.
- Synchronous Control Connector to enable the synchronous operation of a number of boards (regardless of type).



### High Speed 4-channel 32-bit Up/Down Counter CNT32-4MT(CB)

- 4-channel 32-bit up/down counter, LVTTTL input supported
- Capable of counting two-phase signals from devices like rotary encoders or linear gauges
- High-speed data transfer achieved by using the bus master transfer feature
- Can be converted into differential input interface by using differential/TTL input terminal (CTP-4D) and a connecting cable (CNT-68M/50M) both of which are sold separately



Model	CNT32-4MT(LPCI)	CNT32-8M(PCI)	CNT32-4MT(CB)
Number of Channels	4ch	8ch	4ch
Counting System	32-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)		
Input Signals	Phase A/UP: 1 pointx4ch; Phase B/DOWN: 1 pointx4ch; Phase Z/CLR: 1 pointx4ch	Phase A/UP: 1 pointx8ch Phase B/DOWN: 1 pointx8ch Phase Z/CLR: 1 pointx8ch General input: 1 pointx8ch	Phase A/UP: 1 pointx4ch; Phase B/DOWN: 1 pointx4ch; Phase Z/CLR: 1 pointx4ch
Response Frequency (Max.)	10MHz (duty: 50%)	Differential input: 10MHz (duty: 50%) TTL level input: 10MHz (duty: 50%)	10MHz (duty: 50%)
Timer	1~6553msec (selectable in 1msec intervals)		
Max. Count	32-bit binary data		
Input Specifications	LVTTTL level	TTL level: 1 TTL level load, Differential: input voltage range±7V	LVTTTL level
Interrupts	1 interrupt (factors: count mathch, count error, sampling factors, carry/borrow, timer)	1 interrupt(factors: count mathch, count error, sampling factors, SCC error, carry/borrow, timer)	1 interrupt (factors: count mathch, count error, sampling factors, carry/borrow, timer)
I/O Address	32 portsx1, 64 portsx1 occupation		
Additional Function	Filter, Counter coincidence pulse output and Test pulse output	Filter, Counter coincidence pulse output, Test pulse output and Disconnection alarm output	Filter, Counter coincidence pulse output and Test pulse output
Power Consumption (Max.)	5VDC, 300mA	5VDC, 1A	5VDC, 300mA
Bus / Dimensions (mm)	PCI (32bit, 33MHz, 5V or 3.3V <sup>2</sup> ) / 121.69(L)×63.41(H)	PCI (32bit, 33MHz, 5V) / 176.41(L)×106.68(H)	PCI (32bit, 33MHz, 5V or 3.3V <sup>2</sup> ) / 121.69(L)×105.68(H)
Connector	HDRA-E68LFDT+ [HONDA Tsushin Kogyo] or equivalentx2	PCR-E96LMD[HONDA Tsushin Kogyo], PS-10PE-D4L1-B1[JAE] or equivalentx2	HDRA-E68LFDT+ [HONDA Tsushin Kogyo] or equivalentx2
Options	Software	API-PAC(W32) , ACX-PAC(W32)	
	Accessories	CTP-4D <sup>1</sup> , EPD-68A <sup>3</sup> , EPD-50A <sup>1</sup>	
	Cables / Connectors	CNT-68M/50M, PCA68PS-0.5P/1.5P, PCB68PS-0.5P/1.5P	EPD-96 <sup>4</sup> , EPD-96A <sup>4</sup> , DTP-64(PC) <sup>4</sup> PCA96P-1.5, PCA96PS-0.5P/1.5P, PCB96P-1.5, PCB96PS-0.5P/1.5P, CN5-H96F

Note:

- \*1: Requires use of optional cable CNT-68M/50M  
 \*2: +5V power must be supplied from PCI bus slot  
 \*3 : Requires use of optional cable PCB68PS.  
 \*4: Requires use of optional cable PCB96P or PCB96PS

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

Ethernet Remote I/O

Bus Expansion

Accessories

Cables

F-04

Lineup

PCI Express


PCI

ISA

USB

# Counter

Analog I/O
Digital I/O
Serial Communication
GPIO Communication
Motion Controller
Counter
USB Remote I/O
Ethernet Remote I/O
Bus Expansion
Accessories
Cables

ISA		Model	24Bit Up/Down Counter Board for ISA
			CNT24-4(PC)
			
		SPECIFICATIONS	
		Number of Channels	4
		Counting System	24-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)
		Input Signals	Phase A/UP: 1 point x 4ch Phase B/DOWN: 1 point x 4ch Phase Z/CLR: 1 point x 4ch General-purpose input: 1 point x 4ch
		Response Frequency (Max.)	TTL level input: 1MHz (duty: 50%) Opto-isolated input: 500kHz (duty: 50%)
		Timer	1msec~200sec
		Max. Count	24-bit binary data
		Input Specifications	TTL level: 1 TTL level load Opto-isolated: 220Ω
		Interrupts	Preset value of each channel matches or TimeUp value can be set as one of IRQ3-7, 9-12, 14 or 15
		I/O address / Addition Function	Any 2-byte boundary / Filter function
		Power Consumption (Max.)	5VDC 300mA
		Bus / Dimensions (mm)	AT Bus / 163.0(L) x 122.0(H)
		Connector	Opto-isolated input: 37-pin D-SUB female connector TTL level input: 30-pin header male connector
		Options	Accessories DTP-3A <sup>*1</sup> , DTP-4A <sup>*1</sup> , EPD-37A <sup>*1</sup> , EPD-37 <sup>*1</sup>
			Cables / Connectors PCA37P, PCB37P, PCA37PS, PCB37PS, DT/O, DT/B2
		CE marking	○

\*1: Requires use of optional cable PCB37P or PCB37PS.

USB 2.0

Counter 2

Isolated Input

Digital Filter

CE

Windows Driver

LabVIEW

## F&EIT Series Isolated Counter Input Module for USB

### CNT24-2(USB)GY

- Supporting a variety of counter modes
- Counter coincidence pulse output (signal frequency can be set 0~104.5ms)
- Digital filter (0.1~1056.1μs variable sampling range frequency)
- 2 Screw-less connectors for easy wiring - no special tools needed
- Additional channels through use of extension modules (Max. 3 sets)
- 35mm DIN rail mountable
- Sample development and utility debugging software included



Model	CNT24-2(USB)GY	
Number of Channels	2	
Counting System	24-bit Up/Down Counter (two-phase/single-phase/single-phase with Gate Control)	
Input type	Opto-Isolated (for sink current output)	
Input Signals	Phase A/UP: 1 point x 2ch Phase B/DOWN: 1 point x 2ch Phase Z/CLR: 1 point x 2ch General-purpose input: 1 point x 2ch	
Response Frequency (Max.)	500kHz, duty: 50%	
Connector	FK-MC0.5/9-ST-2.5 [PHOENIX CONTACT]	
USB speed	12Mbps (Full Speed) 480Mbps (High Speed)	
Additional Function	Filter, Counter coincidence pulse output	
Power Consumption (Max.)	5VDC 450mA <sup>*1</sup>	
Dimensions (mm)	50.4(W) x 64.7(D) x 94.0(H)	
Weight (main unit)	100g	
Included AC Adapter	AC90~264V, DC5.0V ± 5%, 2.0A(Max.) Cable Length: approx. 1.4m	
Included Cable	USB cable 1.8m	
Options	Software	API-PAC(W32) , ACX-PAC(W32)
	Applicable Modules <sup>*2</sup>	CNT24-2(FIT)GY
	Applicable Power Supplies	POA200-20, POW-AD13GY, POW-AD22GY, POW-DD10GY, POW-DD43GY

Note: <sup>\*1</sup>: Since current consumption may exceed 500mA when using an extension module, please use a attached AC adapter or a optional power supply.  
<sup>\*2</sup>: Please visit our web site for the details of Applicable Modules, Power supplies, Adapters.

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

# Counter

Analog I/O

Digital I/O

Serial  
Communication

GPIB  
Communication

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

Accessories

Cables

## F-06

Lineup

PCI Express

PCI

ISA

USB

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

Ethernet  
Remote I/O

Bus Expansion

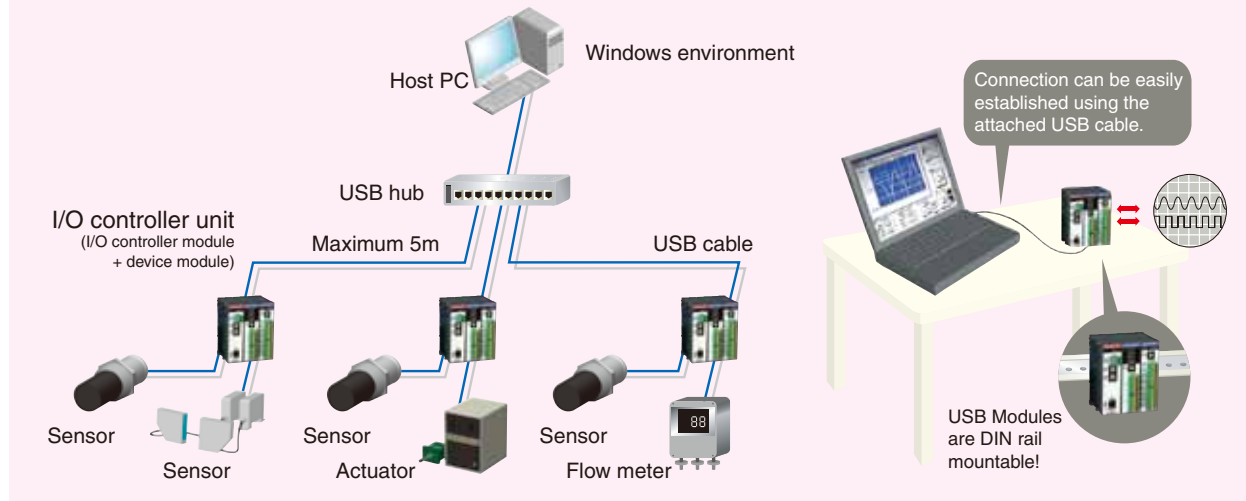
Accessories

Cables

## USB-Based Remote I/O

These USB-based ultra-compact remote I/O systems are optimal for use in any environment (such as laboratories) where computers and I/O modules are placed close to each other. They allow you to design a remote I/O system using the I/O controller (USB interface) and device modules as easily as designing one using controller boards and computer cards. Also, by using an off-the-shelf USB hub, you can connect up to 127 I/O controller modules to a single host computer for central control. The method of interfacing with each device can be either independent or in combination with any of the diverse I/O device modules (digital input/output, analog input/output, counter input) listed on Page P-04.

### Example of USB-based remote I/O system configuration



### Module Configuration

The USB I/O controller modules are used in combination with corresponding device modules (to a maximum of 8 modules). The combined modules are called the I/O Controller Unit.

#### ● I/O controller module [CPU-CA10(USB)GY]

This module receives and transmits control and monitoring information with the host PC using standard USB. It also enables signal I/O processing by connecting with one of the many device modules.

Please refer to [G-02](#) for details.

#### ● Device modules

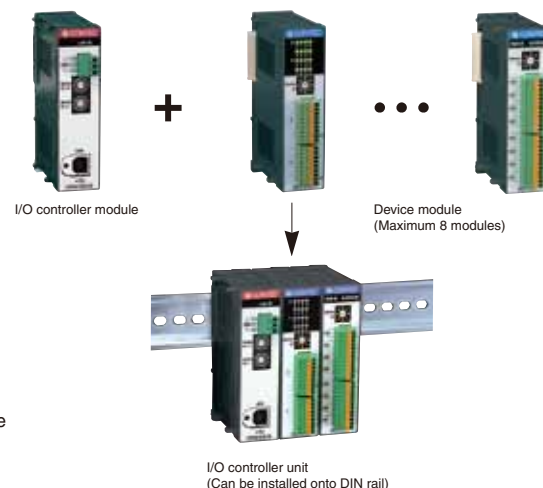
Device modules monitor and control external devices. Modules include digital input / output, analog input / output and counter input.

Please refer to [H-08](#) for the modules that can be used in this configuration.

#### ● Power supplies

CONTEC dedicated power supplies allow for selection according to available power input and required power output.

Please refer to [H-08](#) for details.



### Facilitates application software development

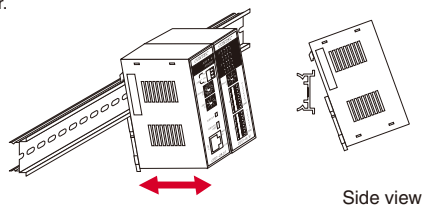
- By using CONTEC's API-function driver library [API-USBP(WDM)]\*, you can easily use the I/O controller unit to monitor and control external devices from a host PC.

\* Included with I/O controller module [CPU-CA10(USB)GY].

### Installation on DIN rail and 'stack' connection of CONTEC's F&IT bus

#### Equipped with 35mm DIN rail mount mechanism

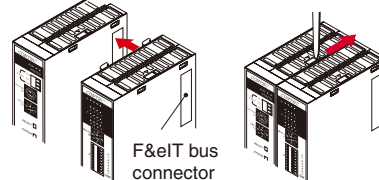
The DIN rail mounting mechanism is compliant with standard general-purpose 35mm DIN rail, allowing for easy installation. Installation and removal can be accomplished with nothing more than a straight slot screwdriver.



Side view

#### Stack connection of F&IT bus eliminates need for backplane

I/O devices are added by using the 'stacking' connection on the sides of the modules. The connection is set in place by a safety lock mechanism that prevents the components from accidentally becoming disconnected.



Simple stacking system

Safety lock mechanism

# USB Remote I/O

## USB Data Acquisition and Controlling Module GCPU-CA10(USB)GY [CPU-CA10(USB)GY]

Included Software - Driver  
Library Attachment for  
Windows [API-USB(WDM)]

### Features

- Power-saving and low heat-generating CPU  
Fanless operation Compact design allows  
for flexible installation sites
- Controls stack-connected device modules  
including digital I/O Communicates monitor  
and control information to host PC



### Specifications

Item	Model
CPU	SH3
Memory	Flash ROM: 512Kbyte (4Mbit) EDO DRAM: 2Mbyte (16Mbit)
USB Transfer Speed	12Mbps (full speed), 480Mbps (high speed) *1
Connectable Device Modules	8 (Maximum) *2
Power Supply	Supplied by 5VDC 5% 2-piece power input connector (removable) located on the front side Use of F&EIT Series power unit (Power Supply Series) is recommended.
Power Consumption	0.3A (Maximum) *3 (Exclusive of Power supplied to device modules)
FG terminal	Power input connector is equipped with FG terminal.
Operating conditions	0 - 50°C / 10 - 90% RH (no condensation)
Dimensions (mm)	25.2 (W)x64.7 (D)x94.0 (H) (1"x2.55"x3.7")
Weight (main unit)	100g (3.53 oz)
Included AC adapter	Input: 90 to 264VAC, Output: 5VDC 2.0A (Max.)
Included cable	USB cable 1.8m

\*1: USB module executes the API function via USB communication. The actual transfer speed of API function via USB is several milliseconds.

\*2: Total maximum power consumption by stacked modules can not exceed the rated output current of the power supply unit.

\*3: Stack connector supplies power to each device module - permissible current of the stack connector is 3.0A.

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## High-Level Instrument and Control in a Compact Design

These compact modules provide high-level functions including the monitoring of digital signals and A to D conversion via an internal sampling clock. Additional input/output modules, up to a maximum 3 device modules of the same type, can be connected (such as adding a DI-16(FIT)GY to DI-16(USB)GY).

500kS/sec USB 2.0 Analog I/O unit with DI/O,  
counter and event controller.

**GAIO-163202FX-USB**  
**[AIO-163202FX-USB]**

USB 2.0  
Input 32ch  
Output 2ch



- Input channels : 32 single-ended / 16 differential
- Output channels : 2
- Power consumption : 5VDC 1200mA

A-28



High-precision analog I/O terminal for USB2.0

**GAIO-160802AY-USB**  
**[AIO-160802AY-USB]**

USB 2.0  
Input 8ch  
Output 2ch



- Input channels : 8 single-ended
- Power consumption : 5VDC 450mA

A-28



High precision analog input terminal for USB2.0

**GAI-1608AY-USB**  
**[AI-1608AY-USB]**

USB 2.0  
Input 8ch



- Input channels : 8 single-ended
- Power consumption : 5VDC 400mA

A-28

Isolated Analog Input Module for USB2.0

**ADI12-8(USB)GY**

USB 2.0  
Input 8ch  
Bus Isolated



- Input channels: 8 differential
- Power consumption : 5VDC 650mA

A-30



Isolated high precision analog input  
module for USB2.0

**GADI16-4(USB)**  
**[ADI16-4(USB)]**

USB 2.0  
Input 4ch  
Bus Isolated



- Input channels : 4 differential
- Power consumption : 5VDC 600mA

A-30



Input Module for Pt100 Temperature  
Sensors for USB2.0

**GPTI-4(USB)**  
**[PTI-4(USB)]**

USB 2.0  
Input 4  
Bus Isolated



- Input channels : 4
- Power consumption : 5VDC(±5%) 800mA

A-29



Isolated Analog Output Module for USB2.0

**DAI12-4(USB)GY**

USB 2.0  
Output 4ch  
Bus Isolated



- Output channels : 4ch
- Power consumption : 5VDC 700mA

A-30



Isolated High precision Analog Output  
Module for USB2.0

**GDAI16-4(USB)**  
**[DAI16-4(USB)]**

USB 2.0  
Output 4ch  
Bus Isolated



- Output channels : 4
- Power consumption : 5VDC 600mA

A-30



Isolated Digital I/O Unit for USB I/O Unit series

**GDIO-1616LX-USB**  
**[DIO-1616LX-USB]**

USB 2.0  
Input 16ch  
Output 16ch  
Isolated  
Digital Filter  
Surge & Overcurrent protection



- Input channels : 16
- Output channels : 16
- Power consumption : 5VDC 300mA

B-35



Isolated Digital I/O Unit for USB2.0

**DIO-1616BX-USB**

USB 2.0  
Input 16ch  
Output 16ch  
Power On board  
Digital Filter  
Surge & Overcurrent protection



- Input channels : 16
- Output channels : 16
- Power consumption : 5VDC 400mA

B-34



G-02

USB-based



# USB Remote I/O

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

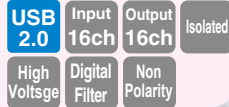
Bus Expansion

Accessories

Cables

## Isolated Digital I/O Unit for USB 2.0

### GDIO-1616RYX-USB



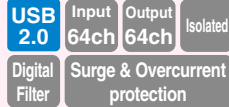
- Input channels : 16
- Output channels : 16
- Power consumption : 5VDC 500mA

B-34



## Isolated Digital I/O Unit for USB 2.0

### DIO-6464LX-USB



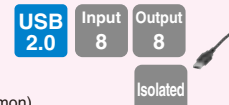
- Input channels : 64
- Output channels : 64
- Power consumption : 5VDC 550mA

B-36



## Isolated Digital I/O Terminal for USB2.0

### GDIO-0808LY-USB



- Input channels : 8 (1 common)
- Output channels : 8 (1 common)
- Power consumption : 5VDC 250mA

B-35



## Isolated Digital I/O Module for USB2.0

### GDIO-8/8(USB)GY



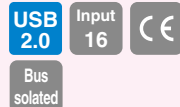
- Input channels : 8
- Output channels : 8
- Power consumption : 5VDC 450mA

B-35



## Isolated Digital Input Module for USB2.0

### DI-16(USB)GY



- Input channels : 16
- Power consumption : 5VDC 450mA

B-37



## Digital Output Terminal for USB2.0

### GDO-16TY-USB



- Input channels : 16 (1 common)
- Power consumption : 5VDC 350mA

B-38



## Isolated Digital Output Module for USB2.0

### DO-32(USB)



- Output channels : 32
- Power consumption : 5VDC 450mA

B-38



## Isolated Digital I/O Module for USB2.0

### GDIO-16/16(USB)



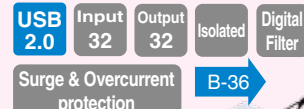
- Input channels : 16
- Output channels : 16
- Power consumption : 5VDC 450mA

B-36



## Isolated Digital I/O Unit for USB I/O Unit series

### GDIO-3232LX-USB



- Input channels : 32 channels (1 common in 16 channels unit)
- Output channels : 32 channels (1 common in 16 channels unit)
- Power consumption : 5VDC 400mA

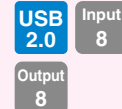


B-36



## Digital I/O Terminal for USB2.0

### GDIO-0808TY-USB



- Input channels : 8 (1 common)
- Output channels : 8 (1 common)
- Power consumption : 5VDC 300mA

B-35



## Digital Input Terminal for USB2.0

### GDI-16TY-USB



- Input channels : 16 (1 common)
- Power consumption : 5VDC 300mA

B-37



## Isolated Digital Input Module for USB2.0

### DI-32(USB)



- Input channels : 32
- Power consumption : 5VDC 450mA

B-37



## Isolated Digital Output Module for USB2.0

### DO-16(USB)GY



- Input channels : 16
- Power consumption : 5VDC 450mA

B-38



## Isolated Counter Input Module for USB 2.0

### CNT24-2(USB)GY



- Number of Channels : 2
- Power consumption : 5VDC 450mA

F-04



G-03

USB-based

# USB Remote I/O

Analog I/O

Digital I/O

Serial  
Communication

GPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&eIT Ethernet IO

Bus Expansion

Accessories

Cables

G-04

USB-based



## Ethernet Remote I/O Distributed Monitoring & Control Network

# F&eIT<sup>®</sup>

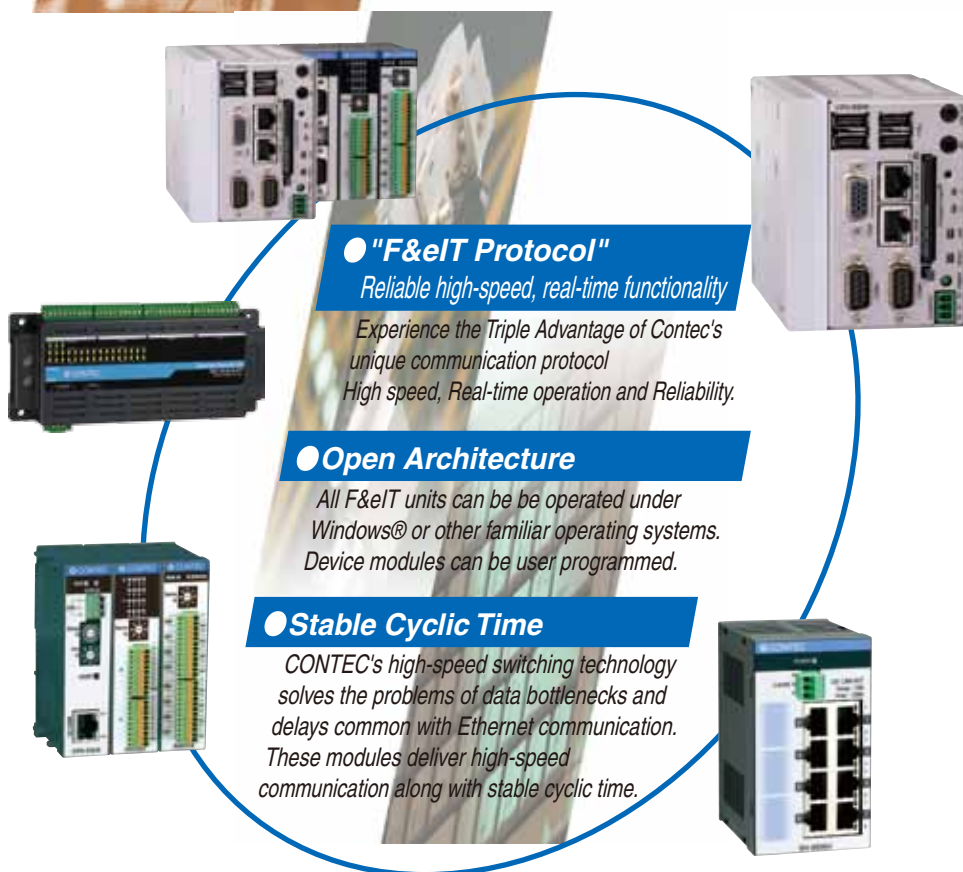
F&eIT, CONTEC's premier automation solution, integrates industrial computers and instrumentation/control with network development technologies.

F&eIT provides you with an ideal automation system for all areas of industry — all the way to corporate offices.

# F&eIT<sup>®</sup>

## ***F&eIT provides you with an ideal environment for automation***

The sudden spread of the Internet has resulted in networks springing up in a wide range of fields. This, in turn, has resulted in the appearance of many information devices that make use of this infrastructure. Yet, it is a fact that interconnectivity - the greatest advantage of networks - is not being used to its fullest. CONTEC sees networks as a prime part of the system bus concept and has developed distributed monitor & control networks that organically integrate various applications from corporate offices through to field applications.



For the latest information on supported hardware, visit our Web site.

<http://www.contec.com/fit/>

# Ethernet Remote I/O

## 1 The simplest and Most Compact Solution for On-site Computers

This ultra-compact [94mm(H)×64.7mm(D)] Micro Controller delivers the functions of a full size PC and runs on familiar operating systems including Windows®, Linux and DOS.



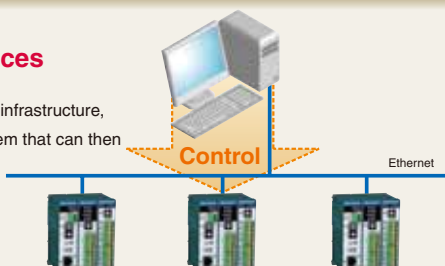
### Micro Controller



Industrial PC Catalog

## 2 Allows Central Monitoring and Control of Remote Devices

By incorporating Ethernet and USB into the system's infrastructure, you can easily configure a lead-free Remote I/O system that can then be monitored and controlled from a central computer.



### I/O Controller



USB-based Ethernet-based

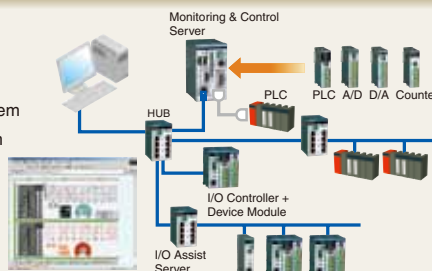
G-01

H-04

## 3 Easily Configured Remote Monitoring & Control

You can develop a multi-function remote monitoring system that can monitor, update and log I/O information, perform task control and send alarms via e-mail.

This system can be completely developed and implemented on a web browser.



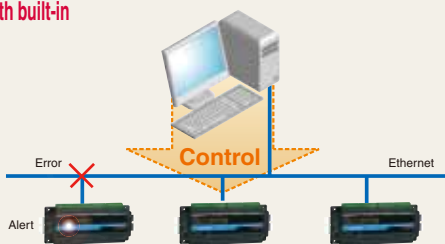
### Monitor & Control Server



H-05

## 4 Reliable Distributed Monitoring and Control with built-in "Fail Safe" function

The F&eIT "N" Series units can remotely monitor and control equipment using existing Ethernet network. Easily installation in limited space with its compact size, and quick fixing by 35mm DIN rail, screws or magnets. An original "Fail Safe" function notifies communication error between PC and the unit to prevent unexpected malfunction.



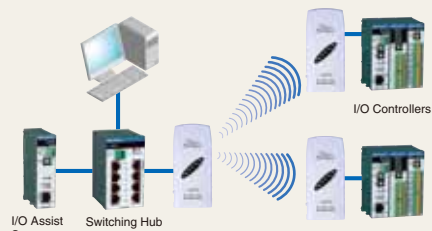
### I/O Unit



H-04

## 5 Wireless networks deliver greater freedom

Wireless networking is now possible using IEEE802.11a/b/g compliant micro access points. Increased potential of F&eIT is realized with the addition of mobile communications and the elimination of unwieldy wiring.



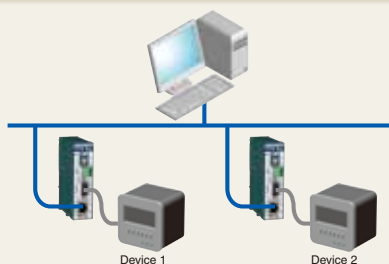
### Micro Access Point



H-05

## 6 Ethernet integration of existing resources

By converting existing communication interfaces into ethernet (both wired and wireless) you can easily integrate the communications from existing industrial equipment and resources with those of the F&eIT device modules.



### Media Converter



RS-232C/422 ⇔ Wire LAN

H-07



GPiB ⇔ Wire LAN

H-08

Analog I/O

Digital I/O

Serial Communication

GPiB Communication

Motion Controller

Counter

USB Remote I/O

F&eIT Ethernet IO

Bus Expansion

Accessories

Cables

H-02

F&eIT series

Ethernet-based Remote I/O

I/O Controller

Monitoring Server

I/O Assistant Server

I/O Module

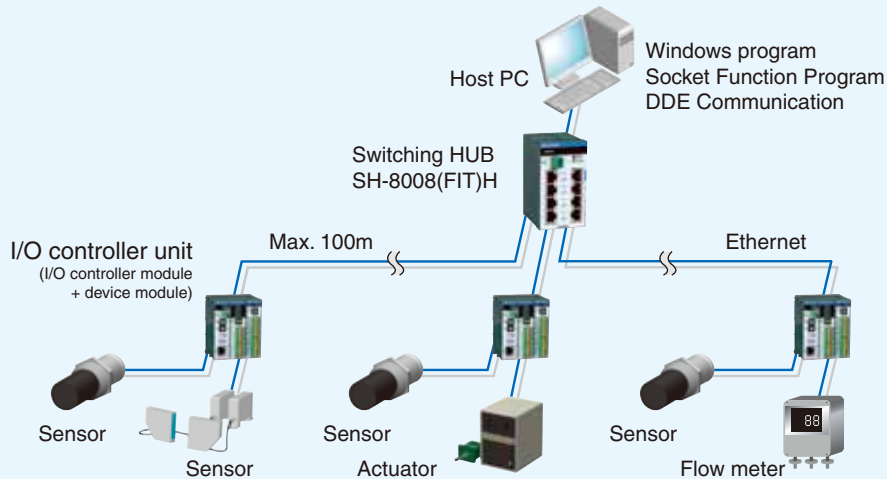
Media Converter

# Ethernet Remote I/O

## Ethernet-based Remote I/O

These Ethernet-based ultra-compact remote I/O systems are ideal for applications where equipment is scattered across a wide area yet monitoring and control needs to be centrally located. It is a low-cost and flexible system that utilizes existing network infrastructure and wireless LAN. Systems each device can be easily configured using the abundant I/O device modules (digital input/output, analog input/output, counter input) listed on Page H-06.

### Example of Ethernet-based remote I/O system configuration



### Module Configuration

The Ethernet I/O controller modules are used in combination with corresponding device modules (to a maximum of 8 modules). The combined modules are called the I/O Controller Unit.

#### ● I/O controller module [CPU-CA20(FIT)GY, CPU-CA10(FIT)GY]

This module receives and transmits control and monitoring information with the host PC using ethernet protocol. It also enables signal I/O processing by connecting with one of the many device modules.

Please refer to [H-04](#) for details.

#### ● Device modules

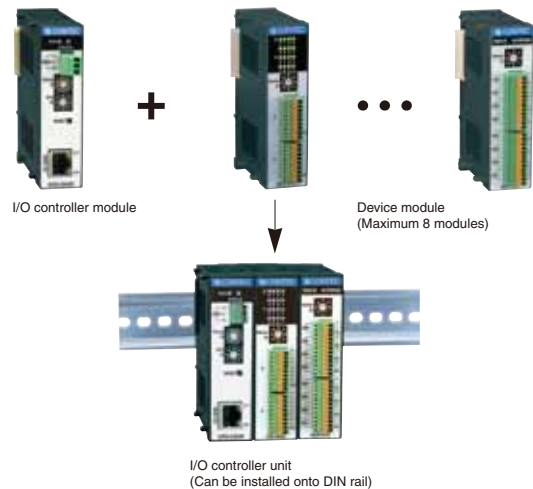
Device modules monitor and control external devices. Modules include digital input/output, analogue input/output and counter input.

Please refer to [H-06](#) for the modules that can be used in this configuration.

#### ● Power supplies

CONTEC dedicated power supplies allow for selection according to available power input and required power output.

Please refer to [H-06](#) for details.



### API-CAP(W32)

The API-CAP(W32) is the driver software provides commands in Windows-standard Win32API(DLL) format to Device Modules stacked and networked with the I/O controller module. Unlike the existing API which provides an access way in common with F&eIT series, this driver offers unique API function systems depending on each function such as digital I/O, analog I/O and counter input.

### Facilitates application software development

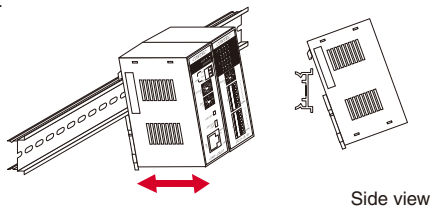
- PC control of networked devices over the network is easily developed by using the driver library for Windows.
- The same easy development is available on non-Windows OS (i.e. UNIX) by using the general-purpose socket function.
- CONTEC's DDE Server [FIT-SVR(W32)] facilitates monitoring using Excel or a SCADA/HMI.

\* Included with I/O controller module [CPU-CA20(FIT)GY, CPU-CA10(FIT)GY].

### Installation on DIN rail and 'stack' connection of CONTEC's F&eIT bus

#### Equipped with 35mm DIN rail mount mechanism

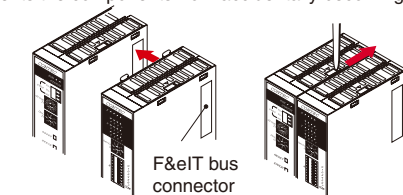
The DIN rail mounting mechanism is compliant with standard general-purpose 35mm DIN rail, allowing for easy installation. Installation and removal can be accomplished with nothing more than a straight slot screwdriver.



Side view

#### Stack connection of F&eIT bus eliminates need for backplane

I/O devices are added by using the 'stacking' connection on the sides of the modules. The connection is set in place by a safety lock mechanism that prevents the components from accidentally becoming disconnected.



Simple stacking system

Safety lock mechanism



## Ethernet Remote I/O

## I/O Controller Module

F&amp;IT Series Ethernet Data Acquisition and Controlling Module

CPU-CA10(FIT)GY



CPU-CA20(FIT)GY



## Included Software:

- Driver library for Windows (for use with all for F&IT products)
- DDE, suiteLink server [FIT-SVR(W32)]
- Utility software for node setting and firmware updating



## Features

- Power-saving and low heat-generating CPU
- Fanless operation
- Compact design allows for flexible installation sites
- Controls stack-connected device modules including digital I/O
- When used with an I/O assist server unit and a monitor / control server unit it can serve as the controller of a subsystem of a web-enabled I/O system.
- Compliant with our multi-programmable display unit ACTIVE TOUCH, it can be used as a dedicated remote I/O device.

## The difference between CPU-CA20(FIT)GY and CPU-CA10(FIT)GY

## ● About 3 times faster than CPU-CA10(FIT)GY

With the introduction of SH4 240MHz CPU, the bandwidth was expanded to 100Mbps(100BASE-TX), achieving a significant increase in I/O and communication processing speed. As a result, communication response time has been reduced to one third (1.5msec to 0.5msec).\*

\* These figures may vary depending on the environment.

- Significant increase in the number of units installable within the same network  
A new operation mode was added to allow maximum 128 units to be installed within the same network in individual startup mode (without I/O assist server unit).

## Specifications

Item	CPU-CA10(FIT)GY	CPU-CA20(FIT)GY
CPU	SH3 60MHz	SH4 240MHz
Memory	Flash ROM: 512Kbyte (4Mbit) SDRAM: 2Mbyte (16Mbit)	Flash ROM: 4Mbyte (32Mbit) SDRAM: 32Mbyte (256Mbit)
Interface (to host)	10BASE-T (IEEE802.3)	100BASE-TX / 10BASE-T (IEEE802.3u)
Connectable device Modules	Max. 8 *1	
Power Supply	Supplied by 5VDC $\pm$ 5% 2-piece power input connector (removable) located on the front. Use of F&IT dedicated power supply series is recommended.	
Power Consumption	0.5A (Max.) *2(Exclusive of the power consumption to device module)	0.7A (Max.) *2(Exclusive of the power consumption to device module)
FG terminal	Power input connector is equipped with FG terminal.	
Operating Conditions	0 - 50°C / 10 - 90%RH (no condensation)	
Dimensions (mm)	25.2(w) $\times$ 64.7(d) $\times$ 94.0(h) (1" $\times$ 2.54" $\times$ 3.7")	
Weight	100g (3.52 oz)	

\*1. Total maximum power consumption by each module can not exceed the rated output current of the power supply unit.

\*2. A stack connector supplies the power to each device module. Supplied power can not exceed the permissible current of a stack connector (max.3.0A). The sum of power consumption within the system can not be larger than the rated output current of the power supply unit.



## Windows Driver

16ch Input / 16ch Output 12~24VDC Opto-Isolated Ethernet Digital I/O Unit

GDIO-1616LN-FIT  
[DIO-1616LN-FIT]

Model	GDIO-1616LN-FIT
Input specifications	Input channels 16 channels (8ch per common)
	Type Opto-Isolated (for sink/source current output)
	Resistance 4.7k $\Omega$
	Input Current (ON) 2.0mA or more
	Input Current (OFF) 0.16mA or less
Output specifications	External Circuit Rating 12~24VDC ( $\pm$ 15%), (2.5mA/12V, 5mA/24V per channel)
	Output channels 16 channels (8ch per common)
	Type Opto-Isolated Open Collector (Current sinking type)
	Rating 12~48VDC ( $\pm$ 15%) Max. 150mA/ch (12~24VDC), 50mA/ch (36~48VDC)
	Response Time (Max.) 1msec
External Circuit Rating 12~48VDC ( $\pm$ 15%)	
Power Consumption (Max.) 5VDC 0.60A, 12VDC 0.26A, 24VDC 0.14A	
Wiring Distance 50m	
Dimensions (mm) 188.0 (W) $\times$ 78.0 (D) $\times$ 30.5 (H) (Excluding protrusions)	
Weight (main unit) 220g (Body only)	
Applicable Wire AWG28-16	
Applicable Plug AK1550/10-3.5-GREEN (PTR)	

- Ethernet-based remote digital input and output
- Fail safe function notifies alert to external equipment if communication error such as cable disconnection or Ethernet switch failure occurs.
- Digital filtering function to prevent input error caused by noise and/or chattering
- 5~24VDC wide range input voltage"

Following variations are also available.

32ch Digital Input: DI-32LN-FIT

32ch Digital Output: DO-32LN-FIT

8ch Digital Input/8ch Digital Output: DIO-0808LN-FIT

16ch Digital Input: DI-16LN-FIT

16ch Digital Output: DO-16LN-FIT



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;IT Ethernet I/O

Bus Expansion

Accessories

Cables

H-04

F&amp;IT series

Ethernet-based Remote I/O

I/O Controller

Monitoring Server

I/O Assistant Server

I/O Module

Media Converter

# Ethernet Remote I/O

- Analog I/O
- Digital I/O
- Serial Communication
- GPIO Communication
- Motion Controller
- Counter
- USB Remote I/O
- F&IT Ethernet I/O
- Bus Expansion
- Accessories
- Cables

## Remote monitoring and control - No programming needed

### Monitoring & Control Server

**Intelligent and multi-function.**  
**All processes can be managed on a web browser.**

This intelligent Server Unit is provided with multiple functions including a Web server that can remotely monitor and update I/O information as well as task scripting, logging and e-mail transmission. Simplicity of design enables development and implementation to be easily performed on a web browser.

#### SVR-MMF2(FIT)



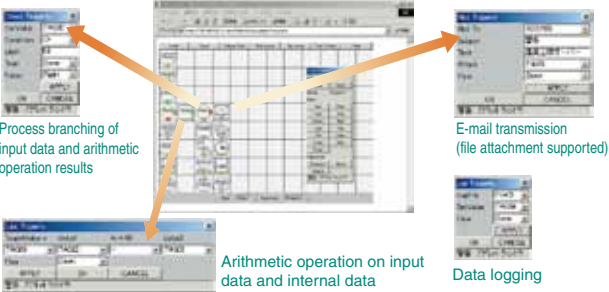
\* Power Supplies Optional



Installation on DIN track

#### Web Task Script

By combining such tasks as arithmetic operation, conditional branches, data output, e-mail transmission and data logging, execution processes and tasks can be set up much like a flowchart. All steps can be completed using a Web browser.



#### Web Monitoring

Preloaded with a Web server (Java applet) function, the SVR-MMF (FIT)GY enables monitoring and updating of I/O information from remote sites using a web browser. GUI components (such as graphs, sliders and buttons) and imported image data can be user formatted on the display. All aspects of setup, from screen configuration to linking with the I/O information can be completed using a web browser.



## The Expanding Potential of F&IT

### Wireless LAN Micro Access Point

Wireless LAN for F&IT / Network connection with industrial systems

#### Access Point FX-DS540-APDL2-U

IEEE802.11b/g		
IEEE802.11a		
W52	W52	W53

- Devices with a built-in (wired) Ethernet communication port can be converted to wireless regardless of OS or protocol.
- The unit can be used as an access point for small-scale wireless LAN systems.
- A UTP cable power supply (sold separately) is available.

\* Indicated figures are logical maximum values according to wireless LAN standards, and do not indicate the actual data transmission speeds.



AC Adapter included

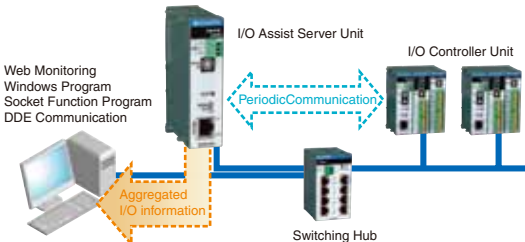
#### Other F&IT series

Model	Description	
SVR-MMF2(FIT)	Server Unit for Monitor and Control	CE
SVR-SEC(FIT)GY	Security Server Unit	CE
SH-8008(FIT)H	10M/100M Auto-Recognition Switching HUB	CE

## Management of I/O Controller Unit

These server units control the I/O information that is received from a maximum 8 units of I/O controller units and then provides data to the host in a single transfer thus helping to alleviate the line load.

#### I/O assist server unit High-speed/high-performance model SVR-IOA2(FIT)GY

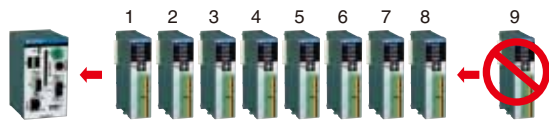


#### Advantages of the SVR-IOA2(FIT)GY over the SVR-IOA(FIT)GY

- The processing speed is almost doubled  
By using the H4 240MHz CPU, I/O and communication processing speed has improved significantly.
- Web monitoring function makes it easier to operate the network  
CONTEC's web monitoring page function has been made easier to remotely view and operate

## Ethernet Remote I/O

## Device Modules Compatability Table



## Max 8 modules

(Total power consumption 3 A or less)

A maximum of eight modules can be stacked on one unit.

However, the power consumption of the configuration of connected device modules cannot exceed a total of 3 Amps.

Function	Model	Power Consumption	Micro Controllers	I/O Controllers	Monitoring & Control Servers	I/O Assist Servers
<b>Isolated Digital I/O</b>			CPU-SB304-FIT-400 CPU-SB304-FIT-456 CPU-SB304-FIT-45F	CPU-CA20(FIT)GY CPU-CA10(FIT)GY	CPU-CA10(USB)GY	SVR-MMF2(FIT)
12 to 24 VDC 16 Inputs/12 to 48 VDC 16 Outputs	GDIO-16/16(FIT)GY [DIO-16/16(FIT)GY]	0.15A	○	○	○	○
12 to 24 VDC 8 Inputs/Outputs	GDIO-8/8(FIT)GY [DIO-8/8(FIT)GY]	0.15A	○	○	○	○
36 to 48 VDC 8 Inputs/Outputs	DIO-8/8H(FIT)GY	0.15A	○	○	—	○
12 to 24 VDC 4 Inputs/12 to 48 VDC 4 Outputs	DIO-4/4(FIT)GY	0.15A	○	○	—	○
<b>Non-isolated Digital I/O</b>						
TTL (5 VDC) 8 Inputs/Outputs	DIO-8D(FIT)GY	0.15A	○	○	—	○
<b>Isolated Digital Input</b>						
12 to 24 VDC 32 Inputs	GDI-32(FIT)GY [DI-32(FIT)GY]	0.15A	○	○	○	○
12 to 24 VDC 16 Inputs	GDI-16(FIT)GY [DI-16(FIT)GY]	0.15A	○	○	○	○
36 to 48 VDC 16 Inputs	DI-16H(FIT)GY	0.15A	○	○	—	○
12 to 24 VDC 8 Inputs	DI-8(FIT)GY	0.15A	○	○	—	○
<b>Isolated Digital Output</b>						
12 to 48 VDC 32 Outputs	GDO-32(FIT)GY [DO-32(FIT)GY]	0.15A	○	○	○	○
12 to 48 VDC 16 Outputs	GDO-16(FIT)GY [DO-16(FIT)GY]	0.15A	○	○	○	○
12 to 48 VDC 8 Outputs	DO-8(FIT)GY	0.15A	○	○	—	○
<b>Isolated Analog Input</b>						
Isolated analog input, 12 bits, 8 channels	ADI12-8(FIT)GY **	0.35A	○	○	○	○
Isolated analog input, 16 bits, 4 channels	GADI16-4(FIT)GY [ADI16-4(FIT)GY]	0.30A	○	○	○	○
<b>Isolated Analog Output</b>						
Isolated analog output, 12 bits, 4 channels	DAI12-4(FIT)GY	0.40A	○	○	○	○
Isolated analog output, 16 bits, 4 channels	GDAI16-4(FIT)GY [DAI16-4(FIT)GY]	0.50A	○	○	○	○
<b>Pt100 Temperature Sensor Input</b>						
Pt100 temperature input, 4 channels	GPTI-4(FIT)GY [PTI-4(FIT)GY]	0.50A	○	○	○	○
<b>Isolated Counter</b>						
24-bit up/down, 5 to 12 VDC, 2 channels	CNT24-2(FIT)GY	0.15A	○	○	○	○
16-bit up, 12 to 24 VDC, 8 channels	CNT16-8(FIT)GY	0.15A	○	○	—	○
16-bit up, 5 VDC, 8 channels	CNT16-8L(FIT)GY	0.15A	○	○	—	○
<b>Reed Relay Contact Output</b>						
125 VAC/30 VDC 2 A, 4 lead relay contact outputs	RRY-4(FIT)GY	0.15A	○	○	—	○
<b>Serial Communication</b>						
RS-232C 2-channel	GCOM-2(FIT)GY [COM-2(FIT)GY]	0.10A	○ *1	—	—	○ *2
RS-422/485 1-channel	GCOM-1PD(FIT)GY [COM-1PD(FIT)GY]	0.30A	○ *1	—	—	○ *2
<b>GPIO Communication</b>						
GPIO (IEEE-488) 1-channel	GGP-IB(FIT)GY [GP-IB(FIT)GY]	0.23A	○ *3	—	—	—

Device modules cannot be stacked.

Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&amp;ET Ethernet IO

Bus Expansion

Accessories

Cables

H-06

F&amp;ET series

Ethernet-based Remote I/O

I/O Controller

Monitoring Server

I/O Assistant Server

I/O Module

Media Converter

## Power Supplies

AC-DC Type			DC-DC Type		
Model	Supply Current (5VDC)	Input Voltage	Model	Supply Current (5VDC)	Input Voltage
POW-AD13GY	3.0A	85~132VAC	POW-DD10GY	3.0A	10~30VDC
POW-AD22GY	2.0A	85~264VAC	POW-DD43GY	3.0A	30~50VDC
AC Adapter			PoE power supply unit for RP-COM(FIT)H-AF		
Model	Supply Current (5VDC)	Input Voltage	Model	Supply Current (5VDC)	Input Voltage
POA201-10	12VDC 1.0A	90~264VAC	POW-CB30(af)	48VDC 0.5A	100~240VAC
POA200-20	5VDC 2.0A	90~264VAC	POW-CBM4(af)	48VDC 1.8A	100~115VAC

\*1:One module can be connected in the Compatible mode, and up to three modules can be connected in the Enhanced mode.

\*4:Optional Low-pass filter ATLF-8(FIT)GY is available.

\*2:Only one module can be connected.

\*3:Up to three modules can be connected.

# Ethernet Remote I/O

- Analogue I/O
- Digital I/O
- Serial Communication
- GPIO Communication
- Motion Controller
- Counter
- USB Remote I/O
- F&EIT Ethernet IO
- Bus Expansion
- Accessories
- Cables

## Media Converter

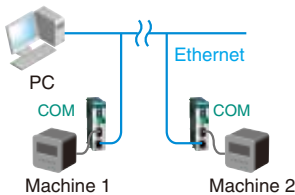
●RS-232 / RS-422A serial communication protocol is converted to Ethernet

●Choice of three operation modes to suit your specific needs

●Add a COM port on your PC - [Virtual COM Mode]

In this mode, the unit is used as a COM port in a Windows® PC. Via Ethernet, you can operate a remote device as if it were right next to you. Access by socket communication is also supported.

■Add a COM port on your PC

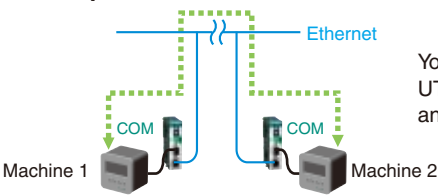


You can use up to 100m UTP cable between PC and HUB, or HUB and this converter.

●Replace a Serial Cable Connection - [Transparent Mode]

In this mode, data from connected devices is transferred as is, without any changes. You can replace serial cables with Ethernet without changing communication software settings. Up to 254 units can be installed on the same line.

■Replace a Serial Cable



You can use up to 100m UTP cable between HUB and this converter.

●N-to-N Packet Communication Using Dedicated Commands - [Modem Mode]

This mode is used for creating communication programs and conducting packet communications using dedicated commands. You can conduct communications to multiple units (N-to-N) by appending packets with the device ID. 254 units can be installed on the same line.

H-07

- F&EIT series
- Ethernet-based Remote I/O
- I/O Controller
- Monitoring Server
- I/O Assistant Server
- I/O Module
- Media Converter

### RS-232C Media Converter

RS-232C ⇄ Ethernet (Wire LAN)

- Add-on device modules COM-2(FIT)GY (for RS-232C 2ch) and COM-1PD(FIT)GY (for RS-422A/RS-485 1ch) can be freely combined to allow up to three units to be added for extension
- DHCP client function

GRP-COM(FIT)H  
[RP-COM(FIT)H]



- Corresponding to the wide input power supply (10 - 30VDC)

GRP-COM(FIT)H-AF  
[RP-COM(FIT)H-AF]



- 5VDC and PoE supporting the use of IEEE802.3af-compatible devices, enabling power to be supplied from UTP cables



RP-COM(FIT)

Windows Diver

AC Adapter

### RS-422A Media Converter

RS-422A ⇄ Ethernet (Wire LAN)  
RP-422(FIT)GY



Windows Diver

AC Adapter



## Ethernet Remote I/O

Model	RP-COM(FIT)H	RP-COM(FIT)H-AF	RP-422(FIT)GY	
Serial standard				
Interface type	RS-232C		RS-422A	
Data Speed	300~921,600bps			
Connector	9-pin male D-type connector			
Wire LAN				
Ethernet Standard	IEEE802.3(10BASE-T)/ IEEE802.3u(100BASE-TX)	IEEE802.3(10BASE-T)/ IEEE802.3u(100BASE-TX)/ IEEE802.3af (PoE)	IEEE802.3(10BASE-T)/ IEEE802.3u(100BASE-TX)	
Data Speed	10/100Mbps			
Access Method	CSMA/CD			
Transmission Format	Half Duplex / Full Duplex			
Number of ports	1 (10BASE-T / 100BASE-TX)			
Power Supply	10.0 - 30.0VDC ±5% (AC adapter is purchased separate)	5VDC±5% (AC adapter is purchased separate)	5VDC±5% (AC adapter included)	
Power Consumption (Max.)	12.0VDC 0.2A, 24.0VDC 0.1A	0.4A (Max.)	0.5A (Max.)	
Add-on module	RS-232C 2ch add-on : COM-2(FIT)GY For RS-422A/485 1ch add-on : COM-1PD(FIT)GY Combine COM-2(FIT)GY or COM-1PD(FIT)GY up to three freely		-	
Dimensions (mm)	25.2(W)×64.7(D)×94.0(H) (Exclusive of protrusions)			
Weight	100g (3.5oz)			

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

## Options

RP-COM(FIT)H / RP-COM(FIT)H-AF	
Add-on device modules	
COM-2(FIT)GY	RS-232C 2ch
COM-1PD(FIT)GY	RS-422A/RS-485 1ch
AC adapter	
POA201-10	Output: 12V 1A <RP-COM(FIT)H>
POA200-20	Output: 5V 2A <RP-COM(FIT)H-AF>

RP-COM(FIT)H-AF	
PoE power supply unit	
POW-CB30(af)	Supplying power Unit from UTP cables support PoE
POW-CBM4(af)	Multi Port Supplying power Unit with swithing HUB support PoE

H-08

## Media Converter

## GPIB Communication Media Converter

GPIB ⇄ Ethernet (Wire LAN)  
RP-GPIB(FIT)GY

AC Adapter

- Provides protocol conversion from GPIB (IEEE-488.1/IEEE-488.2) communication to Ethernet.
- With the included drivers installed on a Windows environment PC, devices can be remotely controlled as easy as if they were local.
- Supported operating systems: Windows XP, 2000, Me, 98SE, 98



## Options

GPIB	
Standard	IEEE-488.1, IEEE-488.2
Mode	Master mode only
Number of Channels	1
Speed (Max.)	Transmission: 18Kbyte/sec Reception: 10Kbyte/sec
Data type	8 parallel lines, 3 handshake lines
Signal Logic	Negative Logic: <Low Level> 0.8V or less, <High level> 2.0V or more
Wire LAN	
Ethernet Standard	IEEE802.3
Data Speed	10Mbps
Access Method	CSMA/CD
Transmission Format	Half Duplex / Full Duplex
Available Ports	1 (10BASE-T)
Power Supply	5VDC±5% (using attached AC Adapter)
Power Consumption (Max.)	0.6A
Dimensions (mm)	50.4(W)×64.7(D)×94.0(H) (Exclusive of protrusions)
Weight	190g

F&amp;EIT series

Ethernet-based  
Remote I/O

I/O Controller

Monitoring Server

I/O Assistant Server

I/O Module

Media Converter



# Bus Expansion System

## Expansion Unit / Bus Adapter

An expansion system is used to expand the number of available PCI bus slots of either CONTEC industrial computers or standard PCs. It is also useful in applications where the power consumption of add-on boards exceeds the power supply capacity of the host PC. An expansion system is used to join the expansion chassis and the host PC into one system.



+



=



## Product Lineup

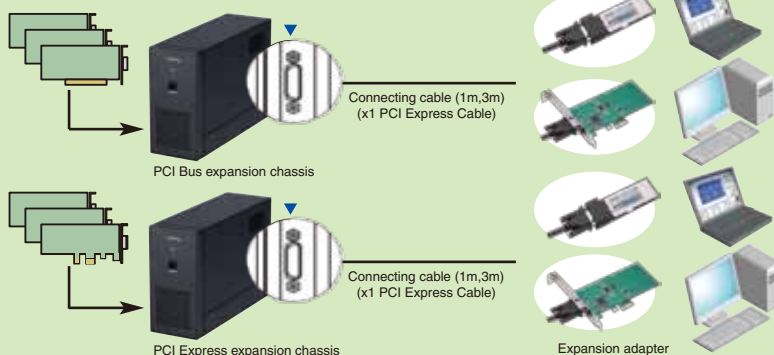
We provide wide array of models to meet your desired bus specifications.

### PCI Express Cable Type Expansion Adapter & Chassis

I-03

#### PCI Express cable extension

Complying with PCI Express External Cabling Standard 1.0, it supports faster data transmission (2.5G Transfer per sec). PCI Bus slots or PCI Express Bus slots can be added to your PC which has a PCI Express slot or an ExpressCard slot. There is no need to change existing software for the PCI or PCI Express card you are using. The power supply of the expansion chassis can be controlled in synchronization with the host PC power supply.



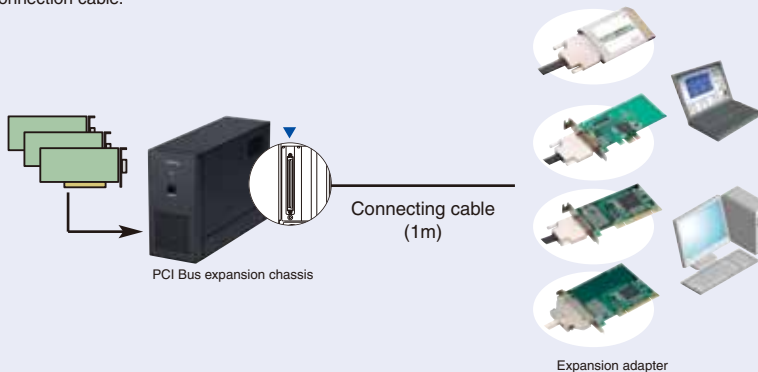
### Bus Extension Type Expansion Adapter & Chassis

I-07

#### Standard Bus extension

This bus extension externally expands PCI bus and transmits signals directly between the expansion chassis and host PC. It is best suited for use in an environment where the measurement control is conducted in close proximity to the host PC.

\* The expansion adapters to be inserted in the PC and expansion chassis are connected with a 1m-long connection cable.

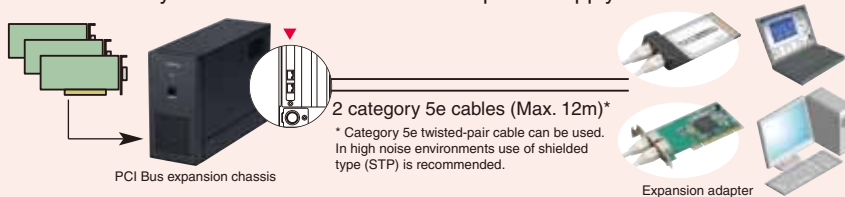


### StarFabric-compliant Type Expansion Adapter & Chassis

I-12

#### StarFabric-compliant extension

With this style extension, you can conduct StarFabric-compliant high-speed serial transfer (2.5Gbps). The expansion adapters to be inserted into the PC and expansion chassis are connected using Category 5e cable creating easy wiring and installation. The included cable can be extended up to 12m, making it an optimal choice where measure / control is conducted at a distance from the host PC. PCI bus compliant, it allows you to construct a system without changing existing boards or software. The power supply of the expansion chassis can be controlled in synchronization with the host PC power supply.



# Expansion Unit / Bus Adapter

## ■ PCI Express Cable Type Expansion Adapter & Chassis

### ● Expansion Adapter

Name	Type
EAD-CE-LPE	PCI Express (for Low Profile PCI Bus slot)
EAD-CE-EC	Express Card
EAD-CE-EC-3	

### ● Bus Expansion Chassis

Name	Bus Type	Installation Type			Slots	Installable Board	
		Desktop	Rack Mount	Wall Mount		Long	Short
ECH-PE-CE-H2B	PCI Express	○	—	—	2	×	○
ECH-PE-CE-F2B	PCI Express	○	—	—	2	○	○
ECH-PCI-CE-H2B	PCI Express	○	—	—	2	×	○
ECH-PCI-CE-H4B	PCI	○	—	—	4	×	○
ECH-PCI-CE-F2B	PCI	○	—	—	2	○	○
ECH-PCI-CE-F4B	PCI	○	—	—	4	○	○
ECH-PCI-CE-H4A	PCI	○	○	○	4	×	○
ECH-PCI-CE-H7A	PCI	○	○	○	7	×	○
ECH-PCI-CE-H13A	PCI	○	○	○	13	×	○

## ■ Bus Extension Type Expansion Adapter & Chassis

### ● Expansion Adapter

Name	Type
EAD-BE-LPE	PCI Express (for Low Profile PCI Bus slot)
EAD(LPCI)BE	PCI (for Low Profile PCI Bus slot)
EAD(PCI)BE	PCI
EAD(CB)BE-N	CardBus

### ● PCI Bus Expansion Chassis

Name	Installation Type			Slots	Installable Board	
	Desktop	Rack Mount	Wall Mount		Long	Short
ECH(PCI)BE-H2B	○	—	—	2	×	○
ECH(PCI)BE-H4B	○	—	—	4	×	○
ECH(PCI)BE-F2B	○	—	—	2	○	○
ECH(PCI)BE-F4B	○	—	—	4	○	○
ECH(PCI)BE-H4A	○	○	○	4	×	○
ECH(PCI)BE-H7A	○	○	○	7	×	○
ECH(PCI)BE-H13A	○	○	○	13	×	○
ECH(PCI)BE-F7A	○	○	○	7	○	○
ECH(PCI)BE-F13A	○	○	○	13	○	○

## ■ StarFabric-compliant Type Expansion Adapter & Chassis

### ● Expansion Adapter

Name	Type
EAD-SF-LPE	PCI Express (for Low Profile PCI Bus slot)
EAD(LPCI)SF	PCI (for Low Profile PCI Bus slot)
EAD(CB)SF	CardBus

### ● PCI Bus Expansion Chassis

Name	Installation Type			Slots	Installable Board	
	Desktop	Rack Mount	Wall Mount		Long	Short
ECH(PCI)SF-H2B	○	—	—	2	×	○
ECH(PCI)SF-H4B	○	—	—	4	×	○
ECH(PCI)SF-F2B	○	—	—	2	○	○
ECH(PCI)SF-F4B	○	—	—	4	○	○
ECH(PCI)SF-H4A	○	○	○	4	×	○
ECH(PCI)SF-H7A	○	○	○	7	×	○
ECH(PCI)SF-H13A	○	○	○	13	×	○
ECH(PCI)SF-F7A	○	○	○	7	○	○
ECH(PCI)SF-F13A	○	○	○	13	○	○

## ■ Bus Converter Adapter

Name	Type
BUF-CARD(PC)P	PC Card to ISA
PC-CARD(PC)H	ISA to PC Card

## ■ Bus Expansion Adapter

Name	Type	Backplane
BUF(PCI)	PCI to PCI (7 slot)	Included
BUF(PCI)13	PCI to PCI (13 slot)	Included
BUF(PC)E	ISA to ISA	—

### Caution

Please note that the following expansion boards cannot be used inside an expansion chassis.

#### <PCI Bus Expansion Chassis>

- Video boards
  - Additional PCI bus expansion boards
  - Boards with the disclaimer "Cannot be used with PCI-to-PCI Bridge"
- Please note that even when a board is compatible with PCI bus specifications, it may not operate due to specification limitations.

#### <PCI Express Bus Expansion Chassis>

- Boards which requires faster data rate than x1 PCI Express, i.e. x16, x8 or x4
  - Additional PCI bus expansion boards
- Please note that even when a board is compatible with PCI Express bus specifications, it may not operate due to specification limitations.

### Expansion adapter

**PCI Express**

Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.

**PC**

Product is PCI standard compliant and can be used in the computer equipped with PCI bus expansion slot.

**Express Card**

34mm Express Card compliant with PCI Express Standards. Can be used both 34 and 54mm Express Card slots of notebook PCs

**Card Bus**

Product supports Cardbus that is a 32-bit PC card standard bus.

### Board Size

Low Profile

Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

### Expansion chassis

**X Slot**

Maximum number of boards that can be installed

**XX Size**

Maximum board size that can be installed

**Built-in Power**

Expansion chassis is equipped with built-in power supply.

**AC Adapter**

Includes AC adapter. The expansion chassis has no built-in power source.

Analog I/O

Digital I/O

Serial Communication

GPB Communication

Motion Controller

Counter

USB Remote I/O

F&E/T Ethernet IO

Bus Expansion

Accessories

Cables

I-02

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

## PCI Express Cable Type

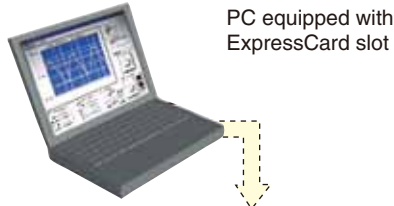
## Selecting Optimal Expansion Adapter and Expansion Chassis

Complying with PCI Express External Cabling Standard 1.0, it supports faster data transmission (2.5G Transfer per sec). PCI Bus slots or PCI Express Bus slots can be added to your PC which has a PCI Express slot or an ExpressCard slot. There is no need to change existing software for the PCI or PCI Express card you are using. The power supply of the expansion chassis can be controlled in synchronization with the host PC power supply.

CONTEC offers 16 different configurations based on the type of host PC, needed number and lengths of slots.

### Expansion Adapter

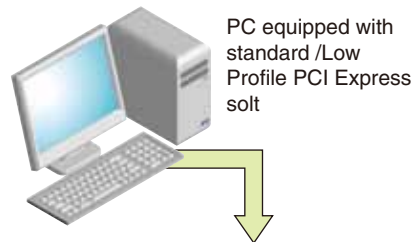
### Expansion Chassis



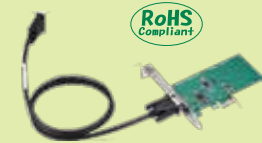
#### Expansion adapter for ExpressCard slot (PC side) EAD-CE-EC/EAD-CE-EC-3



A PCI Express cable (1m/3m) is included.



#### Expansion adapter for PCI Express slot (PC side) EAD-CE-PE



A PCI Express cable (1m) and a bracket for standard PCI slot are included.



Optional 3m cable is available.  
PCI Express cable (3m)  
CB-CE-3



#### Stylish compact black chassis

##### PCI Express expansion chassis (Includes AC adapter)



##### ECH-PE-CE-H2B

2 Slots Short Size AC adapter



##### ECH-PE-CE-F2B

2 Slots Long Size Long Size AC adapter



##### PCI expansion chassis (Includes AC adapter)



##### ECH-PCI-CE-H2B

2 Slots Short Size AC adapter



##### ECH-PCI-CE-H4B

4 Slots Short Size AC adapter



##### ECH-PCI-CE-F2B

2 Slots Long Size Short Size AC adapter



##### ECH-PCI-CE-F4B

4 Slots Long Size Short Size AC adapter



#### Solid steel industrial chassis

##### PCI bus expansion chassis (Built-in power supply)



##### ECH-PCI-CE-H4A

4 Slots Short Size Built-in Power



##### ECH-PCI-CE-H7A

7 Slots Short Size Built-in Power



##### ECH-PCI-CE-H13A

13 Slots Short Size Built-in Power



Short size: A short-size board can be installed  
Long size: A long-size board can be installed

Analog I/O

Digital I/O

Serial

Communication

GPIB

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet I/O

Bus Expansion

Accessories

Cables

I-03

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-

compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion

Adapter

Bus Converter

Adapter

Parts of Maintenance

Exchange

# Expansion Unit / Bus Adapter

## PCI Express

Low Profile



### PCI Express Cable Expansion Adapter (Host PC) EAD-CE-LPE

- PCI and PCI Express bus can be added using one PCI Express slot of the host PC
- Expansion chassis can be selected to meet the required bus type, number of bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Both Low Profile and Standard PCI slots are supported by using the included bracket



## Express Card



### Express card adaptor for PCI Express Cable

#### EAD-CE-EC (1m) EAD-CE-EC-3 (3m)

- PCI and PCI Express bus can be added using one Express Card slot of the host notebook PC
- Expansion chassis can be selected to meet the required bus type, number of bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply



Model	EAD-CE-LPE	EAD-CE-EC	EAD-CE-EC-3
Bus type	PCI Express Base Specification Rev.1.0a x1	-	-
Card slot	-	ExpressCard Standard Release 1.1	-
Dimensions (mm)	121.69(L) × 67.90(H)	121.69(L) × 34(H)	-
Bus Operating Clock	-	-	-
Power Consumption (Max.)	3.3VDC 50mA	3.3VDC 50mA	-
Operating Conditions	0~50°C, 10~90%RH (no condensation)		
Attached cable	CB-CE1 (cable length: 1m)		CB-CE3 (cable length: 3m)

Note:

### PCI Express Cable PCI Express expansion chassis (2 x Short size slots, AC Adapter) ECH-PE-CE-H2B

2 Slots

Short Size



- 2 x Short size PCI Express expansion slots
- Possible to add x1 PCI Express bus slot to your PC
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability

Model	ECH-PE-CE-H2B	ECH-PE-CE-F2B
Bus type	PCI Express Base Specification Rev.1.0a x1 <sup>*1</sup>	
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing	
Interrupt Level	INTA-INTD	
Bus Clock	33MHz (Max.)	
User slots	2 (Short-size)	2 (Long-size)
Installable Board (mm)	167.75(L) × 111.15(H)	312.00(L) × 111.15(H)
Power supply capacity (Max.)	Output current shall not exceed the following values. +3.3VDC 6A (Max), +12VDC 1.5A (Max), -12VDC 0.3A (Max)	
AC input voltage	100 to 240VAC	
Overall maximum power supply capacity	60W	
Operating Conditions	0~50°C, 20~80%RH (no condensation)	
Dimensions (mm)	71.0(W) × 222.0(D) × 144.0(H)	71.0(W) × 360.0(D) × 144.0(H)
Weight of Chassis	1.2kg	1.6kg
Weight of AC Adapter	0.9kg	-

Note:

<sup>\*1</sup> Up to x16 board can be slotted in. But the actual function is x1.

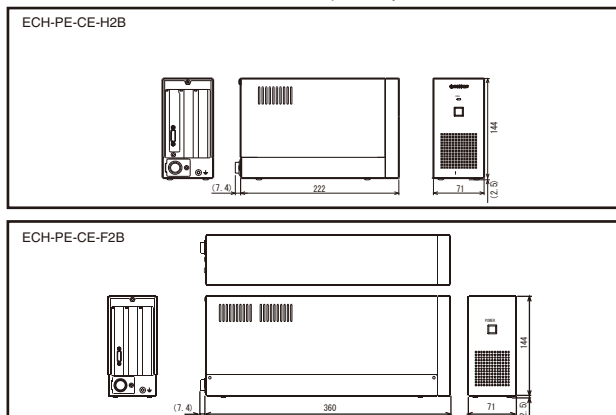
### PCI Express Cable PCI Express expansion chassis (2 x Long size slots, AC Adapter) ECH-PE-CE-F2B

2 Slots

Short Size



- 2 x Long size PCI Express expansion slots
- Possible to add x1 PCI Express bus slot to your PC
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability



Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

I-04

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

Analog I/O

Digital I/O

Serial  
CommunicationGPIO  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

## PCI Express Cable PCI bus expansion chassis (2 × Short size slots, AC Adapter) ECH-PCI-CE-H2B

2  
SlotsShort  
Size

CE

RoHS  
Compliant

- 2× PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

## PCI Express Cable PCI bus expansion chassis (2 × Long size slots, AC Adapter) ECH-PCI-CE-F2B

2  
SlotsShort  
SizeLong  
Size

CE

To be compliant

RoHS  
Compliant

- 2× PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

## PCI Express Cable PCI bus expansion chassis (4 × Short size slots, AC Adapter) ECH-PCI-CE-H4B

4  
SlotsShort  
Size

CE

To be compliant

RoHS  
Compliant

- 4× PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

## PCI Express Cable PCI bus expansion chassis (4 × Long size slots, AC Adapter) ECH-PCI-CE-F4B

4  
SlotsShort  
SizeLong  
Size

CE

To be compliant

RoHS  
Compliant

- 4× PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

Model	ECH-PCI-CE-H2B	ECH-PCI-CE-H4B	ECH-PCI-CE-F2B	ECH-PCI-CE-F4B
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)			
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing			
Interrupt Level	INTA-INTD			
Bus Clock	33MHz (Max.)			
User slots	2 (Short-size)	4 (Short-size)	2 (Long-size)	4 (Long-size)
Installable Board (mm)	176.5(L) × 107(H)		313.8(L) × 107(H)	
Power supply capacity (Max.)	Output current shall not exceed the following values. +5VDC: 7A, +3.3VDC: 3A, +12VDC: 1.5A, -12VDC: 0.3A			
AC input voltage	100 to 240VAC			
Overall maximum power supply capacity	60W			
Operating Conditions	0~50°C, 20~80%RH (no condensation)			
Dimensions (mm)	71.0(W) × 222.0(D) × 144.0(H)	112.0(W) × 222.0(D) × 144.0(H)	71.0(W) × 360.0(D) × 144.0(H)	112.0(W) × 360.0(D) × 144.0(H)
Weight of Chassis	1.2kg	1.5kg	1.6kg	2.0kg
Weight of AC Adapter	0.9kg			

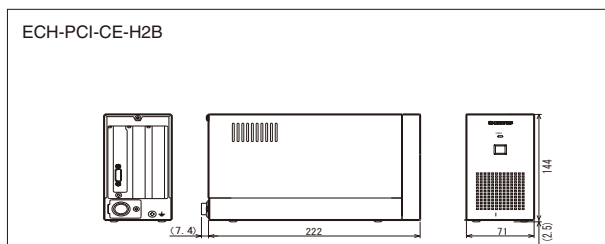
Note:

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

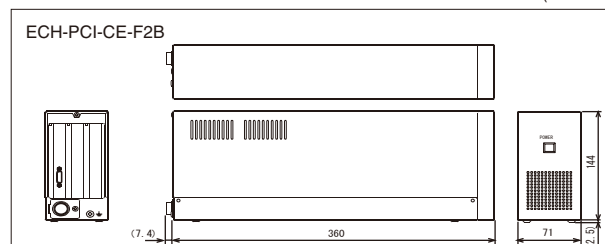
### ■ Dimensions

(Unit:mm)

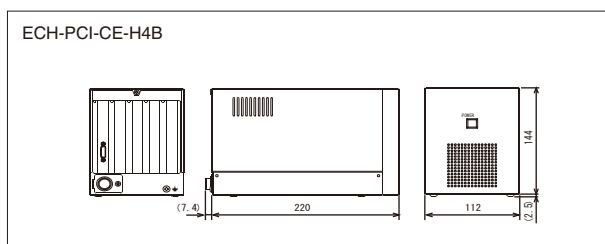
#### ECH-PCI-CE-H2B



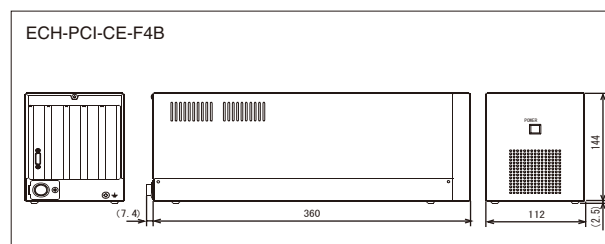
#### ECH-PCI-CE-F2B



#### ECH-PCI-CE-H4B



#### ECH-PCI-CE-F4B



I-05

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-

compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion  
AdapterBus Converter  
AdapterParts of Maintenance  
Exchange



# Expansion Unit / Bus Adapter

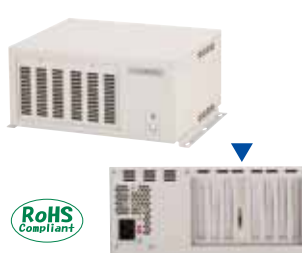
PCI Express Cable  
PCI bus expansion chassis  
(4 × Short size slots, On board Power)  
**ECH-PCI-CE-H4A**



- 4x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply



PCI Express Cable  
PCI bus Expansion Chassis  
(7 × Short size slots, On board Power)  
**ECH-PCI-CE-H7A**



- 7x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply



PCI Express Cable  
PCI bus Expansion Chassis  
(13 × Short size slots, On board Power)  
**ECH-PCI-CE-H13A**



- 13x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply



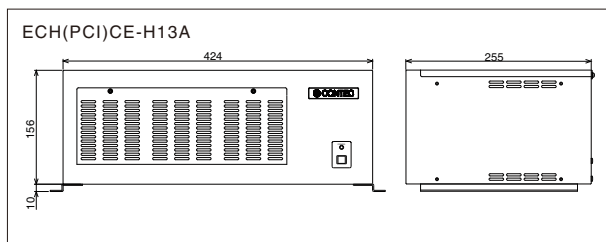
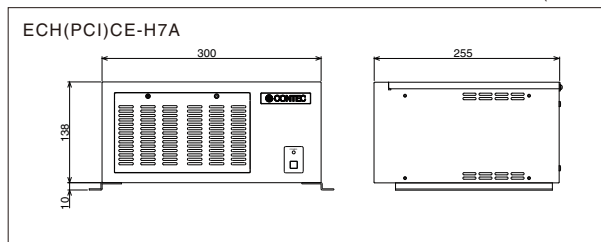
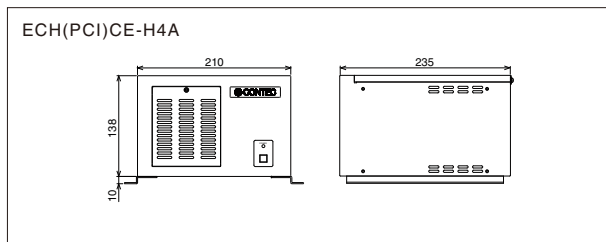
Model	ECH-PCI-CE-H4A	ECH-PCI-CE-H7A *5	ECH-PCI-CE-H13A *5
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)		
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing		
Interrupt Level	INTA-INTD		
Bus Clock	33MHz (Max.)		
User slots	4 (short-size)	7 (short-size)	13 (short-size)
Installable Board (mm)	176.5(L)×107(H)		
Power supply capacity (Max.)	+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A		
AC input voltage	115/230VAC (switch selectable)		
Overall maximum power supply capacity *1	130W *3		
Operating Conditions	0~50°C, 20~80%RH (no condensation)		
Dimensions (mm)	210.0(W)×235.0(D)×138.0(H)	300.0(W)×138.0(H)×255.0(L)	424.0(W)×156.0(H)×255.0(L)
Weight	3.5kg	5.0kg	7.5kg

Note: \*1: AC input line voltage range: 90 - 132VAC and 180 - 250VAC. \*2: The sum of +5VDC and +3.3VDC must not exceed 90W. \*3: Condition with CE marking: 130W at 40°C. \*4: Condition with CE marking: 175W at 50°C. \*5: This product cannot be used with the expansion adapter (EAD-CB-EC).

## ■ Dimensions

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

(Unit:mm)



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

I-06

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

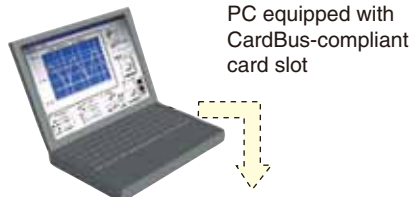
## Bus Extension Type

## Selecting Optimal Expansion Adapter and Expansion Chassis

Bus Extension is best suited for use in an environment where the control is conducted in close proximity to the PC unit. If the expansion unit needs to be further away (up to 12m - max), select from the StarFabric-compliant system - list on CONTEC offers 32 different configurations based on the type of host PC, needed number and lengths of PCI slots.

I-07

### Expansion Adapter



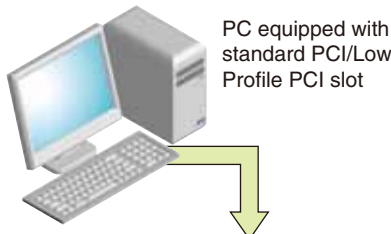
PC equipped with CardBus-compliant card slot

#### Expansion adapter for CardBus slot (PC side) EAD(CB)BN



A dedicated B62connection cable (1m) is included.

I-08



PC equipped with standard PCI/Low Profile PCI slot

#### Expansion adapter for PCI Express -compliant Low Profile PCI bus slot (host PC) EAD-BE-LPE



A dedicated connection cable (1m) and standard PCI bus bracket are included.

I-08

#### Expansion adapter for PCI -compliant Low Profile PCI bus slot (host PC) EAD(LPCI)BE



A dedicated connection cable (1m) and standard PCI bus bracket are included.

I-04

#### Expansion adapter for PCI bus slot (host PC) GEAD(PCI)BE



A dedicated connection cable (1m) is included.

I-04

### Expansion Chassis

#### Stylish compact black chassis

##### PCI expansion chassis (Includes AC adapter)



#### ECH(PCI)BE-H2B

2 Slots Short Size AC adapter

I-09



#### ECH(PCI)BE-H4B

4 Slots Short Size AC adapter

I-09



#### ECH(PCI)BE-F2B

2 Slots Long Size Short Size AC adapter

I-09



#### ECH(PCI)BE-F4B

4 Slots Long Size Short Size AC adapter

I-09

#### Solid steel industrial chassis

##### PCI bus expansion chassis (Built-in power supply)



#### ECH(PCI)BE-H4A

4 Slots Short Size Built-in Power

I-10



#### ECH(PCI)BE-H7A

7 Slots Short Size Built-in Power

I-10



#### ECH(PCI)BE-H13A

13 Slots Short Size Built-in Power

I-10



#### ECH(PCI)BE-F7A

7 Slots Long Size Short Size Built-in Power

I-11



#### ECH(PCI)BE-F13A

13 Slots Long Size Short Size Built-in Power

I-11

Short size: A short-size PCI board can be installed  
Long size: A long-size PCI board can be installed

Note to customers using the CONTEC's conventional expansion units [FA-PAC(PCI) and NOTE-PAC(PC) Series]

When replacing conventional expansion units with expansion chassis and adapters, please refer to the following table so that you can purchase a complete unit with the same specifications as those of the conventional models.

PCI bus expansion system	Expansion adapter	Expansion chassis
FA-PAC(PCI)H4	= EAD(PCI)BE	+ EAD(PCI)BE-H4A
FA-PAC(PCI)F7	= EAD(PCI)BE	+ EAD(PCI)BE-F7A
FA-PAC(PCI)F13	= EAD(PCI)BE	+ EAD(PCI)BE-F13A
CardBus to PCI bus expansion system		
NOTE-PAC(PCI)H2	= EAD(CB)BE-N	+ EAD(PCI)BE-H2B
NOTE-PAC(PCI)H4	= EAD(CB)BE-N	+ EAD(PCI)BE-H4A

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

I-07

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

**PCI Express**

Low Profile


**Bus Extender**
**PCI Express bus slot Expansion Adapter (Host PC)**
**EAD-BE-LPE**

- PCI bus (5V/32bit 33MHz) can be added using one PCI Express slot of the host PC.
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply.
- Both Low Profile and Standard PCI slots are supported by using the included bracket.


**PCI**

Low Profile


**Bus Extender**
**LPCI bus slot Expansion Adapter (Host PC)**
**EAD(LPCI)BE**

- PCI bus (5V/32bit 33MHz) can be added using one Low Profile or Standard PCI slot of the host PC
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Both Low Profile and Standard PCI slots are supported by using the included bracket


**PCI**

**Bus Extender**
**PCI bus slot Expansion Adapter (Host PC)**
**EAD(PCI)BE**

- PCI bus (5V/32bit 33MHz) can be added using one PCI slot of the host PC
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply


**Card Bus**

**Bus Extender**
**CardBus slot expansion adapter (Host PC)**
**EAD(CB)BE-N**

- PCI bus (5V/32bit 33MHz) can be added using one CardBus slot of the host PC
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Supported OS: Windows XP, Windows 2000, Windows Me, Windows98SE and Windows 98



SUPPORTED OS	Windows Vista	Windows XP	Windows 2000	● A dedicated device driver needs to be installed under Windows XP and Windows 2000.
	Windows 7	Windows Me	Windows 98	
	● Windows NT4.0 and Windows 95 are not supported.			

Model	EAD-BE-LPE	EAD(LPCI)BE	EAD(PCI)BE	EAD(CB)BE-N *2
Bus type	PCI Express Base Specification Rev.1.0a	PCI Local Bus Specification Rev2.3 (+5V / +3.3V)		-
Card slot	-			PC Card Standard CardBus
Dimensions (mm)	121.69(L) x 67.90(H)	121.69(L) x 63.41(H)	121.69(L) x 105.68(H)	TYPE II (85.6x54.0x5.0)
Bus Operating Clock	-	33MHz (Max.)		-
Power Consumption (Max.)	3.3VDC 300mA (Max.)	3.3VDC 200mA (Max.) <JP1 1-2 Short>, 5VDC 200mA (Max.) <JP1 2-3 Short>		3.3VDC 200mA (Max.)
Operating Conditions	0~50℃, 10~90%RH (no condensation)			
Attached cable	CB-CB68/96 (cable length: 1m) *1		CB-BF96 (cable length: 1m) *1	CB-CB68/96 (cable length: 1m) *1

Note:

\*1: Only the cable included with the unit can be used.

\*2: This product can be used with the [ECH(PCI)BE-F7A, F13A, H7A, H13A] expansion chassis under Windows Vista only. Other operating systems cannot support the combination of EAD(CB)BE-N and [ECH(PCI)BE-F7A, F13A, H7A, H13A].

Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

**Bus Expansion**

Accessories

Cables

**I-08**

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

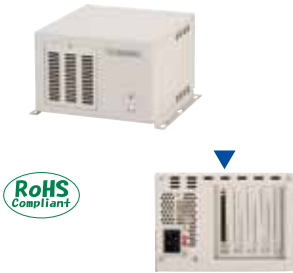
Parts of Maintenance Exchange



# Expansion Unit / Bus Adapter

## Bus Extender PCI bus Expansion Chassis (x4 Short size slots, On board Power) ECH(PCI)BE-H4A

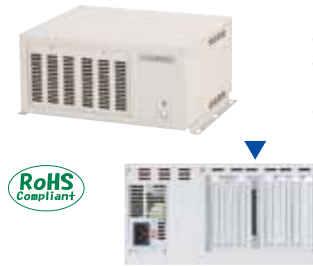
4 Slots Short Size Built-in Power CE



- 4x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

## Bus Extender PCI bus Expansion Chassis (x7 Short size slots, On board Power) ECH(PCI)BE-H7A

7 Slots Short Size Built-in Power CE



- 7x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

## Bus Extender PCI bus Expansion Chassis (x13 Short size slots, On board Power) ECH(PCI)BE-H13A

13 Slots Short Size Built-in Power CE

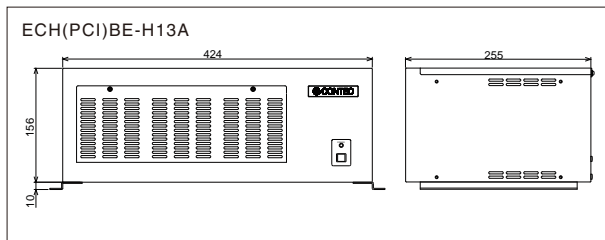
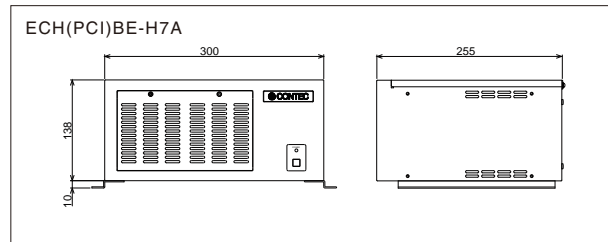
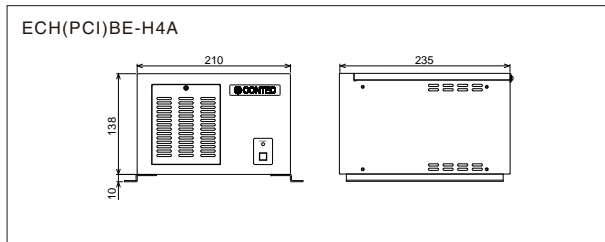


- 13x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

Model	ECH(PCI)BE-H4A		ECH(PCI)BE-H7A *5	ECH(PCI)BE-H13A *5	
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)				
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing				
Interrupt Level	INTA-INTD				
Bus Clock	33MHz (Max.)				
User slots	4 (short-size)	7 (short-size)	13 (short-size)		
Installable Board (mm)	176.5(L)×107(H)				
Power supply capacity (Max.)	+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A			+5VDC: 18A*2, +3.3VDC: 15A*2, +12VDC: 9A, -12VDC: 0.8A	
AC input voltage	115/230VAC (switch selectable)				
Overall maximum power supply capacity *1	130W *3			0~30°C: 230W, 30~40°C: 205W, 40~50°C: 175W *4	
Operating Conditions	0~50°C, 20~80%RH (no condensation)				
Dimensions (mm)	210.0(W)×235.0(D)×138.0(H)	300.0(W)×138.0(H)×255.0(L)	424.0(W)×156.0(H)×255.0(L)		
Weight	3.5kg	5.0kg	7.5kg		
Note:	*1: AC input line voltage range: 90 - 132VAC and 180 - 250VAC.    *2: The sum of +5VDC and +3.3VDC must not exceed 90W.    *3: Condition with CE marking: 130W at 40°C.    *4: Condition with CE marking: 175W at 50°C.    *5: This product cannot be used with the expansion adapter [EAD(CB)BE].				

### ■ Dimensions

(Unit:mm)



Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&E Ethernet I/O

Bus Expansion

Accessories

Cables

I-10

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange



# Expansion Unit / Bus Adapter

- Analog I/O
- Digital I/O
- Serial Communication
- GPiB Communication
- Motion Controller
- Counter
- USB Remote I/O
- F&EiT Ethernet IO
- Bus Expansion
- Accessories
- Cables

Bus Extender  
PCI bus Expansion Chassis  
(×7 Long size slots, On board Power)  
**ECH(PCI)BE-F7A**



- 7x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

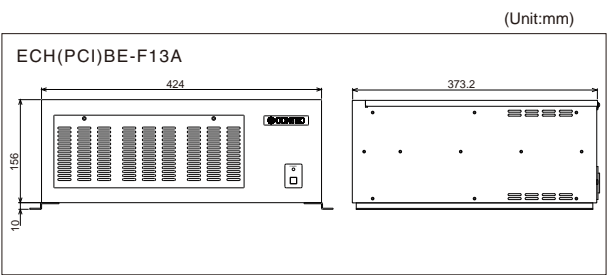
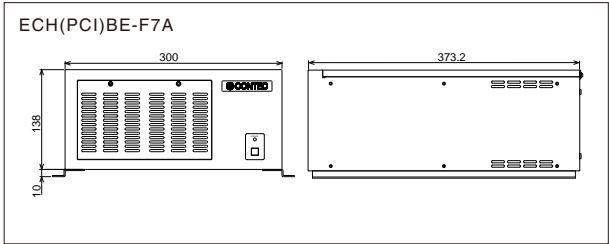
Bus Extender  
PCI bus Expansion Chassis  
(×13 Long size slots, On board Power)  
**ECH(PCI)BE-F13A**



- 13x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

Model	ECH(PCI)BE-F7A *5	ECH(PCI)BE-F13A *5	
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)		
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing		
Interrupt Level	INTA-INTD		
Bus Clock	33MHz (Max.)		
User slots	7 (Long-size)	13 (Long-size)	
Installable Board (mm)	313.8(L)×107(H)		
Power supply capacity (Max.)	+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A	+5VDC: 18A*2, +3.3VDC: 15A*2, +12VDC: 9A, -12VDC: 0.8A	
AC input voltage	115/230VAC (switch selectable)		
Overall maximum power supply capacity *1	130W *3	0~30°C: 230W, 30~40°C: 205W, 40~50°C: 175W *4	
Operating Conditions	0~50°C, 20~80%RH (no condensation)		
Dimensions (mm)	300.0(W)×138.0(H)×373.2(L)	424.0(W)×156.0(H)×373.2(L)	
Weight	6.0kg	9.0kg	
Note:	*1: AC input line voltage range: 90 - 132VAC and 180 - 250VAC. *2: The sum of +5VDC and +3.3VDC must not exceed 90W. *3: Condition with CE marking: 130W at 40°C. *4: Condition with CE marking: 175W at 50°C. *5: This product cannot be used with the expansion adapter [EAD(CB)BE].		


## ■ Dimensions



(Unit:mm)

# Expansion Unit / Bus Adapter

## StarFabric-compliant Selecting Optimal Expansion Adapter and Expansion Chassis

A StarFabric-compliant system is best suited for measurement control when distance between host PC and chassis is required. When using an expansion chassis in close proximity to the host PC, select from the Bus Extension list on [I-03](#) 

CONTEC offers 23 different configurations based on the type of host PC, needed number and lengths of PCI slots.

Analog I/O

Digital I/O

Serial

Communication

GPIB

Communication

Motion Controller

Counter

USB Remote I/O

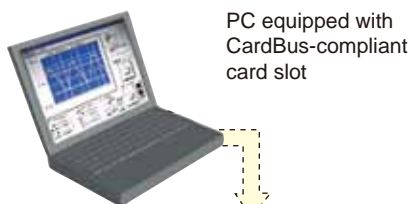
F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

### Expansion Adapter

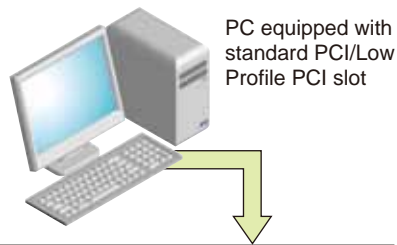


#### Expansion adapter for CardBus slot (PC side) EAD(CB)SF



2x (12m) Category 5e STP cables are included.

I-13



#### Expansion adapter for PCI Express-compliant Low Profile PCI bus slot (host PC) EAD-SF-LPE



2x (12m) Category 5e STP cables and standard PCI bus bracket included

I-13

#### Expansion adapter for PCI-compliant Low Profile PCI bus slot (host PC) EAD(LPCI)SF



2x (12m) Category 5e STP cables and standard PCI bus bracket included

I-13

### Expansion Chassis

#### Stylish compact black chassis

##### PCI expansion chassis (Includes AC adapter)



#### ECH(PCI)SF-H2B

2 Slots Short Size AC adapter

I-14



#### ECH(PCI)SF-H4B

4 Slots Short Size AC adapter

I-14



#### ECH(PCI)SF-F2B

2 Slots Long Size Short Size AC adapter

I-14



#### ECH(PCI)SF-F4B

4 Slots Long Size Short Size AC adapter

I-14

#### Solid steel industrial chassis

##### PCI bus expansion chassis (Built-in power supply)



#### ECH(PCI)SF-H4A

4 Slots Short Size Built-in Power

I-15



#### ECH(PCI)SF-H7A

7 Slots Short Size Built-in Power

I-15



#### ECH(PCI)SF-H13A

13 Slots Short Size Built-in Power

I-15



#### ECH(PCI)SF-F7A

7 Slots Long Size Short Size Built-in Power

I-16



#### ECH(PCI)SF-F13A

13 Slots Long Size Short Size Built-in Power

I-16

Short size: A short-size PCI board can be installed  
Long size: A long-size PCI board can be installed

\* Category 5e twisted-pair cable can be used.  
In high noise environments, shielded cable (STP) is recommended.

I-12

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

**PCI  
Express**
Low  
Profile

## StarFabric-compliant PCI Express bus slot Expansion Adapter (Host PC) EAD-SF-LPE



- PCI bus (5V/32bit 33MHz) can be added using one PCI Express slot of the host PC
- 12m PCI bus expansion and high-speed serial transfer (2.5Gbps) are supported
- PCI-bus compatibility helps users to use PCI bus boards in expansion units without changing existing software
- Uses noise resistant Category 5e STP cable - easy wiring and installation
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Both Low Profile and Standard PCI slots are supported by using the included bracket

**PCI**
Low  
Profile

## StarFabric-compliant LPCI bus slot Expansion Adapter (Host PC) EAD(LPCI)SF



- PCI bus (5V/32bit 33MHz) can be added using one Low Profile or Standard PCI slot of the host PC
- 12m PCI bus expansion and high-speed serial transfer (2.5Gbps) are supported
- PCI bus-compliant, eliminating any need to change PCI add-on boards or software
- Uses noise resistant Cat 5e STP cable - easy wiring and installation
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- Both Low Profile and Standard PCI slots are supported by using the included bracket

I-13

**Card  
Bus**


## StarFabric-compliant CardBus slot Expansion Adapter (Host PC) EAD(CB)SF



- PCI expansion (5V/32bit 33MHz) using CardBus slot of the note PC
- 12m PCI bus expansion and high-speed serial transfer (2.5Gbps) are supported
- Uses noise resistant Cat 5e STP cable - easy wiring and installation
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board

SUPPORTED OS



● A dedicated device driver needs to be installed under Windows XP and Windows 2000.

Model	EAD-SF-LPE	EAD(LPCI)SF	EAD(CB)SF *2	
Bus / Size (mm)	PCI Express Base Specification Rev.1.0a / 121.69(L)×67.90(H)	PCI Local Bus Specification Rev2.2 (+5V / +3.3V) / 121.69(L)×63.41(H)	PC Card Standard CardBus- compliant / TYPE II (119.0×54.0×19.0)	
Power Consumption (Max.)	3.3VDC 700mA (Max.)	3.3VDC 450mA (Max.) <JP1 1-2 Short>, 5VDC 350mA (Max.) <JP1 2-3 Short>	3.3VDC 450mA (Max.)	
Operating Conditions	0~50°C, 10~90%RH (no condensation)		0~50°C, 20~90%RH (no condensation)	
Attached cable *1	2× Category 5e STP cables (12m)			

Note:

\*1: Category 5e twisted-pair cable can be used. In noisy environments shielded cable (STP) is recommended.

\*2: This product cannot be used with the expansion chassis [ECH(PCI)SF-F7A, F13A].

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

# Expansion Unit / Bus Adapter

StarFabric-compliant  
PCI bus expansion chassis  
(2 × Short size slots, AC Adapter)  
**ECH(PCI)SF-H2B**

2 Slots Short Size



- 2x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter



StarFabric-compliant  
PCI bus expansion chassis  
(2 × Long size slots, AC Adapter)  
**ECH(PCI)SF-F2B**

2 Slots Short Size Long Size



- 2x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter



StarFabric-compliant  
PCI bus expansion chassis  
(4 × Short size slots, AC Adapter)  
**ECH(PCI)SF-H4B**

4 Slots Short Size



- 4x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter



StarFabric-compliant  
PCI bus expansion chassis  
(4 × Long size slots, AC Adapter)  
**ECH(PCI)SF-F4B**

4 Slots Short Size Long Size



- 4x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter



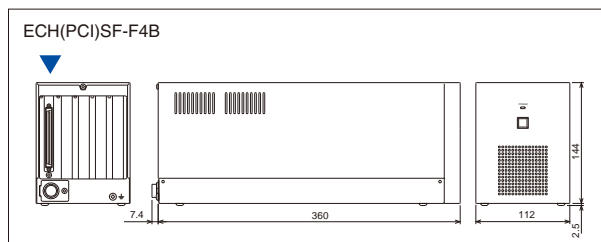
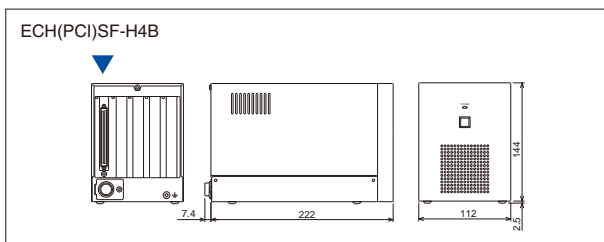
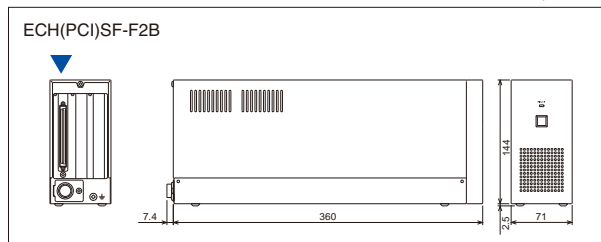
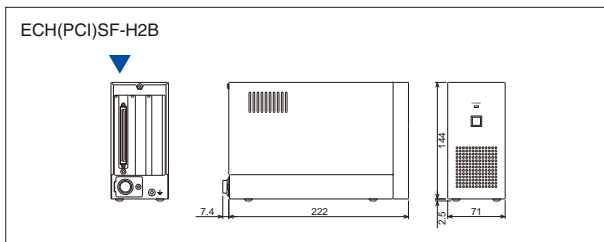
Model	ECH(PCI)SF-H2B	ECH(PCI)SF-H4B	ECH(PCI)SF-F2B	ECH(PCI)SF-F4B
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)			
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing			
Interrupt Level	INTA-INTD			
Bus Clock	33MHz (Max.)			
User slots	2 (Short-size)	4 (Short-size)	2 (Long-size)	4 (Long-size)
Installable Board (mm)	176.5(L) × 107(H)		313.8(L) × 107(H)	
Power supply capacity (Max.)	Output current shall not exceed the following values. +5VDC: 7A, +3.3VDC: 3A, +12VDC: 1.5A, -12VDC: 0.3A			
AC input voltage	100 to 240VAC			
Overall maximum power supply capacity	60W			
Operating Conditions	0~50°C, 20~80%RH (no condensation)			
Dimensions (mm)	71.0(W) × 222.0(D) × 144.0(H)	112.0(W) × 222.0(D) × 144.0(H)	71.0(W) × 360.0(D) × 144.0(H)	112.0(W) × 360.0(D) × 144.0(H)
Weight of Chassis	1.2kg	1.5kg	1.6kg	2.0kg
Weight of AC Adapter	0.9kg			

Note:

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

## ■ Dimensions

(Unit:mm)



Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&E/T Ethernet IO

Bus Expansion

Accessories

Cables

I-14

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

Analog I/O

Digital I/O

Serial

Communication

PIB

Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

## StarFabric-compliant PCI bus Expansion Chassis (x4 Short size slots, On board Power) ECH(PCI)SF-H4A

4  
SlotsShort  
SizeBuilt-in  
Power

CE



- 4x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

## StarFabric-compliant PCI bus Expansion Chassis (x7 Short size slots, On board Power) ECH(PCI)SF-H7A

7  
SlotsShort  
SizeBuilt-in  
Power

CE



- 7x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

## StarFabric-compliant PCI bus Expansion Chassis (x13 Short size slots, On board Power) ECH(PCI)SF-H13A

13  
SlotsShort  
SizeBuilt-in  
Power

CE



- 13x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

Model	ECH(PCI)SF-H4A	ECH(PCI)SF-H7A *5	ECH(PCI)SF-H13A *5
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)		
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing		
Interrupt Level	INTA-INTD		
Bus Clock	33MHz (Max.)		
User slots	4 (short-size)	7 (short-size)	13 (short-size)
Installable Board (mm)	176.5(L)×107(H)		
Power supply capacity (Max.)	+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A		
AC input voltage	115/230VAC (switch selectable)		
Overall maximum power supply capacity *1	130W *3		+5VDC: 18A*2, +3.3VDC: 15A*2, +12VDC: 9A, -12VDC: 0.8A
Operating Conditions	0~50°C, 20~80%RH (no condensation)		
Dimensions (mm)	210.0(W)×235.0(D)×138.0(H)	300.0(W)×138.0(H)×255.0(L)	424.0(W)×156.0(H)×255.0(L)
Weight	3.5kg	5.0kg	7.5kg

Note:

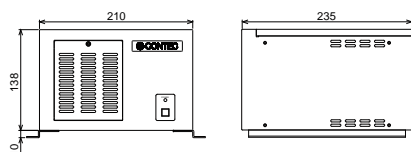
\*1: AC input line voltage range: 90 - 132VAC and 180 - 250VAC. \*2: The sum of +5VDC and +3.3VDC must not exceed 90W. \*3: Condition with CE marking: 130W at 40°C. \*4: Condition with CE marking: 175W at 50°C. \*5: This product cannot be used with the expansion adapter [EAD(CB)SF].

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

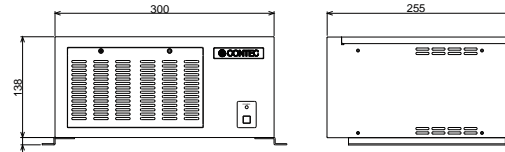
### ■ Dimensions

(Unit:mm)

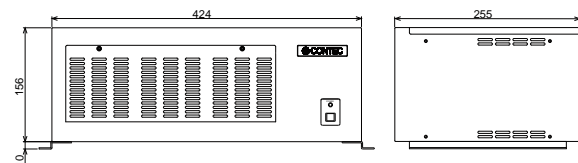
ECH(PCI)SF-H4A



ECH(PCI)SF-H7A



ECH(PCI)SF-H13A



I-15

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion

Adapter

Bus Converter

Adapter

Parts of Maintenance

Exchange



# Expansion Unit / Bus Adapter

StarFabric-compliant  
PCI bus Expansion Chassis  
(7 × Long size slots, On board Power)  
**ECH(PCI)SF-F7A**



- 7x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply



StarFabric-compliant  
PCI bus Expansion Chassis  
(13 × Long size slots, On board Power)  
**ECH(PCI)SF-F13A**



- 13x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply



Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

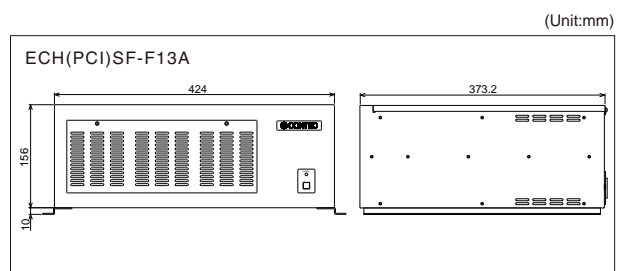
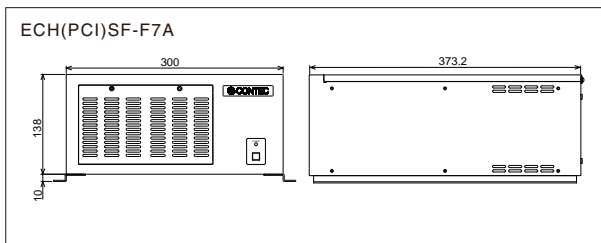
Accessories

Cables

Model	ECH(PCI)SF-F7A *5	ECH(PCI)SF-F13A *5
Bus type	PCI Local Bus Specification Rev2.3 (+5VDC)	
Address Space	Memory: 32-bit addressing, I/O: 32-bit addressing	
Interrupt Level	INTA-INTD	
Bus Clock	33MHz (Max.)	
User slots	7 (Long-size)	13 (Long-size)
Installable Board (mm)	313.8(L)×107(H)	
Power supply capacity (Max.)	+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A	+5VDC: 18A*2, +3.3VDC: 15A*2, +12VDC: 9A, -12VDC: 0.8A*
AC input voltage	115/230VAC (switch selectable)	
Overall maximum power supply capacity *1	130W *3	0~30°C: 230W, 30~40°C: 205W, 40~50°C: 175W *4
Operating Conditions	0~50°C, 20~80%RH (no condensation)	
Dimensions (mm)	300.0(W)×138.0(H)×373.2(L)	424.0(W)×156.0(H)×373.2(L)
Weight	6.0kg	9.0kg
Note:	*1: AC input line voltage range: 90 - 132VAC and 180 - 250VAC.    *2: The sum of +5VDC and +3.3VDC must not exceed 90W.    *3: Condition with CE marking: 130W at 40°C. *4: Condition with CE marking: 175W at 50°C.    *5: This product cannot be used with the expansion adapter [EAD(CB)SF].	

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

## ■ Dimensions



(Unit:mm)

I-16

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

# Expansion Unit / Bus Adapter

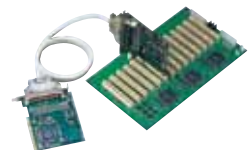
Analog I/O
Digital I/O
Serial Communication
GPIB Communication
Motion Controller
Counter
USB Remote I/O
F&EIT Ethernet IO
Bus Expansion
Accessories
Cables

## PCI to PCI Bus Expansion System (7 Slots) BUF(PCI)



- External backplane expansion slots function as regular PCI slots
  - Using ATX power supply, Chassis power supply can be turned on & off with the host PC power supply.
- \* It cannot be used in PC-9800 series.

## PCI to PCI Bus Expansion System (13 Slots) BUF(PCI)13



- External backplane expansion slots function as regular PCI slots
  - Using ATX power supply, Chassis power supply can be turned on & off with the host PC power supply.
- \* It cannot be used in PC-9800 series.

I-17

Lineup
Bus Extension Type
Expansion Adapter
Expansion Chassis
StarFabric-compliant Type
Expansion Adapter
Expansion Chassis
ISA Bus Unit
Bus Expansion Adapter
Bus Converter Adapter
Parts of Maintenance Exchange

Model	BUF(PCI)	BUF(PCI)13	
Bus type	32-bit PCI bus Rev2.1 (+5V)		
Address space	I/O: 32-bit addressing, Memory: 32-bit addressing		
User slots	7	13	
Interrupt Level	INTA-INTD		
DMA	-		
Accessible I/O space	-		
Accessible Memory	-		
Bus Clock	33MHz (Max.)		
Power Consumption (Max.)	BUS-PC(PCI) (PC side): +5VDC 700mA (Max.) / +5VDC 300mA (typ)	BUS-PC(PCI) (PC side): +5VDC 700mA (Max.) / +5VDC 300mA (typ)	
	BUS-PAC(PCI) (Extension side): +5VDC 700mA(Max.) / +5VDC 500mA (typ)	BUS-PAC(PCI) (Extension side): +5VDC 1500mA (Max.) / +5VDC 900mA (typ)	
Operating Conditions	0~50°C, 30~90%RH(no condensation)		
Dimensions (mm)	BUS-PC(PCI) (PC side):	BUS-PC(PCI) (PC side):	
	122.0(L)×107.0(H)×18.5(D)	122.0(L)×107.0(H)×18.5(D)	
	BUS-PAC(PCI) (Extension side):	BUS-PAC(PCI) (Extension side):	
	122.0(L)×107.0(H)×18.5(D)	122.0(L)×107.0(H)×18.5(D)	
	PC-MB8(PCI) (Back plane):	PC-MB8(PCI) (Back plane):	
	220.0(L)×185.0(H)×20.0(D)	311.5.0(L)×185.0(H)×20.0(D)	
Attached cable	96-pin shielded cable, 1m *1		
Note:	*1: Only the Attached cable can be used. *2:This product provides I/O access to ISA bus board. It is subject to software and hardware restrictions. Please contact General Information for details.		

# Expansion Unit / Bus Adapter

## PCMCIA to ISA Bus Conversion System BUF-CARD(PC)P



- Standard ISA slots can be connected from a PC Card (PCMCIA) slot of host PC.
- Supported OS: Windows XP/2000/98/95/3.1, MS-DOS

## ISA to ISA Bus Expansion System BUF(PC)E



- Standard ISA slots can be connected from a ISA slot of host PC.

## ISA to PCMCIA Expansion Board PC-CARD(PC)H



- Compatible with PC card Type I, Type II, and Type III based on PCMCIA 2.1 / J EIDA 4.2 or later
- Maximum 2pcs. can be mounted simultaneously on the same system.

Model	BUF-CARD(PC)P *1	BUF(PC)E	BUF-CARD(PC)H	
Bus type	PCMCIA to ISA Bus expansion	ISA to ISA Bus Expansion	-	
Card slot	JEIDA Ver.4.1 / PCMCIA Rel.2.0 (TYPE II)	-		
Card type	-		PC Card: JEIDA 4.2 / PCMCIA 2.0 or later TYPE I, II, III (Power consumption 1.2A Max.)	
I/O Address	-		2 ports (X3E0h, X3E1)	
DMA	Not supported		-	
Bus Clock	-	8MHz	-	
Data Bus width	8-bit (16-bit not available)	-	-	
Accessible I/O space	I/O: 32 consecutive ports can be selected as following: 220-23F, 240-25F, 260-27F, 280-29F, 2A0-2BF, 2C0-2DF, 2E0-2FF, 300-31F, 320-33F, 340-35F, 360-37F, 380-39F, 3A0-3BF, 3C0-3DF, 3E0-3FF	0000H - FFFFH (unrelated to expansion bus adapters)	-	
Accessible Memory	Not supported	080000H - 09FFFFH (DIP switch selectable) 0C0000H - 0DFFFFH (DIP switch selectable) 000000H - FEFFFFH (DIP switch selectable)	-	
Interrupt Level	One of IRQ 3-7, 9-12, 14 or 15 (jumper selectable)	IRQ 3-7, 9-12, 14, 15 (rotary SW selectable)	-	
Power Consumption (Max.)	BUS-CARD(PM)P (PC side): +5VDC 100mA BUS-CARD(PC) (Extension side): +5VDC 500mA	BUS-PC(PC)E (PC side): +5VDC 300mA BUS-PAC(PC)E (Extension side): +5VDC 500mA	+5VDC 150mA (without PC Card)	
Operating Conditions	0-50°C, 20-90%RH (no condensation)	0-50°C, 30-90%RH (no condensation)	0-50°C, 0-90%RH (no condensation)	
Dimensions (mm)	BUS-PC(PCI) (PC side): 54.0(L) × 85.6(H) × 5.0(D) BUS-PAC(PCI) (Extension side): 160.0(L) × 122.0(H) × 18.5(D)	Both PC & Extension side: 160.0(L) × 122.0(H) × 22.0(D)	-	
Applicable Models	AT-compliant PC equipped with a card slot compatible with a JEIDA 4.1 / PCMCIA 2.0 or later Type II card (should be compatible with Card Service Release 2.0 or later)	-		
Attached cable	32-pin shielded cable, 1m *2	96-pin shielded cable, 1m *2	-	
Bus / Size (mm)	-		ISA / 160(L) × 107(H)	
Note:	*1: There might be boards that cannot be used in some conditions. Please contact General Information for details. *2: Only the Attached cable can be used.			

Analog I/O

Digital I/O

Serial Communication

GPIB Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

I-18

Lineup

Bus Extension Type

Expansion Adapter

Expansion Chassis

StarFabric-compliant Type

Expansion Adapter

Expansion Chassis

ISA Bus Unit

Bus Expansion Adapter

Bus Converter Adapter

Parts of Maintenance Exchange

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;ET Ethernet IO

Bus Expansion

Accessories

Cables

J-01

AIO

DIO

USB

Motion

Counter

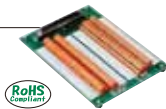
GBIP

COM

Remote I/O &  
Wireless

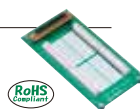
## Low cost Screw Terminal (M2.5 x 96) DTP-64

170(W)×122(D)×20(H) mm  
\* Cables optional

RoHS  
Compliant

## Screw Terminal (M2.6 x 37) DTP-4A

160(W)×82(D)×17(H) mm  
35mm DIN-rail Mountable  
\* Cables optional

RoHS  
Compliant

## Screw Terminal (M3 x 15) FTP-15

190(W)×105(D)×25.5(H) mm  
\* For Digital I/O

RoHS  
Compliant

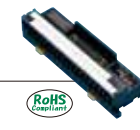
## Screw Terminal (M3 x 37) DTP-3A

190(W)×105(D)×21.5(H) mm  
\* Cables optional

RoHS  
Compliant

## Screw Terminal (M3.5 x 37) EPD-37

226(W)×64(D)×40.5(H) mm  
35mm DIN-rail Mountable  
Connector: DCLC-J37SAF-20L9 [JAE] or equivalent  
Terminal pitch: 10 mm \* Cables optional

RoHS  
Compliant

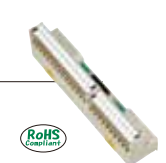
## Screw Terminal (M3 x 37) EPD-37A

158.4(W)×40(D)×54.8(H) mm  
35mm DIN-rail Mountable  
Connector: DCLC-J37SAF-20L9 [JAE] or equivalent  
Terminal pitch: 7.62 mm \* Cables optional

RoHS  
Compliant

## Screw Terminal (M3 x 50) EPD-50A

202.5(W)×40(D)×54.8(H) mm  
35mm DIN-rail Mountable  
The screw of Up-screw type  
terminal cannot be missing.  
\* Cables optional

RoHS  
Compliant

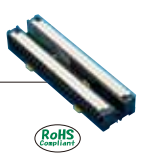
## Screw Terminal (M3 x 68) EPD-68A

278.7(W)×40(D)×52(H) mm  
35mm DIN-rail Mountable  
The screw of Up-screw type  
terminal cannot be missing  
\* Cables optional

RoHS  
Compliant

## Screw Terminal (M3.5 x 96) EPD-96

219.5(W)×64(D)×35.5(H) mm  
35mm DIN-rail Mountable  
Terminal pitch: 8.5 mm  
\* Cables optional

RoHS  
Compliant

## Screw Terminal (M3 x 96) EPD-96A

196.5(W)×64(D)×48(H) mm  
35mm DIN-rail Mountable  
The screw of Up-screw type  
terminal cannot be missing.  
\* Cables optional

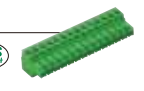
RoHS  
Compliant

## Screw Terminal (M3 x 100) EPD-100A

196.5(W)×64(D)×48(H) mm  
35mm DIN-rail Mountable  
The screw of Up-screw type  
terminal cannot be missing.  
\* Cables optional

RoHS  
Compliant

## 14 pin Terminal connector (screw type) 6/set CN6-Y14

RoHS  
Compliant

## 37pin D-SUB (Female) Connector Five-piece Set CN5-D37M

Easily soldered.



## 96 pin half pitch connectors (A female) Five-piece Set CN5-H96F

Easily soldered.

RoHS  
Compliant

## DIN-Rail Adapter for Termination Panels DIN-ADP1

DIN-rail Adapter for terminal panels

● For use with  
ATSS-16, ATP-16, ATII-8A, FTP-15, ATLF-8,  
CM-64(PC)E, CM-32(PC)E, CCB-96, CCB-SMC1,  
CCB-SMC2



## BNC Connector Accessory for Analog I/O Board ATP-8

120(W)×88(D)×40.6(H) mm  
\* Cables optional  
Please see Page J-04 for the specifications of  
ATP-8.

RoHS  
Compliant

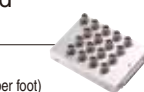
## BNC connectors for Analog I/O Board ATP-8L

120(W)×88(D)×40.6(H) mm  
\* Cables optional  
Please see Page J-04 for the  
specifications

RoHS  
Compliant

## BNC Connectors terminal box for Analog I/O Board ATP-16E

120(W)×88(D)×35(H) mm  
(excluding screw terminal block and rubber foot)  
\* A limited number of boards can be used.  
\* Cables optional  
Please see Page J-04 for the specifications

RoHS  
Compliant

## BNC Connectors for Analog I/O Board ATP-32F

194(W)×128(D)×40.1(H) mm  
\* Cables optional  
Please see Page J-04 for the  
specifications

RoHS  
Compliant

## Buffer Amplifier Function Extension Box for analog input board ATBA-8F

This product prevents the crosstalk while analog  
signals of low response speed sources are being  
inputted to the analog input board/card.  
110(W)×70(D)×22(H) mm (Exclusive of protrusions)  
Non-isolated, Input power voltage -10V to +10V  
Single eng input 8 channels, differential input 4 channels  
Consumption of electric current 5VDC, 0.3A(Max.)  
Please see Page J-04 for the specifications

RoHS  
Compliant

## Buffer Amplifier Function Extension Box for analog input board ATBA-8L

This product prevents the crosstalk while analog  
signals of low response speed sources are being  
inputted to the analog input board/card.  
75(W)×70(D)×22(H) mm (Exclusive of protrusions)  
Non-isolated, Input power voltage -10V to +10V  
Single eng input 8 channels, differential input 4 channels  
Consumption of electric current 5VDC, 0.3A(Max.)  
Please see Page J-04 for the specifications

RoHS  
Compliant

## Buffer Amplifier Function Extension Box for analog input board ATBA-16L

This product prevents the crosstalk while analog  
signals of low response speed sources are being  
inputted to the analog input board/card.  
75(W)×70(D)×22(H) mm (Exclusive of protrusions)  
Non-isolated, Input power voltage -10V to +10V  
Single eng input 16 channels, differential input 8 channels  
Consumption of electric current 5VDC, 0.4A(Max.)  
Please see Page J-04 for the specifications

Pb  
Free  
Soon to be RoHS-compliant

## Buffer Amplifier Function Extension Box for analog input board ATBA-32F

This product prevents the crosstalk while analog  
signals of low response speed sources are being  
inputted to the analog input board/card.  
110(W)×70(D)×22(H) mm (Exclusive of protrusions)  
Non-isolated, Input power voltage -10V to +10V  
Single eng input 32 channels, differential input 16 channels  
Consumption of electric current 5VDC, 0.85A(Max.)  
Please see Page J-04 for the specifications

RoHS  
Compliant

## Buffer Amplifier Function Extension Box for analog input board ATBA-16E

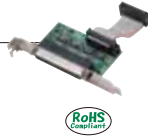
This product prevents the crosstalk while analog  
signals of low response speed sources are being  
inputted to the analog input board/card.  
110(W)×70(D)×22(H) mm (Exclusive of protrusions)  
Non-isolated, Input power voltage -10V to +10V  
Single eng input 16 channels, differential input 8 channels  
Consumption of electric current 5VDC, 0.4A(Max.)  
Please see Page J-04 for the specifications

RoHS  
Compliant

# Accessories

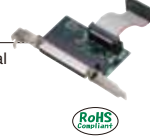
## 16Ch Extension sub board for E series U type ATUH-16A(PCI)

16 single-ended or 8 differential inputs can be added



## 16Ch Extension sub board for E series ATCH-16A(PCI)

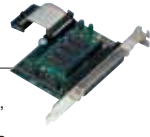
16 single-ended or 8 differential inputs can be added



## 16Ch Analog Input Doubler for AD12-16U(PC)E, AD16-16U(PC)E ATUH-16(PC)

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

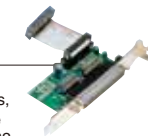
\* Multiplexers occupy one chassis slot.



## 16Ch Analog Input Doubler for AD12-16(PC)E, AD16-16(PC)E ATCH-16(PC)

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.



## Isolation function extension accessories ATII-8C

105(W)×25.5(D)×230(H) mm

The amplification of an input gain every channel can reach 200 times, because this product is equipped with an insulation amplifier of 8 channels, and breaks a signal of the input side from the output side, between each channels electrically. It can convert the current input of -40mA ~ +40mA into the voltage of -10V ~ +10V.

This product keeps a temperature sensor for performing Cold-junction compensation processing when connected a thermocouple sensor.

\* Cables optional

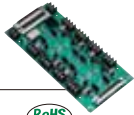


## Gain amplifier function extension accessories ATLF-8A

105(W)×25.5(D)×230(H) mm

This product is equipped with a differential gain amplifier of 8 channels.

An input signal can amplify 500 times at the maximum. Passband of a differential gain amplifier is DC - 100kHz (in the case of input gain 1 time). This product keeps a fourth Butterworth low pass filter, and a temperature sensor for performing Cold-junction compensation processing when connected a thermocouple sensor.



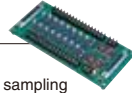
## Simultaneous sampling function extension accessories ATSS-16A

105(W)×230(D)×25.5(H) mm

Terminal block type simultaneous sampling function expansion board equipped with 16-channel sample-and-hold amplifier. It is capable of sampling 16 channels at the same timing.

\* ATSS-16A can be used at differential input mode.

\* Cables optional



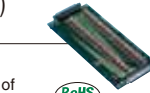
## Signal monitor Accessory for Digital I/O (Checkmate) CM-32(PC)E

230(W)×105(D)×35(H) mm

It is used to monitor the status of the signal line or to generate pseudo signals onto the signal line, making it easier to debug and check the behavior of programs.

\* It doesn't accept Bi-directional I/O type.

\* Cables optional

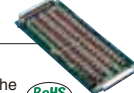


## Signal monitor Accessory for Digital I/O (Checkmate) CM-64(PC)E

230(W)×105(D)×35(H) mm

It is used to monitor the status of the signal line or to generate pseudo signals onto the signal line, making it easier to debug and check the behavior of programs.

\* Cables optional



## USB I/O Unit Bracket for X Series GBRK-USB-X [BRK-USB-X]



## Bracket for USB I/O Terminal products GBRK-USB-Y [BRK-USB-Y]



## Terminal Board for SMC-2P(PCI), SMC-4P(PCI) CCB-SMC1

250(W)×105(D)×25.5(H) mm

\* Cables optional

Distributes each channel to 37-pin D-SUB connector to facilitate the connection with driver amplifier. Supports encoder input system of line driver/open collector (jumper switching).

Screw-type terminal enables easy connection of limit sensors of varying types.

Using optional DIN-ADP1, it can be mounted on 35mm DIN rail.

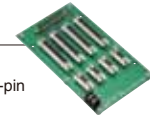


## Conversion terminal for SMC series CCB-SMC2

190(W)×105(H) mm

Distributes each channel to 37-pin and 9-pin D-SUB connectors.

Using optional DIN-ADP1, it can be mounted on 35mm DIN rail.



## Connector conversion board CCB-96

145(W)×105(H) mm

It converts 96-pin half pitch connectors to a pair of general-purpose, 37-pin female D-type connectors.

\* Cables optional



## Termination Panel with Differential Receivers for Counter Input CTP-4D

Differential / TTL Input Terminal

120(W)×88(D)×22(H) mm



## GPIO Counter Adapter CN-GP/C

The connector adapter is best to be equipped in high noisy environments such as on the Extension Slot of PC or cable from an adjoining board.



Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E Ethernet IO

Bus Expansion

Accessories

Cables

J-02

AIO

DIO

USB

Motion

Counter

GPIO

COM

Remote I/O &amp; Wireless



# Accessories

Analogue I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&ET Ethernet IO

Bus Expansion

Accessories

Cables

 : Lock Screw UNC#4-40 (Inch Screw Thread)

## Options for Communication Board

### ■ Connectors

Divider Unit for COM-8Ch / 4Ch Board  
**GCCU-78F/25M**

The break-out box has 8 channels with 25-pin D-type connectors equipped with LEDs for monitoring the communication state of each channel.

Connection cables are not included. Unit is DIN-rail mountable.

\* CCU-78F/25M is not insulated and cannot be used with CONTEC's COM-4P(PCI)H.



9pin D-SUB (Male)  
Connector Five-piece Set  
**CN5-D9M**



9pin D-SUB (Female)  
Connector Five-piece Set  
**CN5-D9F**



25pin D-SUB (Male)  
Connector Five-piece Set  
**CN5-D25M**



25pin D-SUB (Female)  
Connector Five-piece Set  
**CN5-D25F**



44pin D-SUB (Male)  
Connector Five-piece Set  
**CN5-D44M**



78pin D-SUB (Male)  
Connector Five-piece Set  
**CN5-D78M**



Please visit our website for the details of Accessories & Cables.

10/100/1000M AUTO-MDIX Industrial Switching HUB( For DIN rail, 8port)  
**GSH-9008-FIT**  
**[SH-9008-FIT]**



F&ET Series 10M/100M AUTO-MDIX Embedded type Switching HUB (8 ports)  
**GSH-8008(FIT)H**  
**[SH-8008(FIT)H]**



F&ET series AC adaptor  
(90 - 264VAC 0.3A / 5VDC 2A)  
**POA200-20**



F&ET series AC adaptor  
(12V,1A)  
**POA201-10**



AC Adapter Input 90-264VAC, Output 5VDC 2A  
**POA-AD22**



F&ET Series DC-DC Power Supply Unit  
Input : DC10-30V, Output : DC5V 3A  
**POW-DD10GY**



F&ET Series DC-DC Power Supply Unit  
Input : DC30-50V, Output : DC5V 3A  
**POW-DD43GY**



F&ET Series AC-DC Power Supply Unit  
Input 85-132VAC, Output 5VDC 3A  
**POW-AD13GY**



F&ET Series AC-DC Power Supply Unit  
Input 85-264VAC, Output 5VDC 2A  
**POW-AD22GY**



## J-03

AIO

DIO

USB

Motion

Counter

GPIO

COM

Remote I/O & Wireless

## Accessories

Model		ATBA-32F	ATBA-8F	ATBA-16L	ATBA-8L	ATBA-16E
Analog Input (Buffer Amplifier Part)	Isolation type	-	-	-	-	-
	Absolute max. input voltage	±15V				
	Input channels <sup>*1</sup>	32 single-end, 16 differential	8 single-end	16 single-end, 8 differential	8 single-end, 4 differential	16 single-end, 8 differential
	Range	±10V				
	Impedance	1MΩ or more				
	Non-Linearity error <sup>*2</sup>	±0.03% of FSR				
CN1 Connector Assignment		The same definition as the used AD board/card ATBA-8F, ATBA-8L: only CH0 - CH7 have buffer amplifier. (other channels are straight-connected).				
External power supply		5VDC 0.85A(max.)	5VDC 0.3A(max.)	5VDC 0.4A(max.)	5VDC 0.3A(max.)	5VDC 0.4A(max.)
Operating Condition		0 to 50°C , 10 to 90%RH (No condensation)				
Dimensions(mm)		110(W) x 70(D) x 22(H) (Not included protrusion)		75(W) x 70(D) x 22(H) (Not included protrusion)		110(W) x 70(D) x 22(H) (Not included protrusion)
Weight		150g		100g		

Note: \*1: It depends on the number of AD board's/card's input channels.  
\*2: When the environment temperature is 0°C or 50°C, the maximum non-linearity error is 0.04% of full input range.

Model	ATP-32F	ATP-8L	ATP-8
Analog Input	32ch(BNC connector, AI00 - AI31)	8ch(BNC connector, AI00 - AI07)	
Analog Output	2ch(BNC connector, AO00 - AO01)	2ch(BNC connector, AO00 - AO01)	
Digital Input	8ch(Screw terminals, DI00 - DI07)	4ch(Screw terminals, DI00 - DI03)	
Digital Output	8ch(Screw terminals, DO00 - DO07)	4ch(Screw terminals, DO00 - DO03)	
Counter I/O	2ch(Screw terminals, CNTUP, CNTCLK, CNTOUT)	1ch(Screw terminals, CNTUP, CNTCLK, CNTOUT)	
Operating Condition	0 to 50°C , 10 to 90%RH (No condensation)		
Dimensions(mm)	194(W) x 40.6(D) x 128(H) (Not included protrusion and rubber feet)		
Weight	530g	240g	420g

- Analog I/O
- Digital I/O
- Serial Communication
- GPIO Communication
- Motion Controller
- Counter
- USB Remote I/O
- F&E Ethernet IO
- Bus Expansion
- Accessories
- Cables

[illegible]

Analog I/O

Digital I/O

Serial Communication

GPIO Communication

Motion Controller

Counter

USB Remote I/O

F&ET Ethernet IO

Bus Expansion

Accessories

Cables

37pin D-type(M) to Open-Ended, Flat Cable

**PCA37P-1.5** (1.5m)

**PCA37P-3** (3m)

**PCA37P-5** (5m)



37pin D-type(M) to Open-Ended, Flat Cable(Custom length)

**PCA37P-xxA** xx: 0.1 ~ 10.0 (m)



37pin D-type(M) at Each End, Flat Cable

**PCB37P-1.5** (1.5m)

**PCB37P-3** (3m)

**PCB37P-5** (5m)



37pin D-type(M) at Each End, Flat Cable(Custom length)

**PCB37P-xxA** xx: 0.1 ~ 10.0 (m)



37pin D-type(M) to Open-Ended, Shield Cable with Mold type connector

**PCA37PS-0.5P** (0.5m)

**PCA37PS-1.5P** (1.5m)

**PCA37PS-3P** (3m)

**PCA37PS-5P** (5m)



37pin D-type(M) to Open-Ended, Shield Cable with Assembly type connector(Custom length)

**PCA37PS-xxA** xx: 0.1 ~ 10.0 (m)



37pin D-type(M) at Each End, Shield Cable Low Cost

**PCB37PS-0.5P** (0.5m)

**PCB37PS-1.5P** (1.5m)

**PCB37PS-3P** (3m)

**PCB37PS-5P** (5m)



37pin D-type(M) at Each End, Shield Cable with Assembly type connector(Custom length)

**PCB37PS-xxA** xx: 0.1 ~ 10.0 (m)



68pin 0.8mm Pitch Connector to Open-Ended, Shield Cable

**GPCA68PS-0.5P** (0.5m)  
**[PCA68PS-0.5P]**

**GPCA68PS-1.5P** (1.5m)  
**[PCA68PS-1.5P]**



68pin 0.8mm Pitch Connector to Open-Ended, Shield Cable (Custom length)

**PCA68PS-xxA** xx: 0.1 ~ 10.0 (m)



68pin 0.8mm Pitch Connector at Each End, Shield Cable

**PCB68PS-0.5P** (0.5m)

**PCB68PS-1.5P** (1.5m)

**PCB68PS-3P** (3m)

**PCB68PS-5P** (5m)



68pin 0.8mm Pitch Connector at Each End, Shield Cable (Custom length)

**PCB68PS-xxA** xx: 0.1 ~ 10.0 (m)



K-01

96pin Half Pitch Connector to Open-Ended, Flat Cable

**PCA96P-1.5** (1.5m)

**PCA96P-3** (3m)

**PCA96P-5** (5m)



96pin Half Pitch Connector to Open-Ended, Flat Cable (Custom length)

**PCA96P-xxA** xx: 0.1 ~ 10.0 (m)



96pin Half Pitch Connector at Each End, Flat Cable

**PCB96P-1.5** (Mold type, 1.5m)

**PCB96P-3** (Mold type, 3m)

**PCB96P-5** (Mold type, 5m)



96pin Half Pitch Connector at Each End, Flat Cable (Custom length)

**PCB96P-xxA** xx: 0.1 ~ 10.0 (m)



96pin Half Pitch Connector to Open-Ended, Shield Cable

**PCA96PS-0.5P** (Mold type, 0.5m)

**PCA96PS-1.5P** (Mold type, 1.5m)

**PCA96PS-3P** (Mold type, 3m)

**PCA96PS-5P** (Mold type, 5m)



96pin Half Pitch Connector to Open-Ended, Shield Cable (Custom length)

**PCA96PS-xxA** xx: 0.1 ~ 10.0 (m)



96pin Half Pitch Connector at Each End, Shield Cable

**GPCB96PS-0.5P** (0.5m)  
**[PCB96PS-0.5P]**

**GPCB96PS-1.5P** (1.5m)  
**[PCB96PS-1.5P]**

**GPCB96PS-3P** (3m)  
**[PCB96PS-3P]**

**PCB96PS-5P** (5m)



96pin Half Pitch assembly type Connector at Each End, Shield Cable (Custom length)

**PCB96PS-xxA** xx: 0.1 ~ 10.0 (m)

(2m)

(7m)



96pin Half Pitch Connector to D-SUB, Divider Flat Cable (96P -> 2x37P, 5m)

**PCB96W-5**



Universal

AIO, DIO

DIO, Motion

DIO, Counter

AIO

DIO

Counter

GPIO

COM

## Cables

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;E/T Ethernet IO

Bus Expansion

Accessories

Cables

K-02

Universal

AIO, DIO

DIO, Motion

DIO, Counter

AIO

DIO

Counter

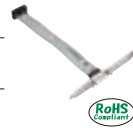
GPIB

COM

96pin Half-Pitch to 2 x 37pin D-type(M),  
Flat Cable, Assembly type, Custom length  
**PCB96W-xxA** xx: 0.1 ~ 10.0 (m)



16pin post header ->  
D-SUB 15pin Bracket with Cable(150mm)  
**DT-E3**



D-SUB37 pin male to female Cable (1.2m)  
**DT-6**



50pin Header to Open-Ended, Flat Cable(1.5m)  
**PCA50J-1.5**



50pin miniature ribbon connector to  
Open-Ended, Shield Cable (Mold type, 0.5m)  
**PCA50PS-0.5P** (Mold type, 0.5m)

**PCA50PS-1.5P** (Mold type, 1.5m)

**PCA50PS-3P** (Mold type, 3m)

**PCA50PS-5P** (Mold type, 5m)



50pin miniature ribbon connector to Open-Ended,  
Shield Cable (Assembly type, Custom length)  
**PCA50PS-xxA** xx: 0.1 ~ 10.0 (m)



50pin miniature ribbon connector,  
Shield Cable  
**PCB50PS-0.5P** (0.5m)

**GPCB50PS-1.5P** (Mold type, 1.5m)  
**[PCB50PS-1.5P]**

**GPCB50PS-3P** (Mold type, 3m)  
**[PCB50PS-3P]**

**PCB50PS-5P** (Mold type, 5m)



0pin miniature ribbon connector, Shield Cable  
(Assembly type, Custom length)  
**PCB50PS-xxA** xx: 0.1 ~ 10.0 (m)



100pin 0.8mm-pitch Connector at Each End,  
Shielded Cable (Custom length)  
**PCB100PS-0.5** (0.5m)

**PCB100PS-1.5** (1.5m)

**PCB100PS-3** (3m)

**PCB100PS-5** (5m)



100pin 0.8mm-pitch Connector at Each End,  
Shielded Cable (Custom length)  
**PCB100PS-xxA** xx: 0.1 ~ 10.0 (m)



100pin 0.8mm-pitch Connector to  
Open-Ended, Flat Cable  
**PCA100P-1.5** (1.5m)

**PCA100P-3** (3m)

**PCA100P-5** (5m)



100pin 0.8mm-pitch Connector to  
Open-Ended, Flat Cable (Custom length)  
**PCA100P-xxA** xx: 0.1 ~ 10.0 (m)



96pin Half-Pitch to 2 x 37pin D-type(M),  
Shield Cable

**GPCB96WS-1.5P** (1.5m)  
**[PCB96WS-1.5P]**

**GPCB96WS-3P** (3m)  
**[PCB96WS-3P]**

**GPCB96WS-5P** (5m)



96pin Half-Pitch to 2 x 37pin D-type(M),  
Shield Cable, Assembly type, Custom length  
**PCB96WS-xxA** xx: 0.1 ~ 10.0 (m)



BNC cable

**BNC-B100** (1m)

**BNC-B200** (2m)

**BNC-B300** (3m)



BNC clip Cable

**BNC-W60**



Shield Cable for CardBus Analog I/O Card

**ADC-68M/50M**



























Shield Cable for CardBus Analog I/O Card

**ADC-68M/96F**



# Cables

	<div>Shield Cable for CardBus Counter Input Card</div> <div>CNT-68M/50M</div> <div></div> <div>RoHS Compliant</div>	<div>2 wire Shield Cable for 8ch Differential Input</div> <div>PCD8PS-3 (3m)</div> <div></div> <div>RoHS Compliant</div>	<div>16pin Header to Open-Ended for Analog E Series Boards-1.5m</div> <div>DT/E1</div> <div></div> <div>RoHS Compliant</div>
<div>Serial Communication</div> <div>GPIOB Communication</div>	<div>15pin D-type(M) to Open-Ended, Flat Cable</div> <div>PCA15P-1.5 (1.5m)</div> <div></div> <div>RoHS Compliant</div>	<div>15pin D-type(M) at Each-End, Flat Cable</div> <div>PCB15P-1.5 (1.5m)</div> <div></div> <div>RoHS Compliant</div>	<div>Single End Coaxial Cable for 16ch Input</div> <div>PCC16PS-1.5 (1.5m)</div> <div></div> <div>RoHS Compliant</div>
<div>F&amp;eIT Ethernet IO</div> <div>Bus Expansion</div>	<div>15pin D-type(M) at Each-End, Shield Cable</div> <div>PCB15PS-1.5 (1.5m)</div> <div></div> <div>RoHS Compliant</div>	<div>16pin post header -&gt; D-SUB 15pin with Bracket(10cm)</div> <div>DT/E2</div> <div></div> <div>RoHS Compliant</div>	<div>50 pin miniature ribbon -&gt; 37 pin D-SUB conversion shield cables(Mold type, 0.5m)</div> <div>PCE50/37PS-0.5P (0.5m)</div> <div></div> <div>RoHS Compliant</div>
<div>Accessories</div>	<div>Shielded Cable for Digital I/O Card for CardBus (0.5m)</div> <div>DIO-68M/96F</div> <div></div> <div>RoHS Compliant</div>	<div>96pin 1.27mm Pitch Conversion Shield Cable for 100pin 0.8mm Pitch Connector</div> <div>PCB100/96PS-1.5 (1.5m)</div> <div></div> <div>RoHS Compliant</div>	<div>96pin 1.27mm Pitch Conversion Shield Cable for 100pin 0.8mm Pitch Connector, Assembly type (Custom length)</div> <div>PCB100/96PS-xxA xx: 0.1 ~ 10.0 (m)</div> <div></div> <div>RoHS Compliant</div>
<div>K-03</div>	<div>37pin D-SUB x2 Distribution Shield Cable for 100pin 0.8mm Pitch Connector</div> <div>PCB100WS-1.5 (1.5m)</div> <div></div> <div>RoHS Compliant</div>	<div>37pin D-SUB x2 Distribution Shield Cable for 100pin 0.8mm Pitch Connector (Custom length)</div> <div>PCB100WS-xxA xx: 0.1 ~ 10.0 (m)</div> <div></div> <div>RoHS Compliant</div>	<div>Conversion Cable(5m)</div> <div>PRN-CB105 (5m)</div> <div></div> <div>RoHS Compliant</div>
<div>Universal</div> <div>AIO. DIO</div> <div>DIO. Motion</div> <div>DIO. Counter</div>	<div>30pin Header to 37pin D-type(F) with Bracket-1.5m</div> <div>DT/B2</div> <div></div> <div>RoHS Compliant</div>	<div>GPIOB Cable</div> <div>GPCN-T04 (4m) [PCN-T04]</div> <div></div> <div>RoHS Compliant</div>	<div>Cross Cable, RS-232C D-SUB25P(1.8m)</div> <div>RSC-25F</div> <div></div> <div>RoHS Compliant</div>
<div>AIO</div> <div>DIO</div> <div>Counter</div> <div>GPIOB</div> <div>COM</div>	<div>Cross Cable for Connector Conversion, RS-232C(25F -&gt; 9F, 1.8m)</div> <div>RSC-25F/9F</div> <div></div> <div>RoHS Compliant</div>	<div>Cross Cable, RS-232C D-SUB9P(1.8m)</div> <div>RSC-9F</div> <div></div> <div>RoHS Compliant</div>	<div>Straight Cable for Connector Conversion, RS-232C(25F -&gt; 9M, 1.8m)</div> <div>RSS-25F/9M</div> <div></div> <div>RoHS Compliant</div>
	<div>Straight cable for Connector Conversion, RS-232C(25M -&gt; 9F, 1.8m)</div> <div>RSS-25M/9F</div> <div></div> <div>RoHS Compliant</div>	<div>Straight Cable, RS-232C D-SUB25P(1.8m)</div> <div>RSS-25M/F</div> <div></div> <div>RoHS Compliant</div>	<div>Connection Cable of COM-8ch CCU-78F/25M(2m)</div> <div>RSS-78M</div> <div></div> <div>RoHS Compliant</div>



## Cables

Analog I/O

Digital I/O

Serial  
CommunicationGPIB  
Communication

Motion Controller

Counter

USB Remote I/O

F&amp;EIT Ethernet IO

Bus Expansion

Accessories

Cables

K-04

Universal

AIO, DIO

DIO, Motion

DIO, Counter

AIO

DIO

Counter

GPIB

COM

Connection Cable of COM-4ch for  
CCU-78F/25M(2m)

RSS-78M/37M



Straight Cable, RS-232C D-SUB9P(1.8m)

RSS-9M/F

Divider Shield cable, D-SUB44pin ->  
9pin x2 (0.25m) for Serial I/O Board

PCE44/9P2S

Divider Shield cable, D-SUB44pin ->  
9pin x4 (0.25m) for Serial I/O Board

PCE44/9P4S

Divider Shield cable for COM-8ch board (1m)  
(78P -> 8 x 25P)

PCE78/25PS

Divider Cable for COM-8ch board (1m)  
(78P -> 8 x 9P)

GPCE78/9PS

Divider Shield cable, D-SUB37pin ->  
25pin x4 (0.25m)

PCE37/25PS

Divider Shield cable, D-SUB37pin ->  
9pin x4 (0.25m)

PCE37/9PS





JAPAN(Headquarters)  
**CONTEC CO.,LTD.**  
3-9-31, Himesato,  
Nishiyodogawa-ku,  
Osaka 555-0025, Japan  
Tel : 81-6-6477-5219  
Fax : 81-6-6477-1692  
<http://www.contec.co.jp/>

TAIWAN  
**CONTEC SOLUTION CO.,LTD.**  
10F-6, No.700, Zhongzheng Road,  
Zhonghe, Taipei County  
23552 TAIWAN  
Tel : 886-2-8227-3216  
Fax : 886-2-8227-3217  
[Http://www.contecsolution.com](http://www.contecsolution.com)

**TAIWAN CONTEC CO.,LTD.**  
(Production, R&D Center)  
[ Main Office ]  
2FL-2, No.186, Jianyi Road,  
Zhonghe, Taipei County  
23553 TAIWAN  
Tel : 886-2-8227-8669  
Fax : 886-2-8227-2498  
[ R&D Office ]  
9FL, No.700, Zhongzheng Road,  
Zhonghe, Taipei County  
23552 TAIWAN  
Tel : 886-2-8227-8669  
Fax : 886-2-8227-8298

U.S.A.  
**CONTEC MICROELECTRONICS  
U.S.A. INC.**  
1294, Lawrence Station Road,  
Sunnyvale, CA94089, U.S.A.  
Tel : 1-408-400-8700  
Fax : 1-408-400-9115  
<http://www.contecusa.com/>

CHINA [www.contec.com.cn/](http://www.contec.com.cn/)  
**CONTEC SOLUTION CHINA  
CORPORATION**  
Room 1002, Qilai Building,  
No. 889, Yishan Road,  
Shanghai 200233 CHINA  
Tel : 86-21-5401-2288  
Fax : 86-21-5401-2287  
[ Beijing Office ]  
B-805, Huatong Building,  
No.B19 Chegongzhuang West Road,  
Haidian District, Beijing  
100044 CHINA  
Tel : 86-10-8288-5989 Ext.108  
Fax : 86-10-8288-3997

**BEIJING CONTEC  
MICROELECTRONICS  
CORPORATION**  
(R&D Center)  
[ Main Office ]  
B-806, Huatong Building,  
No.B19 Chegongzhuang West Road,  
Haidian District, Beijing  
100044 CHINA  
Tel : 86-10-8801-8228  
Fax : 86-10-8801-8209  
[ Shanghai Branch Office ]  
Room 1001, Qilai Building,  
No. 889, Yishan Road,  
Shanghai 200233 CHINA  
Tel : 86-21-5401-2200  
Fax : 86-21-5401-2808

## Trademarks

CONTEC and F&EIT are trademarks of CONTEC Co., Ltd.

Windows, Windows 7, Windows Vista, Windows XP, Windows 2000, Windows NT and MS-DOS are trademarks or trade name of Microsoft Corporation in United States of America and the other territories.

Intel, Intel Core, Pentium, Celeron are trademarks or trade name of Intel Corporation in United States of America and the other territories.

MATLAB and Simulink are trademarks of MathWorks, Inc.

National instruments, LabVIEW are trademarks of National Instruments Corporation.

The other brands and product names are trademarks or trade names of their respective holders.

All data subject to change without notice.  
Every effort has been made to ensure correctness of data.

Copyright 2010, CONTEC Co., Ltd. All rights reserved