Bi-Directional Digital I/O Card for CardBus

PIO-48D(CB)H

with Driver Library [API-PAC(W32)]

This board is a Type II size, CardBus, PC Card that complies with the PC Card Standard. The board performs input and output of LVTTL level signals.
PIO-48D(CB)H can input and output up to 48 channels.
Using the bundled Driver library [API-PAC(W32)], you can create Windows application software for this PC card in your favorite programming language supporting Win32 API functions, such as Visual Basic or Visual C/C++.

* If your PC has two TYPE II size PC card slots one on top of the other, you cannot use two cards in both slots at the same time. However, you can use this card together with another PC card that does not require an external connector such as a memory PC card.

Features

- This board can be used to input/output 48 points bi-directional digital corresponding to the i8255 mode 0.
- Uninsulated LVTTL-level input/output enabling fast response.
- Functionally equivalent to the PIO-48D(PCI) PCI bus board.
- The connector signal assignments when the DIO-68M/96F cable is used are the same as the cable connector signal assignments for the PCB96P-** series and the PCB96PS-**P series option cable on the PIO-48D(PCI).
- You can use all of the input signals as interrupt inputs. You can also select the interrupt trigger edge of the input signal.
- A digital filter function is included to prevent problems due to noise or chattering on input signals.

Specification

Item		Specification
I/O		
	I/O format	LVTTL-level input (Positive logic)
	Number of I/O channels	48 channels (all available for interrupts)
	Interrupt	48 interrupt input signals are arranged into a single output of interrupt signal INT. An interrupt is generated at the falling edge (HIGH-to-LOW transition) or rising edge (LOW-to-HIGH transition).
	Response time	200nsec within
	Rated output current	I_{OL}=8mA(Max.) I_{OH}=-8mA(Max.)
Common		
	I/O address	8 bit x 32 port boundary(Common to I/O part)
	Power consumption	3.3VDC 120 mA(Max.)
	Operating condition	0 to 50°C, 10 to 90%RH (No condensation)
	Allowable distance of signal extension	Approx. 1.5m (depending on wiring environment)
	Compatible PC card slot	PC card Standard compliant CardBus
	Dimension (mm)	85.6(W) x 54.0(D) x 5.0(H) TYPE II *2
	Weight	60g

*1 Data "1" and "0" correspond to the High and Low levels, respectively.
*2 On PCs with two TYPE II size PC card slots arranged vertically, two PIO-48D (CB)H cards cannot be used in the two slots at the same time. This is due to the shape of the option cable connectors.

Support Software

You should use CONTEC support software according to your purpose and development environment.

■ Driver Library API-PAC(W32) (Bundled)

API-PAC(W32) is the library software that provides the commands for CONTEC hardware products in the form of Windows standard Win32 API functions (DLL). It makes it easy to create high-speed application software taking advantage of the CONTEC hardware using various programming languages that support Win32 API functions, such as Visual Basic and Visual C/C++.
It can also be used by the installed diagnosis program to check hardware operations.
CONTEC provides download services to supply the updated drivers and differential files.
For details, read Help on the bundled CD-ROM or visit the CONTEC's Web site.

< Operating environment >

OS	Windows XP, 2000, Me, 98, etc..
Adaptation language	Visual C/C++, Visual Basic, Delphi, Builder, etc..
Others	Each piece of library software requires 50 megabytes of free hard disk space.

■ Linux version of digital I/O driver API-DIO(LNX) (Supplied: Stored on the API-PAC(W32) CD-ROM)

This driver is used to control CONTEC digital I/O boards (PC cards) from within Linux.
You can control CONTEC I/O boards easily using the shared library used by gcc and Kylix, the device driver (module) for each kernel version, and the board (PC card) configuration program (config).
CONTEC provides download services to supply the updated drivers and differential files.
For details, read Help on the bundled CD-ROM or visit the CONTEC's Web site.

< Operating environment >

OS	RedHatLinux, TurboLinux, etc.. (For details on supported distributions, refer to Help available after installation.)
Adaptation language	gcc, Kylix, etc..
Others	Requires 3 megabytes of free hard disk space.

Base package of ActiveX components for measurement system development

■ ACX-PAC(W32)BP (Option)

This is a set of useful Windows development tools for measurement systems and consists of a software component library with ready-to-use samples which you can combine for easy programming.
The package contains components for controlling CONTEC I/O boards (PC cards). Features include interface control for analog I/O, digital I/O, GPIB communications, and counter inputs, as well as X-Y plotting and file storage support.
Check the CONTEC's Web site for more information on this soft.
Advanced package of ActiveX components for measurement system development

■ ACX-PAC(W32)AP (Option)

Complements the ACX-PAC(W32)BP functions with additional components including graphics (plotting, switches, and lamps, etc.) and mathematical and analysis tools.
Check the CONTEC's Web site for more information on this soft.

■ Data acquisition VI library for LabVIEW VI-DAQ (Free download)

This is a VI library to use in National Instruments LabVIEW.
VI-DAQ is created with a function form similar to that of LabVIEW's Data Acquisition VI, allowing you to use various devices without complicated settings.
See http://www.contec.co.jp/vidaq/ for details and download of VI-DAQ.

Cable & Connector

◆ Cable & Connector (Option)

Shielded Cable for CardBusDigital I/O Card
: DIO-68M/96F (0.5m)
Shield Cable with One 68-Pin Connector
: PCA68PS-0.5P (0.5m)
: PCA68PS-1.5P (1.5m)

Accessories

◆ Accessories (Option)

Relay Terminal Unit for Crimping	: EPD-96 *1
Terminal Unit for Cables	: DTP-64(PC) *1

*1 DIO-68M/96F optional cable is required separately.

* Check the CONTEC's Web site for more information on these options.

Product Configuration List

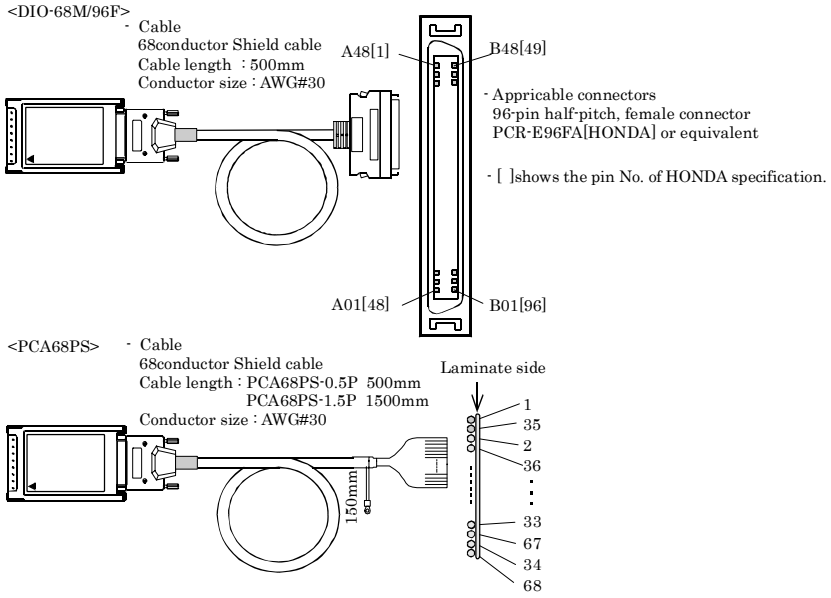
- PC Card [[PIO-48D(CB)H] ... 1
- First step guide ... 1
- CD-ROM [API-PAC(W32) *1] ... 1

*1 The CD-ROM contains the driver software and User's Guide (this guide)

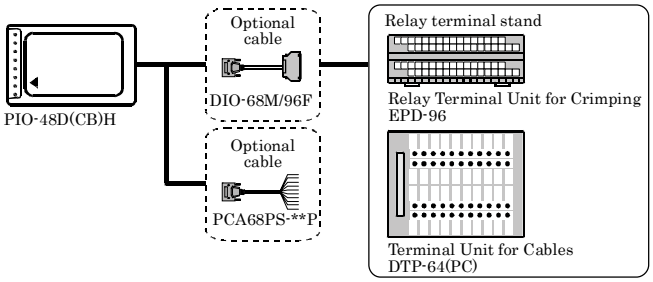
Using the On-board Connectors

◆ Connecting a Device to a Connector

The optional connector cable (DIO-68M/96F or PCA68PS-**P) is used to connect the PC card to external devices. The cable is used together with a terminal block to connect external devices.

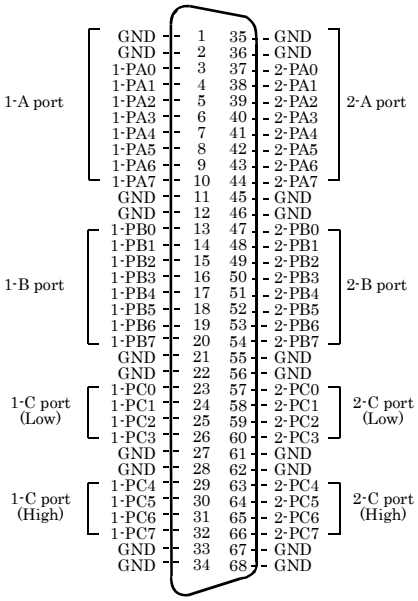


◆ Examples of Connecting Options

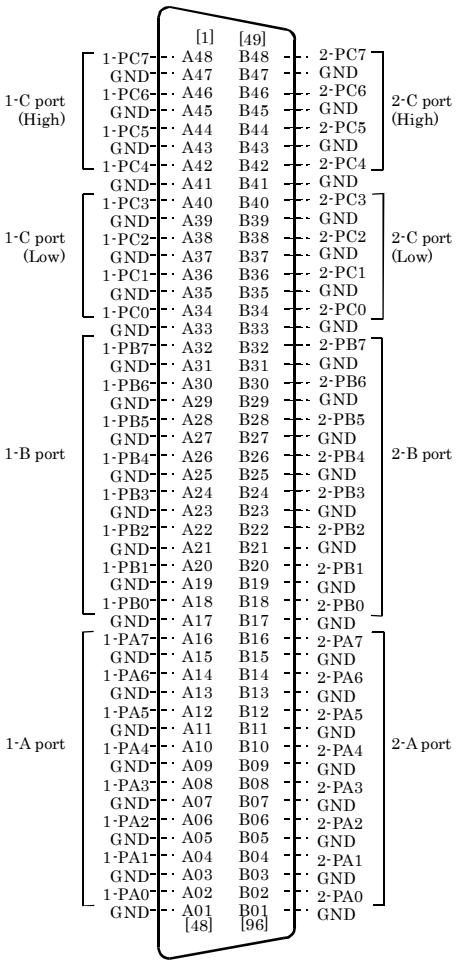


◆ Connector Pin Assignment

■ Pin Assignments of Interface Connector for PIO-48D(CB)H



■ Signal assignment with the DIO-68/96F used

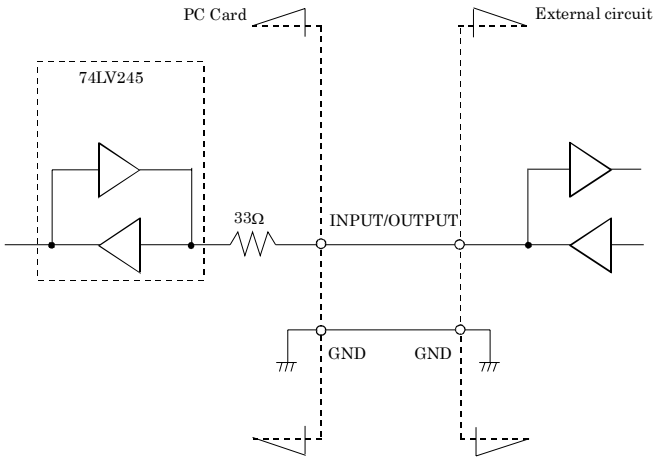


- [ ]shows the pin No. of HONDA TSUSHIN KOGYO CO., LTD. specification.

Connecting I/O Signals

The I/O circuits of interface blocks of the PIO-48D(CB)H are illustrated in Figure 3.5. Signals are LVTTL levels and positive logic. Each of the signal is pulled up.

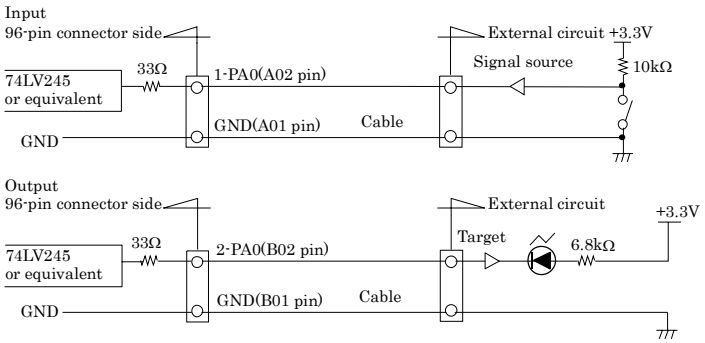
◆ I/O Circuit



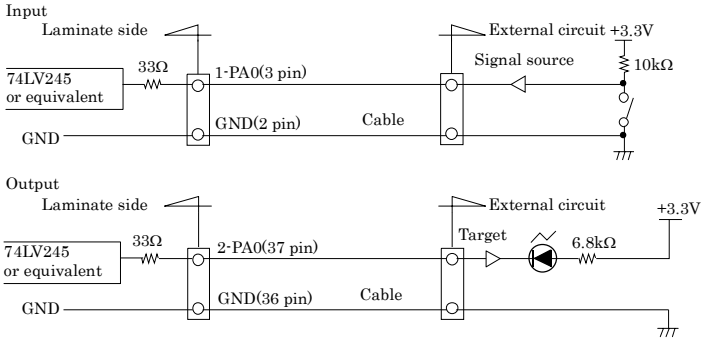
▼ CAUTION

- Take care not to short the outputs to digital ground as this may cause a fault.
- If connecting pull-up resistors to the outputs, use a resistor of approximately 10k and pull-up to the 3.3V power supply.
- The inputs support input of 5V TTL signals.

◆ Example Connection 1 (Using DIO-68M/96F)



◆ Example Connection 2 (Using PCA68PS-**P)



Block Diagram