

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

Current Source Digital I/O Board
with Opto-Isolation

PIO-32/32RL(PCI)H



* Specifications, color and design of the products are subject to change without notice.

This board is a PCI bus-compliant interface board for input/output of digital signals.
The board is a current source typed and isolated digital input/output board and can input and output digital signals at 12 - 24VDC.
This board can input and output up to 32 channels.
This product uses Optocoupler isolated input (ready to accept current sinking output signals) for input and Optocoupler isolated current sinking output for output.

Windows/Linux driver is supported with this product.

Possible to be used as a data recording device for LabVIEW, with dedicated libraries.

*The contents in this document are subject to change without notice.
*Visit the CONTEC website to check the latest details in the document.
*The information in the data sheets is as of August, 2022.

Features

- A different external power supply can be used for each common pin as it is shared by 16 channels.
- The PCI bus (personal computer) and the I/O interface are isolated from each other by an Optocoupler, offering good noise immunity.
- You can use 32 signal channels of the input signals as interrupt inputs.
- You can also select the interrupt trigger edge of the input signal.
- The board has a digital filter feature to prevent wrong recognition of input signals from carrying noise or a chattering.
- Up to 35VDC, 100mA per signal, max. output.
- Zener diode connected to output transistors for protection from surge voltage. Overcurrent protective device provided for every eight channels of output transistors.

Included Items

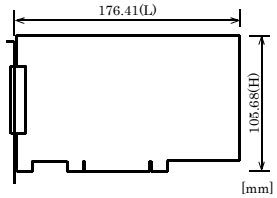
Product [PIO-32/32RL(PCI)H] ...1
Please read the following ... 1

Hardware specifications

Item		Specification
Input		
Input format		Opto-isolated input (corresponding to the current source output)(Positive logic *1)
Number of input signal channels		32 channels (all available for interrupts) (One common power supply per 16 channels)
Input resistance		4.7kΩ
Input ON current		2.0mA or more
Input OFF current		0.16mA or less
Interrupt		32 interrupt input signals are arranged into a single output of interrupt signal INTA. An interrupt is generated at the falling edge (HIGH-to-LOW transition) or rising edge (LOW-to-HIGH transition).
Response time		200µsec within
Output		
Output format		Opto-isolated (Compatible with current source output)(Positive logic *1)
Number of output signal channels		32 channels (One common power supply per 16 channels)
Output rating	Output voltage	35VDC (Max.)
	Output current	100mA (par channel) (Max.)
Residual voltage with output on		0.5V or less (Output current≤50mA), 1.0V or less (Output current≤100mA)
Surge protector		Zener diode RD47FM(NEC) or the equivalence for it
Response time		200µsec within
Common		
I/O address		8 bits x 32 ports
Interruption level		1 level use
Max. board count for connection		16 boards including the master board
Dielectric strength		500Vrms
External circuit power supply		12 - 24VDC(±10%)
Power consumption		5VDC 200mA(Max.)
Operating condition		0 - 50°C, 10 - 90%RH(No condensation)
Allowable distance of signal extension		Approx. 50m (depending on wiring environment)
Bus specification		PCI (32bit, 33MHz, Universal key shapes supported *2)
Dimension (mm)		176.41(L) x 105.68(H)
Weight		215g
Standard		VCCI Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

*1 Data "0" and "1" correspond to the Low and High levels, respectively.
*2 This board requires power supply at +5V from an expansion slot (it does not work on a machine with a +3.3V power supply alone).

Physical Dimensions



The standard outside dimension (L) is the distance from the end of the board to the outer surface of the slot cover.

Support Software

You can use CONTEC support software according to your purpose and development environment. For more details on the supported OS, applicable languages, or to download the latest version of software, visit the CONTEC Web site.

Name	Contents	How to get
Windows Version Digital I/O Driver software API-DIO(WDM)	The API-DIO(WDM) is the Windows version driver software that provides products in the form of Win32 API functions (DLL). Various sample programs such as Visual Basic and Visual C++, etc and diagnostic program useful for checking operation is provided.	Download from the CONTEC website
Linux Version Digital I/O Driver software API-DIO(LNX)	The API-DIO(LNX) is the Linux version driver software which provides device drivers (modules) by shared library and kernel version. Various sample programs of gcc are provided.	Download from the CONTEC website
LabVIEW-support data acquisition library DAQfast for LabVIEW	This is a data collection library to use in the LabVIEW by National Instruments. With Polymorphic VI, our design enables a LabVIEW user to operate seamlessly. Our aim is that the customers to perform easily, promptly what they wish to do.	Download from the CONTEC website

Optional Products

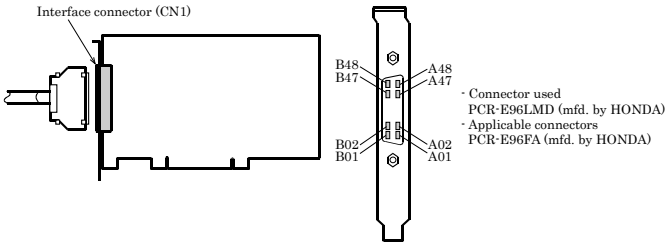
Product Name	Model type	Description
96-Pin Shield Cable with a Half-Pitch Connector	PCB96PS-0.5P	0.5m
	PCB96PS-1.5P	1.5m
	PCB96PS-3P	3m
	PCB96PS-5P	5m
Flat Cable with 96-Pin Half-Pitch Connectors at Both Ends	PCB96P-1.5	1.5m
	PCB96P-3	3m
96-Pin Shield Cable with 2Sided Half-Pitch Connector	PCA96PS-0.5P	0.5m
	PCA96PS-1.5P	1.5m
	PCA96PS-3P	3m
	PCA96PS-5P	5m
Flat Cable with One 96-Pin Half-Pitch Connector	PCA96P-1.5	1.5m
	PCA96P-3	3m
Connection Conversion Shield Cable(96P → 37P x 2)	PCB96WS-1.5P	1.5m
	PCB96WS-3P	3m
	PCB96WS-5P	5m
Screw Terminal (M3 x 96P)	EPD-96A	*1 *4
Screw Terminal (M3.5 x 96P)	EPD-96	*1
Digital I/O 64CH Series Terminal Panel (M3 x 96P)	DTP-64A	*1
Screw Terminal (M3 x 37P)	EPD-37A	*2 *4
Screw Terminal (M3.5 x 37P)	EPD-37	*2
General Purpose Terminal (M3 x 37P)	DTP-3C	*2
Screw Terminal (M2.5 x 37P)	DTP-4C	*2
Connection Conversion Board (96-P→37-P x 2)	CCB-96	*3

*1 PCB96P or PCB96PS optional cable is required separately.
*2 PCB96WS optional cable is required separately.
*3 Option cable PCB96P or PCB96PS, and the cable for 37-pin D-SUB are required separately.
*4 "Spring-up" type terminal is used to prevent terminal screws from falling off.
* Check the CONTEC's Web site for more information on these options.

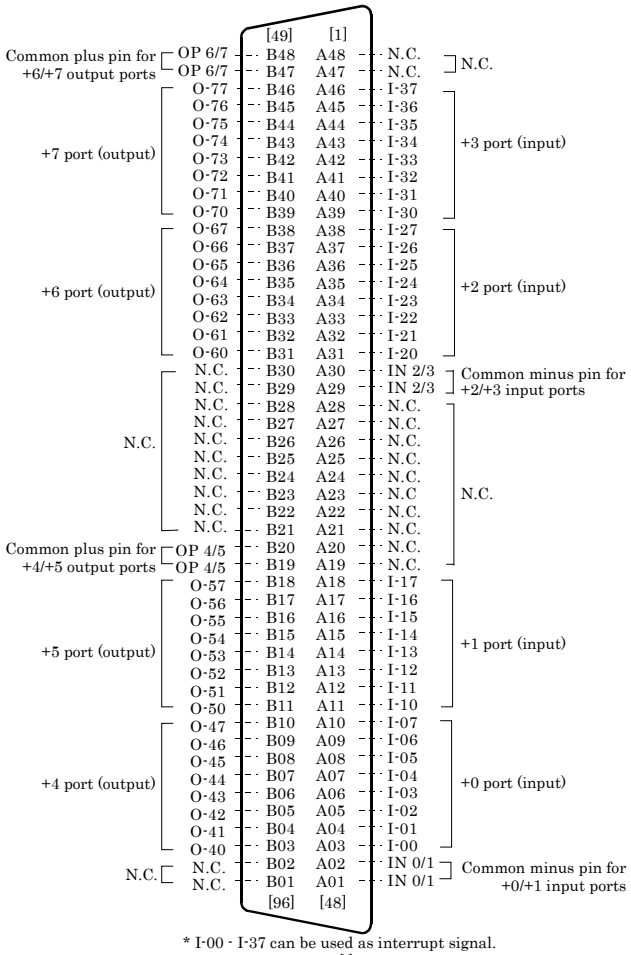
How to connect the connectors

Connector shape

To connect an external device to this board, plug the cable from the device into the interface connector shown below.



Connector Pin Assignment



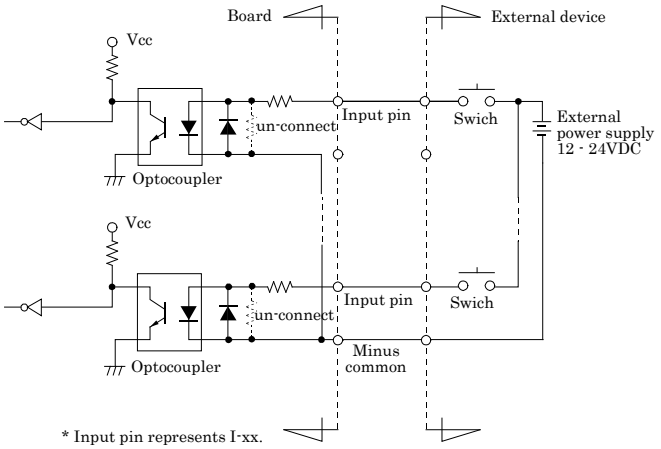
* I-00 - I-37 can be used as interrupt signal.
The numbers in square brackets [ ] are pin numbers designated by HONDA TSUSHIN KOGYO CO., LTD.

I-00 - I-37	32 input signal pins. Connect output signals from the external device to these pins.
O-40 - O-77	32 output signal pins. Connect these pins to the input signal pins of the external device.
OP 4/5 - OP 6/7	Connect the positive side of the external power supply. These pins are common to 16 output signal pins.
IP 0/1 - IP 2/3	Connect the positive side of the external power supply. These pins are common to 16 input signal pins.
N.C.	This pin is left unconnected.

Connecting Input Signals

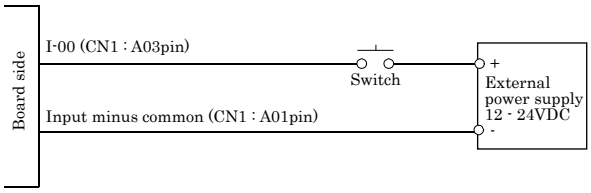
Connect the input signals to a device which can be current-driven, such as a switch or transistor output device.
The connection requires an external power supply to feed currents.
The board inputs the ON/OFF state of the current-driven device as a digital value.

Input Circuit



The input circuits of interface blocks of this board are illustrated in the image above.
The signal inputs are isolated by Optocoupler (corresponding to the current source output). The board therefore requires an external power supply to drive the inputs. The power requirement for each input pin is about 5.1mA at 24VDC (about 2.6mA at 12VDC).

Connecting a Switch

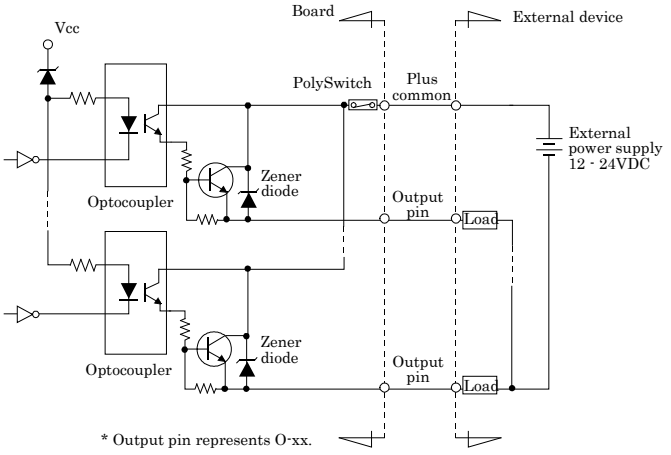


When the switch is ON, the corresponding bit contains 1.
When the switch is OFF, by contrast, the bit contains 0.

Connecting Output Signals

Connect the output signals to a current-driven controlled device such as a relay or LED.
The connection requires an external power supply to feed currents.
The board controls turning on/off the current-driven controlled device using a digital value.

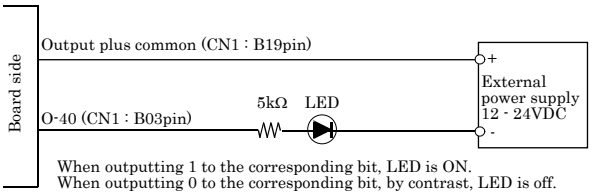
Output Circuit



The output circuits of interface blocks of this board are illustrated in the image above. The signal output section is an Optocoupler isolated, current source output type. Driving the output section requires an external power supply.
The rated output current per channel is 100mA at maximum.
A zener diode is connected to the output transistor for protection from surge voltages. A PolySwitch-based overcurrent protector is provided for every eight output transistors. When the overcurrent protector works, the output section of the board is temporarily disabled. If this is the case, turn of the power to the PC and the external power supply and wait for a few minutes, then turn them on back.

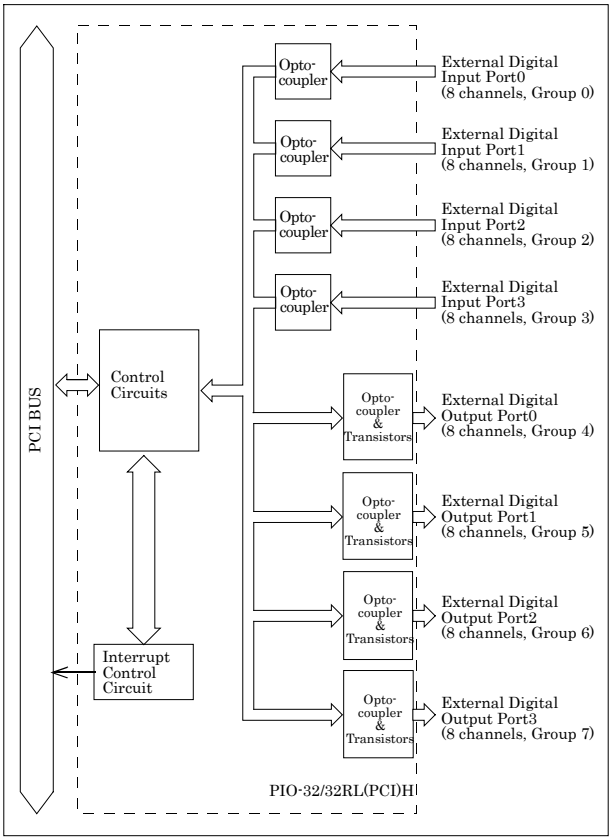
⚠ CAUTION
When the PC is turned on, all output are reset to OFF.

Connection to the LED



When outputting 1 to the corresponding bit, LED is ON.
When outputting 0 to the corresponding bit, by contrast, LED is off.

Block Diagram



Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP