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Bi-Directional Digital I/O Board for PCI

DIO-48D2-PCI



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

Features

This board can be used to input/output 48 points bi-directional digital corresponding to the equivalence to the i8255 mode 0.

This board has up to 48 unisolated TTL-level input/output channels whose response speed is 200μsec that is powered by the equivalence to the mode 0 of i8255 device for general-purpose. You can select the input/output by the application software in eight signals units (in four signals unit for some inputs/outputs).

You can use up to 48channels of the input signals as interrupt events.

You can use up to 48channels of the input signals as interrupt events and also disable or enable the interrupt in bit units and select the edge of input signals, at which to generate an interrupt.

This product has a digital filter function to prevent wrong recognition of input signals from carrying noise or a chattering.

This product has a digital filter function to prevent wrong recognition of input signals by noise or chattering is provided. All input terminals can be added a digital filter, and the setting can be performed by software.

Windows/Linux compatible driver libraries are attached.

Using the attached driver library API-PAC(W32) makes it possible to create applications of Windows/Linux. In addition, a diagnostic program by which the operations of hardware can be checked is provided.

Connectors are compatible with PCI compatible board PIO-48D(PCI).

There is compatibility in terms of connector shape and pin assignments with PCI compatible board PIO-48D(PCI), it is easy to migrate from the existing system.

LabVIEW is supported by a plug-in of dedicated library VI-DAQ.

Using the dedicated library VI-DAQ makes it possible to create each application for LabVIEW.

This product is a PCI bus-compliant interface board that extends the input/output function of

bi-directional digital signal. This board has up to 48 unisolated TTL-level input/output channels that is powered by the equivalence to the mode 0 of i8255 chips, and you can use up to 48 channels of the input signals as interrupt inputs. You can select the input/output by the application software in eight signals units (in four signals unit for some inputs/outputs). Additionally, the digital filter function is equipped with this product. Windows/Linux driver is bundled with this product.

Using the dedicated library VI-DAQ makes it possible to create each application for LabVIEW.

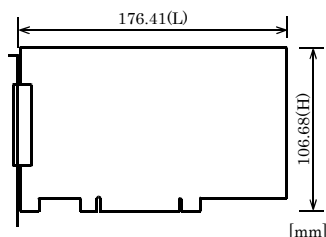
Specification

Item	Specification
I/O	
I/O format	Unisolated TTL-level input (Positive logic)
Number of I/O channels	48 channels (all available for interrupts)
Pull-up resistance	10kΩ
Interrupt	48 interrupt input signals are arranged into a single output of interrupt signal INTA. An interrupt is generated at the rising edge (LOW-to-HIGH transition).
Response time	Within 200nsec
Rated output current	I _{OL} =24mA (Max.) I _{OH} =-15mA (Max.)
Common	
I/O address	Any 32-byte boundary (Common to I/O part)
Power consumption (Max)	5VDC 600mA
Operating condition	0 - 50°C, 10 - 90%RH (No condensation)
Allowable distance of signal extension	Approx. 1.5m (depending on wiring environment)
Bus specification	PCI (32bit, 33MHz, Universal key shapes supported *2)
Dimension (mm)	176.41(L) x 106.68(H)
Connector	
CN1	96 pin half pitch connector (F (female) type) PCR-E96LMD+ [mfd. by HONDA TSUSHIN KOGYO CO., LTD.] or equivalent to it
CN2,3	50 pin IC pitch pin header connector PS-50PE-D4T1-B1A [mfd.by JAE] or equivalent to it
Weight	130g

*1 Data "0" and "1" correspond to the High and Low 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).

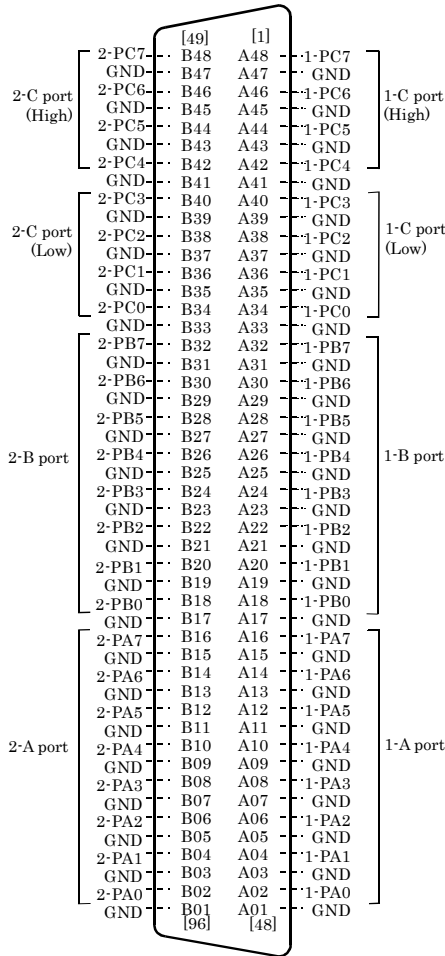
Board Dimensions



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

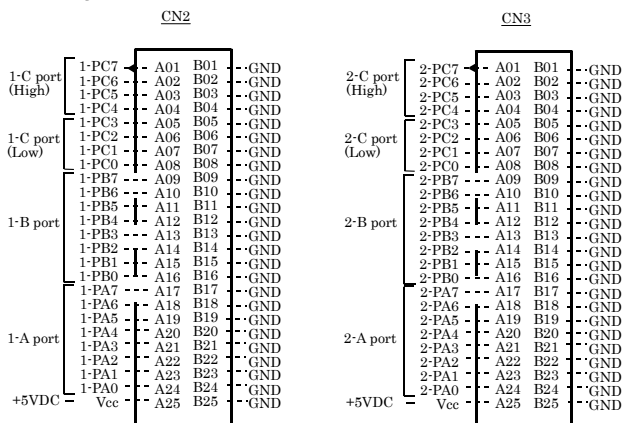
Connector Pin Assignment

<Pin Assignments of Interface Connector (CN1)>



* The numbers in square brackets [] are pin numbers designated by HONDA TSUSHIN KOGYO CO., LTD.

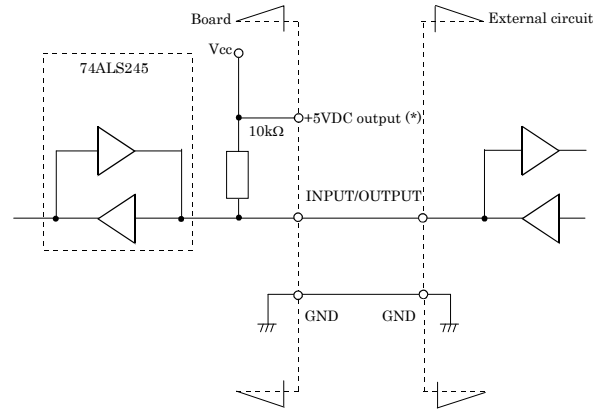
< Pin Assignments of Interface Connector (CN2, CN3)>



Connecting I/O Signals

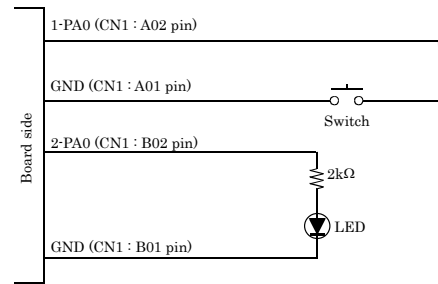
The I/O circuits of interface blocks of the DIO-48D2-PCI are illustrated in Figure below. Signals are TTL levels and positive logic. Each of the signal is pulled up.

I/O Circuit



(* Only CN2 and CN3 has +5VDC output pin. Current to be able to supplied is within 1A (total).

Example of Connection

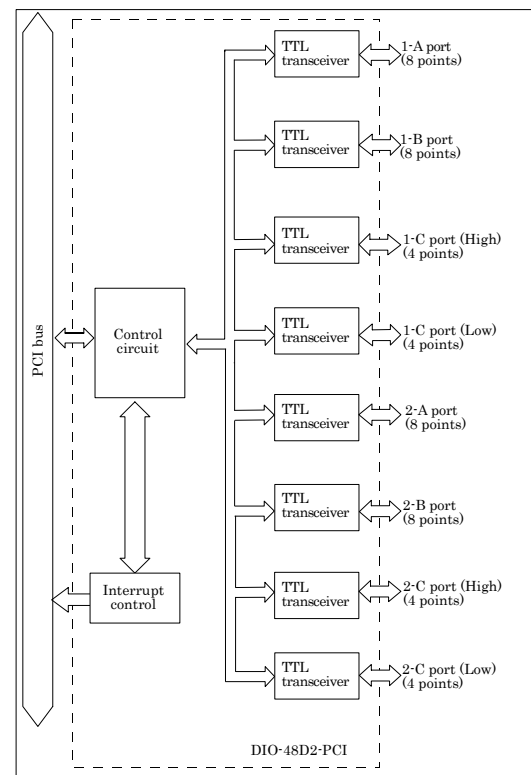


When switch is "ON", the corresponding bit is "0".
When switch is "OFF" in contrast, the corresponding bit is "1".
When "1" is output to a relevant bit, the corresponding LED comes on.
When "0" is output to the bit, in contrast, the LED goes out.

About the Protection Feature

The +5VDC output of the board is provided with a PolySwitch-based protection feature. If the +5VDC output is accidentally connected to GND, the protection feature works and it may disable the board temporarily. In that case, turn the PC off, wait for a few minutes, then turn the PC back on.

Block Diagram





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