

PCI-compliant Digital Input Board

DI-32T2-PCI



Features

**32ch of unisolated TTL level input**

This board has 32ch of unisolated TTL level input with a 200µsec response speed. Output rating: Max. 30VDC, 40mA per pin.

**All input signals can be used as interrupt events.**

You can use all input signals as interrupt events and also disable or enable the interrupt in bit units and select the interrupt edge.

**Digital filter prevents input signal errors from noise or chattering.**

A digital filter is provided to prevent input signal errors from noise or chattering. This filter can be added to each input terminal, with settings performed via software.

**Windows and Linux driver libraries are included**

The included driver library [API-PAC(W32)] makes it possible to create applications in both Windows and Linux environments. A diagnostic program to check the hardware operation is also provided.

**LabVIEW support**

LabVIEW is supported by using CONTEC's dedicated library VI-DAQ.

This product is a PCI board designed for extending input function on your PC. It has 32channels of TTL level inputs with a 200nsec response speed. All input signals can be used as interrupts. A digital filter is provided to prevent input signal errors from noise or chattering.

Both Windows and Linux drivers are included with this board.

CONTEC provides drivers that enable these boards to be used with LabVIEW.

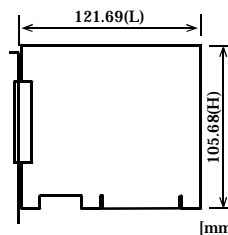
Specifications

| Item                                   | Specification   |
|--|---|
| <b>Input</b>                           |   |
| Input format                           | Unisolated TTL level input (Negative logic *1)  |
| Number of input signal channels        | 32channels (All of them are available for interrupts) (1 common)  |
| Input resistance                       | Pull up 10kΩ (1TTL load)  |
| Interrupt                              | 32 interrupt input signals are arranged into a single output of interrupt signal INTA.<br>An interrupt is generated at the rising edge (HIGH-to-LOW transition) or falling edge (LOW-to-HIGH transition). |
| Response time                          | 200nsec within  |
| <b>Common</b>                          |   |
| External supply capable current (Max.) | 5VDC 1A   |
| Allowable distance of signal extension | Approx. 1.5m (depending on wiring environment)  |
| I/O address                            | Any 32-byte boundary  |
| Interrupt Level                        | 1 level use   |
| Max. board count for connection        | 16 boards including the master board  |
| Power consumption (Max.)               | 5VDC 200mA  |
| Operating condition                    | 0 - 50°C, 10 - 90%RH (No condensation)  |
| Bus specification                      | PCI (32bit, 33MHz, Universal key shapes supported *2)   |
| Dimension (mm)                         | 121.69(L) x 105.68(H)   |
| Connector                              | 37 pin D-SUB connector [F (female) type] DCLC-J37SAF-20L9E [mfd. by JAE] equivalent to it   |
| Weight                                 | 100g  |

\*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.

## Support Software

### API-DIO(WDM)/API-DIO(98/PC) Digital I/O driver for Windows

[Found on the included CD-ROM driver library API-PAC(W32)]

For use in Windows environments, API-DIO(98/PC) is driver library software that provides basic Win32 API functions (DLL).

Various sample programs using Visual Basic and Visual C++ and a diagnostic program used to check the hardware operation are also provided.

< Operating Environments >

Operating Systems: Windows Vista, Windows XP, Server 2003, 2000

Programming languages: Visual Basic, Visual C++, Visual C#, Delphi, C++ Builder

Upgraded software versions can be downloaded from CONTEC's [document site \(http://www.contec.com/apipac/\)](http://www.contec.com/apipac/).

For more details on supported OS, programming languages and for updated information, please visit CONTEC's Web site.

### API-DIO(LNX) Digital I/O driver for Linux

[Found on the included CD-ROM driver library API-PAC(W32)]

API-DIO(LNX) is driver software for Linux which provides device drivers (modules) by shared library and kernel versions. Various sample gcc programs are provided.

< Operating Environments >

Operating Systems: RedHatLinux, TurboLinux  
(For details on supported distributions, refer to Help files that are available after installation.)

Programming language: gcc

Upgraded software versions can be downloaded from CONTEC's [document site \(http://www.contec.com/apipac/\)](http://www.contec.com/apipac/).

For more details on supported OS, programming languages and for updated information, please visit CONTEC's Web site.

### VI-DAQ Data acquisition VI library for LabVIEW

[Available for free download from CONTEC's web site]

CONTEC's VI library is for use with National Instruments' LabVIEW.

VI-DAQ is designed with functions similar to that of LabVIEW's Data Acquisition VI, allowing various devices to be used without complicated settings.

For more details and to download VI-DAQ go to <http://www.contec.com/vidaq/>.

## Optional Cables and Connectors

Flat Cable with 37-Pin D-sub Connectors at either Ends  
:PCB37P-1.5 (1.5m)

Shield Cable with 37-Pin D-sub Connector at either Ends (Mold Type)

:PCB37PS-0.5P(0.5m)  
:PCB37PS-1.5P (1.5m)

Flat Cable with 37-Pin D-sub Connector at One End  
:PCA37P-1.5 (1.5m)

Shield Cable with 37-Pin D-sub Connector at One End (Mold Type)

:PCA37PS-0.5P (1.5m)  
:PCA37PS-1.5P (1.5m)

D-SUB37P Male Connector Set (5 Pieces)  
:CN5-D37M

## Accessories

|                                  |                |
|----------------------------------|----------------|
| Screw Terminal Unit (M3 x 37P)   | :EPD-37A *1    |
| Screw Terminal Unit (M3.5 x 37P) | :EPD-37 *1     |
| General Purpose Terminal         | :DTP-3A *1     |
| Screw Terminal                   | : DTP-4A *1    |
| Signal Monitor for Digital I/O   | :CM-32(PC)E *1 |

\*1: A PCB37P-1.5 or PCB37PS-0.5P, 1.5P optional cable is required separately.

## Packing List

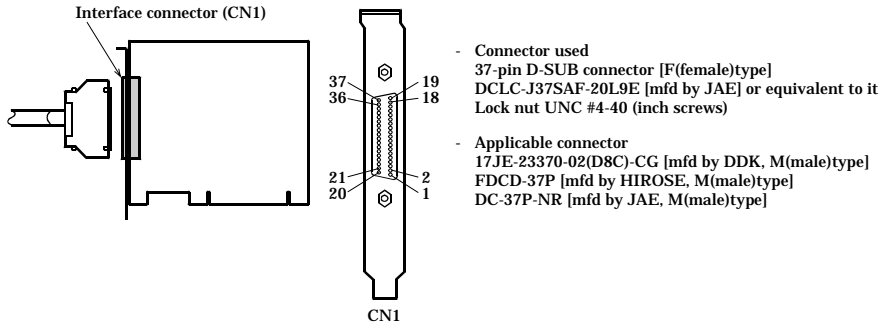
- Board [DI-32T2-PCI] ...1
- First step guide ... 1
- CD-ROM \*1 [API-PAC(W32)] ...1

\*1 The CD-ROM contains the driver software and User's Guide.

## On-board connector wiring

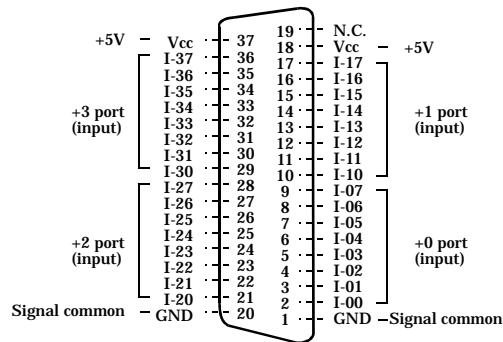
### Connector shape

The on-board interface connector (CN1) is used when connecting this product and the external devices.



### Connector Pin Assignment

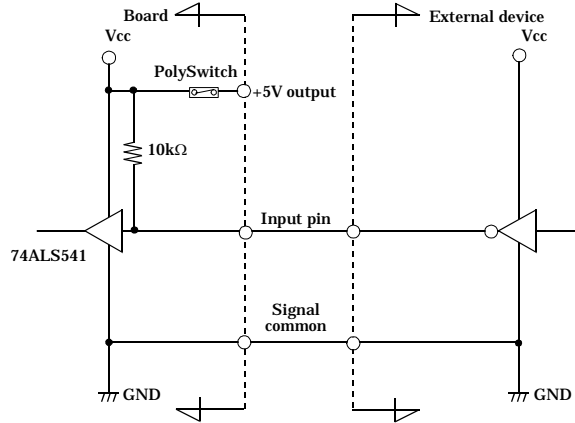
Pin Assignments of Interface Connector (CN1)



|             |  |
|-------------|--|
| I-00 - I-37 | 32 input signal pins. Connect output signals from the external device to these pins. |
| Vcc         | Output +5V. Max. electrical current is 1A.   |
| GND         | This pin is connected to GND in the slot.  |
| N.C.        | This pin is left unconnected.  |

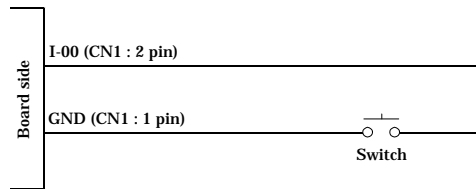
## Connection of Input Signals

### Input Circuit



The input circuit of interface is illustrated above. External digital signals given to signal inputs are TTL levels. The individual input signals are passed to the personal computer as negative logic signals. As each of the signal inputs is pulled up internally, the output of a relay contact or semiconductor switch can be connected directly between the signal input and the signal common pin.

### Connecting a Switch



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

## Block Diagrams

