

Digital Input Board for PCI Express

DI-32T-PE



Features

Unisolated TTL level input

The < DI-32T-PE > has the 32ch of unisolated TTL level input whose response speed is 200nsec.

You can use all of the input signals as interrupt request signals.

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This product has a digital filter to prevent wrong recognition of input signals from carrying noise or a chattering. 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 Window/Linux. In addition, a diagnostic program by which the operations of hardware can be checked is provided.

Functions and connectors are compatible with PCI compatible board DI-32T2-PCI.

The functions same with PCI compatible board DI-32T2-PCI are provided.

In addition, as there is compatibility in terms of connector shape and pin assignments, 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 make a LabVIEW application.

This product is a PCI Express bus-compliant interface board used to provide a digital signal input function on a PC. The < DI-32T-PE > features 32 unisolated TTL level inputs. You can use 32 input signals as interrupt inputs. In addition, the digital filter function to prevent wrong recognition of input signals is provided.

Windows/Linux driver is bundled with this product.

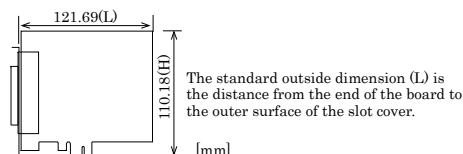
Possible to be used as a data recording device for LabVIEW, with dedicated libraries.

Specifications

Item	Specification
Input	
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 10k Ω (1TTL load)
Interrupt	32 interrupt input signals are arranged into a single output of interrupt signal INTA. An interrupt is generated at the rising edge (HIGH-to-LOW transition) or falling edge (LOW-to-HIGH transition).
Response time	200nsec within
Common	
External supply capable current (Max.)	5VDC 350mA
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.)	3.3VDC 300mA
Operating condition	0 - 50°C, 10 - 90%RH (No condensation)
Bus specification	PCI Express Base Specification Rev. 1.0a x1
Dimension (mm)	121.69(L) x 110.18(H)
Connector	37 pin D-SUB connector [F (female) type] DCLC-J37SAF-20L9E [mfd. by JAE] equivalent to it
Weight	100g
Certification	VCCI Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

*1 Data "0" and "1" correspond to the High and Low levels, respectively.

Board Dimensions



Support Software

Windows version of digital I/O driver API-DIO(WDM)

The API-DIO(WDM) / API-DIO(98/PC) is the Windows version driver library 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. You can download the updated version from the CONTEC's Web site. For more details on the supported OS, applicable language and new information, please visit the CONTEC's Web site.

Linux version of digital I/O driver 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. You can download the updated version from the CONTEC's Web site. For more details on the supported OS, applicable language and new information, please visit the CONTEC's Web site.

Data acquisition VI library for LabVIEW VI-DAQ

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 CONTEC's Web site for details and download of VI-DAQ.

Cable & Connector

- 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)

Accessories

- Screw Terminal Unit (M3 x 37P) : PCB37P-1.5 (1.5m)
- Screw Terminal Unit (M3.5 x 37P) : EPD-37 *1
- General Purpose Terminal (M3 x 37P) : DTP-3C *1
- Screw Terminal (M2.5 x 37P) : DTP-4C *1
- Signal Monitor / Output Accessory for Digital I/O (32P) : CM-32L *1

*1 A PCB37P-1.5 or PCB37PS-0.5P, 1.5P optional cable is required separately.
*2 "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.

Packing List

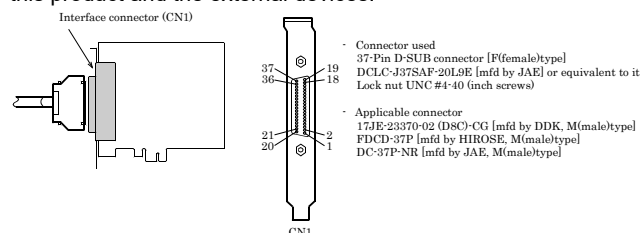
- Board [DI-32T-PE] ...1
- First step guide ... 1
- Disk *1 [API-PAC(W32)] ...1
- Serial number label...1
- Product Registration Card & Warranty Certificate...1

*1 The Disk contains the driver software and User's Guide.

How to connect the connectors

Connector shape

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



* Please refer to page 2 for more information on the supported cable and accessories.

Connector Pin Assignment

Pin Assignments of Interface Connector (CN1)

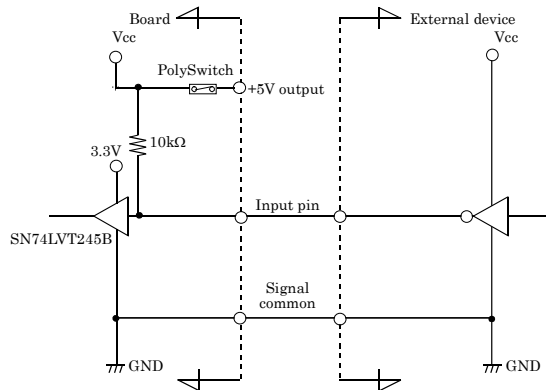
+5V	Vcc	37	19	N.C.	
	I-37	36	18	Vcc	+5V
	I-36	35	17	I-17	
	I-35	34	16	I-16	
	I-34	33	15	I-15	
+3 port (Input)	I-33	32	14	I-14	
	I-32	31	13	I-13	
	I-31	30	12	I-12	
	I-30	29	11	I-11	
	I-29	28	10	I-10	
	I-28	27	9	I-09	
	I-27	26	8	I-08	
	I-26	25	7	I-07	
	I-25	24	6	I-06	
	I-24	23	5	I-05	
	I-23	22	4	I-04	
	I-22	21	3	I-03	
	I-21	20	2	I-02	
	I-20	19	1	I-01	
Signal common	GND	20	1	GND	Signal common

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 350mA.
GND	This pin is connected to GND in the slot.
N.C.	This pin is left unconnected.

How to Connect Input Signals

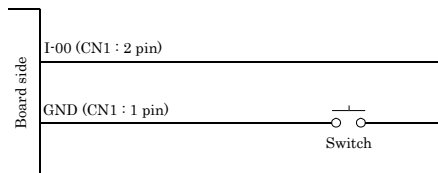
The input circuit of interface is illustrated in the below figure. External digital signals given to signal inputs are TTL levels. The individual input signals are passed to the personal computer as negative logic signals. As each of the signal inputs is pulled up internally, the output of a relay contact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

Input Circuit



* I-xx represents an input pin.
One polyswitch is connected for Vcc(+5V) terminal.

Connecting to the Switch



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

A Protection Function of the +5V Outputs

A protection function, which prevents excessive current flow from the +5V outputs, is attached to this board. In case of accidental short of the +5V output and GND, for example, the function works, and the board operation may become impossible temporarily. In such a case, you should turn the PC off and wait for several minutes before you use the board again.

Block Diagram

