Digital Output Board for PCI

DO-128T2-PCI

* Specifications, color and design of the products are subject to change without notice.
* 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 May, 2018.

This product is a PCI bus-compliant interface board used to provide a digital signal output function on a PC.

DO-128T2-PCI features 128 unisolated open-collector outputs.

Windows/Linux driver is bundled with this product.

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

Features

Unisolated TTL level input, unisolated open-collector output
DO-128T2-PCI has the 128ch of the unisolated open collector outputs whose response speed is 200nsec.
Output rating : max 30VDC, 40mA per pin.

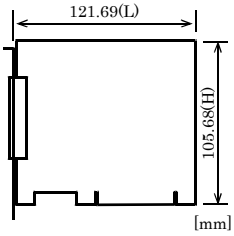
Windows/Linux compatible driver libraries are attached.
Using the attached driver library API-PAC(W32) makes it possible to create applications of Windows/Linux. In addition, a diagnostic program by which the operations of hardware can be checked is provided.

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.

Specification

Item		Specification
Output		
Output format		Unisolated open collector output (Negative logic *1)
Number of output signal channels		128hannels (1 common)
Output rating	Output voltage	30VDC (Max.)
	Output current	40mA (per channel) (Max.)
Response time		Within 200nsec (change by pull-up registor value)
Common		
External supply capable current (Max.)		5VDC 1A *3
Allowable distance of signal extension		Approx. 1.5m (depending on wiring environment)
I/O address		Any 32-byte boundary
Interrupt Level		None
Max. board count for connection		16 boards including the master board
Power consumption (Max.)		5VDC 500mA *4
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		100 pin 0.8mm pitch connector [F (female) type] x 2 HDRA-E100W1LFDT1EC-SL+[HONDA TSUSHIN KOGYO CO., LTD.] 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).
*3 Because it supplies the +5V power supply from an expansion slot, the external supply capable current depends on the PC.
*4 The power consumption does not include it in the external supply capable current.



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

Support Software

Windows version of digital I/O driver API-DIO(WDM)/ API-DIO(98/PC)
[Stored on the bundled disk driver library API-PAC(W32)]
The API-DIO(WDM) 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 *1useful for checking operation is provided.

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)
[Stored on the bundled disk driver library API-PAC(W32)]
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.

For more details on the supported OS, applicable language and new information, please visit the CONTEC's Web site.

LabVIEW-support data acquisition library DAQfast for LabVIEW (Available for downloading (free of charge) from the CONTEC web site.)
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.

For more details on the library and download of DAQfast for LabVIEW, please visit the CONTEC's Web site.

Data acquisition library for LabVIEW VI-DAQ (Available for downloading (free of charge) from the CONTEC web site.)
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.

For more details on the library and download of VI-DAQ, please visit the CONTEC's Web site.

Packing List

Board [DO-128T2-PCI] ...1
First step guide ... 1
Disk *1 [API-PAC(W32)] ...1
Warranty Certificate ...1
Serial Number Label...1

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

Cable & Connector (Option)

Shielded Cable With Two 100pin Connector	PCB100PS-0.5 (0.5m)
	PCB100PS-1.5 (1.5m)
Connection Conversion Shield Cable (100P→96P)	PCB100/96PS-1.5(1.5m)
Flat Cable with One 100-Pin Connector	PCA100P-1.5(1.5m)
Connection Conversion Shield Cable (100P→37P D-SUB x 2)	PCB100WS-1.5(1.5m)

*If using both the CNA and CNB connectors, two cable sets are required.

Accessories (Option)

Screw Terminal (M3 x 100P)	EPD-100A *1*4*6
Screw Terminal (M3 x 96P)	EPD-96A *2*4*6
Screw Terminal (M3.5 x 96P)	EPD-96 *2*4
Screw Terminal	DTP-64(PC) *2*4
Connector Conversion Board (96P→37P x 2)	CCB-96 *2*4
Signal Monitor for Digital I/O (64Bits)	CM-64L *2*4
Screw Terminal (M3 x 37P)	EPD-37A *3*5*6
Screw Terminal (M3.5 x 37P)	EPD-37 *3*5
General Purpose Terminal	DTP-3A *3*5
Screw Terminal	DTP-4A *3*5
Signal Monitor for Digital I/O (32Bits)	CM-32L *3*5

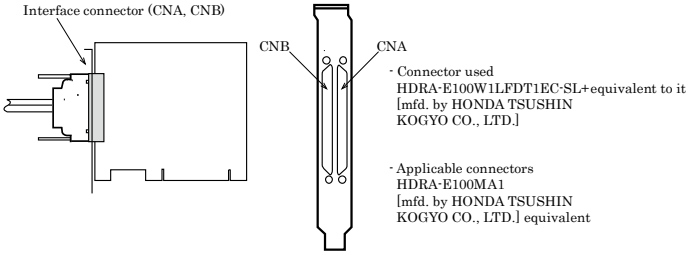
*1 PCB100PS-0.5, 1.5 optional cable is required separately.
*2 PCB100/96PS-1.5 optional cable is required separately.
*3 PCB100WS-1.5 optional cable is required separately.
*4 If using both the CNA and CNB connectors, two each of the terminal and cable sets are required.
*5 If using both the CNA and CNB connectors, two cable sets are required.
You will also require sufficient terminal blocks for the number of I/O points you are using.
*6 "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.

On-board connector wiring

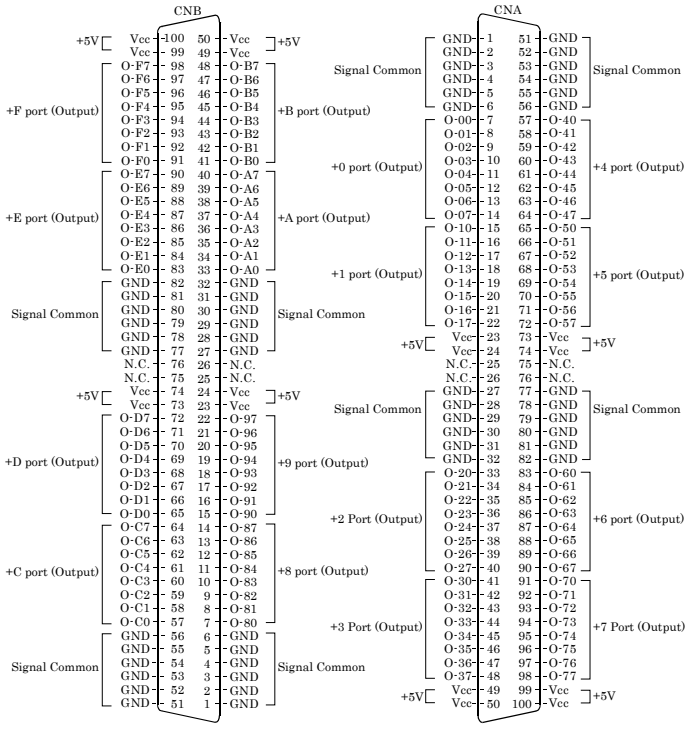
Connector shape

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



Connector Pin Assignment

Pin Assignments of Interface Connector (CNA, CNB)

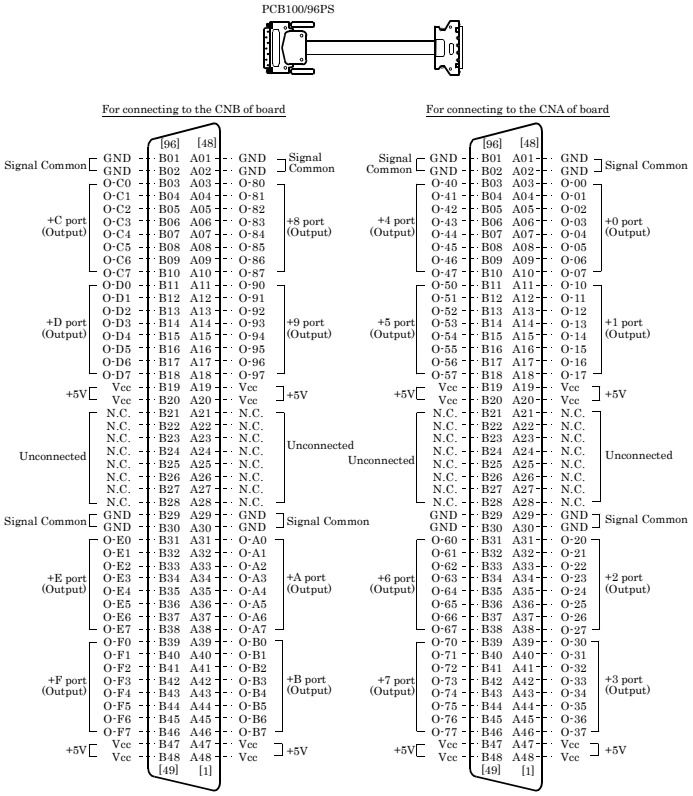


O-00 - O-F7	128 output signal pins. Connect input signals from the external device to these pins.
Vcc	Output +5V. The current that can be supplied is 1A(Max.). The permitted current per pin of connector is 0.3A. Connect the number of pins required to supply the total current.
GND	This pin is connected to GND in the slot. The permitted current per pin of connector is 0.3A. Connect the number of pins required to supply the total current for the 64 outputs.
N.C.	This pin is left unconnected.

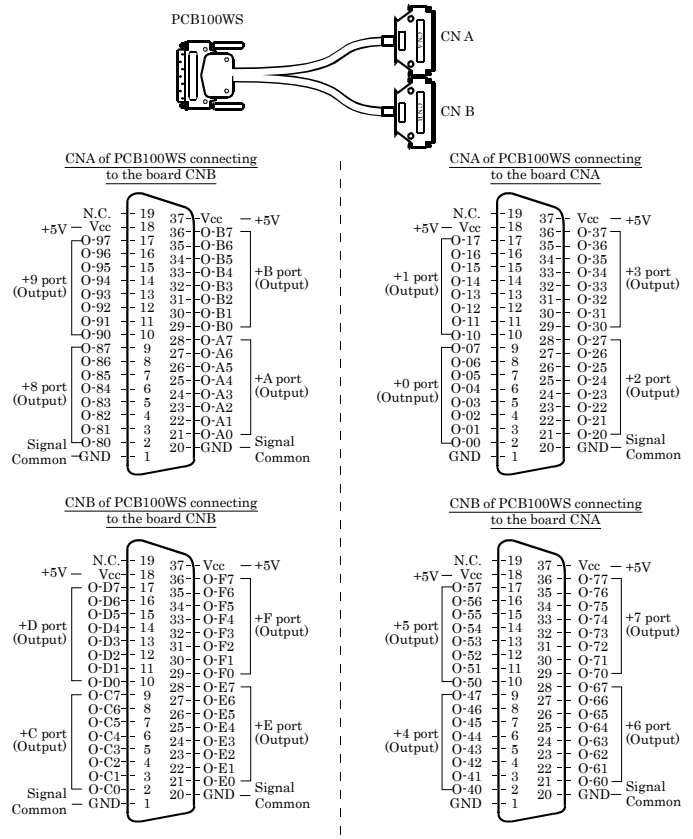
Pin Assignments of Optional Connector PCB100/96PS or PCB100WS

The figure below shows the correspondence between the option cable pins and signals.

< Pin assignments for connecting a PCB100/96PS or PCB100WS to the DO-128T2-PCI >

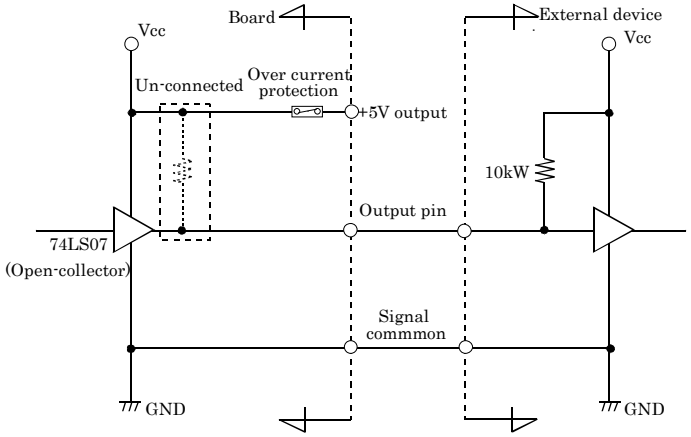


* The numbers in square brackets [ ] are pin numbers designated by HONDA TSUSHIN KOGYO CO., LTD.



Connecting Output Signals

Output Circuit



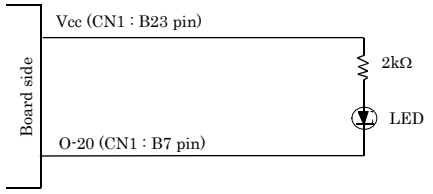
* O-xx represents an output pin.
One over current protection is connected for Vcc(+5V) terminal.

The output circuit of < DO-128T2-PCI > is illustrated in Figure. Signal outputs are open-collector outputs; individual output signals are sent to the external device as negative logic signals. Note that each signal output must be pulled up at the external device as it is not pulled up internally.

⚠ CAUTION

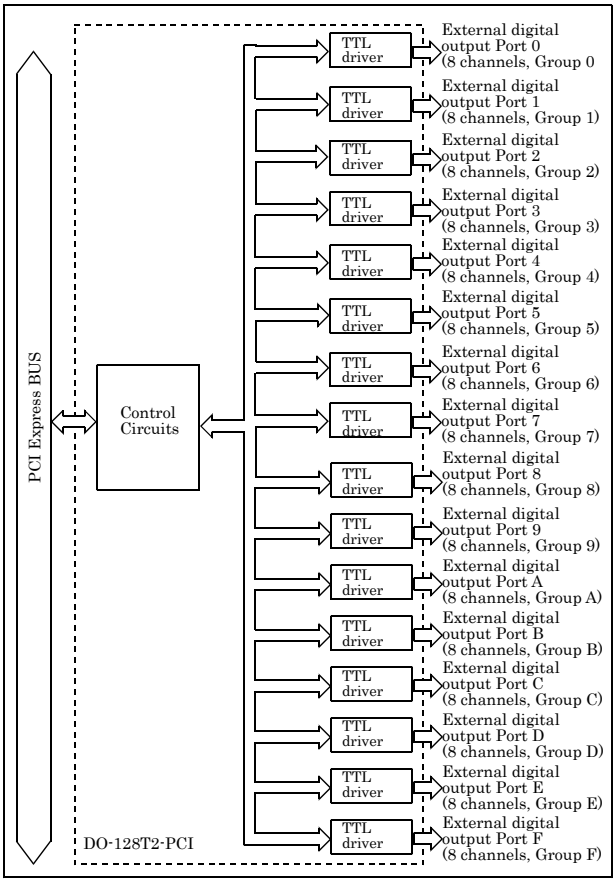
When the PC is turned on, all output are reset to OFF.

Connection to the LED



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.

A Protection Function of the +5V Outputs

An overcurrent protection circuit is attached to this board.

Block Diagram