

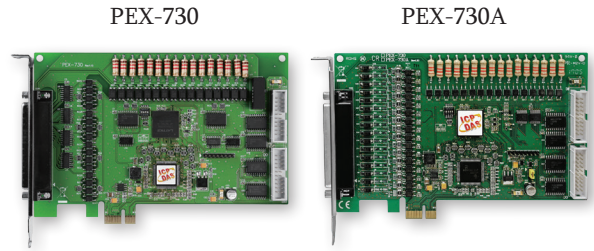
# PEX-730/PEX-730A

PCI Express, 32-channel TTL Digital Input/Output and 32-channel Isolated Digital Input/Output (Sink/Source) Board



## Features

- PCI Express x1 Interface
- 16-channel Optically-isolated Digital Input
- 16-channel Optically-isolated Digital Output
  - PEX-730: Current Sinking (NPN)
  - PEX-730A: Current Sourcing (PNP)
- Supports Output Status Readback
- Supports Card ID (SMD Switch)
- 3750 V<sub>rms</sub> Photo-isolation Protection
- Internal Power (3000 V<sub>DC</sub> Isolation) for Dry-contact Input
- 16-channel 5 V/TTL Digital Output
- 16-channel 5 V/TTL Digital Input
- Two Interrupt Sources



## Introduction

PEX-730/730A cards provide 32 isolated digital I/O channels (16 x DI and 16 x DO) and 32 TTL-level digital I/O channels (16 x DI and 16 x DO). Both the isolated DI and DO channels use a short optical transmission path to transfer an electronic signal between the elements of a circuit and keep them electrically isolated. With 3750 V<sub>rms</sub> isolation protection, these DI/O channels allow the input signals to be completely floated so as to prevent ground loops and isolate the host computer from damaging voltages. Each digital output offers a Darlington NPN (Current Sinking for PEX-730) or PNP (Current Sourcing for PEX-730A) transistor and integrated suppression diode for the inductive load. The open collector outputs (DO channels) are typically used for alarm and warning notification, signal output control, control for external circuits that require a higher voltage level, and signal transmission applications, etc.

These cards also adds a Card ID switch. Users can set Card ID on a board and recognize the board by the ID via software when using two or more cards in one computer. The PEX-730/730A is designed as easy replacement for the PISO-730U/PISO-730A without any software/driver modification.

## Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment
IDI_0	01	20 IDI_1
IDI_2	02	21 IDI_3
IDI_4	03	22 IDI_5
IDI_6	04	23 IDI_7
IDI_8	05	24 IDI_9
IDI_10	06	25 IDI_11
IDI_12	07	26 IDI_13
IDI_14	08	27 IDI_15
EI.COM1	09	28 EI.COM2
EO.COM1	10	29 IGND
IDO_0	11	30 IDO1
IDO_2	12	31 IDO3
IDO_4	13	32 IDO5
IDO_6	14	33 IDO7
IDO_8	15	34 IDO9
IDO_10	16	35 IDO11
IDO_12	17	36 IDO13
IDO_14	18	37 IDO15
EO.COM2	19	

Pin Assignment	Terminal No.	Pin Assignment
DI 0	01	02 DI 1
DI 2	03	04 DI 3
DI 4	05	06 DI 5
DI 6	07	08 DI 7
DI 8	09	10 DI 9
DI 10	11	12 DI 11
DI 12	13	14 DI 13
DI 14	15	16 DI 15
GND	17	18 GND
+5 V	19	20 +12 V

Pin Assignment	Terminal No.	Pin Assignment
DO 0	01	02 DO 1
DO 2	03	04 DO 3
DO 4	05	06 DO 5
DO 6	07	08 DO 7
DO 8	09	10 DO 9
DO 10	10	12 DO 11
DO 12	12	14 DO 13
DO 14	14	16 DO 15
GND	16	18 GND
+5 V	18	20 +12 V

## Ordering Information

PEX-730 CR	PCI Express, 32-channel Isolated Digital Input/Output and 32-channel TTL Digital Input/Output Board. (Current Sinking, RoHS). Includes one CA-4002 D-sub Connector.
PEX-730A CR	PCI Express, 32-channel Isolated Digital Input/Output and 32-channel TTL Digital Input/Output Board. (Current Sourcing, RoHS). Includes one CA-4002 D-sub Connector.

## Software

### Drivers

- 32/64-bit Windows XP/2003/2008/7/8/10
- Linux

### Sample Programs

- DOS Lib and TC/BC/MSC Demo
- LabVIEW Toolkit
- VB/VC/Delphi/BCB/VB.NET/C#.NET/VC.NET/MATLAB Demo



## Hardware Specifications

Model	PEX-730	PEX-730A
<b>Isolated Digital Input</b>		
Channels	16	
Compatibility	Optical	
Isolation Voltage	3750 V <sub>rms</sub>	
Input Voltage	Logic 0: 0 ~ +1 V, Logic 1: +9 ~ +24 V	
Input Impedance	1.2 KΩ, 1 W	
Response Speed	4 kHz (Typical)	
<b>Isolated Digital Output</b>		
Channels	16	
Compatibility	Sink (NPN), Open Collector	Source (PNP), Open Collector
Isolation Voltage	3750 V <sub>rms</sub>	
Output Capability	100 mA/+30 V for each channel @ 100% duty	
Response Speed	4 kHz (Typical)	
<b>Non-isolated Digital Input</b>		
Channels	16	
Compatibility	5 V/TTL	
Input Voltage	Logic 0: 0.8 V Max., Logic 1: 2.0 V Min.	
Response Speed	500 kHz	
<b>Non-isolated Digital Output</b>		
Channels	16	
Compatibility	5 V/TTL	
Output Voltage	Logic 0: 0.4 V Max., Logic 1: 2.4 V Min.	
Output Capability	Sink: 2.4 mA @ 0.8 V, Source: 0.8 mA @ 2.0 V	
Response Speed	500 kHz	
<b>General</b>		
Bus Type	PCI Express x1	
Card ID	Yes (4-bit)	
Connectors	Female DB37 x 1, 20-pin Box Header x 2	
Power Consumption	350 mA @ +3.3 V; 250 mA @ +12 V	
Operating Temperature	0°C to +60°C	
Humidity	5 to 85% RH, Non-condensing	