



PEX-730

PCI Express, 32-ch Isolated Digital I/O and 32-ch Digital I/O Board (Current Sinking, NPN)

PEX-730A

PCI Express, 32-ch Isolated Digital I/O and 32-ch Digital I/O Board (Current Sourcing, PNP)

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 Vrms 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.

Software

Drivers

☒ 32/64-bit Windows 10/11 ☒ Linux

Sample Programs

☒ DOS Lib and TC/BC/MSC Demo
☒ VB/VC/Delphi/VB.NET/C#.NET/VC.NET/LabVIEW/Python/
 MATLAB

Ordering Information

PEX-730 CR	PCI Express, 32-ch Isolated Digital I/O and 32-ch Digital I/O Board (Current Sinking, NPN) (RoHS) Includes one CA-4002 D-Sub connector
PEX-730A CR	PCI Express, 32-ch Isolated Digital I/O and 32-ch Digital I/O Board (Current Sourcing, PNP) (RoHS) Includes one CA-4002 D-Sub connector

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 Vrms Photo-isolation Protection
- Internal Power (3000 VDC isolation) for Dry-contact Input
- 16-channel 5 V/TTL Digital Output
- 16-channel 5 V/TTL Digital Input
- Two Interrupt Sources



Hardware Specifications

Model	PEX-730	PEX-730A
Hardware		
Card ID	Yes (4-bit)	
Connector	Female DB37 x 1 20-pin box header x 2	
Digital Input		
Channels	16 (Isolated) + 16 (Non-isolated)	
Type	Isolated: Photocoupler (Sink and Source) Non-isolated: 5V/TTL	
TTL Input, ON Voltage Level	2.0 V Min.	
TTL Input, OFF Voltage Level	0.8 V Max.	
Response Speed	4 kHz (Typical) (Isolated) 500 kHz(Typical) (Non-isolated)	
Trigger Mode	Static Update	
Wet Contact, ON Voltage Level	9 ~ 24 V (Min. 7 V; Max. 30 V)	
Wet Contact, OFF Voltage Level	0 ~ 1 V	
Isolation	3750 Vrms (Isolated)	
Digital Output		
Channels	16 (Isolated) + 16 (Non-isolated)	
Type	Isolated:Sink (NPN), Open Collector Non-isolated: 5V/TTL	Isolated: Source (PNP), Open Emitter Non-isolated: 5V/TTL
Operation Mode	Static Update	
Voltage	Non-isolated: Logic 0: 0.4 V max. Logic 1: 2.4 V min.	
Max. Load Current	100 mA/+30 V for each channel @ 100% duty (Isolated) Sink: 2.4 mA @ 0.8 V (Non-isolated) Source: 0.8 mA @ 2.0 V (Non-isolated)	
Response Speed	4 kHz (Typical) (Isolated) 500 kHz (Non-isolate)	
Isolation	3750 Vrms (Isolated)	
PC Bus		
Type	PCI Express x 1	
Data Bus	8-bit	
Power		
Consumption	350 mA @ +3.3 V 250 mA @ +12 V	
Mechanical		
Dimensions (mm)	116 x 163 x 22 (W x L x D)	
Environmental		
Operating Temperature	0 ~ +60°C	
Storage Temperature	-20 ~ +70°C	
Humidity	5 ~ 85% RH, Non-condensing	

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Terminal No.	Pin Assignment	Terminal No.
IDI_0	01	IDI_1	20	DI 0	01
IDI_2	02	IDI_3	21	DI 2	03
IDI_4	03	IDI_5	22	DI 4	05
IDI_6	04	IDI_7	23	DI 6	07
IDI_8	05	IDI_9	24	DI 8	09
IDI_10	06	IDI_11	25	DI 10	11
IDI_12	07	IDI_13	26	DI 12	13
IDI_14	08	IDI_15	27	DI 14	15
EI.COM1	09	EI.COM2	28	GND	17
EO.COM1	10	IGND	29	+5 V	19
IDO_0	11	IDO1	30	CON2	
IDO_2	12	IDO3	31	DO 0	01
IDO_4	13	IDO5	32	DO 2	03
IDO_6	14	IDO7	33	DO 4	05
IDO_8	15	IDO9	34	DO 6	07
IDO_10	16	IDO11	35	DO 8	09
IDO_12	17	IDO13	36	DO 10	10
IDO_14	18	IDO15	37	DO 12	12
EO.COM2	19			DO 14	14
CON1				GND	16
				+5 V	18
				CON3	
				DO 1	02
				DO 3	04
				DO 5	06
				DO 7	08
				DO 9	10
				DO 11	12
				DO 13	14
				DO 15	16
				GND	18
				+12 V	20

Accessories

	CA-2002 CR	20-pin fl at cable, 20 cm x 2 (RoHS)
	CA-2010 CR	20-pin fl at cable, 1 M (RoHS)
	CA-2020 CR	20-pin fl at cable, 2 M (RoHS)
	CA-3710 CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°)) (RoHS)
	CA-3710D CR	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°)) (RoHS)
	CA-3715DM-H CR	DB-37 Male-Male Cable, 1.5 M, 180° (RoHS)
	CA-3730DM-H CR	DB-37 Male-Male Cable, 3.0 M, 180° (RoHS)
	CA-3750DM CR	DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)
	CA-3750DM-H CR	DB-37 Male-Male Cable, 5.0 M, 180° (RoHS)
	CA-4002 CR	37-pin Male D-sub connector with plastic cover (RoHS)
	DB-37 CR	Directly connect signal to D-sub 37-pin connector (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)
	DN-20 CR	Two 20-pin header DIN-rail terminal board (RoHS)
	DN-20/N CR	DN-20 without DIN-Rail mount (RoHS)
	DB-16P CR	Isolated Digital Input Daughter Board (RoHS)
	DB-16R CR	Relay Output Daughter Board (RoHS)
	ADP-20/PCI CR	20-pin extender (RoHS)

