



PCI Express, 64-ch Optically Isolated Digital Input Board

Introduction

The PEX-P64/P64-24V series utilizes the PCI Express bus and provides 64 optically-isolated Digital Input channels that use either an internal or external power supply that can be selected via a jumper. The internal power is provided by an onboard isolated DC/DC converter that provides 3000 VDC isolation and is used for connecting dry-contact input devices. The DI channels are arranged into four isolated banks when using four isolated external power supplies, where DI channels 0 to 15 are allocated to bank A, DI channels 16 to 31 are allocated to bank B, DI channels 32 to 47 are allocated to bank C, and DI channels 48 to 63 are allocated to bank D. The onboard photocouplers provide 3750 Vrms isolation, and act as an interface between field logic signals, eliminating ground loop problems and isolating the host computer from potentially damaging voltage spikes.

The PEX-P64/P64-24V series also include an onboard Card ID switch that enables the board to be easily recognized via software if two or more cards are installed in the same computer. The PEX-P64/P64-24V series is designed as an easy replacement for the PISO-P64U board without requiring any modification to either the software or the driver.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
IGND0	01	20 IGND1	IGND2	01	02 IGND3
DI_0	02	21 DI_16	DI_32	03	04 DI_48
DI_1	03	22 DI_17	DI_33	05	06 DI_49
DI_2	04	23 DI_18	DI_34	07	08 DI_50
DI_3	05	24 DI_19	DI_35	09	10 DI_51
DI_4	06	25 DI_20	DI_36	11	12 DI_52
DI_5	07	26 DI_21	DI_37	13	14 DI_53
DI_6	08	27 DI_22	DI_38	15	16 DI_54
DI_7	09	28 DI_23	DI_39	17	18 DI_55
DI_8	10	29 DI_24	DI_40	19	20 DI_56
DI_9	11	30 DI_25	DI_41	21	22 DI_57
DI_10	12	31 DI_26	DI_42	23	24 DI_58
DI_11	13	32 DI_27	DI_43	25	26 DI_59
DI_12	14	33 DI_28	DI_44	27	28 DI_60
DI_13	15	34 DI_29	DI_45	29	30 DI_61
DI_14	16	35 DI_30	DI_46	31	32 DI_62
DI_15	17	36 DI_31	DI_47	33	34 DI_63
ECOM0	18	37 ECOM1	ECOM2(+)	35	36 ECOM3
N.C.	19		ECOM2(-)	37	38 N.C.
			N.C.	39	40 N.C.

Ordering Information

PEX-P64 CR	PCI Express, 64-ch Optically Isolated Digital Input Board (RoHS) Includes one CA-4037B cable and two CA-4002 D-Sub connectors
PEX-P64-24V CR	PCI Express, 64-ch Optically Isolated Digital Input Board (RoHS) Includes one CA-4037B cable and two CA-4002 D-Sub connectors

Features

- PCI Express x1 Interface
- 64-channel Optically-isolated Digital Input
 - Internal Power (3000 VDC Isolation) for Dry-Contact Input
- Supports Card ID (SMD Switch)
- 3750 Vrms Photo-isolation Protection
- Digital Input Arranged into Four Isolated Banks when using Four Isolated External Power Supplies
- Selectable Internal or External Power for Digital Input



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

Hardware Specifications

Model	PEX-P64	PEX-P64-24V
Hardware		
Card ID	Yes (4-bit)	
Connector	Female DB37 x 1 40-pin Box header x 1	
Digital Input		
Channels	64	
Type	Photocoupler (Sink and Source)	
Response Speed	4 kHz (Typical)	
Trigger Mode	Static Update	
Wet Contact, ON Voltage Level	5 ~ 15 V (Max 24 V)	20 ~ 28 V (Max 30 V)
Wet Contact, OFF Voltage Level	0 ~ 1 V	
Dry Contact, ON Voltage Level	Close to GND	
Dry Contact, OFF Voltage Level	Open	
Isolation	3750 Vrms (Using external power)	
PC Bus		
Type	PCI Express x 1	
Data Bus	8-bit	
Power		
Consumption	600 mA @ +3.3 V 400 mA @ +12 V	
Mechanical		
Dimensions (mm)	105 x 180 x 22 (W x L x D)	
Environmental		
Operating Temperature	0 ~ +60°C	
Storage Temperature	-20 ~ +70°C	
Humidity	5 ~ 85% RH, Non-condensing	

Accessories

	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)
	CA-4037B CR	40-pin flat & D-sub 37-pin Female cable 24 cm (RoHS)
	DB-37 CR	Directly connect signal to D-sub 37-pin connector (RoHS)
	DN-37 CR	DIN Rail Mounting 37-pin Connector (RoHS)

