



PCI-P16POR16U

Universal PCI, 16-ch Optically Isolated Digital Input and 16-ch PhotoMOS Relay Output Board

Introduction

The PCI-P16POR16U Universal PCI card supports the 3.3 V/5 V PCI bus and provides 16 optically-isolated Digital Input channels and 16 PhotoMOS Relay Output channels. Both the isolated DI channels and the PhotoMOS Relay channels use a short optical transmission path to transfer an electronic signal between elements of a circuit and keep them electrically isolated.

The PCI-P16POR16U provides 5000 Vrms isolation protection for the DI channels, allowing the input signals to be completely floated so as to prevent ground loops and isolate the host computer from potentially damaging voltage spikes. The PhotoMOS Relays are used where it is necessary to control a circuit using a low-power signal, with complete electrical isolation between the control and the controlled circuits, or where several circuits must be controlled by a single signal.

This card can be used in a variety of applications, such as controlling the ON/OFF state of external devices, driving external relays or small power switches, activating alarms, contact closure, or sensing external voltages or switches, etc.

The PCI-P16POR16U cards also include an onboard Card ID switch that enables the board to be recognized via software if two or more cards are installed in the same computer. The PCI-P16POR16U is designed as a direct replacement for the PCI-P16POR16 without requiring any modification to the software or the driver.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
NO_0	01	20	DO_8	01	02
NO_1	02	21	DO_9	03	04
NO_2	03	22	DO_10	05	06
NO_3	04	23	DO_11	07	08
NO_4	05	24	DO_12	09	10
NO_5	06	25	DO_13	11	12
NO_6	07	26	DO_14	13	14
NO_7	08	27	DO_15	15	16
N/A	09	28	N/A	17	18
N/A	10	29	N/A	19	20
N/A	11	30	N/A	21	22
DIA_0	12	31	DIA_8	23	24
DIA_1	13	32	DIA_9	25	26
DIA_2	14	33	DIA_10	27	28
DIA_3	15	34	DIA_11	29	30
DIA_4	16	35	DIA_12	31	32
DIA_5	17	36	DIA_13	33	34
DIA_6	18	37	DIA_14	35	36
DIA_7	19	38	DIA_15	37	38
		39	N/A	40	N/A

CON1 (left side), CON2 (right side)

Features

- Universal PCI (3.3 V/5 V) Interface
- LED Power Indicator
- 16-channel Optically-isolated Digital Input
 - 5000 Vrms Photo-isolation Protection
 - Selectable DC Signal Input Filter
 - AC Signal Input with Filter
- High-speed DI/O Operation
- 16-channel PhotoMOS Relay Output
 - Long-life, High-reliability PhotoMOS Relay
 - Low leakage current when PhotoMOS Relay is OFF
 - No Acoustical Noise
 - No Contact Bounce or Sparking



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

Hardware	
Card ID	Yes (4-bit)
Connector	Female DB37 x 1 40-pin box header x 1
Digital Input	
Channels	16
Type	Photocoupler (Sink or Source)
Response Speed	Without Filter: 50 kHz (Typical) With Filter: 0.455 kHz (Typical)
Trigger Mode	Static Update
Wet Contact, ON Voltage Level	AC/DC 5 ~ 24 V (AC 50 ~ 1 kHz)
Wet Contact, OFF Voltage Level	AC/DC 0 ~ 1 V
Isolation	2000 VDC
Relay Output	
Channels	16
Type	PhotoMos Relay (Form A)
Contact Rating	Load Voltage: 300 V (AC peak or DC) Load Current: 130 mA
Operate Time	0.7 ms (typical)
Release Time	0.05 ms (typical)
Electrical Endurance	Long Life and No Sparking
PC Bus	
Type	PCI-Express x 1
Data Bus	16-bit
Power	
Consumption	600 mA @ +3.3 V 300 mA @ +12 V
Mechanical	
Dimensions (mm)	113 x 118 x 22 (W x L x D)
Environmental	
Operating Temperature	0 ~ +60°C
Storage Temperature	-20 ~ +70°C
Humidity	5 ~ 85% RH, Non-condensing

Ordering Information

PCI-P16POR16U CR	Universal PCI, 16-ch Optically Isolated Digital Input and 16-ch PhotoMOS Relay Output Board (RoHS) Includes one CA-4037W cable and two CA-4002 D-Sub connectors.
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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-4037W 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)

