



## 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 CM_0	DO_8	01	02 CM_8
NO_1	02	21 CM_1	DO_9	03	04 CM_9
NO_2	03	22 CM_2	DO_10	05	06 CM_10
NO_3	04	23 CM_3	DO_11	07	08 CM_11
NO_4	05	24 CM_4	DO_12	09	10 CM_12
NO_5	06	25 CM_5	DO_13	11	12 CM_13
NO_6	07	26 CM_6	DO_14	13	14 CM_14
NO_7	08	27 CM_7	DO_15	15	16 CM_15
N/A	09	28 N/A	N/A	17	18 N/A
N/A	10	29 N/A/GND	N/A	19	20 N/A/GND
N/A	11	30 DIB_0	N/A	21	22 DIB_8
DIA_0	12	31 DIB_1	DIA_8	23	24 DIB_9
DIA_1	13	32 DIB_2	DIA_9	25	26 DIB_10
DIA_2	14	33 DIB_3	DIA_10	27	28 DIB_11
DIA_3	15	34 DIB_4	DIA_11	29	30 DIB_12
DIA_4	16	35 DIB_5	DIA_12	31	32 DIB_13
DIA_5	17	36 DIB_6	DIA_13	33	34 DIB_14
DIA_6	18	37 DIB_7	DIA_14	35	36 DIB_15
DIA_7	19		DIA_15	37	38 N/A
			N/A	39	40 N/A

### 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 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

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

<b>PCI-P16POR16U CR</b>	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	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (45°))
	CA-3710D	DB-37 Male-Male D-sub cable 1 M (Cable for Daughter Board (180°))
	CA-3715DM-H	DB-37 Male-Male Cable, 1.5 M, 180°. (RoHS)
	CA-3730DM-H	DB-37 Male-Male Cable, 3.0 M, 180°. (RoHS)
	CA-3750DM	DB-37 Male-Male Cable, 5.0 M, 180°. (RoHS)
	CA-3750DM-H	DB-37 Male-Male Cable, 5.0 M, 180°. (RoHS)
	CA-4002	37-pin Male D-sub connector with plastic cover.
	CA-4037W	40-pin flat & D-sub 37-pin Female cable 24 cm.
	DB-37	Directly connect signal to D-sub 37-pin connector
	DN-37	DIN Rail Mounting 37-pin Connector

