



PCI-P16C16U

Universal PCI, 16-ch Isolated Digital Input and 16-ch Open Collector Digital Output Board (Current Sinking, NPN type)

Introduction

The PCI-P16C16U Universal PCI card supports the 3.3 V/5 V PCI bus and provides 16 optically-isolated Digital Input channels and 16 open-collector (Sink, NPN) Digital Output channels. The DI channels provide 5000 Vrms isolation protection that allows the input signals to be completely floated so as to prevent ground loops and isolate the host computer from potentially damaging voltage spikes. The open-collector DO channels are typically used for alarm and warning notifications, control of signal output, control of external circuits that require a higher voltage level, or signal transmission applications, etc. The PCI-P16C16U contains a single DB-37 connector and a single 40-pin box header, and includes a 40-pin to DB-37 flat cable for easy wiring.

The PCI-P16C16U cards also includes an onboard Card ID switch that enables the board to be recognized via software if two or more boards are installed in the same computer.

Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
			DO_8	01	02 Ext. Power3
OUT_0	01		DO_9	03	04 Ext. Power3
OUT_1	02	20 Ext. Power 1	DO_10	05	06 GND3
OUT_2	03	21 Ext. Power 1	DO_11	07	08 GND3
OUT_3	04	22 GND_1	DO_12	09	10 Ext. Power4
OUT_4	05	23 GND_1	DO_13	11	12 Ext. Power4
OUT_5	06	24 Ext. Power 2	DO_14	13	14 GND4
OUT_6	07	25 Ext. Power 2	DO_15	15	16 GND4
OUT_7	08	26 GND_2	N/A	17	18 N/A
N/A	09	27 GND_2	N/A	19	20 N/A
N/A	10	28 N/A	DIA_8	23	22 DIB_8
N/A	11	29 N/A	DIA_9	25	24 DIB_9
DIA_0	12	30 DIB_0	DIA_10	27	26 DIB_10
DIA_1	13	31 DIB_1	DIA_11	29	28 DIB_11
DIA_2	14	32 DIB_2	DIA_12	31	30 DIB_12
DIA_3	15	33 DIB_3	DIA_13	33	32 DIB_13
DIA_4	16	34 DIB_4	DIA_14	35	34 DIB_14
DIA_5	17	35 DIB_5	DIA_15	37	36 DIB_15
DIA_6	18	36 DIB_6	N/A	39	38 N/A
DIA_7	19	37 DIB_7		40	40 N/A
					CON2
					CON1

Features

- Universal PCI (3.3 V/5 V) Interface
- 16-channel Optically-isolated Digital Input
- 16-channel Open-collector Digital Output (Sink, NPN)
- External Power Status LED Indicator
- Selectable DC Signal Input Filter
- AC Signal Input with Filter
- Supports Card ID (SMD Switch)
- 5000 Vrms Photo-isolation Protection



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	5000 Vrms
Digital Output	
Channels	16
Type	Sink (NPN), Open Collector
Operation Mode	Static Update
Max. Load Current	+30 V for one channel @ 100% duty
Response Speed	4 kHz (Typical)
Isolation	5000 Vrms
PC Bus	
Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz
Data Bus	16-bit
Power	
Consumption	800 mA @ +5 V
Mechanical	
Dimensions (mm)	105 x 183 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-P16C16U CR	Universal PCI, 16-ch Isolated Digital Input and 16-ch Open Collector Digital Output Board (Current Sinking, NPN type) (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

