



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	Terminal No.	Pin Assignment
OUT_0	01	DO_8	01	Ext. Power3
OUT_1	02	DO_9	03	Ext. Power3
OUT_2	03	DO_10	05	GND3
OUT_3	04	DO_11	07	GND3
OUT_4	05	DO_12	09	Ext. Power4
OUT_5	06	DO_13	11	Ext. Power4
OUT_6	07	DO_14	13	GND4
OUT_7	08	DO_15	15	GND4
N/A	09	N/A	17	N/A
N/A	10	N/A	19	N/A
N/A	11	N/A	21	DIB_8
DIA_0	12	N/A	23	DIB_9
DIA_1	13	DIA_8	25	DIB_10
DIA_2	14	DIA_9	27	DIB_11
DIA_3	15	DIA_10	29	DIB_12
DIA_4	16	DIA_11	31	DIB_13
DIA_5	17	DIA_12	33	DIB_14
DIA_6	18	DIA_13	35	DIB_15
DIA_7	19	DIA_14	37	N/A
		DIA_15	39	N/A
		N/A	40	N/A

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 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	5000 Vrms
Digital Output	
Channels	16
Type	Sink (NPN), Open Collector
Operation Mode	Static Update
Max. Load Current	DC: 600 mA/+30 V for one channel @ 100% duty
Response Speed	4 kHz (Typical)
Isolation	3750 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 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)

