



## PISO-P32C32U/PISO-P32C32U-5V

Universal PCI, 32-ch Optically Isolated Digital Input and 32-ch Open Collector Isolated Digital Output Board (Current Sinking, NPN)

### Introduction

The PISO-P32C32U/P32C32U-5V card features 32 optically isolated Digital Input channels and 32 optically-isolated Digital Output channels, arranged into four isolated banks. Each input channel uses a photocoupler, while each output channel contains a Darlington transistor. Either an external power supply or an isolated internal power supply from the PC via a DC/DC converter can be used for the input port, which is selected via a jumper, whereas the output port should use an external power supply. The board eliminates ground-loop problems and isolates the host computer from potentially damaging voltage spikes.

The PISO-P32C32U/P32C32U-5V cards also include an onboard Card ID switch (version 1.1 or above) that enables the board to be recognized via software if two or more boards are installed in the same computer.

The PISO-P32C32U-5V uses lower input impedance that is suitable for 5 V signal applications, while the PISO-P32C32U uses higher input impedance that is suitable for 12 or 24 V signal applications and produces less heat.

### Pin Assignments

Pin Assignment	Terminal No.	Pin Assignment	Pin Assignment	Terminal No.	Pin Assignment
Ext. GND0	01	20 Ext. GND0	Ext. GND1	01	02 Ext. GND1
DI_0	02	21 DO_0	DI_16	03	04 DO_16
DI_1	03	22 DO_1	DI_17	05	06 DO_17
DI_2	04	23 DO_2	DI_18	07	08 DO_18
DI_3	05	24 DO_3	DI_19	09	10 DO_19
DI_4	06	25 DO_4	DI_20	11	12 DO_20
DI_5	07	26 DO_5	DI_21	13	14 DO_21
DI_6	08	27 DO_6	DI_22	15	16 DO_22
DI_7	09	28 DO_7	DI_23	17	18 DO_23
DI_8	10	29 DO_8	DI_24	19	20 DO_24
DI_9	11	30 DO_9	DI_25	21	22 DO_25
DI_10	12	31 DO_10	DI_26	23	24 DO_26
DI_11	13	32 DO_11	DI_27	25	26 DO_27
DI_12	14	33 DO_12	DI_28	27	28 DO_28
DI_13	15	34 DO_13	DI_29	29	30 DO_29
DI_14	16	35 DO_14	DI_30	31	32 DO_30
DI_15	17	36 DO_15	DI_31	33	34 DO_31
ECOM0	18	37 DO_16	ECOM1	35	36 Ext. PWR1
IGND0	19	38 Ext. PWR0	IGND1	37	38 N/A
		39	N/A	39	40 N/A

### Features

- Universal PCI (3.3 V/5 V) Interface
- 32 Optically-isolated Digital Input Channels
- 32 Optically-isolated Digital Output Channels (Sink, NPN)
- Supports DO Status Readback (Register Level)
- 3750 Vrms Photo-isolation Protection
- Four Isolated Banks
- Built-in DC/DC Converter with 3000 VDC Isolation
- Supports Card ID (SMD Switch)



### Software

#### Drivers

- 32/64-bit Windows XP/2003/2008/7/8/10
- Linux
- DASyLab

#### 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

Model	PISO-P32C32U	PISO-P32C32U-5V
<b>Hardware</b>		
Card ID	Yes (4-bit) for Version 1.1 or above	
Connector	Female DB37 x 1 40-pin box header x 1	
<b>Digital Input</b>		
Channels	32	
Type	Photocoupler (Sink and Source)	
Response Speed	4 kHz (Typical)	
Trigger Mode	Static Update	
Wet Contact, ON Voltage Level	9 ~ 24 V (Min. 7 V; Max. 30 V)	5 ~ 12 V (Min. 3.5 V; Max. 16 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)	
<b>Digital Output</b>		
Channels	32	
Type	Sink (NPN), Open Collector	
Operation Mode	Static Update	
Max. Load Current	100 mA/+30 V for each channel @ 100% duty	
Response Speed	4 kHz (Typical)	
Isolation	3750 Vrms	
<b>PC Bus</b>		
Type	3.3 V/5 V Universal PCI, 32-bit, 33 MHz	
Data Bus	8-bit	
<b>Power</b>		
Consumption	600 mA @ +5 V	
<b>Mechanical</b>		
Dimensions (mm)	105 x 180 x 22 (W x L x D)	
<b>Environmental</b>		
Operating Temperature	0 ~ +60°C	
Storage Temperature	-20 ~ +70°C	
Humidity	5 ~ 85% RH, Non-condensing	

## Ordering Information

<b>PISO-P32C32U CR</b>	Universal PCI, 32-ch Optically Isolated Digital Input and 32-ch Open Collector Isolated Digital Output Board (Current Sinking, NPN) (RoHS) Includes one CA-4037B cable and two CA-4002 D-Sub connectors
<b>PISO-P32C32U-5V CR</b>	Universal PCI, 32-ch Optically Isolated Digital Input and 32-ch Open Collector Isolated Digital Output Board (Current Sinking, NPN) (RoHS) Includes one CA-4037B cable and two CA-4002 D-Sub connectors.

## 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-4037B	40-pin flat & D-sub 37-pin Female cable 24 cm.
	DB-16P16R	16-channel input terminal and 16-channel relay output board Include : CA-3710D Male- Male D-sub Cable 1.0 M
	DB-37	Directly connect signal to D-sub 37-pin connector
	DN-37	DIN Rail Mounting 37-pin Connector

