



## PISO-P32A32U/PISO-P32A32U-5V

Universal PCI, 32-ch Optical Isolated Digital Input and 32-ch Open Collector Isolated Digital Output Board (Current Source, PNP)

### Introduction

The PISO-P32A32U/P32A32-5V card features 32 optically-isolated Digital Input channels and 32 optically-isolated Digital Output channels, arranged into four isolated banks.

Each Digital Output channel includes a PNP transistor and an integral suppression diode for the inductive load. Isolated input channels 0 - 15 are allocated to Group A, while channels 16 - 31 are allocated to Group B. Isolated output channels are allocated to Groups C and D. The photocoupler input for the PISO-P32A32-5V can be powered by using either an internal current source or an external power supply, while the input for the PISO-P32A32U operates using an external power supply only.

The PISO-P32A32U/P32A32-5V cards also include 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.

The PISO-P32A32-5V uses lower input impedance that is suitable for 5 V signal applications, while the PISO-P32A32U 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 Ext. PWR0	ECOM1	35	36 Ext. PWR1
IGND0	19		IGND1	37	38 N/A
			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 (Source, PNP)
  - Supports DO Status Readback (Register Level)
- 3750 Vrms Photo-isolation Protection
- 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-P32A32U	PISO-P32A32U-5V
<b>Hardware</b>		
Card ID	Yes (4-bit) for Version 4.0 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	Source (PNP), Open Emitter	
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-P32A32U CR</b>	Universal PCI, 32-ch Optical Isolated Digital Input and 32-ch Open Collector Isolated Digital Output Board (Current Source, PNP) (RoHS) Includes one CA-4037B cable and two CA-4002 D-Sub connectors
<b>PISO-P32A32U-5V CR</b>	Universal PCI, 32-ch Optical Isolated Digital Input and 32-ch Open Collector Isolated Digital Output Board (Current Source, PNP) (RoHS) Includes one CA-4037B cable and two CA-4002 D-Sub connectors

## 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-4037B 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)

