

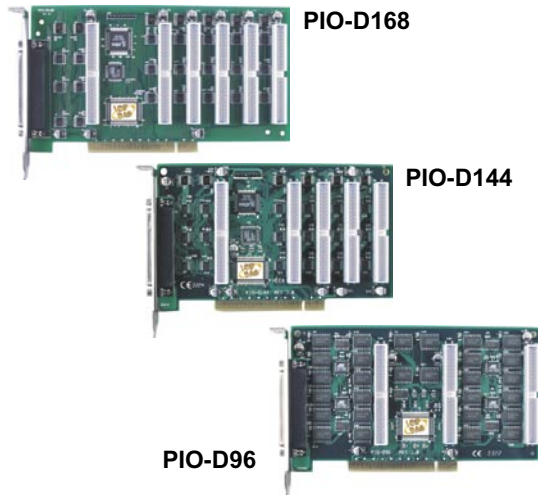
# Selection Guide

## PCI bus digital I/O board

Digital I/O Board		PIO-D168	PIO-D144	PIO-D96	PIO-D64	PIO-D56	PIO-D48	PIO-D24	PCI-TMC12A
Type		TTL Level							
Digital I/O Channel	Bi-direction Digital I/O	168	144	96	-	24	48	24	-
	D/I	-	-	-	32	16	-	-	16
	D/O	-	-	-	32	16	-	-	16
	Response Time	0.77 us (1.3 MHz max.)	0.77 us (1.3 MHz max.)	0.77 us (1.3 MHz max.)	0.77 us (1.3 MHz max.)	0.77 us (1.3 MHz max.)	0.77 us (1.3 MHz max.)	0.77 us (1.3 MHz max.)	-
Driving Capacity	Sink	64 mA	64 mA	64 mA	24 mA	64 mA	64 mA	64 mA	24 mA
	Source	32 mA	32 mA	32 mA	15 mA	32 mA	32 mA	32 mA	15 mA
Timer/Counter	Channel	-	-	-	4x16-bit 1x32-bit	-	1x16-bit 1x32-bit	-	2x16-bit
	Clock Source	-	-	-	4MHz	-	4MHz 32.768KHz	-	8M/1.6MHz 0.8M/80KHz
Connector	37-pin D-sub	1	1	1	-	1	1	1	1
	50-pin Header	6	5	3	-	-	1	-	-
	20-pin Header	-	-	-	5	2	-	-	2
Dimensions (mm)		200x105	180x105	180x105	156x110	143x105	156x105	143x105	150x105
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# PIO-D168/D144/D96

PCI bus 168/144/96-bit OPTO-22 compatible DIO board



### Features

- 32-bit +5V PCI Bus, Plug & Play
- 168/144/96-channel digital TTL/DTL I/O
- All I/O lines buffered on the board
- Emulate 7/6/4 industry standard 8255 PPI mode 0
- Direct interface with OPTO-22 compatible I/O modules
- High output driving capability
- Programmable direct-trigger interrupt source
- DIO response time is about 0.77 us (1.3 MHz max.)

### Functional Description

PIO-D168/D144/D96 are high density parallel digital I/O board equipped with 168/144/96-channel bi-direction I/O. The header connectors are fully compatible with industry OPTO-22 standard. The PIO-D168/D144/D96 emulate mode 0 of the industry standard 8255 programmable peripheral interface (PPI) chips. Each PPI offers three 8-bit ports, Port A, Port B and Port C. All groups are configured as inputs upon power-up or reset.

The flat cable can be connected to ADP-37/PCI or ADP-50/PCI adapter. The adapter can be fixed on the chassis. Refer to the above figure. It can be installed in a 5 V PCI bus and can support truly "Plug & Play."

### Applications

- Factory Automation
- Laboratory Automation
- Communication Switching
- Industrial Automation

### Specifications

- All inputs & outputs are TTL compatible
- Input Logic high voltage: 2.4V min
- Input Logic low voltage: 0.8V max
- Output sink current: 64 mA max
- Output source current: 32 mA max
- Programmable Interrupt source:
  - P2C0, P2C1, P2C2, P2C3 (PIO-D168, PIO-D144)
  - P2C0, P5C0, P8C0, P11C0 (PIO-D96)

### General Specifications

- I/O connector: one 37-pin D-Sub female
  - six 50-pin ribbon male (PIO-D168)
  - five 50-pin ribbon male (PIO-D144)
  - three 50-pin ribbon male (PIO-D96)
- Power requirements:

Device	PIO-D168	PIO-D144	PIO-D96
+5V	1300 mA	1100 mA	600 mA

- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 200 mm x 105 mm (PIO-D168)  
180 mm x 105 mm (PIO-D144/D96)

## PCI Digital I/O Board

# PIO-D48

PCI bus 48-bit OPTO-22 compatible DIO board



### Features

- 32-bit +5V PCI Bus, Plug & Play
- 48-channel digital TTL/DTL I/O
- All I/O lines buffered on the board
- Emulate 2 industry standard 8255 PPI mode 0
- Direct interface with OPTO-22 compatible I/O modules
- High output driving capability
- Programmable direct-trigger interrupt source
- On-board 8254 timer/counter chip
- Interrupt source: timer, event, direct trigger
- Pull-up or pull-down resistors on I/O lines
- DIO response time is about 0.77 us (1.3 MHz max.)

### Functional Description

The PIO-D48 provides 48 TTL digital I/O lines. The PIO-D48 consists of two 24-bit bi-direction ports. Each 24-bit port supports three of 8-bit groups (A, B, C) and the port C can be divided into 2 nibble\_wide (4-bit) ports. Each 8-bit group can be configured to function as either inputs or latched outputs. All groups are configured as inputs upon power-up or reset. Outputs of the I/O buffers are pulled up through 10K resistors to +5VDC. Outputs can be changed to pull-down by jumper selection on the board. This pull-up / pull-down mechanism assures that there are no erroneous outputs at power-up until the board is initialized by application software.

The PIO-D48 has one D-sub connector and one 50-pin flat-cable header. The header can be connected to a 50-pin flat-cable. The flat-cable can be connected to ADP-37 / PCI or ADP-50 / PCI adapters. The adapter can be fixed on the chassis. It can be installed in a 5 V PCI bus and can support truly "Plug & Play".

### Applications

- Factory Automation
- Laboratory Automation
- Communication Switching
- Industrial Automation

### Specifications

- All inputs & outputs are TTL compatible
- Input logic high voltage: 2.4V min
- Input logic low voltage: 0.8V max
- Output sink current: 64 mA max
- Output source current: 32 mA max
- Programmable interrupt source: P2C3, P2C7, P5C3, P5C7 (PIO-D48)

### General Specifications

- I/O connector: one 37-pin D-Sub female  
one 50-pin ribbon male
- Power requirements: +5V / 500 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 156 mm x 105 mm

# PIO-D168/D144/D96/D48

PCI bus 168/144/96/48-bit OPTO-22 compatible DIO board

## Pin Assignment

**CN1**

PA_0	37	○	19	GND
PA_1	36	○	18	Vcc
PA_2	35	○	17	GND
PA_3	34	○	16	N.C.
PA_4	33	○	15	GND
PA_5	32	○	14	N.C.
PA_6	31	○	13	GND
PA_7	30	○	12	N.C.
PC_0	29	○	11	GND
PC_1	28	○	10	PB_0
PC_2	27	○	9	PB_1
PC_3	26	○	8	PB_2
PC_4	25	○	7	PB_3
PC_5	24	○	6	PB_4
PC_6	23	○	5	PB_5
PC_7	22	○	4	PB_6
GND	21	○	3	PB_7
Vcc	20	○	2	N.C.
		○	1	N.C.

## CN2, CN3, CN4, CN5, CN6 & CN7

GND	50	○	49	Vcc
GND	48	○	47	PA_0
GND	46	○	45	PA_1
GND	44	○	43	PA_2
GND	42	○	41	PA_3
GND	40	○	39	PA_4
GND	38	○	37	PA_5
GND	36	○	35	PA_6
GND	34	○	33	PA_7
GND	32	○	31	PB_0
GND	30	○	29	PB_1
GND	28	○	27	PB_2
GND	26	○	25	PB_3
GND	24	○	23	PB_4
GND	22	○	21	PB_5
GND	20	○	19	PB_6
GND	18	○	17	PB_7
GND	16	○	15	PC_0
GND	14	○	13	PC_1
GND	12	○	11	PC_2
GND	10	○	9	PC_3
GND	8	○	7	PC_4
GND	6	○	5	PC_5
GND	4	○	3	PC_6
GND	2	○	1	PC_7

## Ordering Information

### Standard

- PIO-D168:** PCI bus 168-bit OPTO-22 DIO board
- PIO-D144:** PCI bus 144-bit OPTO-22 DIO board
- PIO-D96:** PCI bus 96-bit OPTO-22 DIO board
- PIO-D48:** PCI bus 48-bit OPTO-22 DIO board

### Optional

- DB-24PD:** 24-channel isolated D/I board
- DB-24RD:** 24-channel relay board
- DB-24PRD:** 24-channel power relay board
- DB-16P8R:** 16-channel isolated D/I and 8-channel relay output board
- DB-24POR:** 24-channel PhotoMos relay output board
- DB-24SSR:** 24-channel solid state relay output board
- DB-24C:** 24-channel open-collector output board
- DB-24OD:** 24-channel open-drain output board
- DN-37:** DIN-rail mounting terminal board
- DN-50:** DIN-rail mounting terminal board
- ADP-37/PCI:** 50-pin OPTO-22 ports to DB-37 adapter
- ADP-50/PCI:** 50-pin extender

## PCI Digital I/O Board

# PIO-D64

PCI bus 64-bit DIO board with timer/counter



### Features

- 32-bit +5V PCI bus, Plug & Play
- 32-channel digital input
- 32-channel digital output
- 3 independent programmable 16-bit down counters
- Four clock sources: 2M, 1M, 500K, 250KHz
- Three frequency divider: 100,10,1
- One 16-bit counter, one 32-bit timer with a 4 MHz for interface function
- Interrupt source: timer, event and direct trigger
- One breadboard area for add-on circuitry
- DIO response time is about 0.77 us (1.3 MHz max.)

### Functional Description

The PIO-D64 provides 32-channel digital input, 32-channel output and 6-channel counter/timer. The user can use the DB-16P to connect the input ports (CN2, CN4) for isolation purpose, or use DB-16R to interface to the output ports (CN1, CN3) for relay control. The first 8254 chip is used as general purpose timer/counter, such as frequency measurement, event counting and pulse generation. The second 8254 chip is used to generate interrupt trigger signal. The Counter 3 accept event signal and it will generate trigger signal of interrupt. The Counter 4 and Counter 5 are cascaded together. The clock source is 4MHz. It is used to generate pacer timer trigger for interrupt.

### Applications

- Factory automation
- Laboratory automation
- Communication switching
- Industrial automation

### Specifications

#### Digital I/O

- All outputs and inputs are TTL Compatible
- Input logic high voltage: 2.4V min
- Input logic low voltage: 0.8V max
- Input load current: -0.45 mA min/ +70 μ A
- Output sink current: +24 mA max
- Output source current: -15 mA max

#### General Specifications

- I/O connector: five 20-pin ribbon male
- Power consumption: +5V/580 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 156 mm x 110 mm

### Pin Assignment

CN1/CN3				CN2/CN4					
DO 0	1	○ ○	2	DO 1	DI 0	1	○ ○	2	DI 1
DO 2	3	○ ○	4	DO 3	DI 2	3	○ ○	4	DI 3
DO 4	5	○ ○	6	DO 5	DI 4	5	○ ○	6	DI 5
DO 6	7	○ ○	8	DO 7	DI 6	7	○ ○	8	DI 7
DO 8	9	○ ○	10	DO 9	DI 8	9	○ ○	10	DI 9
DO 10	11	○ ○	12	DO 11	DI 10	11	○ ○	12	DI 11
DO 12	13	○ ○	14	DO 13	DI 12	13	○ ○	14	DI 13
DO 14	15	○ ○	16	DO 15	DI 14	15	○ ○	16	DI 15
GND	17	○ ○	18	GND	DI 17	17	○ ○	18	GND
+5V	19	○ ○	20	+12V	+5V	19	○ ○	20	STROBE

CN5				
CLK2	1	○ ○	2	CLK1
OUT2	3	○ ○	4	OUT1
GATE2	5	○ ○	6	GATE1
CLK3	7	○ ○	8	GLK0
OUT3	9	○ ○	10	OUT0
GATE3	11	○ ○	12	GATE0
GATE4	13	○ ○	14	CLK4
X	15	○ ○	16	OUT4
GND	17	○ ○	18	GND
+5V	19	○ ○	20	X

### Ordering Information

#### Standard

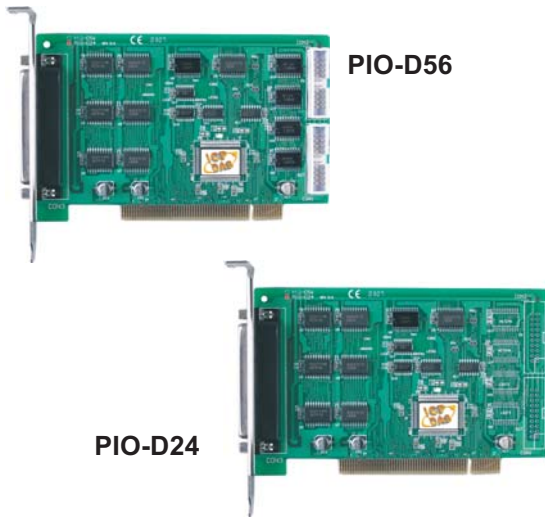
**PIO-D64:** PCI bus 64-bit DIO board with timer/counter

#### Optional

**DB-16P:** 16-channel OPTO-isolated input board  
**DB-26R:** 16-channel relay terminal board  
**DB-24PR:** 24-channel power relay board  
**DB-24POR:** 24-channel PhotoMOS relay board  
**DB-24C:** 24-channel open-collector output board  
**DB-24OD:** 24-channel open-drain output board  
**DB-8025:** General screw terminal board  
**DN-20:** DIN-rail mounting terminal board  
**ADP-20/PCI:** 20-pin extender

# PIO-D56/D24

PCI bus 56/24-bit DIO board



PIO-D56

PIO-D24

## Functional Description

The PIO-D56/D24 consists of one 24-bit port, one 16-bit input port and one 16-bit output port (only for PIO-D56). The 24-bit port emulate mode 0 of the industry standard 8255 programmable peripheral interface (PPI) chip. Each PPI offers three 8-bit ports, Port A, Port B and Port C. The 24-bit bi-directional ports are configured as inputs upon power-up or reset.

## Applications

- Factory automation
- Laboratory automation
- Communication switching
- Industrial automation

## Specifications

### Digital Input

- All inputs are TTL compatible
- Logic high voltage: 2.4V min
- Logic low voltage: 0.8V max

### Digital Output

- All outputs are TTL compatible
- OPTO-22 output (CON3)
  - Sink current: 64 mA max
  - Source current: 32 mA max
- 16-channel output (CN1)
  - Sink current: 8 mA max
  - Source current: 0.4 mA max

### General Specifications

- I/O connector: one D-sub 37-pin female  
two 20-pin ribbon male (PIO-D56)
- Power requirements: +5V@580 mA (PIO-D56)  
+5V@420 mA (PIO-D24)
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 143 mm x 105 mm

## Features

- 32-bit +5V PCI bus, Plug & Play
- 56-bit digital I/O (PIO-D56)
- 24-bit digital I/O (PIO-D24)
- High driving capability
- Four interrupt sources: PC0, PC1, PC2, PC3
- DIO response time is about 0.77 us (1.3 MHz max.)

## Pin Assignment

CON3		CON1	
PA_0	37	19	GND
PA_1	36	18	Vcc
PA_2	35	17	GND
PA_3	34	16	N.C.
PA_4	33	15	GND
PA_5	32	14	N.C.
PA_6	31	13	GND
PA_7	30	12	N.C.
PC_0	29	11	GND
PC_1	28	10	PB_0
PC_2	27	9	PB_1
PC_3	26	8	PB_2
PC_4	25	7	PB_3
PC_5	24	6	PB_4
PC_6	23	5	PB_5
PC_7	22	4	PB_6
GND	21	3	PB_7
Vcc	20	2	N.C.
		1	N.C.

CON2	
DI0	1
DI2	3
DI4	5
DI6	7
DI8	9
DI10	11
DI12	13
DI14	15
GND	17
+5V	19

2	DI1
4	DI3
6	DI5
8	DI7
10	DI9
12	DI11
14	DI13
16	DI15
18	GND
20	+12V

DO0	1
DO2	3
DO4	5
DO6	7
DO8	9
DO10	11
DO12	13
DO14	15
GND	17
+5V	19

2	DO1
4	DO3
6	DO5
8	DO7
10	DO9
12	DO11
14	DO13
16	DO15
18	GND
20	+12V

## Ordering Information

### Standard

- PIO-D56:** PCI bus 56-bit DIO board
- PIO-D24:** PCI bus 24-bit DIO board

### Optional

- DB-24PD:** 24-channel isolated D/I board
- DB-24RD:** 24-channel relay board
- DB-24PRD:** 24-channel power relay board
- DB-16P8R:** 16-channel isolated D/I and 8-channel relay output board
- DB-24POR:** 24-channel PhotoMOS relay output board
- DB-24SSR:** 24-channel solid state relay output board
- DB-24C:** 24-channel open-collector output board
- DB-24OD:** 24-channel open-drain output board
- DB-16P:** 16-channel OPTO-isolated digital input board
- DB-16R:** 16-channel relay output board
- DN-20:** 2x20 pin header DIN-rail mounting terminal board
- DN-37:** 2x37 pin header DIN-rail mounting terminal board
- ADP-20/PCI:** 20-pin extender

## PCI Timer/Counter Board

# PCI-TMC12A

PCI bus 12-channel timer/counter board



### Features

- On-board four 8254 timer/counter chips
- 12 independent 16-bit timer/counter
- 12 external clock input
- 12 external gate control input
- 12 timer/counter output
- All Signal are TTL compatible
- 16-bit timer/counter can be cascaded to 32/48-bit
- Gate input can be from external or previous timer/counter output
- 4 internal interrupt source: COUT3, COUT6, COUT9, COUT12
- 2 internal clock source: 8M/1.6M, 0.8M/80K
- 16-channel D/I; 16-channel D/O

### Functional Description

The PCI-TMC12A is a PCI bus general purpose timer/counter and digital I/O board. It provides twelve channels of 16-bit Timer/Counter. Two internal clock sources (8M/1.6M and 0.8M/80K) are selected by jumper.

### Applications

- Event Counting
- Wave Generator
- Frequency Measurement
- Pulse Width Measurement
- Time-delay generation

### Comparison

	TMC-10	PCI-TMC12A
8254	4	same
16-DI	No	Yes
16-DO	No	Yes
16-bit Time/Counter	8	12
32-bit Time/Counter	2	0 (can be cascaded)
Internal clock source	2	Same
External clock source	8	12
flexible	flexible	More flexible

### Specifications

#### Digital I/O

- All input & output are TTL compatible
- Input logic high voltage: 2.0V min / 5.0V max
- Input logic low voltage: -0.5V min / 0.8V max
- Output sink current: +24 mA max
- Output source current: -15 mA max

#### General Specifications

- I/O connector: one 37-pin D-Sub female  
two 20-pin ribbon male
- Power requirements: +5V@500 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 150 mm x 105 mm

### Pin Assignment

CN1				CN2							
DO 0	1	○	2	DO 1	1	○	2	DI 1	1	○	2
DO 2	3	○	4	DO 3	3	○	4	DI 3	3	○	4
DO 4	5	○	6	DO 5	5	○	6	DI 5	5	○	6
DO 6	7	○	8	DO 7	7	○	8	DI 7	7	○	8
DO 8	9	○	10	DO 9	9	○	10	DI 9	9	○	10
DO 10	11	○	12	DO 11	11	○	12	DI 11	11	○	12
DO 12	13	○	14	DO 13	13	○	14	DI 13	13	○	14
DO 14	15	○	16	DO 15	15	○	16	DI 15	15	○	16
GND	17	○	18	GND	17	○	18	GND	17	○	18
+5V	19	○	20	+12V	19	○	20	+12V	19	○	20

#### CN3

ECLK1	1	○	20	EXTG1
COUT1	2	○	21	ECLK2
EXTG2	3	○	22	COUT2
ECLK3	4	○	23	EXTG3
COUT3	5	○	24	ECLK4
EXTG4	6	○	25	COUT4
ECLK5	7	○	26	EXTG5
COUT5	8	○	27	ECLK6
EXTG6	9	○	28	COUT6
ECLK7	10	○	29	EXTG7
COUT7	11	○	30	ECLK8
EXTG8	12	○	31	COUT8
ECLK9	13	○	32	EXTG9
COUT9	14	○	33	ECLK10
EXTG10	15	○	34	COUT10
ECLK11	16	○	35	EXTG11
COUT11	17	○	36	ECLK12
EXTG12	18	○	37	COUT12
GND.	19	○		

### Ordering Information

#### Standard

**PCI-TMC12A:** 12-channel timer/counter board

#### Optional

- DN-37:** 2x37-pin connector DIN-rail mounting terminal board
- DB-37:** 37-pin D-sub directly connector terminal board
- DN-20:** 2x20-pin header DIN-rail terminal board
- DB-16P:** 16-channel isolated D/I board
- DB-16R:** 16-channel relay board
- ADP-20/PCI:** 20-pin extender

# Selection Guide

## PCI bus isolated digital I/O board

Isolated Digital I/O Board		PCI-P16R16	PCI-P8R8	PCI-P16C16	PCI-P16POR16	PISO-P16R16U	PISO-P8R8	PISO-P8SSR8DC/AC	PISO-725	
Digital Output	Type	Relay	Relay	Open-Collector	PhotoMos Relay	Relay	Relay	DC/AC-Type Solid-state Relay	Relay	
	Channel	Total	16	8	16	16	16	8	8	8
		Contact Type	8xFormC 8xFormA	4xFormC 4xFormA	16xNPN	16xFormA	8xFormC 8xFormA	8xFormA	8xFormA	8xFormC
	Output Rating	DC	1A/24V		400mA/30V	130mA/250V	1A/24V	5A/30V	1A/30V	1A/30V
AC		0.5A/120V		-	130mA/350V (Peak AC)	0.5A/120V	5A/250V	24~265Vrms /1.0Arms	0.3A/120V	
Digital Input	Type	Optical-isolated								
	Channel	16	8	16	16	16	8	8	8	
	Isolation	5,000 V	5,000 V	5,000 V	5,000 V	3,750 V	5,000 V	5,000 V	3,750 V	
	Input Impedance	1.2K $\Omega$								
	Input Voltage	DC	5~24V							
AC		3.5~30V(50~1KHz)								
Connector	37-pin D-sub	2	1	2	2	2	1	1	1	
Dimensions (mm)		180 x105	180 x105	180 x105	180 x105	180 x105	146 x105	146 x105	146 x105	
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Isolated Digital I/O Board		PISO-P32A32	PISO-P32C32	PISO-P64	PISO-A64	PISO-C64	PISO-730	PISO-730A	
Digital Output	Type	Open-Collector (PNP)	Open-Collector (NPN)	-	Open-Collector (PNP)	Open-Collector (NPN)	Open-Collector (NPN)	Open-Collector (PNP)	
	Channel	32	32	-	64	64	16	16	
	Output Rating	DC	100mA/30V	100mA/30V	-	100mA/30V	100mA/30V	100mA/30V	100mA/30V
		AC	-	-	-	-	-	-	-
Non-Isolated D/O (TTL Level)		-	-	-	-	-	16	16	
Digital Input	Type	Optical-isolated							
	Channel	32	32	64	-	-	16	16	
	Isolation	3,750 V	3,750 V	3,750V	-	-	2,500 V	3,750 V	
	Input Impedance	3K $\Omega$	3K $\Omega$	3K $\Omega$	-	-	3K $\Omega$	3K $\Omega$	
	Input Voltage (DC)	5~30V	5~30V	5~30V	-	-	5~30V	5~30V	
	Building DC/DC Converter	2x150mA/5VDC	2x150mA/5VDC	2x150mA/5VDC	-	-	150mA/5VDC	150mA/5VDC	
Non-Isolated D/I (TTL Level)		-	-	-	-	-	16	16	
Connector	37-pin D-Sub	2	2	2	2	2	1	1	
	20-pin header	-	-	-	-	-	2	2	
Dimensions (mm)		180x105	180x105	180x105	180x105	180x105	170x105	170x105	
Page		2-28	2-28	2-28	2-28	2-28	2-31	2-31	

\*Note : Contact arrangement : "Form A" Common and Normal Open; "Form C" Common, Normal open and Normal Close



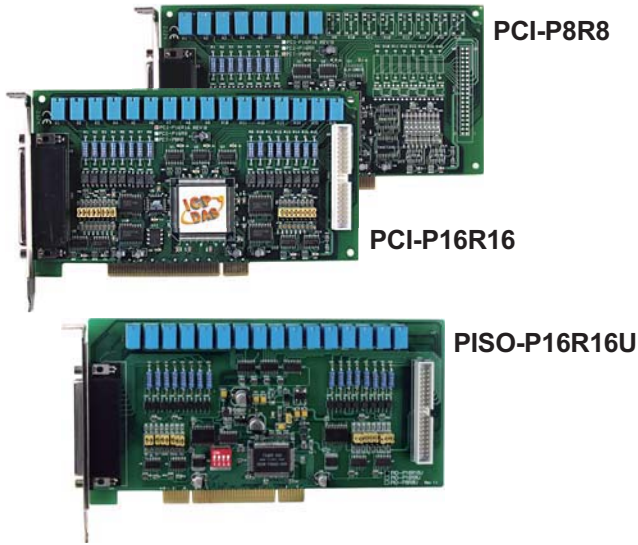
## PCI Relay Output Board

### PCI-P8R8/P16R16

8/16-channel isolated input & 8/16-channel relay output board

### PISO-P16R16U

Universal PCI, 16-channel isolated digital input, 16-channel relay output board



### Features

- 32-bit +5V PCI Bus (PCI-P8R8, PCI-P16R16)
- 32-bit +5V and +3.3V PCI bus (PISO-P16R16U)
- 8/16-channel electromechanical relay output
- 8/16-channel optically isolated digital input
- AC/DC signal input
- AC signal input with filter
- On-board LED indication for relay status
- On-board CardID dip-switch (PISO-P16R16U)

### Functional Description

The PCI-P8R8 provides 8-channel electromechanical relay output and 8-channel optically isolated input. The PCI-P8R8 can be used in various applications including load switching, external switching, contact closure and others. The PCI-P16R16 has one of 37-pin D-Sub & one of 40-pin header connectors and the function is equal to two PCI-P8R8.

The PISO-P16R16U is a universal PCI version of the PCI-P16R16 card, it can be installed in a 5V or 3.3V PCI bus.

### Applications

- Factory Automation
- Laboratory Automation
- Communication Switching

### Specifications

#### Isolated Digital Input

- Channels: 8 (PCI-P8R8); 16 (PCI-P16R16, PISO-P16R16U)
- Type: non-polarized OPTO-Isolated
- Isolated voltage: 5,000V (PCI-P8R8, PCI-P16R16)  
3,750V (PISO-P16R16U)
- Photo-coupler: PC-814 (PCI-P8R8/P16R16);  
PC-354 (PISO-P16R16U)
- Input current: 20 mA max (24V)
- Input voltage: AC/DC 5-24V (AC 50~1KHz)
- Input impedance: 1.2K $\Omega$  / 1W
- Withstanding voltage: 1KV
- Response time: 20  $\mu$  S (without filter), 2.2ms (with filter)

#### Relay Output

- Channels: 8 (PCI-P8R8); 16 (PCI-P16R16, PISO-P16R16U)
- Contact rating: 120VAC@0.5A; 24VDC@1.0A
- Breakdown voltage: 1KV
- Operating Time: 5ms (PCI-P8R8/P16R16)  
Typical 1 ms (PISO-P16R16U)
- Release time: 2ms (PCI-P8R8/P16R16)  
Typical 7 ms (PISO-P16R16U)
- Insulation resistance: 1,000 M $\Omega$
- Life: mechanical (5 millions) ; electrical (1 millions)
- Switching power: 60VA, 24W

### General Specifications

- I/O connector:  
One 37-pin D-Sub female (PCI-P8R8)  
One 37-pin D-Sub & one 40-pin header (PCI-P16R16, PISO-P16R16U)
- Power requirements:

Device	PCI-P8R8	PCI-P16R16
+5V	500 mA	800 mA

- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 180 mm x 105 mm

### Pin Assignment

NO_0	1	○	20	NO_3
COM_0	2	○	21	COM_3
NC_0	3	○	22	NC_3
NO_1	4	○	23	NO_4
COM_1	5	○	24	COM_4
NC_1	6	○	25	NO_5
NO_2	7	○	26	COM_5
COM_2	8	○	27	NO_6
NC_2	9	○	28	COM_6
NO_7	10	○	29	GND
COM_7	11	○	30	DIL_0
DIH_0	12	○	31	DIL_1
DIH_1	13	○	32	DIL_2
DIH_2	14	○	33	DIL_3
DIH_3	15	○	34	DIL_4
DIH_4	16	○	35	DIL_5
DIH_5	17	○	36	DIL_6
DIH_6	18	○	37	DIL_7
DIH_7	19	○		

### Ordering Information

#### Standard

- PCI-P8R8:** 8-channel isolated digital Input & 8-channel relay output board
- PCI-P16R16:** 16-channel isolated digital Input & 16-channel relay output board
- PISO-P16R16U:** Universal PCI, 16-channel isolated digital input & 16-channel relay output board

#### Optional

- DN-37:** DIN-rail mounting terminal board
- DB-37:** Directly connection terminal board

# PCI-P16C16

16-channel isolated digital input & 16-channel open-collector output board



## Features

- 32-bit +5V PCI Bus, Plug & Play
- 16-channel open-collector output
- 16-channel optical isolated digital input
- AC/DC signal input
- AC signal input with filter
- On-board LED indication for external power status

2 PCI Bus I/O Boards

## Functional Description

The PCI-P16C16 provides 16-channel optically isolated input and 16-channel open-collector output. The PCI-P16C16 has one 37-pin D-sub connector and one 40-pin header. The 40-pin to DB-37 flat-cable can be fixed on the case wall.

## Applications

- Factory Automation
- Laboratory Automation
- Communication Switching
- Industrial Automation

## Specifications

### Isolated Digital Input

- Number of channels: 16
- Type: non-polarized OPTO-Isolated
- Isolated voltage: 5000V
- Photo-coupler: PC-814
- Input current: 20 mA max (24V)
- Input voltage: AC/DC 5-24V (AC 50~1KHz)
- Input impedance: 1.2K $\Omega$  / 1W
- Withstanding voltage: 1KV
- Response time: 20  $\mu$  S (without filter)  
2.2mS (with filter)

### Isolated Digital Output

- Number of channels: 16
- Type: open collector Darlington transistor
- Sink current: 400 mA/channel
- External power: 30V max
- Response time: 30KHz max

## General Specifications

- I/O connector:  
one 37-pin D-Sub & one 40-pin header
- Power requirements: +5V @ 320 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 180 mm x 105 mm

## Pin Assignment

OUT_0	1		20	Ext.Power 1
OUT_1	2		21	Ext.Power 1
OUT_2	3		22	GND 1
OUT_3	4		23	GND 1
OUT_4	5		24	Ext.Power 2
OUT_5	6		25	Ext.Power 2
OUT_6	7		26	GND 2
OUT_7	8		27	GND 2
	9		28	
	10		29	
	11		30	DIB_0
DIA_0	12		31	DIB_1
DIA_1	13		32	DIB_2
DIA_2	14		33	DIB_3
DIA_3	15		34	DIB_4
DIA_4	16		35	DIB_5
DIA_5	17		36	DIB_6
DIA_6	18		37	DIB_7
DIA_7	19			

## Ordering Information

### Standard

**PCI-P16C16:** 16-channel isolated digital input & 16-channel open-collector output board

### Optional

**DN-37:** 2x37-pin connector DIN-rail mounting terminal board

**DB-37:** 37-pin D-sub directly connector terminal board

## PCI Relay Output Board

# PCI-P16POR16

16-channel isolated digital input & 16-channel PhotoMOS relay output board



### Features

- 32-bit +5V PCI Bus , Plug & Play
- 16-channel PhotoMOS relay output
- 16-channel optical isolated digital input
- AC/DC signal input
- AC signal input with filter
- On-board LED indication for output status

### Functional Description

The PCI-P16POR16 provides 16-channel optically isolated input and 16-channel PhotoMOS relay output. The PCI-P16POR16 has one 37-pin D-Sub connector and one 40-pin header. The 40-pin to DB-37 flat-cable can be fixed on the case wall.

### Applications

- Factory automation
- Laboratory automation
- Communication switching
- Industrial automation

### Specifications

#### 16 Isolated Digital Input

- Type: non-polarized OPTO-Isolated
- Isolated voltage: 5000V
- Photo-coupler: PC-814
- Input current: 20 mA max (24V)
- Input voltage: AC/DC 5-24V (AC 50~1KHz)
- Input impedance: 1.2K $\Omega$  / 1W
- Withstanding voltage: 1KV
- Response time: 20  $\mu$  S (without filter)  
2.2mS (with filter)

#### 16 Isolated Digital Output

- Type: PhotoMOS relay
- Turn on time: Ton =0.7ms (typical)
- Turn off time: Toff=0.05ms (typical)
- Output: on resistance =23 $\Omega$  (typical)
- Load voltage: 350V (Peak AC)
- Continuous load current: 0.13A
- Peak load current: 0.3A
- Maximum switching power: 300mW
- Output off-state leakage current: 1  $\mu$  A max
- Input/Output isolation: 5000 V (AC Switching)

### General Specifications

- I/O connector: one 37-pin D-sub and one 40-pin header
- Power requirements: +5V@320 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 180 mm x 105 mm

### Pin Assignment

NO_0	1	○	20	COM_0
NO_1	2	○	21	COM_1
NO_2	3	○	22	COM_2
NO_3	4	○	23	COM_3
NO_4	5	○	24	COM_4
NO_5	6	○	25	COM_5
NC_6	7	○	26	COM_6
NO_7	8	○	27	COM_7
	9	○	28	
	10	○	29	GND
	11	○	30	DIL_0
DIH_0	12	○	31	DIL_1
DIH_1	13	○	32	DIL_2
DIH_2	14	○	33	DIL_3
DIH_3	15	○	34	DIL_4
DIH_4	16	○	35	DIL_5
DIH_5	17	○	36	DIL_6
DIH_6	18	○	37	DIL_7
DIH_7	19	○		

### Ordering Information

#### Standard

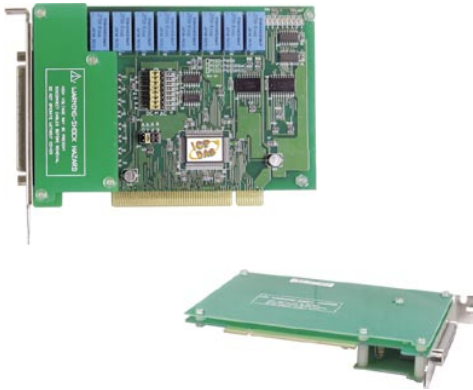
**PCI-P16POR16:** 16-channel isolated digital input & 16-channel PhotoMOS output board

#### Optional

**DN-37:** DIN-rail mounting terminal board  
**DB-37:** Direct connection terminal board

# PISO-P8R8/P8SSR8AC/P8SSR8DC

8-channel isolated digital input & 8-channel relay output board



PISO-P8R8

## Features

- 32-bit +5V PCI Bus, Plug & Play
- 8-channel electromechanical relay output (PISO-P8R8)
- 8-channel AC type solid state relay output (PISO-P8SSR8AC)
- 8-channel DC type solid state relay output (PISO-P8SSR8DC)
- 8-channel optical isolated digital input
- AC/DC signal input
- AC signal input with filter
- On-board LED indicate relay output status

## Functional Description

The PISO-P8R8/P8SSR8AC/P8SSR8DC are isolated input/output interface boards for the PCI-Bus computers. The PISO-P8R8 provides 8-channel electromechanical relay output and 8-channel optically isolated input, while PISO-P8SSR8AC and PISO-P8SSR8DC provide 8-channel solid state relay output and 8-channel optically isolated input. The PISO-P8R8, PISO-P8SSR8AC and PISO-P8SSR8DC can be used in various applications including contact closure, external-voltage sensing, external-switch sensing and loading switching and designed for control and sensing applications.

## Applications

- Factory automation
- Laboratory automation
- Communication switching
- Industrial automation

## Specifications

### Isolated Digital Input

- Number of channels: 8
- Type: non-polarized OPTO-Isolated
- Isolated voltage: 5000V
- Photo-coupler: PC-814
- Input current: 20 mA max (24V)
- Input voltage: AC/DC 5~24V (AC 50~1KHz)
- Input impedance: 1.2K $\Omega$ /1W
- Withstanding voltage: 1KV
- Response time: 20  $\mu$  S (without filter); 2.2mS (with filter)

### Relay Output (PISO-P8R8)

- Number of channels: 8
- Output type: SPST (Form A)
- Contact rating:
  - 250VAC @ 1.6A, 120 VAC @ 1A
  - 30VDC @ 1A
- Surge Strength : 4000 VAC
- Relay on time: max 6 ms
- Relay off time: max 3 ms
- Insulation resistance: 1,000 M $\Omega$  @ 500VDC min
- Life: Mechanical: 20 x 10<sup>6</sup> ops.  
Electrical: 100 x 10<sup>3</sup> ops.

### AC-Type SSR Output (PISO-P8SSR8AC)

- Number of channels: 8
- Relay type: SPST (Form A)
- Contact rating: AC: 24 ~ 265 Vrms @ 1.0Arms
- Max. load current: 1.0Arms
- Min. load current: 10mArms
- Max. off-state leakage current:
  - 0.75mA (at 100Vrms 60Hz )
  - 1.5mA ( at 200Vrms 60 Hz )
- 1 cycle surge current: 50A@60Hz
- Max. off-state voltage drop: 1.2Vrms
- Max. operate time: 1 ms
- Max. release time: 1/2 cycle + 1 ms
- Insulation resistance: 1,000 M $\Omega$  @500VDC min
- Life: long life, maintenance free

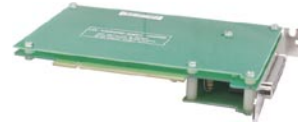
## PCI Relay Output Board

# PISO-P8R8/P8SSR8AC/P8SSR8DC

8-channel isolated digital input & 8-channel relay output board



**PISO-P8SSR8AC**



**PISO-P8SSR8DC**

### DC-Type SSR Output (PISO-P8SSR8DC)

- Number of channels: 8
- Relay type: SPST (Form A)
- Contact rating: 3~30VDC@1A
- Max. load current: 1.0 A
- Min. load current: 1 mA
- Max. off-state leakage current: 0.1 mA ( at 30 VDC )
- 1 cycle surge current: 3A (10ms )
- Max. off-state voltage drop: 1.2V
- Max. operate time: 1 ms
- Max. release time: 1 ms
- Insulation resistance: 1,000 MΩ@500VDC min
- Life: long life, maintenance free

### General Specifications

- I/O connector: one 37-pin D-sub female
- Power requirements: +5V@300 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 180 mm x 105 mm

### Pin Assignment

NO_0	1	○	20	NO_3
COM_0	2	○	21	COM_3
	3	○	22	
NO_1	4	○	23	NO_4
COM_1	5	○	24	COM_4
	6	○	25	NO_5
NO_2	7	○	26	COM_5
COM_2	8	○	27	NO_6
	9	○	28	COM_6
NO_7	10	○	29	
COM_7	11	○	30	DIB_0
DIA_0	12	○	31	DIB_1
DIA_1	13	○	32	DIB_2
DIA_2	14	○	33	DIB_3
DIA_3	15	○	34	DIB_4
DIA_4	16	○	35	DIB_5
DIA_5	17	○	36	DIB_6
DIA_6	18	○	37	DIB_7
DIA_7	19	○		

### Ordering Information

#### Standard

- PISO-P8R8:** 8-channel isolated digital input & 8-channel relay output board
- PISO-P8SSR8AC:** 8-channel isolated digital input & 8-channel AC-type solid state relay output board
- PISO-P8SSR8DC:** 8-channel isolated digital input & 8-channel DC-type solid state relay output board

#### Optional

- DN-37:** 2x37-pin connector DIN-rail mounting terminal board
- DB-37:** 37-pin D-sub directly connector terminal board

# PISO-P32A32/P32C32/P64/A64/C64

64-channel isolated digital I/O board



PISO-P32A32

## Functional Description

The PISO-P32A32/P32C32/P64/A64/C64 provide 64 optically isolated digital input and/or output channel, arranged into four isolated banks. Each input channel use a photo-coupler input which allows either internal isolated power supply or external power selected by jumper. Each digital output offers a PNP transistor (PISO-P32A32/A64) or Darlington transistor (PISO-P32C32/C64) and integral suppression diode for inductive load. The power supply of the input port may use the external power or the power from the PC side using DC/DC converter. The power supply of the output port should use the external power. This interface board is easily installed in any PC. The board interface to field logic signals, eliminating ground-loop problems and isolating the host computer from damaging voltages. The PISO-P32A32, PISO-P32C32, PISO-P64, PISO-A64 and PISO-C64 has one 37-pin D-Sub connector and one 40-pin male header. The 40-pin to DB-37 flat-cable is used to fix with the case.

The user can use the DB-16P16R to connect the input ports (CON1) of the PISO-P32C32 for relay output.

Also use the DB-32R to connect the input ports (CON1) of the PISO-C64 for relay output.

## Applications

- Factory Automation
- Product Test
- Laboratory Automation

## Specifications

### Isolated Digital Input

- Number of channels:
  - 32 (PISO-P32A32, PISO-P32C32)
  - 64 (PISO-P64)
- Type: Isolated current input
- Isolation voltage:
  - 3750V (Using external power)
  - 3000V (Using internal power)
- Input voltage: 5V to 30V
- Input impedance: 3KΩ /1/4W
- Response time: 4KHz max

## Features

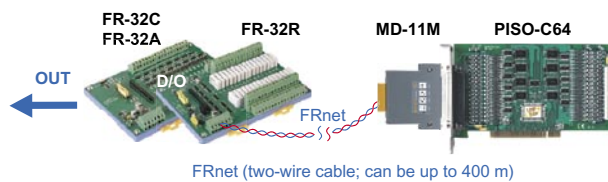
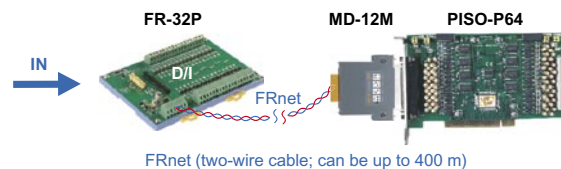
- 32-bit +5V PCI Bus, Plug & Play
- 32-channel isolated digital input & 32-channel isolated digital output (PISO-P32A32, PISO-P32C32)
- 64-channel isolated digital input (PISO-P64)
- 64-channel isolated digital output (PISO-A64, PISO-C64)
- Sink current output (PISO-P32C32, PISO-C64)
- Source current output (PISO-P32A32, PISO-A64)
- 3000VDC isolated voltage

## Isolated Digital Output

- Number of channels:
  - 32 (PISO-P32A32, PISO-P32C32)
  - 64 (PISO-P64, PISO-A64, PISO-C64)
- Type: isolated open collector
- Sink current:
  - 100 mA/channel (PISO-P32C32, PISO-C64)
- Source current:
  - 100 mA/channel (PISO-P32A32, PISO-A64)
- External voltage: 30V max
- Response time: 30KHz max

## General Specifications

- I/O connector: one 37-pin D-sub female  
one 40-pin ribbon male
- Power requirements (typical):
  - +5V@ 600 mA (PISO-P32A32, PISO-P32C32)
  - +5V@ 400 mA (PISO-P64)
  - +5V@ 800 mA (PISO-A64, PISO-C64)
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 80°C
- Dimensions: 180 mm x 105 mm



Please refer to page 8-7 MagicWire and FR I/O for detail information

PCI Isolation DI/O Board

# PISO-P32A32/P32C32/P64/A64/C64

64-channel isolated digital I/O board

2 PCI Bus I/O Boards



PISO-P32C32



PISO-A64



PISO-P64



PISO-C64

**Pin Assignment**

**PISO-P32A32/PISO-P32C32**

GND_DO(-)	1	○	20	GND_DO(-)
DI_0	2	○	21	DO_0
DI_1	3	○	22	DO_1
DI_2	4	○	23	DO_2
DI_3	5	○	24	DO_3
DI_4	6	○	25	DO_4
DI_5	7	○	26	DO_5
DI_6	8	○	27	DO_6
DI_7	9	○	28	DO_7
DI_8	10	○	29	DO_8
DI_9	11	○	30	DO_9
DI_10	12	○	31	DO_10
DI_11	13	○	32	DO_11
DI_12	14	○	33	DO_12
DI_13	15	○	34	DO_13
DI_14	16	○	35	DO_14
DI_15	17	○	36	DO_15
CON1 D/I COM1A	18	○	37	Power_DO(+)
CON1 D/I COM1B	19	○		

**PISO-P64**

GND1	1	○	20	GND2
DI_0	2	○	21	DI_16
DI_1	3	○	22	DI_17
DI_2	4	○	23	DI_18
DI_3	5	○	24	DI_19
DI_4	6	○	25	DI_20
DI_5	7	○	26	DI_21
DI_6	8	○	27	DI_22
DI_7	9	○	28	DI_23
DI_8	10	○	29	DI_24
DI_9	11	○	30	DI_25
DI_10	12	○	31	DI_26
DI_11	13	○	32	DI_27
DI_12	14	○	33	DI_28
DI_13	15	○	34	DI_29
DI_14	16	○	35	DI_30
DI_15	17	○	36	DI_31
PWR1	18	○	37	PWR2
NC	19	○		

**PISO-A64/PISO-C64**

GND_A(-)	1	○	20	GND_B(-)
DO_0	2	○	21	DO_16
DO_1	3	○	22	DO_17
DO_2	4	○	23	DO_18
DO_3	5	○	24	DO_19
DO_4	6	○	25	DO_20
DO_5	7	○	26	DO_21
DO_6	8	○	27	DO_22
DO_7	9	○	28	DO_23
DO_8	10	○	29	DO_24
DO_9	11	○	30	DO_25
DO_10	12	○	31	DO_26
DO_11	13	○	32	DO_27
DO_12	14	○	33	DO_28
DO_13	15	○	34	DO_29
DO_14	16	○	35	DO_30
DO_15	17	○	36	DO_31
Power_A(+)	18	○	37	Power_B(+)
N.C.	19	○		

**Ordering Information**

**Standard**

**PISO-P32A32:** 32-channel isolated digital input & 32-channel isolated open-collector output board. (current sourcing)

**PISO-P32C32:** 32-channel isolated digital input & 32-channel isolated open-collector output board. (current sinking)

**PISO-P64:** 64-channel isolated digital input board

**PISO-A64:** 64-channel isolated open-collector output board. (current sourcing)

**PISO-C64:** 64-channel isolated open-collector output board. (current sinking)

**Optional**

**DN-37:** 2x37-pin connector DIN-rail mounting terminal board

**DB-37:** 37-pin D-sub connector direct connection terminal board

**DB-16P16R:** 16-channel input terminal and 16-channel relay output board (For PISO-P32C32)

**DB-32R:** 32-channel relay output board (For PISO-C64)

# PISO-725

## 8-channel Relay Output 8-channel Isolated Digital Input Board



### Features

- 32-bit +5V PCI Bus, Plug & Play
- 8-channel isolated digital input
- State-changed interrupt for all digital inputs
- Digital input can be isolated or non-isolated selected by hardware jumper
- 8-channel electromechanical relay output
- One Form C for user's external device
- Another Form C for relay status read back
- On-board LEDs indicate output state

### Functional Description

The PISO-725 provides 8-channel electric mechanical relay output and 8-channel digital input. The digital input channels can be isolated or non-isolated that is selected by hardware jumpers. All digital inputs can generate an interrupt if any state change occurs at any one or more of the inputs. This is very useful when monitoring contact closures/ openings since continuously polling the input is not necessary. All relays are de-energized at power-on. On/Off status of the relays can be read back. The PISO-725 can be used in various applications including contact closure checking, external voltage sensing, and loading sensing and control and sensing applications.

### Applications

- Industrial Automation
- Laboratory Automation
- Communication Switching

### Specifications

#### 8 Isolated Digital Input

- Isolated/non-isolated input selected by jumper JA&JB
- Photo-coupler used for isolated input: PC-357
- Input\_high voltage for isolated input: 3.5 ~ 30V
- Input\_low voltage for isolated input: 0 ~ 1V
- Input impedance for isolated input: 1.2K $\Omega$  / 1W
- Isolation voltage for isolated input: 3750V
- Response time for isolated input: 20uS
- Non-isolated input: TTL compatible

#### 8 Relay Output

- Relay type: DPDT(Form C)
- Output type:
  - Channel 0 ~ channel 3: NC and No output
  - Channel 4 ~ channel 7: No output
- Contact rating: 120VAC@0.3A, 30VDC@1A

- Operating time: 5ms
- Release time: 10ms
- Life: 100,000 times (at 30V/1A)

#### General Specifications

- I/O connector: one 37-Pin D-sub female
- Power requirements: 300 mA@5V (typical)
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Dimensions: 150 mm x 110 mm

### Pin Assignment

NO_0	1	○	20	NO_3
COM_0	2	○	21	COM_3
NC_0	3	○	22	NC_3
NO_1	4	○	23	NO_4
COM_1	5	○	24	COM_4
NC_1	6	○	25	NO_5
NO_2	7	○	26	COM_5
COM_2	8	○	27	NO_6
NC_2	9	○	28	COM_6
NO_7	10	○	29	GND
COM_7	11	○	30	DIL_0
DIH_0	12	○	31	DIL_1
DIH_1	13	○	32	DIL_2
DIH_2	14	○	33	DIL_3
DIH_3	15	○	34	DIL_4
DIH_4	16	○	35	DIL_5
DIH_5	17	○	36	DIL_6
DIH_6	18	○	37	DIL_7
DIH_7	19	○		

### Ordering Information

#### Standard

**PISO-725:** 8-channel isolated digital input & 8-channel relay output board

#### Optional

**DN-37:** Two 37-pin connector DIN-rail mounting terminal board

**DB-37:** 37-pin D-sub directly connector terminal board



# PISO-730/730A

32-channel isolated DI/O & 32-channel TTL DI/O board



PISO-730



PISO-730A

## Functional Description

The PISO-730/730A provides 32-channel isolated digital I/O and 32-channel TTL-level digital I/O. Each of the 16 isolated digital output channel equipped a Darlington transistor (PISO-730) or PNP transistor (PISO-730A). The board can interface to field digital logic signals to eliminate ground-loop problems and isolate the host PC from damaging voltages.

## Applications

- Factory Automation
- Product Test
- Laboratory Automation

## Specifications

### 16 Optical-Isolated Inputs

- Type: isolated current input
- Input voltage: 5V to 24VDC
- Input impedance: 1.2KΩ, 0.5W
- Response time: 4KHz max

### 16 TTL-level Inputs

- Input high voltage: 2.0V min
- Input low voltage: 0.8V max
- Response time: 30KHz typical

### 16 Isolated Digital Outputs

- Output voltage:
  - open-collector 5~30VDC (PISO-730)
  - open-collector 10~30VDC (PISO-730A)
- Sink current: 100 mA/channel, 200 mA max
- Source current: 100 mA/channel
- Response time: 30KHz max

### 16 TTL-level Outputs

- High: Source 0.4 mA at 2.4V min
- Low: Sink 8 mA at 0.5V max

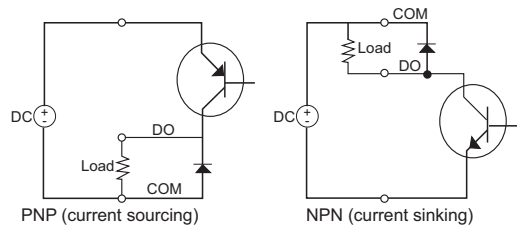
## Features

- 16-channel isolated digital input and 16-channel isolated open-collector output
- 16-channel TTL input and 16-channel TTL output
- Built-in DC/DC converter built-in
- 2500VDC isolated voltage (PISO-730)
- 3750VDC isolated voltage (PISO-730A)
- Sink current output (PISO-730)
- Source current output (PISO-730A)

## General Specifications

- I/O connector: one 37-pin D-sub female  
two 20-pin ribbon male
- Power requirements: +5V @ 640 mA
- Operating temperature: 0 ~ 60°C
- Operating humidity: 0 ~ 90% non-condensing
- Storage temperature: -20 ~ 70°C
- Dimensions: 180 mm x 105 mm

## Sinking and Sourcing circuit



## Pin Assignment

CON1				CON2				CON3			
IDO15	37	19	EO.COM2	+12V	20	19	+5V			19	+5V
IDO13	36	18	IDO14	D.GND	18	17	D.GND			17	D.GND
IDO11	35	17	IDO12	DI 15	16	15	DI 14			15	DI 14
IDO9	34	16	IDO10	DI 13	14	13	DI 12			13	DI 12
IDO7	33	15	IDO8	DI 11	12	11	DI 10			11	DI 10
IDO5	32	14	IDO6	DI 9	10	9	DI 8			9	DI 8
IDO3	31	13	IDO4	DI 7	8	7	DI 6			7	DI 6
IDO1	30	12	IDO2	DI 5	6	5	DI 4			5	DI 4
EO.GND	29	11	IDO0	DI 3	4	3	DI 2			3	DI 2
EI.COM2	28	10	EO.COM1	DI 1	2	1	DI 0			1	DI 0
IDI15	27	9	EI.COM1								
IDI13	26	8	IDI14	+12V	20	19	+5V			19	+5V
IDI11	25	7	IDI12	D.GND	18	17	D.GND			17	D.GND
IDI9	24	6	IDI10	DO 15	16	15	DO 14			15	DO 14
IDI7	23	5	IDI8	DO 13	14	13	DO 12			13	DO 12
IDI5	22	4	IDI6	DO 11	12	11	DO 10			11	DO 10
IDI3	21	3	IDI4	DO 9	10	9	DO 8			9	DO 8
IDI1	20	2	IDI2	DO 7	8	7	DO 6			7	DO 6
		1	IDI0	DO 5	6	5	DO 4			5	DO 4
				DO 3	4	3	DO 2			3	DO 2
				DO 1	2	1	DO 0			1	DO 0

## Ordering Information

### Standard

- PISO-730:** 32-channel isolated digital I/O & 32-channel TTL digital I/O board. (current sinking)
- PISO-730A:** 32-channel isolated digital I/O & 32-channel TTL digital I/O board. (current sourcing)

### Optional

- DN-37:** Two 37-pin connector DIN-rail mounting terminal board
- DB-37:** 37-pin D-sub directly connector terminal board
- DN-20:** Two 20-pin header DIN-rail terminal board
- DB-16P:** 16-channel isolated DI/O board
- DB-16R:** 16-channel relay board
- ADP-20/PCI:** 20-pin extender