

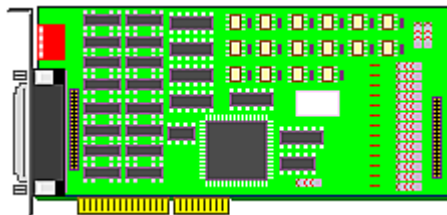
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SMARTLAB
INDUSTRIAL AUTOMATION SERIES



INDUSTRIAL / SMARTLAB SERIES MANUAL

PCI BUS 16 CHANNELS PHOTO ISOLATOR INPUT/OUTPUT ADAPTER



PCI 16 channels relay output / photo isolator input adapter

Product Code: APCI 16 PHOTO / RELAY

INTRODUCTION

The PCI 16 channels relay output / photo isolator input adapter is a 32 bits PCI bus board with Plug and Play (PnP) features, it is a programmable I/O interface card for PC/486, Pentium, or compatibles. The PnP features let hardware configuration for IRQ and I/O address is detected by BIOS automatically, you don't need set switch and jumper.

The PCI 16 channels relay output / photo isolator input adapter provides relay output functions. The relay output part provides 16 relays to drive 16 different output channels. Each relay channel can be used to control ON/ OFF of external devices, to drive external power relays, to activate alarms... etc.

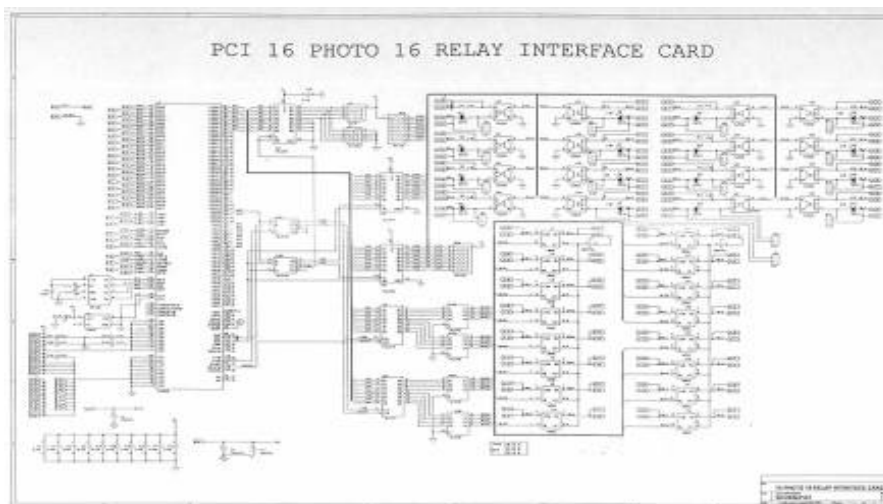
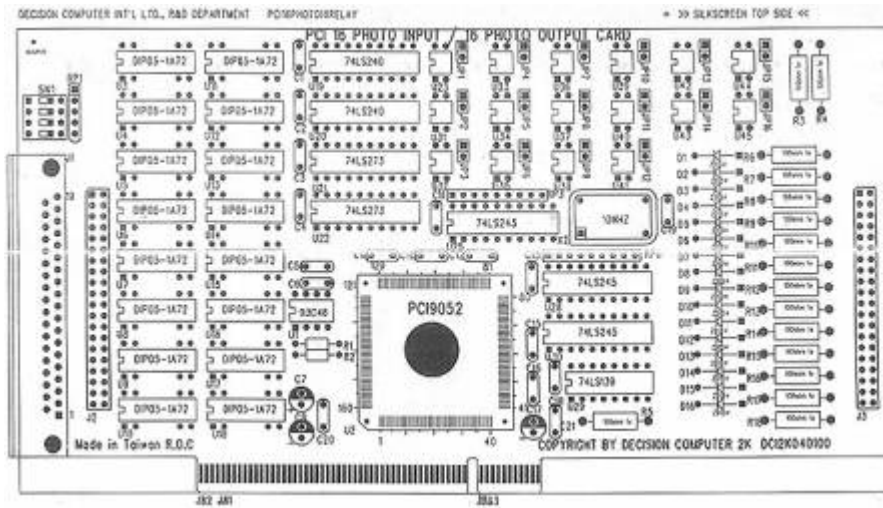
The photo isolator input part provides 16 photo couple digital input channels, which allow the input signals to be completely floated and prevent the ground loop.

The features of PCI 16 channels relay output / 16 channels photo isolator input adapter are:

- 32 bits PCI bus with Plug and Play (PnP) features.
- Support 16 relay output channels and 16 photo couple input channels.
- Max contact rating for relay: 70V/AC, 100V/DC 0.25AMP.
- Response time for relay: 1 ms minimum.
- Contact resistance for relay: 0.2 OHM maximum.
- Support several operating modes that are programmable.

The package includes following item

- SMARTLAB PCI bus 16 channels relay output / 16 channels photo couple input adapter.
- User's manual.
- Warranty form.

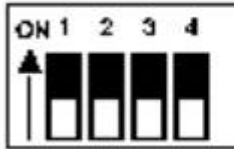


HARDWARE CONFIGURATION

Before you use the PCI 16 channels relay output / 16 channels photo couple input adapter, Please check our technical web site <http://www.smatlab.com>. Observe the figure in the follows, the proper settings for the PCI 16 channels relay output / 16 channels photo couple input adapter is described in the following.

2.1 Switch and Jumper Settings

1. Card ID setting



Card No 1 : All OFF

Card No 2 : 1 ON, 2, 3, 4 OFF

Card No 3 : 2 ON, 1, 3, 4 OFF

Card No 4 : 3 ON, 1, 2, 4 OFF

The switch is used to identify card number. Please set card number by card identifier switch, the PCI BIOS will assign pre-allocated I/O address to each adapter. Please set different card number to each adapter (do not duplicate card number setting).

2. JP1 to JP16

JP1

Jumper	Description
Open	opto+ and opto- voltage 17 to 30V
Short	opto+ and opto- voltage 0 to 35V

The JP1 is used to select voltage signal range of photo couple input channel 1, and the JP2 is used to select voltage signal range of photo input channel 2, When we short the jumper, the input voltage range is 0 to 20V, and open the jumper means input voltage range is 0 to 35V.

2.2 I/O Address

The PnP feature will get base I/O address automatically, where

Base Address + 0:

Relay output channel 1 to 16

15	14	13	12	11	10	9	8
RL16	RL15	RL14	RL13	RL12	RL11	RL10	RL9
7	6	5	4	3	2	1	0
RL8	RL7	RL6	RL5	RL4	RL3	RL2	RL1

Base Address + 0:

Photo isolator input channel 1 to 16.

15	14	13	12	11	10	9	8
IN16	IN15	IN14	IN13	IN12	IN11	IN10	IN9
7	6	5	4	3	2	1	0
IN8	IN7	IN6	IN5	IN4	IN3	IN2	IN1

2.3 Connector Assignments

1. DB 37 Connector Pin Assignments

Pin	Single	Description
1	NO01	Relay channel 1, Normal open output
2	NO02	Relay channel 2, Normal open output

3	NO03	Relay channel 3 Normal open output
4	NO04	Relay channel 4 Normal open output
5	NO05	Relay channel 5 Normal open output
6	NO06	Relay channel 6 Normal open output
7	NO07	Relay channel 7 Normal open output
8	NO08	Relay channel 8 Normal open output
9	NO09	Relay channel 9 Normal open output
10	NO10	Relay channel 10 Normal open output
11	NO11	Relay channel 11 Normal open output
12	NO12	Relay channel 12 Normal open output
13	NO13	Relay channel 13 Normal open output
14	NO14	Relay channel 14 Normal open output
15	NO15	Relay channel 15 Normal open output
16	NO16	Relay channel 16 Normal open output
17	GND	GND
18	DC + 5V	DC + 5V output
19	DC +12V	DC +12V output
20	COM01	Relay channel 1, COMMON output
21	COM02	Relay channel 2, COMMON output
22	COM03	Relay channel 3, COMMON output
23	COM04	Relay channel 4, COMMON output
24	COM05	Relay channel 5, COMMON output
25	COM06	Relay channel 6, COMMON output
26	COM07	Relay channel 7, COMMON output
27	COM08	Relay channel 8, COMMON output
28	COM09	Relay channel 9, COMMON output
29	COM10	Relay channel 10 COMMON output
30	COM11	Relay channel 11 COMMON output
31	COM12	Relay channel 12 COMMON output

32	COM13	Relay channel 13 COMMON output
33	COM14	Relay channel 14 COMMON output
34	COM15	Relay channel 15 COMMON output
35	COM16	Relay channel 16 COMMON output
36	GND	GND
37	DC + 5V	DC + 5V output

2. 40 Pins Connector J2

Pin	Single	Description
1	NO-01	Relay Ch. 01 - Output
2	COM-01	Relay Ch. 01 - Output
3	NO-02	Relay Ch. 02 - Output
4	COM-02	Relay Ch. 02 - Output
5	NO-03	Relay Ch. 03 - Output
6	COM-03	Relay Ch. 03 - Output
7	NO-04	Relay Ch. 04 - Output
8	COM-04	Relay Ch. 04 - Output
9	NO-05	Relay Ch. 05 - Output
10	COM-05	Relay Ch. 05 - Output
11	NO-06	Relay Ch. 06 - Output
12	COM-06	Relay Ch. 06 - Output
13	NO-07	Relay Ch. 07 - Output
14	COM-07	Relay Ch. 07 - Output
15	NO-08	Relay Ch. 08 - Output
16	COM-08	Relay Ch. 08 - Output
17	NO-09	Relay Ch. 09 - Output
18	COM-09	Relay Ch. 09 - Output
19	NO-10	Relay Ch. 10 - Output
20	COM-10	Relay Ch. 10 - Output

21	NO-11	Relay Ch. 11 - Output
22	COM-11	Relay Ch. 11 - Output
23	NO-12	Relay Ch. 12 - Output
24	COM-12	Relay Ch. 12 - Output
25	NO-13	Relay Ch. 13 - Output
26	COM-13	Relay Ch. 13 - Output
27	NO-14	Relay Ch. 14 - Output
28	COM-14	Relay Ch. 14 - Output
29	NO-15	Relay Ch. 15 - Output
30	COM-15	Relay Ch. 15 - Output
31	NO-16	Relay Ch. 16 - Output
32	COM-16	Relay Ch. 16 - Output
33	GND	GND
34	GND	GND
35	DC + 5V	DC + 5V output
36	DC + 5V	DC + 5V output
37	DC + 12V	DC + 12V output
38	DC + 12V	DC + 12V output
39	GND	GND
40	GND	GND

3. 40 Pins Connector J3

Pin	Single	Description
1	IN-01-	Opto-isolator Ch. 01 - Input
2	IN-01+	Opto-isolator Ch. 01 + Input
3	IN-02-	Opto-isolator Ch. 02 - Input
4	IN02+	Opto-isolator Ch. 02 + Input
5	IN-03-	Opto-isolator Ch. 03 - Input
6	IN-03+	Opto-isolator Ch. 03 + Input
7	IN-04-	Opto-isolator Ch. 04 - Input

8	IN-04+	Opto-isolator Ch. 04 + Input
9	IN-05-	Opto-isolator Ch. 05 - Input
10	IN-05+	Opto-isolator Ch. 05 + Input
11	IN-06-	Opto-isolator Ch. 06 - Input
12	IN-06+	Opto-isolator Ch. 06 + Input
13	IN-07-	Opto-isolator Ch. 07 - Input
14	IN-07+	Opto-isolator Ch. 07 + Input
15	IN-08-	Opto-isolator Ch. 08 - Input
16	IN-08+	Opto-isolator Ch. 08 + Input
17	IN-09-	Opto-isolator Ch. 09 - Input
18	IN-09+	Opto-isolator Ch. 09 + Input
19	IN-10-	Opto-isolator Ch. 10 - Input
20	IN-10+	Opto-isolator Ch. 10 + Input
21	IN-11-	Opto-isolator Ch. 11 - Input
22	IN-11+	Opto-isolator Ch. 11 + Input
23	IN-12-	Opto-isolator Ch. 12 - Input
24	IN-12+	Opto-isolator Ch. 12 + Input
25	IN-13-	Opto-isolator Ch. 13 - Input
26	IN-13+	Opto-isolator Ch. 13 + Input
27	IN-14-	Opto-isolator Ch. 14 - Input
28	IN-14+	Opto-isolator Ch. 14+ Input
29	IN-15-	Opto-isolator Ch. 15 - Input
30	IN-15+	Opto-isolator Ch. 15 + Input
31	IN-16-	Opto-isolator Ch. 16 - Input
32	IN-16+	Opto-isolator Ch. 16 + Input
33	GND	GND
34	GND	GND
35	DC + 5V	DC + 5V output
36	DC + 5V	DC + 5V output

37	DC + 12V	DC + 12V output
38	DC + 12V	DC + 12V output
39	GND	GND
40	GND	GND

[DOWNLOAD PCI BUS 16 RELAY OUTPUT/16 PHOTO ISOLATOR CARD DOC](#)







Technical data - Isolated input Output and Relay Output

Isolated input: The digital signal input with isolated protection.

Relay :

[Word File BT-12S](#)

[Hyper Link](#)

- [Catalog](#) 
- [Manual](#) 
- [Device Driver](#) 
- [Self Test Software & Sample Code](#) 
- [Web Based DAQ](#) 
- [Application](#) 
- [Q&A](#) 