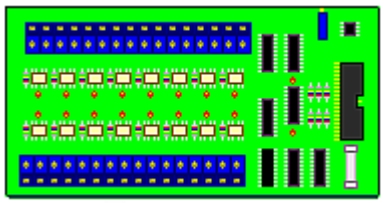
305-2

SMATLAB
INDUSTRIAL AUTOMATION SERIES

USER'S MANUAL FOR 16 Channel Photo Isolator Input Board



16 Channel Isolator Input Board

Product Code: A16PHOTO

INTRODUCTION

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

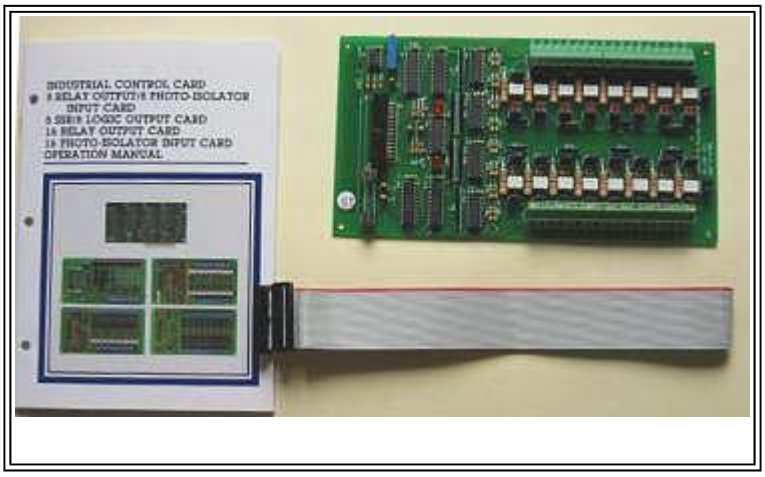
The features of PCI 16 channels photo isolator input/output adapter are:

1. 32 bits PCI bus with Plug and Play (PnP) features.
2. Support 16 photo couple input/output channels.
3. Allow the photo input/output signals to be completely floated and prevent the ground loops.
4. 16 LED correspond to 16 output ports activation status.
5. By using PC817 photo couple chips.
6. 5000V isolation voltage.
7. Maximum load voltage is 30V.
8. Maximum 50mA forward input current.
9. Output voltage : Vcd = 35V, Vec = 6V, and maximum collector current is 50mA. (Maximum current restrict below 30mA.)
10. Voltage range from 0V to 30V, where 0 to 4V is OFF and 5V to 30V is ON.
11. Operating temperature range from 0 to 33C.
12. Relative humidity rage from 0 to 90%.

The package includes following item

The package contains:
1.SMARTLAB PCI bus 16 channels photo couple input/outputadapter.
2.One flat cable.

3.User's manual.



HARDWARE CONFIGURATION

2.1 Configuration For Jumper

Before you use the PCI 16 channels photo couple input/output adapter, Please check our technical web site http://www.smatlab.com. You must ensure that the I/O address after boot your computer. Observe the figure in the follows, the proper jumper settings for the 16 channels photo couple input/output adapter is described in the following.

2.2 Connector Assignments

1.DB 37/M Connector Pin Assignments (J1)

The photo isolator output signal is assigned in the DB37/M (J1) connector, its pin assignments are show in the below.

2. 40-PIN Connector Pin Assignments (J2)

The photo isolator input signal is assigned in 40 pin (J2) connector, its pin assignments are show in the below.

Pin	Single	Description
1	PAO-01+	Opto-isolator Ch. 01 + Output
2	PAO -01-	Opto-isolator Ch. 01 - Output
3	PAO -02+	Opto-isolator Ch. 02 + Output
4	PAO -02-	Opto-isolator Ch. 02 - Output
5	PAO -03+	Opto-isolator Ch. 03 + Output
6	PAO -03-	Opto-isolator Ch. 03 - Output
7	PAO -04+	Opto-isolator Ch. 04 + Output
8	PAO -04-	Opto-isolator Ch. 04 - Output
9	PAO -05+	Opto-isolator Ch. 05 + Output
10	PAO -05-	Opto-isolator Ch. 05 - Output
11	PAO -06+	Opto-isolator Ch. 06 + Output

12	PAO -06-	Opto-isolator Ch. 06 - Output
13	PAO -07+	Opto-isolator Ch. 07 + Output
14	PAO -07-	Opto-isolator Ch. 07 - Output
15	PAO -08+	Opto-isolator Ch. 08 + Output
16	PAO -08-	Opto-isolator Ch. 08 - Output
17	NC	
18	NC	Opto-isolator Ch. 09 + Output
19	NC	Opto-isolator Ch. 09 - Output
20	PBO-01+	Opto-isolator Ch. 10 + Output
21	PBO -01-	Opto-isolator Ch. 10 - Output
22	PBO -02+	Opto-isolator Ch. 11 + Output □
23	PBO -02-	Opto-isolator Ch. 11 - Output
24	PBO -03+	Opto-isolator Ch. 12 + Output
25	PBO -03-	Opto-isolator Ch. 12 - Output
26	PBO -04+	Opto-isolator Ch. 13 + Output
27	PBO -04-	Opto-isolator Ch. 13 - Output
28	PBO -05+	Opto-isolator Ch. 14 + Output
29	PBO -05-	Opto-isolator Ch. 14 - Output
30	PBO -06+	Opto-isolator Ch. 15 + Output
31	PBO -06-	Opto-isolator Ch. 15 - Output
32	PBO -07+	Opto-isolator Ch. 16 + Output
33	PBO -07-	Opto-isolator Ch. 16 - Output
34	PBO -08+	
35	PBO -08-	
36	NC	
37	NC	

3. Signal assignment of screw connector

The normal open, normal close, and common contacts signal of each relay are shown in the follows.

Pin	Single	Description
1	PAI-01+	Opto-isolator Ch. 01 + Input

2	PAI -01-	Opto-isolator Ch. 01 - Input
3	PAI -02+	Opto-isolator Ch. 02 + Input
4	PAI -02-	Opto-isolator Ch. 02 - Input
5	PAI -03+	Opto-isolator Ch. 03 + Input
6	PAI -03-	Opto-isolator Ch. 03 - Input
7	PAI -04+	Opto-isolator Ch. 04 + Input
8	PAI -04-	Opto-isolator Ch. 04 - Input
9	PAI -05+	Opto-isolator Ch. 05 + Input
10	PAI -05-	Opto-isolator Ch. 05 - Input
11	PAI -06+	Opto-isolator Ch. 06 + Input
12	PAI -06-	Opto-isolator Ch. 06 - Input
13	PAI -07+	Opto-isolator Ch. 07 + Input
14	PAI -07-	Opto-isolator Ch. 07 - Input
15	PAI -08+	Opto-isolator Ch. 08 + Input
16	PAI -08-	Opto-isolator Ch. 08 - Input
17	NC	
18	NC	
19	NC	Opto-isolator Ch. 09 + Input
20	NC	Opto-isolator Ch. 09 - Input
21	PBI-01+	Opto-isolator Ch. 10 + Input
22	PBI -01-	Opto-isolator Ch. 10 - Input
23	PBI -02+	Opto-isolator Ch. 11 + Input
24	PBI -02-	Opto-isolator Ch. 11 - Input
25	PBI -03+	Opto-isolator Ch. 12 + Input
26	PBI -03-	Opto-isolator Ch. 12 - Input
27	PBI -04+	Opto-isolator Ch. 13 + Input
28	PBI -04-	Opto-isolator Ch. 13 - Input
29	PBI -05+	Opto-isolator Ch. 14 + Input
30	PBI -05-	Opto-isolator Ch. 14 - Input

31	PBI -06+	Opto-isolator Ch. 15 + Input
32	PBI -06-	Opto-isolator Ch. 15 - Input
33	PBI -07+	Opto-isolator Ch. 16 + Input
34	PBI -07-	Opto-isolator Ch. 16 - Input
35	PBI -08+	
36	PBI -08-	
37	NC	
38	NC	
39	NCNC	
40		

2.3 Flat Cable

There is one flat cable that contains one 40-pin connector at one side, and one DB37 connector at another side. The flat cable can be connected to 40-pin (J2) connector to let user use DB37 signal directly. The pin assignments of DB37 on the flat cable are show in the below.

Pin	Single	Description
1	PAI-01+	Opto-isolator Ch. 01 + Input
2	PAI -01-	Opto-isolator Ch. 01 - Input
3	PAI -02+	Opto-isolator Ch. 02 + Input
4	PAI -02-	Opto-isolator Ch. 02 - Input
5	PAI -03+	Opto-isolator Ch. 03 + Input
6	PAI -03-	Opto-isolator Ch. 03 - Input
7	PAI -04+	Opto-isolator Ch. 04 + Input
8	PAI -04-	Opto-isolator Ch. 04 - Input
9	PAI -05+	Opto-isolator Ch. 05 + Input
10	PAI -05-	Opto-isolator Ch. 05 - Input
11	PAI -06+	Opto-isolator Ch. 06 + Input
12	PAI -06-	Opto-isolator Ch. 06 - Input
13	PAI -07+	Opto-isolator Ch. 07 + Input
14	PAI -07-	Opto-isolator Ch. 07 - Input

15	PAI -08+	Opto-isolator Ch. 08 + Input
16	PAI -08-	Opto-isolator Ch. 08 - Input
17	NC	
18	NC	
19	NC	Opto-isolator Ch. 09 + Input
20	NC	Opto-isolator Ch. 09 - Input
21	PBI-01+	Opto-isolator Ch. 10 + Input
22	PBI -01-	Opto-isolator Ch. 10 - Input
23	PBI -02+	Opto-isolator Ch. 11 + Input
24	PBI -02-	Opto-isolator Ch. 11 - Input
25	PBI -03+	Opto-isolator Ch. 12 + Input
26	PBI -03-	Opto-isolator Ch. 12 - Input
27	PBI -04+	Opto-isolator Ch. 13 + Input
28	PBI -04-	Opto-isolator Ch. 13 - Input
29	PBI -05+	Opto-isolator Ch. 14 + Input
30	PBI -05-	Opto-isolator Ch. 14 - Input
31	PBI -06+	Opto-isolator Ch. 15 + Input
32	PBI -06-	Opto-isolator Ch. 15 - Input
33	PBI -07+	Opto-isolator Ch. 16 + Input
34	PBI -07-	Opto-isolator Ch. 16 - Input
35	PBI -08+	
36	PBI -08-	
37	NC	

2.4Loopback Diagnostic

To test your 16 channel photo isolator input/output card, we recommend you use loopback circuit shown in below. Where IA*+ means input channel+ and IA*- means input channel-, OA*+ means output channel+ and OA*- means output channel-. * means channel number. Please note that, if you use IA2+, you must connect its pair IA2- otherwise if may short the circuit.

In this experiment, if VCC larger than 10V, then it input HIGH to input channel, otherwise it input LOW; your program can get this digital signal easily. If no VCC voltage input, the output channel will be loopback to input channel, it means when output HIGH then input channel get HIGH, when output LOW then input channel get LOW.

Technical data - Isolated input Output and Relay Output
Isolated input: The digital signal input with isolated protection.
Photo Isolator :
Word File 4N35
Hyper Link

- Catalog
- Manual
- Device Driver
- Self Test Software & Sample Code
- Web Based DAQ
- Application
- Q&A