

DIO3208B

Digital I/O Card

User's Manual (V1.2)

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Correction record

Version	Record
V1.0->V1.1	Modify 4. Layout and dimensions 6. I/O interface diagram
V1.1->V1.2	Modify 2. Feature-Delete Software key function

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Notes on hardware installation

Please follow step by step as you are installing the control cards.

1. Be sure your system is power off.
2. Be sure your external power supply for the wiring board is power off.
3. Plug your control card in slot, and make sure the golden fingers are put in right contacts.
4. Fasten the screw to fix the card.
5. Connect the cable between the card and wiring board.
6. Connect the external power supply for the wiring board.
7. Recheck everything is OK before system power on.
8. External power on.

Congratulation! You have it.

For more detail of step by step installation guide, please refer the file “installation.pdf” on the CD come with the product or register as a member of our user’s club at:

<http://automation.com.tw/>

to download the complementary documents.

Warning:

Some computer BIOS has “Auto detect DIMM/PCI clock” option, be sure to switch to “DISABLE” else in some cases the PCI add on cards will not be detected by windows at cold start.

1. **Forward**

Thank you for your selection of JAC's product DIO3208/A 8 inputs and 8 outputs DIGITAL I/O card for IBM compatible industrial PC. In the field of industrial control, digital I/O is generally controlled under a microprocessor and owing to their specific consideration of industrial environment, it is quite different from the laboratory requirement.

This card is a FPGA based design and our experience in the noise immunity makes this card very stable in the noisy environment and you don't worry about computer down by external noise. We wish the card that will be helpful to your project.

Other DIO series products:

- DIO9201 16 channel input and 16 channel output isolated digital I/O card (ISA bus)
- DIO2232 32 channel input and 32 channel output isolated digital I/O card (ISA bus)
- DIO2248 48 channel input and 16 channel output isolated digital I/O card (ISA bus)
- DIO2264 64 channel input isolated digital I/O card (ISA bus)
- DIO3206 48 channel TTL digital I/O Card (PCI bus)
- DIO3216B 16 channel input and 16 channel output isolated digital I/O card (PCI bus)
- DIO3217 16 channel input and 16 channel output isolated digital I/O card (PCI bus)
with multifunction timer/counter
- DIO3232 32 channel input and 32 channel output isolated digital I/O card (PCI bus)
- DIO3248 48 channel input and 16 channel output isolated digital I/O card (PCI bus)
- DIO3264 64 channel input isolated digital I/O card (PCI bus)
- DIO4264 64 TTL digital I/O PC-104 Module
- DIO6208 8 channel input and 8 channel relay output isolated digital I/O PCI-104 Module
- DIO6216 16 channel input and 16 channel relay output isolated digital I/O PCI-104 Module

Any comment is welcome,

please visit our website

<http://www.automation.com.tw/>

<http://www.automation-js.com/> for the up to date information.

2. Features

- 2.1. 8 isolated DI and 8 relay DO channels
- 2.2. High voltage isolation on all isolated channel (2500 Vac)
- 2.3. Output status readback
- 2.4. External triggered interrupt (on IN0, IN1)
- 2.5. Wide bipolar input range 5~12Vdc or 12~50Vdc (jumper selectable)
- 2.6. 4 c-contact and 4 a/b contact (jumper selectable) relay output
- 2.7. Keep output state after hot reset (jumper selectable)
- 2.8. Multi-function : programmable one-shot, square wave generator, event counter, PWM generator

3. **Specifications**

3.1 DIO3208B Main card

Input Section

- 3.1.1 Input : 8 photo-isolated
- 3.1.2 Input range : 5V~12V or 12V~50V (jumper selectable)
- 3.1.3 ON state : 2.8Vdc(max) @5V~12V
- 3.1.4 10Vdc(max) @12V~50V
- 3.1.5 Switching speed : 2.2KHz max. (with on board debounce circuit)
- 3.1.6 Interrupt at IN0, IN1

Output Section

- 3.1.7 Output : 8 relay
- 3.1.8 Output rating : 1A @ 120Vac
- 3.1.9 1A @ 24Vdc
- 3.1.10 Max. switching rage : 300ops. /min. (no load)
- 3.1.11 30ops. /min. (rated load)
- 3.1.12 Expected electrical life : 5 million ops (no load)

Timer/counter Section

- 3.1.13 one 32bit multifunction counters with 33MHz time base input.
- 3.1.14 multi-function:
 - programmable one-shot
 - square wave generator
 - event counter
 - PWM generator
 - timer (based on 1us clock)
- 3.1.15 trigger/counter in, trigger out of timer/counter function

Main Card General

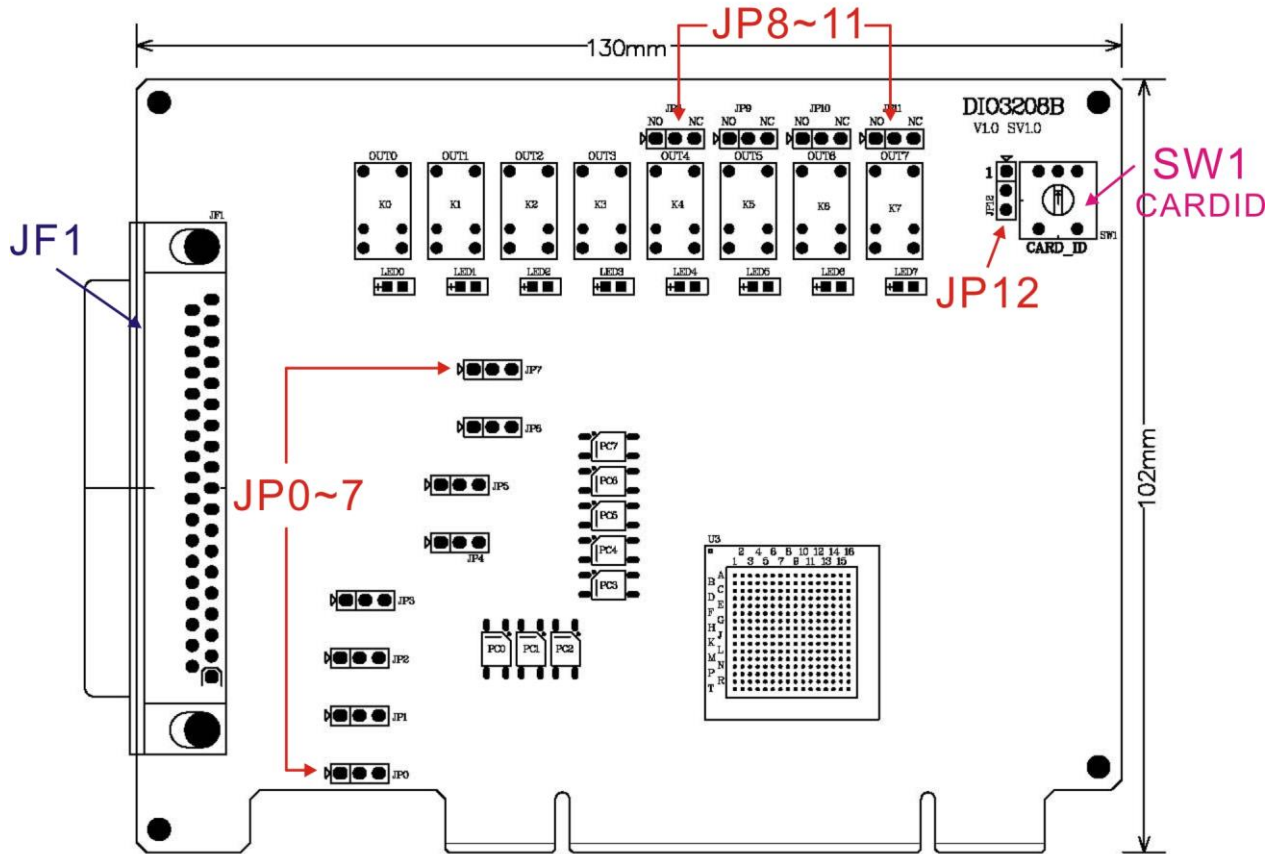
- 3.1.16 Card ID : 4 bits
- 3.1.17 Insulation resistance : 100M Ohm (min) at 1000Vdc
- 3.1.18 Isolation voltage : 2500Vac 1Min
- 3.1.19 Connector : One 37-pin female connector
- 3.1.20 Operation temperature : 0 to +70 degree C
- 3.1.21 Storage temperature : -20 to +80 degree C
- 3.1.22 Operation humidity : 5~95% RH, non-condensing
- 3.1.23 Dimensions : 130(W)*102(H) mm , 5.2(W) * 4.1(H)in

3.2 JS51026 37PM Din rail mounted dummy wiring board

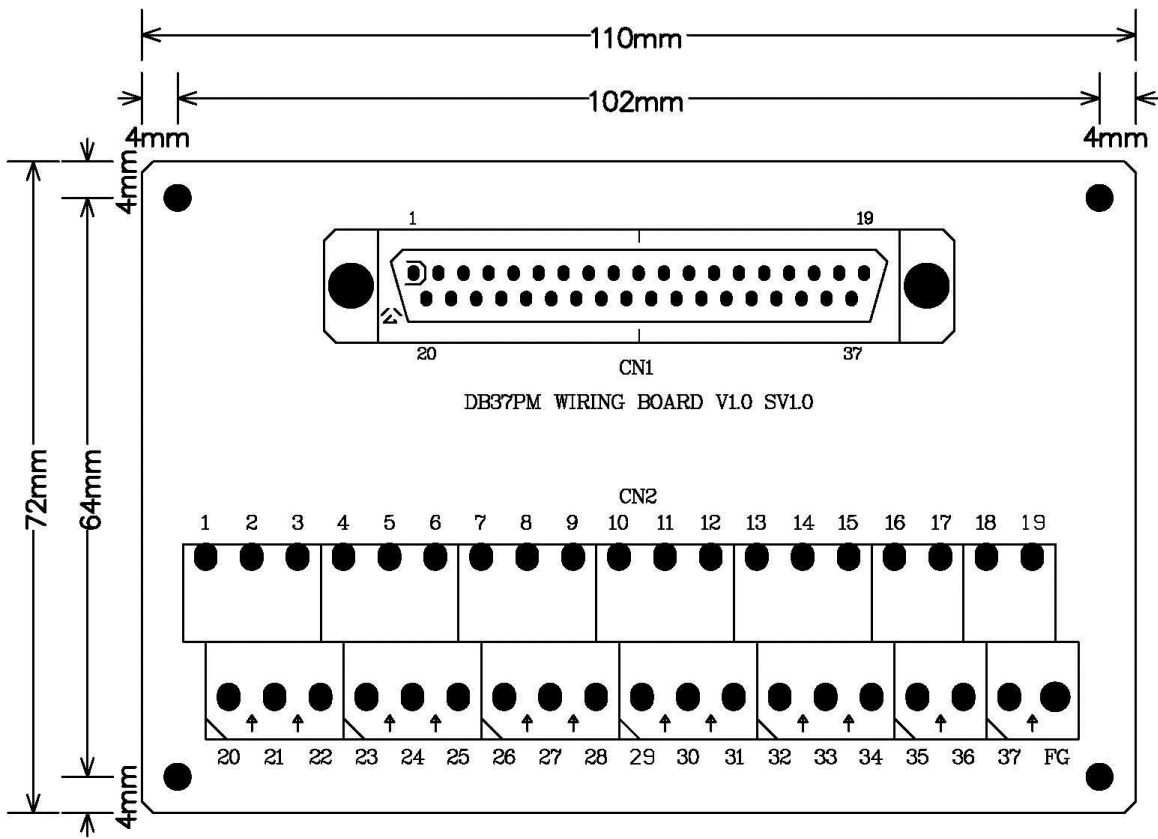
- 3.2.1 Connection cable — D-type 37P cable to connect main and wiring board
- 3.2.2 Dimension — 90(W)*113(L)*60(H)mm , 3.6(W)*4.5(L)*2.4(H)in

4. Layout and dimensions

4.1 DIO3208B Main card



4.2 JS51026 37PM Din rail mounted dummy wiring board



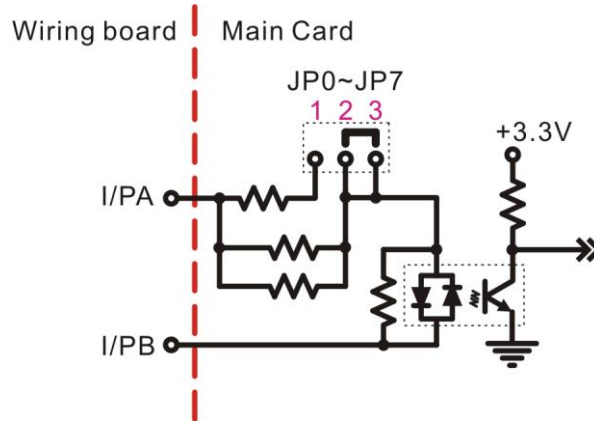
5. Pin definitions

5.1 Pin definitions for JF1 connector

PIN	Descriptions		PIN	Descriptions
1	IN0A	IN0A	20	IN0B
2	IN1A	IN1A	21	IN1B
3	IN2A	IN2A	22	IN2B
4	IN3A	IN3A	23	IN3B
5	IN4A	IN4A	24	IN4B
6	IN5A	IN5A	25	IN5B
7	IN6A	IN6A	26	IN6B
8	IN7A	IN7A	27	IN7B
9	NC	NC	28	OUT0_COM
10	OUT1_COM	OUT1_COM	29	OUT0_NO
11	OUT1_NO	OUT1_NO	30	OUT0_NC
12	OUT1_NC	OUT1_NC	31	OUT2_COM
13	OUT3_COM	OUT3_COM	32	OUT2_NO
14	OUT3_NO	OUT3_NO	33	OUT2_NC
15	OUT3_NC	OUT3_NC	34	OUT4_COM
16	OUT5_COM	OUT5_COM	35	OUT4_NC/NO
17	OUT5_NC/NO	OUT5_NC/NO	36	OUT6_COM
18	OUT7_COM	OUT7_COM	37	OUT6_NC/NO
19	OUT7_NC/NO	OUT7_NC/NO		

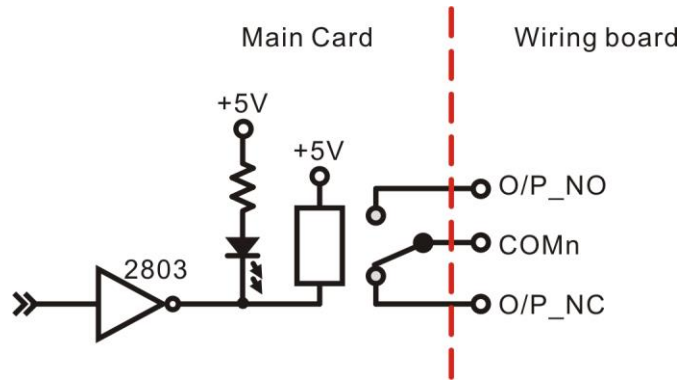
6. I/O interface diagram

6.1 Input diagram (IN0~IN7)

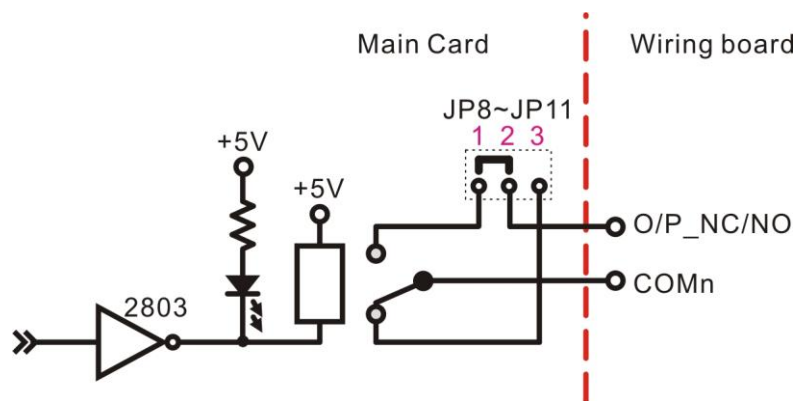


6.2 Output diagram

Type 1 output : (OUT0~OUT3)



Type 2 output : (OUT4~OUT7)



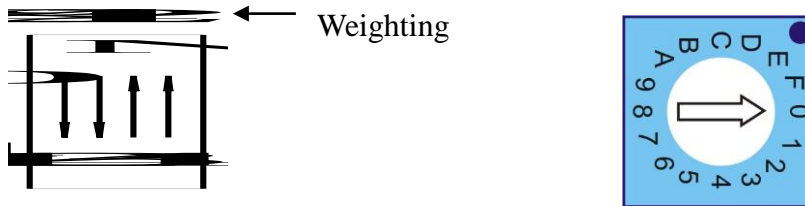
7. Hardware settings

7.1 Card ID setting

Since PCI cards have plug and play function, the card ID is required for programmer to identify which card he/she will control without knowing the physical address assigned by the Windows. A 4 bits DIP switch or rotary switch for distinguishing the 16 identical card.

The following example sets the card ID at 12.

Example for card ID setting



DIP switch set at ID=12

Rotary switch set at ID=0

7.2 Jumper setting

Input voltage range setting for IN0~IN7 (JP0~JP7)	
Input voltage range 5~12V	Input voltage range 12~50V

Output relay contact type setting for OUT4~OUT7 (JP8~JP11)	
Relay out type:NO	Relay out type:NC

Output relay contact type setting (JP12)	
Reset output after warm reset	Keep output after warm reset

8. Applications

- Accept : -- P.B./M.S./EMG./Contact- Start/Stop/Limit switch/sensor
-- Interlock/selective Sw.- Proximity switch
-- Aux. contact of transducer/detector
- As I/O of S/W PLC Controller

9. Ordering information

<u>PRODUCT</u>	<u>DESCRIPTIONS</u>
DIO3208B	16-channel Digital I/O Card for 8 Photo-coupler isolated DI and 8 Relay D0 with multi-function timer/counter
JS51026	DIN rail mounted dummy wiring board (D type 37p male to terminals)
M270337X0	D type 37p male-female cable 1.5M
M270337X0S	D type 37p male-female cable 1.5M, shielding
M270337X2	D type 37p male-female cable 3.0M
M270337X2S	D type 37p male-female cable 3.0M, shielding