

DIO6208/6216
PCI-104
Digital I/O Card

User's Manual (V1.2)

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Correction record

Version	Record
V1.0->V1.1	Modify 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 socket, and select the right CardID and CLK. (The bottom layer of stack please select CardID=0, CLK=0)
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 DIO6208 8 inputs and 8 outputs , DIO6216 16 inputs and 16 outputs DIGITAL I/O card for 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.

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)
- DIO3208B 8 channel input and 8 channel relay output isolated 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

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 Main card

- 2.1.1 8 isolated DI and 8 isolated DO channels (DIO6208)
16 isolated DI and 16 isolated DO channels (DIO6216)
- 2.1.2 High voltage isolation on all isolated channel (2500 Vac)
- 2.1.3 Programmable digital filter at 100Hz,200Hz,1KHz and no de-bounce for input
- 2.1.4 No output transition during start-up
- 2.1.5 Output status read back
- 2.1.6 External triggered interrupt (on IN00~IN07)
- 2.1.7 Keep output state after hot reset (jumper selectable)
- 2.1.8 32 bit timer based on 1us time base
- 2.1.9 Time up interrupt

2.2 Din rail mounted wiring board

- 2.2.1 DIN rail wiring board with different output options
- 2.2.2 ADP9201DIN Din rail mounted wiring board
- 2.2.3 JS51053 20P Din rail mounted dummy wiring board

3. **Specifications**

3.1 DIO6208/6216 Main card

Input Section

- 3.1.1 Input : 8 photo-isolated (DIO6208)
16 photo-isolated (DIO6216)
- 3.1.2 ON state : 2.8Vdc(max) 4.5mA(min)
- 3.1.3 OFF state : 8Vdc(min) 3mA(max)
- 3.1.4 Switching speed : limited by photo coupler speed.
- 3.1.5 Interrupt at IN00~IN07

Output Section

- 3.1.6 Output : 8 photo-isolated (DIO6208)
16 photo-isolated (DIO6216)
- 3.1.7 Output range : Open collector 0 ~ 45 Vdc (on card)
- 3.1.8 Output rating : 3A @250Vac, 30Vdc (Relay)
1A @ 24Vdc (PMOS)
2A @ 240Vac (SSR) (with wiring board)
- 3.1.9 Sink current : 500mA(peak) per channel (on card)
- 3.1.10 Switching speed : 20KHz(max)(MOS out only)

Main Card General

3.1.11 Card ID : 0~3

3.1.12 Insulation resistance : 100M Ohm (min) at 1000Vdc

3.1.13 Isolation voltage : 2500Vac 1Min

3.1.14 Connector : One 20-pin male flat-cable connectors (DIO6208)
Two 20-pin male flat-cable connectors (DIO6216)

3.1.15 Operation temperature : 0 to +70 degree C

3.1.16 Storage temperature : -20 to +80 degree C

3.1.17 Operation humidity : 5~95% RH, non-condensing

3.1.18 Dimensions : 90(W)*96(H)mm , 3.6(W)* 3.8(H)in

3.2 Din rail mounted wiring board

ADP9201DIN Din rail mounted wiring board

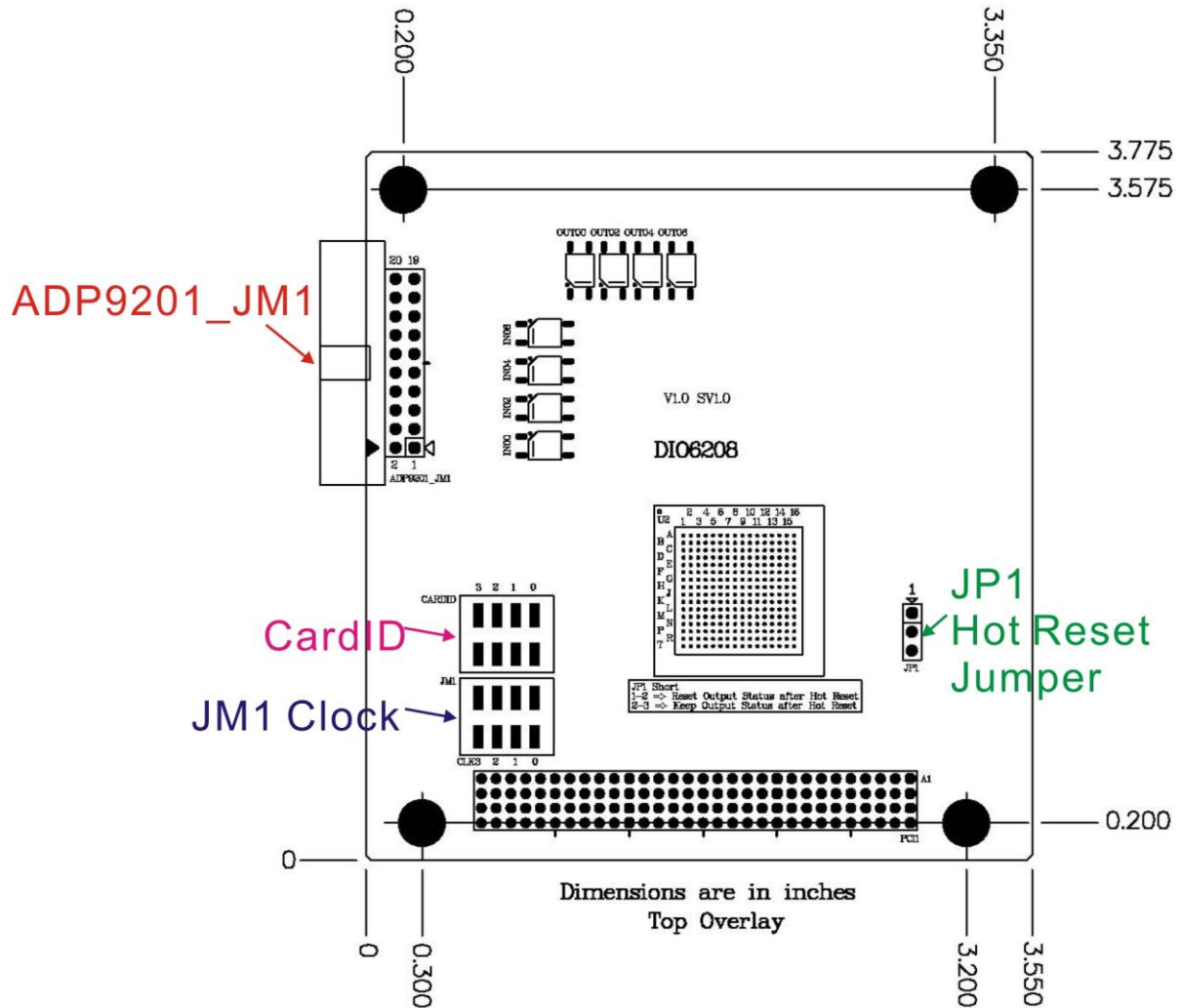
- 3.2.1 External Supply : DC 24V \pm 4V
- 3.2.2 Input : 8 with LED indicator
- 3.2.3 Output : ADP9201DIN(R) : 8 relays (3A @250Vac, 3A @30Vdc) with LED indicator
ADP9201DIN(S) : 8 SSR (2A @240Vac) with LED indicator
ADP9201DIN(P) : 8 PMOS (Source 1A @24Vdc) with LED indicator
- 3.2.4 Connector: One 20-pin male flat-cable connector
- 3.2.5 Operation Temperature: 0 to +70 degree C
- 3.2.6 Operation Humidity: RH5~95%, non-condensing
- 3.2.7 Dimension: ADP9201DIN(R) / (P) : 86(W) * 103(L) *45(H)mm;
3.4(W)*4.1(L)*1.8(H)in
ADP9201DIN(S) : 86(W) * 103(L) *50(H)mm
3.4(W)*4.1(L)*2.0(H)in

JS51053 20P Din rail mounted dummy wiring board

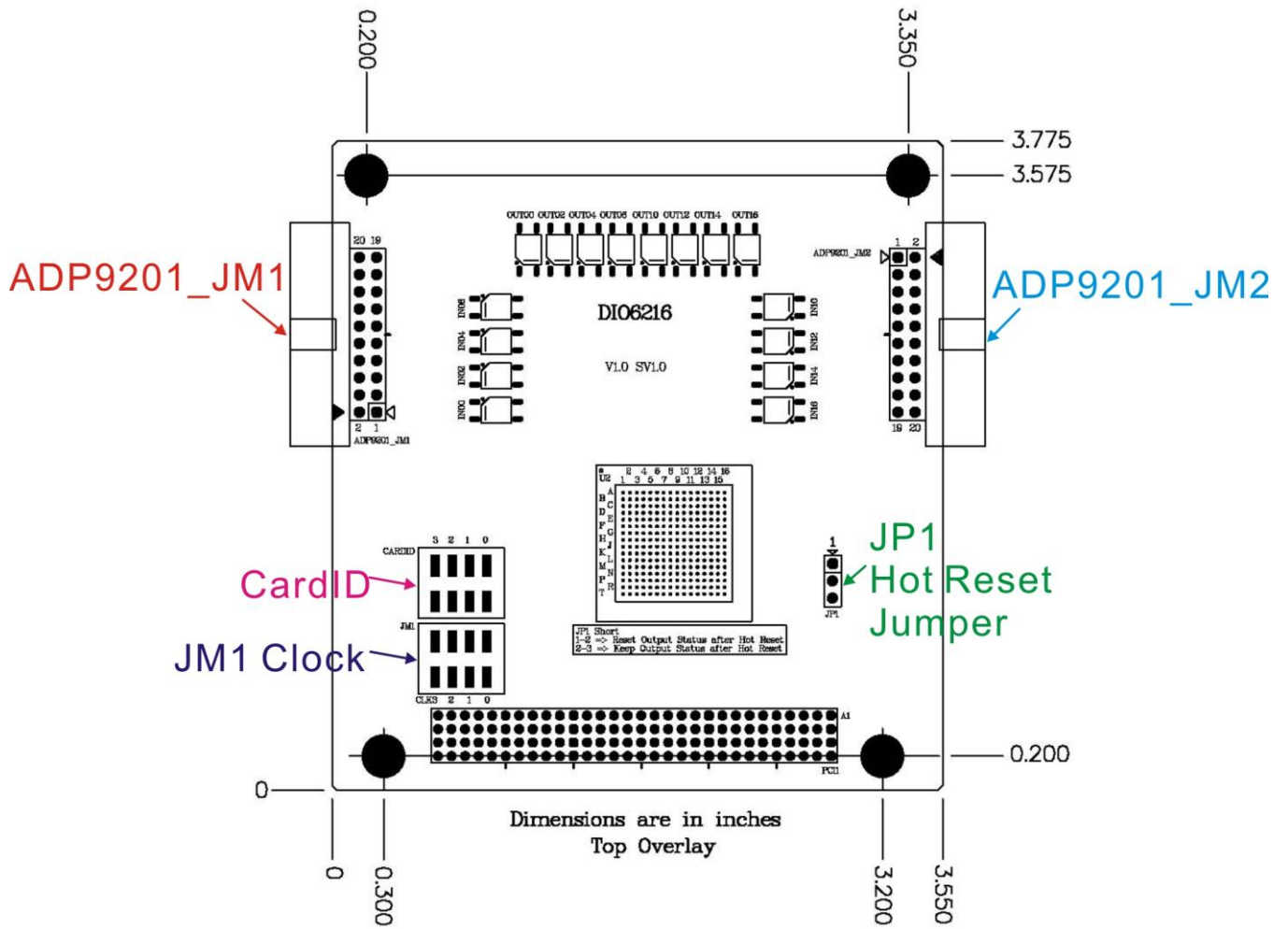
- 3.2.8 Dimension: 86(W)*79(L)*52(H)mm, 3.4(W)*3.2(L)*2.1(H)in

4. Layout and dimensions

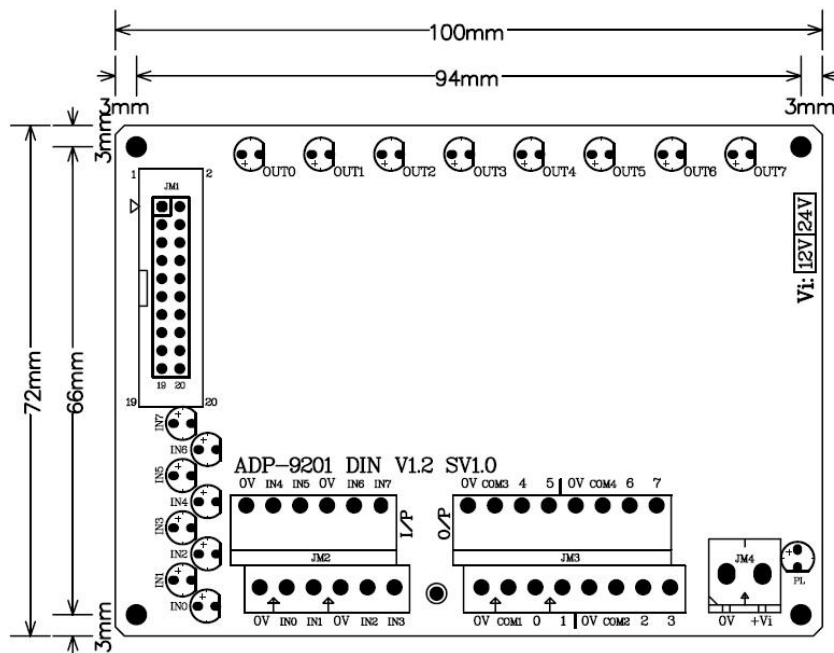
4.1 DIO6208 Main card



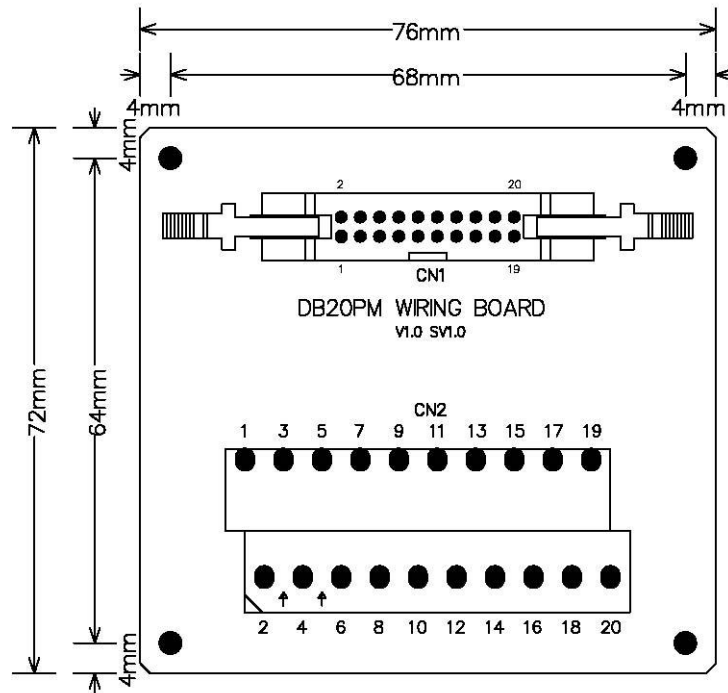
4.2 DIO6216 Main card



4.3 ADP9201DIN Din rail mounted wiring board



4.4 JS51053 for ADP9201_JM1/ ADP9201_JM2 20PM Din rail mounted dummy wiring board



5. PIN definitions

5.1 DIO6208 PIN definitions

PIN	Descriptions		PIN	Descriptions
1	EXT_IN00	ADP9201_JM1 EXT_IN00 1 2 EXT_OUT00 EXT_IN01 3 4 EXT_OUT01 EXT_IN02 5 6 EXT_OUT02 EXT_IN03 7 8 EXT_OUT03 EXT_IN04 9 10 EXT_OUT04 EXT_IN05 11 12 EXT_OUT05 EXT_IN06 13 14 EXT_OUT06 EXT_IN07 15 16 EXT_OUT07 EXTG 17 18 EXTG EXT +24Vin 19 20 EXT +24Vin	2	EXT_OUT00
3	EXT_IN01		4	EXT_OUT01
5	EXT_IN02		6	EXT_OUT02
7	EXT_IN03		8	EXT_OUT03
9	EXT_IN04		10	EXT_OUT04
11	EXT_IN05		12	EXT_OUT05
13	EXT_IN06		14	EXT_OUT06
15	EXT_IN07		16	EXT_OUT07
17	EXTG		18	EXTG
19	+24Ve		20	+24Ve

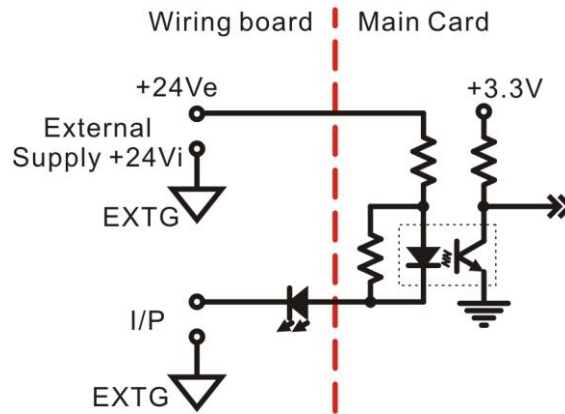
5.2 DIO6216 PIN definitions

PIN	Descriptions		PIN	Descriptions
1	EXT_IN00	ADP9201_JM1 EXT_IN00 1 2 EXT_OUT00 EXT_IN01 3 4 EXT_OUT01 EXT_IN02 5 6 EXT_OUT02 EXT_IN03 7 8 EXT_OUT03 EXT_IN04 9 10 EXT_OUT04 EXT_IN05 11 12 EXT_OUT05 EXT_IN06 13 14 EXT_OUT06 EXT_IN07 15 16 EXT_OUT07 EXTG 17 18 EXTG EXT +24Vin 19 20 EXT +24Vin	2	EXT_OUT00
3	EXT_IN01		4	EXT_OUT01
5	EXT_IN02		6	EXT_OUT02
7	EXT_IN03		8	EXT_OUT03
9	EXT_IN04		10	EXT_OUT04
11	EXT_IN05		12	EXT_OUT05
13	EXT_IN06		14	EXT_OUT06
15	EXT_IN07		16	EXT_OUT07
17	EXTG		18	EXTG
19	+24Ve		20	+24Ve

PIN	Descriptions		PIN	Descriptions
1	EXT_IN10	ADP9201_JM2 EXT_IN10 1 2 EXT_OUT10 EXT_IN11 3 4 EXT_OUT11 EXT_IN12 5 6 EXT_OUT12 EXT_IN13 7 8 EXT_OUT13 EXT_IN14 9 10 EXT_OUT14 EXT_IN15 11 12 EXT_OUT15 EXT_IN16 13 14 EXT_OUT16 EXT_IN17 15 16 EXT_OUT17 EXTG 17 18 EXTG EXT +24Vin 19 20 EXT +24Vin	2	EXT_OUT10
3	EXT_IN11		4	EXT_OUT11
5	EXT_IN12		6	EXT_OUT12
7	EXT_IN13		8	EXT_OUT13
9	EXT_IN14		10	EXT_OUT14
11	EXT_IN15		12	EXT_OUT15
13	EXT_IN16		14	EXT_OUT16
15	EXT_IN17		16	EXT_OUT17
17	EXTG		18	EXTG
19	+24Ve		20	+24Ve

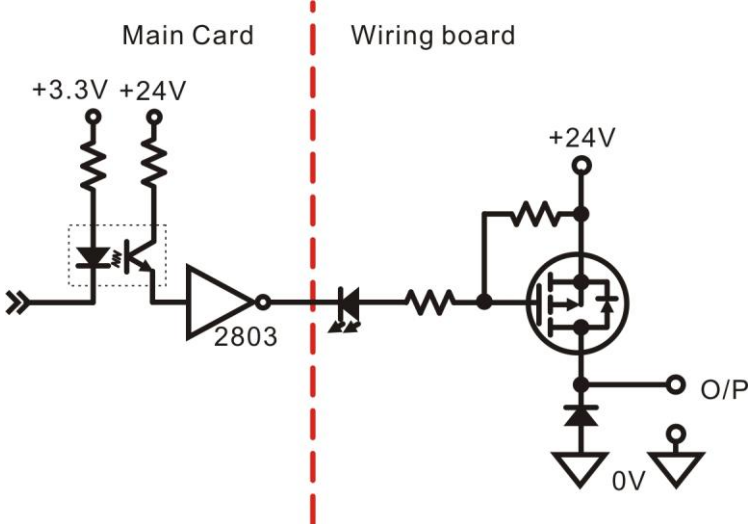
6. I/O interface diagram

6.1 Input diagram

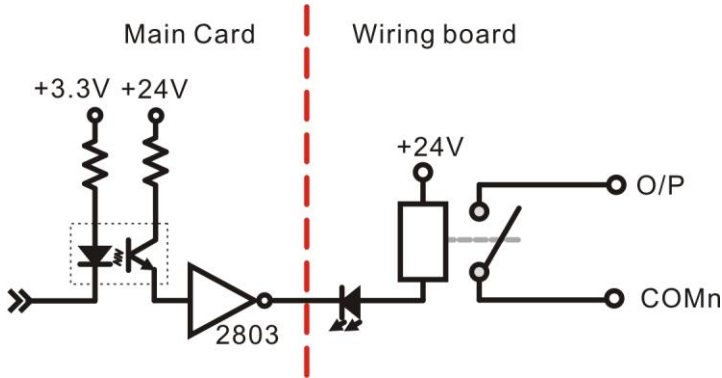


6.2 Output diagram

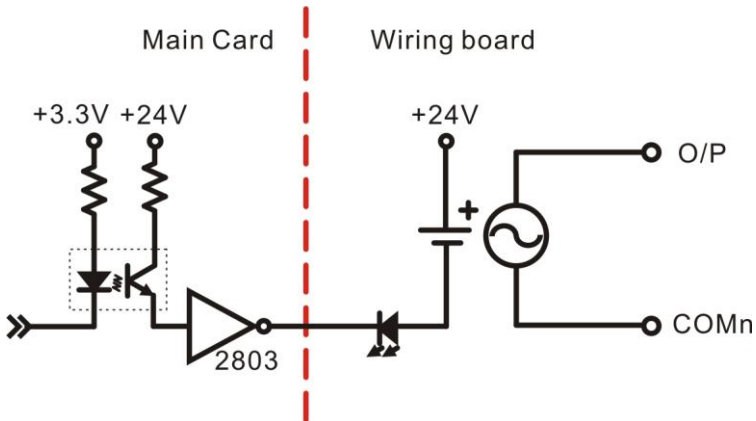
Type 1 output : (PMOS)



Type 2 output : (Relay)



Type 3 output : (SSR)



7. **Hardware settings**

7.1 CARD ID setting

Please refer the section 4.1 for CardID setting, you can jump to any of the 4 positions according to the stack layer of the card. The bottom layer (closest to the CPU board) should jump to 0 and select CLKS to 0. Next to the bottom should jump to CardID=1 and CLKS also to 1,...

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
- Industrial ON/OFF control

9. Ordering information

<u>PRODUCT</u>	<u>DESCRIPTIONS</u>
DIO6208	16-channel Digital I/O Card for 8 DI and 8 D0 Photo-coupler isolated
DIO6216	32-channel Digital I/O Card for 16 DI and 16 D0 Photo-coupler isolated
ADP9201DIN(R)	DIN rail mounted wiring board with 16 I/O LED indicators and relay output for 8 DI, 8DO
ADP9201DIN(S)	DIN rail mounted wiring board with 16 I/O LED indicators and SSR output for 8 DI, 8DO
ADP9201DIN(P)	DIN rail mounted wiring board with 16 I/O LED indicators and PMOS output for 8 DI, 8DO
JS51053	DIN rail mounted dummy wiring board
M23207	20-pin flat cable 1.5 M
M23209	20-pin flat cable 3.0 M