DIO8265
Digital I/O Card

User's Manual (V1.0)

健昇科技股份有限公司

JS AUTOMATION CORP.

新北市汐止區中興路 100 號 6 樓

6F., No.100, Zhongxing Rd.,

Xizhi Dist., New Taipei City, Taiwan

TEL：+886-2-2647-6936

FAX：+886-2-2647-6940

http://www.automation.com.tw

http://www.automation-js.com/

E-mail：control.cards@automation.com.tw

Correction record

Version	Record
V1.0	New

Contents

1. Forward 4
2. Features 5
   2.1 Main card 5
   2.2 DIN rail mounted wiring board 5
3. Specifications 6
   3.1 DIO8265Main card 6
   3.2 DIN rail mounted wiring board 7
4. Layout and dimensions 8
   4.1 DIO8265 Main card 8
   4.2 ADP8265DIN(R) Din rail mounted wiring board 9
   4.3 JS51050 for JM0 25PM Din rail mounted dummy wiring board 9
5. PIN definitions 10
   5.1 Pin definitions for DIO8265_JF0 connector 10
   5.2 Pin definitions for DIO8265_JM0 connector 11
6. I/O interface diagram 12
   6.1 TTL IO 12
   6.2 Isolated output diagram 13
7. External wiring diagram 14
8. Hardware settings 15
   8.1 CARD ID setting 15
   8.2 Jumper setting 15
9. Applications 16
10. Ordering information 17

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 DIO8265 64 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.

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)
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
DIO3232A/B 32 channel input and 32 channel output isolated digital I/O card (PCI bus)
DIO3248A/B 48 channel input and 16 channel output isolated digital I/O card (PCI bus)
DIO3264A/B 64 channel input isolated digital I/O card (PCI bus)
DIO3265 64 channel output isolated digital I/O card (PCI bus)

DIO8216 16 channel input and 16 channel output isolated digital I/O card (PCIe bus)
DIO8217 16 channel input and 16 channel output isolated digital I/O card (PCIe bus) with multifunction timer/counter
DIO8232 32 channel input and 32 channel output isolated digital I/O card (PCIe bus)
DIO8264 64 channel input isolated digital I/O card (PCIe 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 Main card

- 2.1.1 PCIe plug and play function with card ID for 16 identical cards
- 2.1.2 64 isolated DO channels
- 2.1.3 High voltage isolation on all isolated channel (2500 Vac)
- 2.1.4 Programmable debounce for TTL input
- 2.1.5 No output transition during start-up
- 2.1.6 Output status readback
- 2.1.7 External triggered interrupt (TTL IO07~IO00)
- 2.1.8 Input counter / frequency counter (on TTL IO07~IO00)
- 2.1.9 Keep output state after hot reset (jumper selectable)
- 2.1.10 Watch dog timer with default output on OUT07~OUT00
- 2.1.11 32bit timer with time up interrupt

2.2 DIN rail mounted wiring board

- 2.2.1 LEDs for corresponding status indication
- 2.2.2 8 digits per I/O group with Green LED at first digit
- 2.2.3 Optional Relay type output for different application requirement

3. Specifications

3.1 DIO8265Main card

Input Section

3.1.1 Interrupt : at TTL IO07~IO00

3.1.2 Counter/frequency counter : 16 bit at TTL IO07~IO00

Output Section

3.1.3 Output : 64 photo-isolated

3.1.4 Output rating : 3A @250Vac, 30Vdc (Relay)

TTL IO

3.1.5 Port : 2

3.1.6 Direction : software programmable on port base

3.1.7 Software debounce : No debounce, up to 8MHz

Timer

3.1.8 Length : 32 bit @1us

3.1.9 Interrupt : time up interrupt

Main Card General

3.1.10 Card ID : 4 bits

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

3.1.12 Isolation voltage : 2500Vac 1Min

3.1.13 Connector : Centronic type SCSI II 68pin connector

3.1.14 Operation temperature : 0 to +70 degree C

3.1.15 Storage temperature : -20 to +80 degree C

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

3.1.17 Dimensions : 165(W) * 110(H) mm , 6.5(W) * 4.4(H)in

3.2 DIN rail mounted wiring board

ADP8265DIN(R) DIN rail mounted wiring board

3.2.1 External supply : DC 24V±4V

3.2.2 Output status indicator : 64 LED, 8 digit per group with Green LED at first digit

3.2.3 Power indicator : Red LED

3.2.4 Output capacity : Relay : 3A continuous@250Vac(max)

3.2.5 Operation temperature : 0 to 70° C

3.2.6 Operation humidity : RH5~95%, non-condensed

3.2.7 Dimension : ADP8265DIN(R) : 274(W) * 107(L) * 45(H)mm
10.8(W) * 4.3(L) * 1.8(H)in

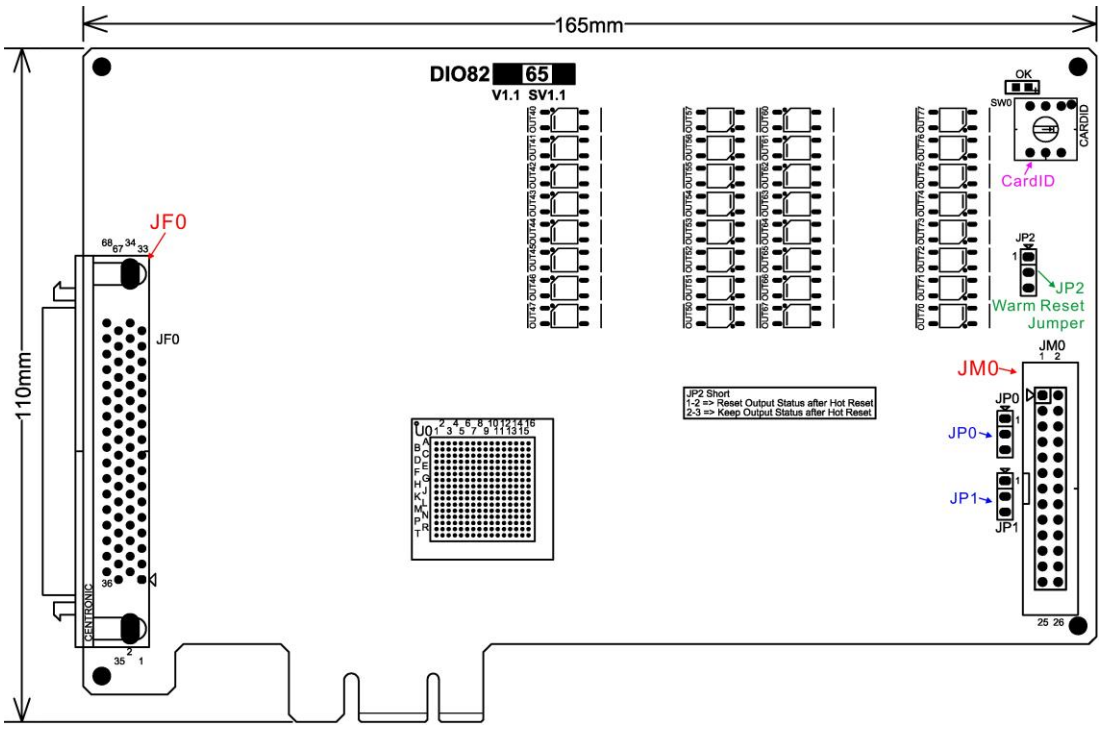
JS51050 25PM DIN rail mounted dummy wiring board for TTL I/O

3.2.8 Connection cable : D-type 25P cable to connect main and wiring board

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

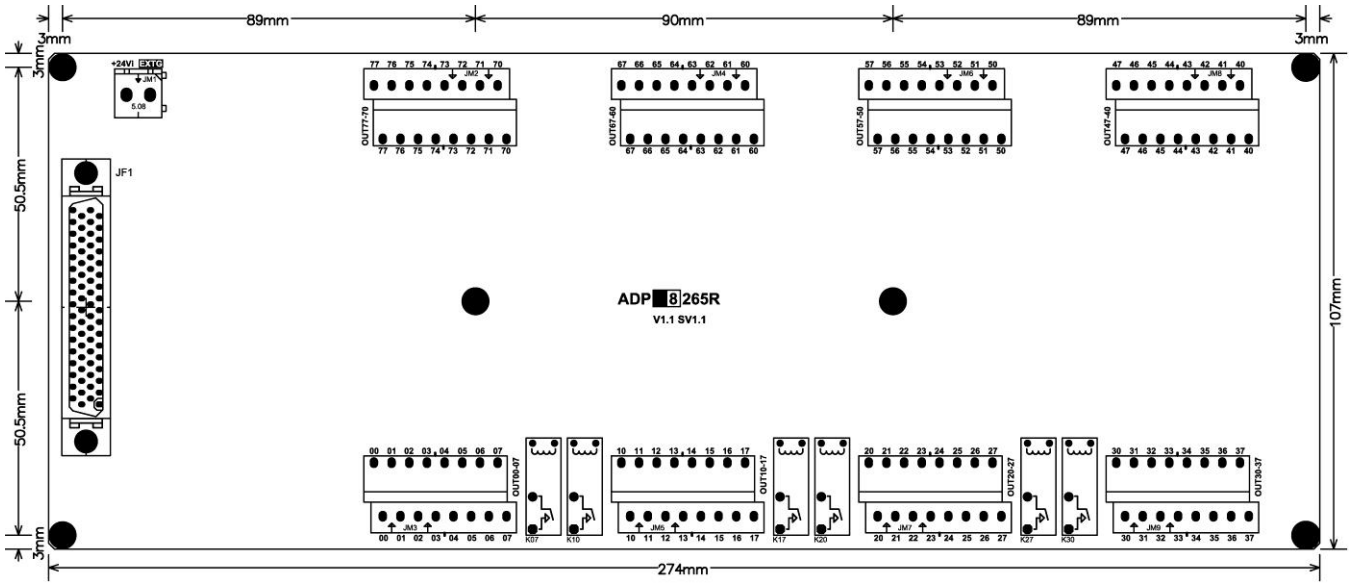
4. Layout and dimensions

4.1 DIO8265 Main card



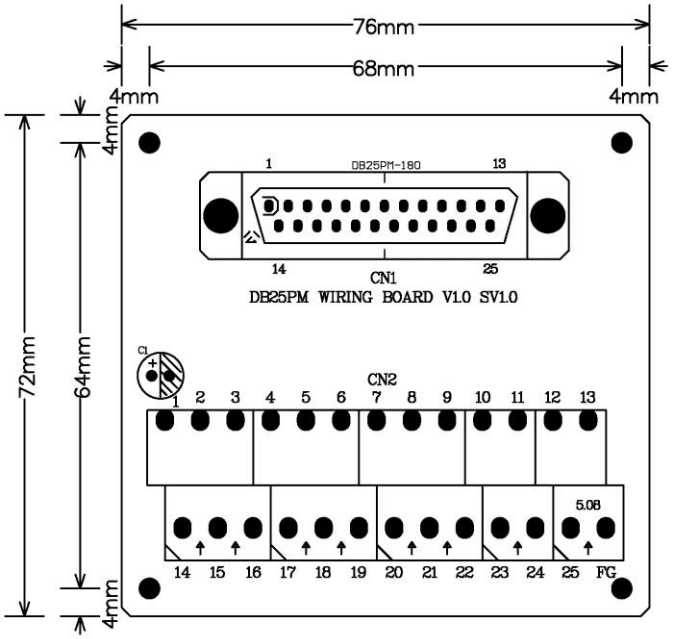
*dimension in bare board

4.2 ADP8265DIN(R) Din rail mounted wiring board



*dimension in bare board

4.3 JS51050 for JM0 25PM Din rail mounted dummy wiring board

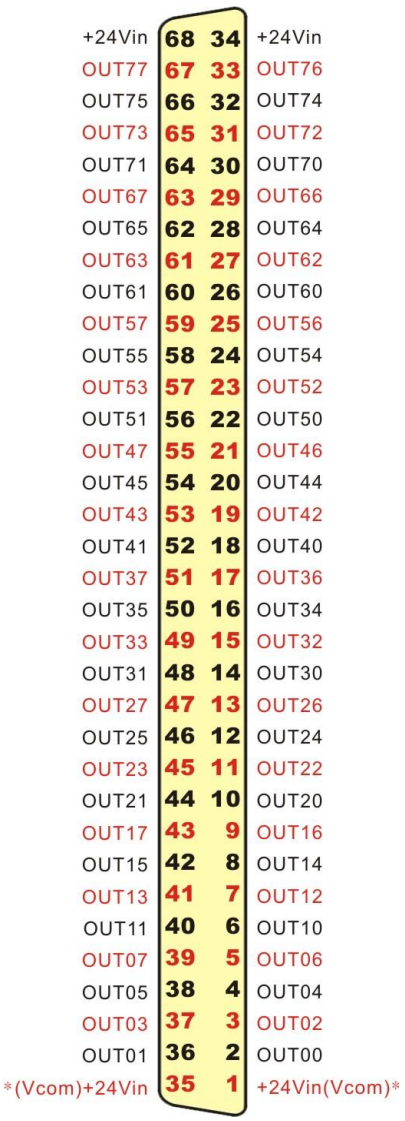


*dimension in bare board

5. PIN definitions

5.1 Pin definitions for DIO8265_JF0 connector

PIN	Descriptions
68	+24V[External DC24V power]
67	OUT77[Port7 bit7 output]
66	OUT75[Port7 bit5 output]
65	OUT73[Port7 bit3 output]
64	OUT71[Port7 bit1 output]
63	OUT67[Port6 bit7 output]
62	OUT65[Port6 bit5 output]
61	OUT63[Port6 bit3 output]
60	OUT61[Port6 bit1 output]
59	OUT57[Port5 bit7 output]
58	OUT55[Port5 bit5 output]
57	OUT53[Port5 bit3 output]
56	OUT51[Port5 bit1 output]
55	OUT47[Port4 bit7 output]
54	OUT45[Port4 bit5 output]
53	OUT43[Port4 bit3 output]
52	OUT41[Port4 bit1 output]
51	OUT37[Port3 bit7 output]
50	OUT35[Port3 bit5 output]
49	OUT33[Port3 bit3 output]
48	OUT31[Port3 bit1 output]
47	OUT27[Port2 bit7 output]
46	OUT25[Port2 bit5 output]
45	OUT23[Port2 bit3 output]
44	OUT21[Port2 bit1 output]
43	OUT17[Port1 bit7 output]
42	OUT15[Port1 bit5 output]
41	OUT13[Port1 bit3 output]
40	OUT11[Port1 bit1 output]
39	OUT07[Port0 bit7 output]
38	OUT05[Port0 bit5 output]
37	OUT03[Port0 bit3 output]
36	OUT01[Port0 bit1 output]
35	* +24V[External DC24V power] (Vcom)

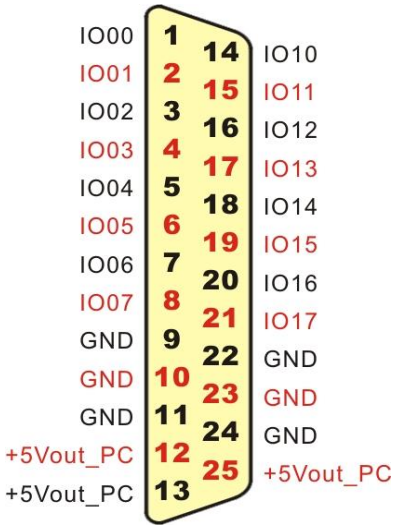


PIN	Descriptions
34	+24V[External DC24V power]
33	OUT76[Port7 bit6 output]
32	OUT74[Port7 bit4 output]
31	OUT72[Port7 bit2 output]
30	OUT70[Port7 bit1 output]
29	OUT66[Port6 bit6 output]
28	OUT64[Port6 bit4 output]
27	OUT62[Port6 bit2 output]
26	OUT60[Port6 bit0 output]
25	OUT56[Port5 bit6 output]
24	OUT54[Port5 bit4 output]
23	OUT52[Port5 bit2 output]
22	OUT50[Port5 bit1 output]
21	OUT46[Port4 bit6 output]
20	OUT44[Port4 bit4 output]
19	OUT42[Port4 bit2 output]
18	OUT40[Port4 bit0 output]
17	OUT36[Port3 bit6 output]
16	OUT34[Port3 bit4 output]
15	OUT32[Port3 bit2 output]
14	OUT30[Port3 bit1 output]
13	OUT26[Port2 bit6 output]
12	OUT24[Port2 bit4 output]
11	OUT22[Port2 bit2 output]
10	OUT20[Port2 bit0 output]
9	OUT16[Port1 bit6 output]
8	OUT14[Port1 bit4 output]
7	OUT12[Port1 bit2 output]
6	OUT10[Port1 bit1 output]
5	OUT06[Port0 bit6 output]
4	OUT04[Port0 bit4 output]
3	OUT02[Port0 bit2 output]
2	OUT00[Port0 bit0 output]
1	* +24V[External DC24V power] (Vcom)

*If main card only，Vcom do not connect to +24Vin.

5.2 Pin definitions for DIO8265_JM0 connector

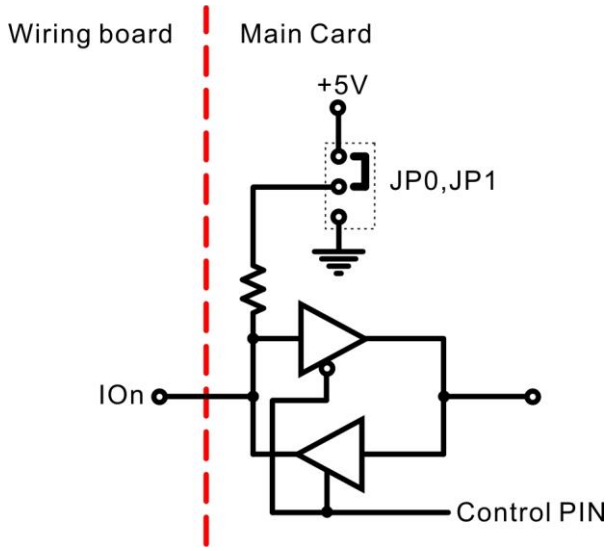
PIN	Description
1	IO00: TTL port0 IO0
2	IO01: TTL port0 IO1
3	IO02: TTL port0 IO2
4	IO03: TTL port0 IO3
5	IO04: TTL port0 IO4
6	IO05: TTL port0 IO5
7	IO06: TTL port0 IO6
8	IO07: TTL port0 IO7
9	GND
10	GND
11	GND
12	+5Vout_PC: 5V out from PC
13	+5Vout_PC: 5V out from PC



PIN	Description
14	IO10: TTL port1 IO0
15	IO11: TTL port1 IO1
16	IO12: TTL port1 IO2
17	IO13: TTL port1 IO3
18	IO14: TTL port1 IO4
19	IO15: TTL port1 IO5
20	IO16: TTL port1 IO6
21	IO17: TTL port1 IO7
22	GND
23	GND
24	GND
25	+5Vout_PC: 5V out from PC

6. I/O interface diagram

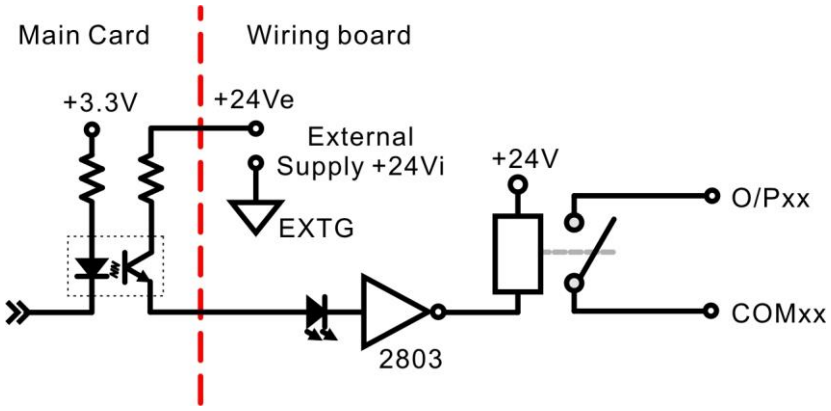
6.1 TTL IO



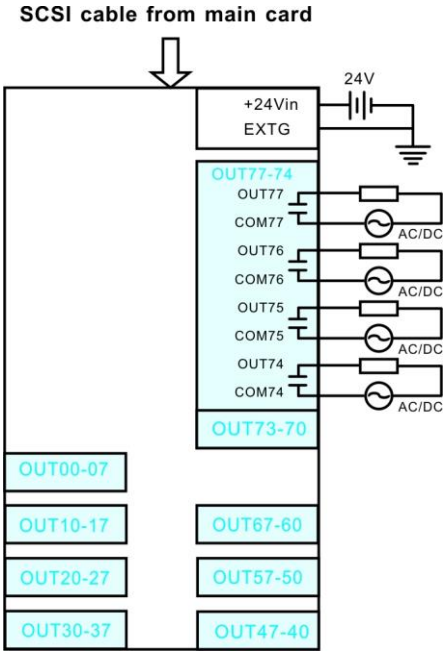
For byte-programmable TTL I/O IO07 ~ IO00, IO17 ~ IO10 to configured as pull high or pull low. JP0,JP1 are used for output state of power on. (refer 8.2 Jumper setting

)

6.2 Isolated output diagram



7. External wiring diagram



wiring board with Relay output

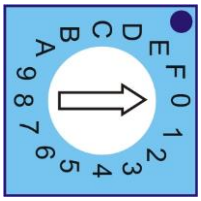
8. Hardware settings

8.1 CARD ID setting

Since PCIe 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 cards.

The following example sets the card ID at 12.

Example for card ID setting



Rotary switch set at ID=0

8.2 Jumper setting

JP0,JP1

	
1-2 short Pull High	2-3 short Pull Low

Jumper JP0 and JP1 is used for the TTL output default state, if you disable the TTL port or at computer start-up period, the default state will be output. Select the one to match with the succeeding circuit.

JP2

Warm reset jumper (JP2)	
	
Reset output after warm reset	Keep output after warm reset

9. 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
- Low speed counter
- Frequency counter
- Hardware event capture

10. Ordering information

PRODUCT	DESCRIPTIONS
DIO8265	64-channel Digital I/O Card for 64 D0 Photo-coupler isolated
ADP8265DIN(R)	DIN rail mounted wiring board for 64 power Relay output
JS51050	DIN rail mounted dummy wiring board (D type 25P male to terminals) for JM0 TTL I/O
M26J68681M5F	68 pin SCSI II cable 1.5M
M26J68683M0F	68 pin SCSI II cable 3.0M
M270325X4	D type 25p male-female cable 1.5M
M270325X4S	D type 25p male-female cable 1.5M, shielding
M270325X0	D type 25p male-female cable 3.0M
M270325X0S	D type 25p male-female cable 3.0M, shielding
SM23404	Extension kit for JM0 (bracket and flat cable for 25P female D type connector)