

EX-94421

Analog Input and

User's Manual (V1.0)

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Correction record

Version	Record

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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.

1. **Forward**

Thank you for your selection of our PCI bus EX-94421 a multi-channel analog input card.

An analog input card maybe as simply as just signal conversion but the long-term stable is most concerned; we provide it for industrial environment application.

2. **Features**

General:

2.1.1 PCI plug and play function with card ID for 16 identical cards

Analog function:

2.1.2 8 channel 12bit analog inputs (standard:8 channels)

2.1.3 Software selectable input range: -10V~ +10V, -5V~ +5V , 0~10V, 0~5V

3. **Specifications**

3.1 EX-94421 Main card

General:

3.1.1 PCI data width — 32 Bits

3.1.2 Card ID — 4 bits

3.1.3 Dimension — 156(W)*112(H)mm , 6.2(W) * 4.5(H)in

Analog block:

3.1.4 input channels — 8 channel single end or differential (standard:8 channels)

3.1.5 resolution — 12bit

3.1.6 input range — -10V~ +10V, -5V~ +5V , 0~10V, 0~5V

3.1.7 range selection — software selectable

3.1.8 conversion speed — 6us per channel

3.1.9 accuracy — full range within 9mV

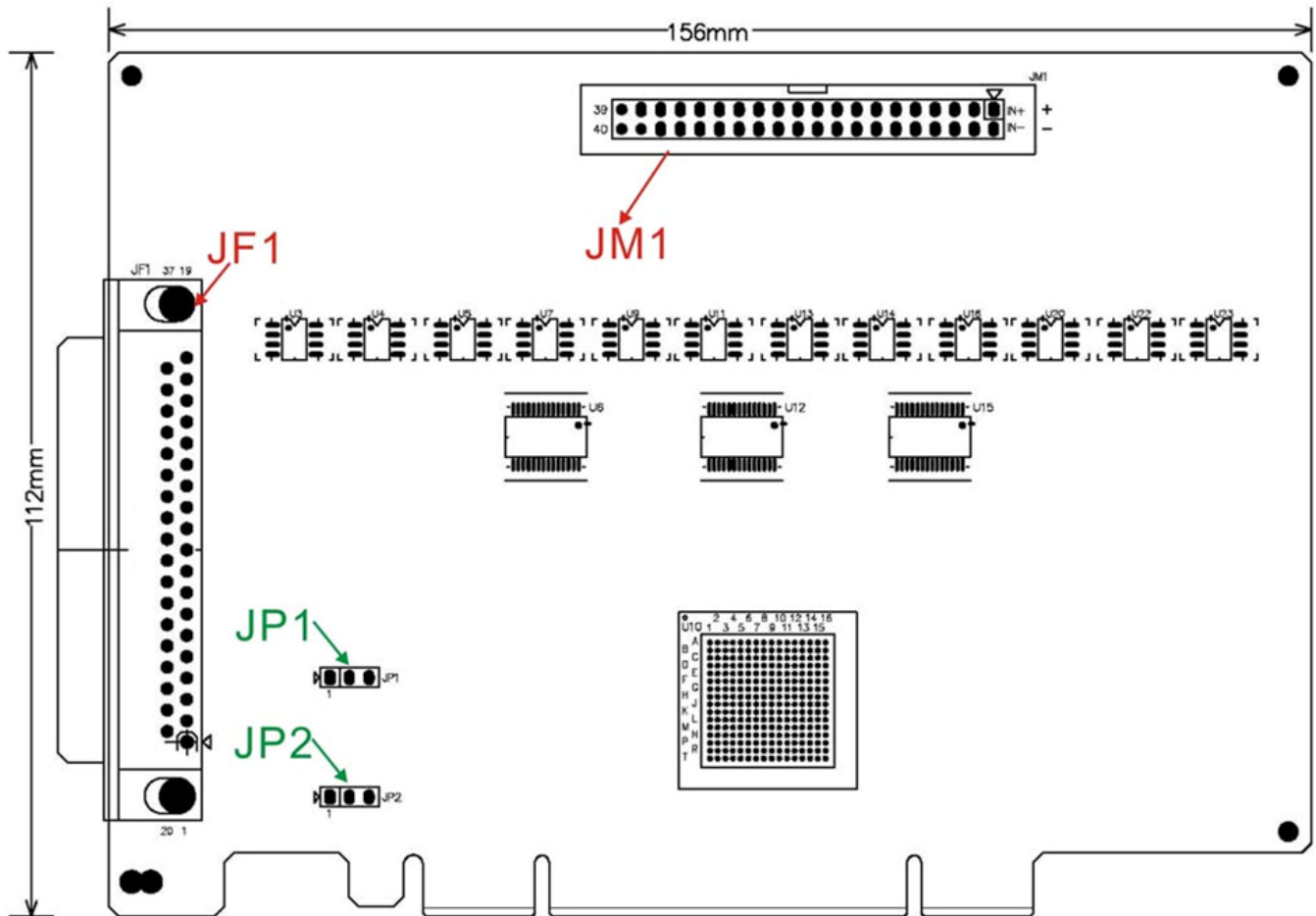
3.2 EX-962137 37P Din rail mounted dummy wiring board (Option)

3.2.1 Connection cable — D-type EX-962137 37P cable to connect main and wiring
board

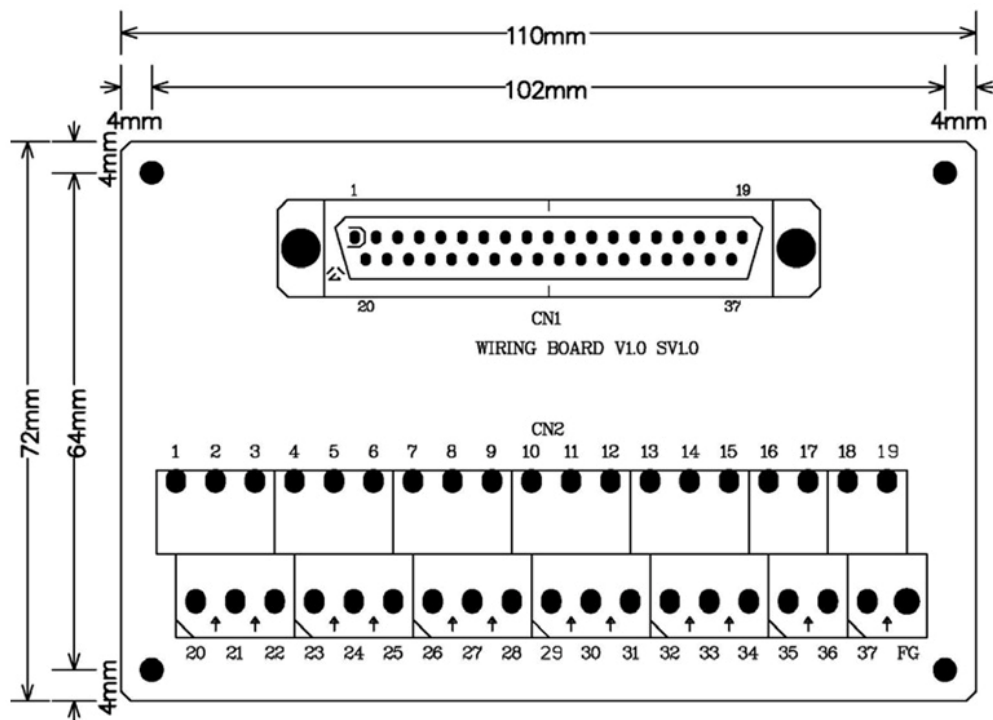
3.2.2 Dimension — 90(W)*113(L)*60(H)mm , 3.6(W)*4.5(L)*2.4(H)in

4. Layout and dimensions

4.1 EX-94421 Main card



4.2 EX-962137 37PM Din rail mounted dummy wiring board



5. Pin definitions

5.1 Pin definitions for JF1 (on card EX-962137 37P) connector

PIN	DESCRIPTIONS				PIN	DESCRIPTIONS
1	DIO00: dio port0 bit0 trigger in of counter0	DIO00	1	DIO01	20	DIO01: dio port0 bit1 trigger in of counter1
2	DIO02: dio port0 bit2	DIO02	2	DIO03	21	DIO03: dio port0 bit3
3	DIO04: dio port0 bit4	DIO04	3	DIO05	22	DIO05: dio port0 bit5
4	DIO06: dio port0 bit6	DIO06	4	DIO07	23	DIO07: dio port0 bit7
5	DIO10: dio port1 bit0 trigger out of counter0/timer0	DIO10	5	DIO11	24	DIO11: dio port1 bit1 trigger out of counter1/timer1
6	DIO12: dio port1 bit2	DIO12	6	DIO13	25	DIO13: dio port1 bit3
7	DIO14: dio port1 bit4	DIO14	7	DIO15	26	DIO15: dio port1 bit5
8	DIO16: dio port1 bit6	DIO16	8	DIO17	27	DIO17: dio port1 bit7
9	AI0+: analog in0+	AI0+	9	AI0-	28	AI0-: analog in0-
10	AI1+: analog in1+	AI1+	10	AI1-	29	AI1-: analog in1-
11	AI2+: analog in2+	AI2+	11	AI2-	30	AI2-: analog in2-
12	AI3+: analog in3+	AI3+	12	AI3-	31	AI3-: analog in3-
13	AI4+: analog in4+	AI4+	13	AI4-	32	AI4-: analog in4-
14	AI5+: analog in5+	AI5+	14	AI5-	33	AI5-: analog in5-
15	AI6+: analog in6+	AI6+	15	AI6-	34	AI6-: analog in6-
16	AI7+: analog in7+	AI7+	16	AI7-	35	AI7-: analog in7-
17	+5V (out)	+5Vout	17	GND	36	GND
18	GND	GND	18	-15Vout	37	-15Ve (out)
19	+15Ve (out)	+15Vout	19			

NOTE: For single end input application, one end of differential input terminal should wire to ground,
Say AI0 for example, AI0- should wire to ground for single end input application.

NOTE: DIO00~07, DIO10~17 do not populate on this version

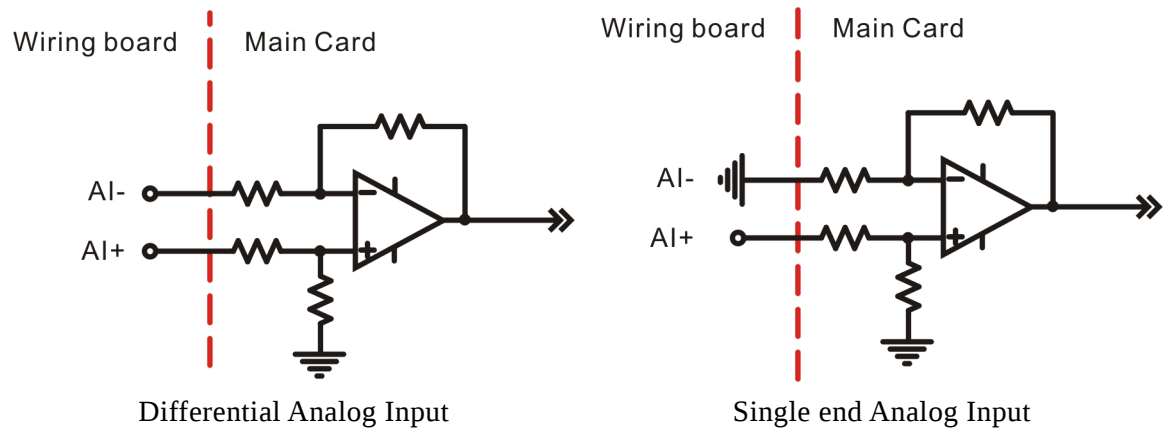
5.2 Pin definitions for JM1 (extension EX-962137 37P) connector

PIN	DESCRIPTIONS					PIN	DESCRIPTIONS
1	AI8+: analog in8+	AI8+	1	20	AI8-	20	AI8-: analog in8-
2	AI9+: analog in9+	AI9+	2	21	AI9-	21	AI9-: analog in9-
3	AI10+: analog in10+	AI10+	3	22	AI10-	22	AI10-: analog in10-
4	AI11+: analog in11+	AI11+	4	23	AI11-	23	AI11-: analog in11-
5	AI12+: analog in12+	AI12+	5	24	AI12-	24	AI12-: analog in12-
6	AI13+: analog in13+	AI13+	6	25	AI13-	25	AI13-: analog in13-
7	AI14+: analog in14+	AI14+	7	26	AI14-	26	AI14-: analog in14-
8	AI15+: analog in15+	AI15+	8	27	AI15-	27	AI15-: analog in15-
9	AI16+: analog in16+	AI16+	9	28	AI16-	28	AI16-: analog in16-
10	AI17+: analog in17+	AI17+	10	29	AI17-	29	AI17-: analog in17-
11	AI18+: analog in18+	AI18+	11	30	AI18-	30	AI18-: analog in18-
12	AI19+: analog in19+	AI19+	12	31	AI19-	31	AI19-: analog in19-
13	AI20+: analog in20+	AI20+	13	32	AI20-	32	AI20-: analog in20-
14	AI21+: analog in21+	AI21+	14	33	AI21-	33	AI21-: analog in21-
15	AI22+: analog in22+	AI22+	15	34	AI22-	34	AI22-: analog in22-
16	AI23+: analog in23+	AI23+	16	35	AI23-	35	AI23-: analog in23-
17	+5V (out)	+5Vout	17	36	GND	36	GND
18	GND	GND	18	37	-15Vout	37	-15Ve (out)
19	+15Ve (out)	+15Vout	19				

NOTE: JM1 do not populate on this version

6. I/O interface diagram

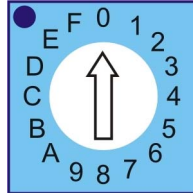
6.1 Analog I/O diagram



7. **Hardware descriptions**

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 (OS). A 16 position rotary switch is used for extinguishing the 16 identical cards.



7.2 Analog input

There are 8 channels of analog input on card, the hardware may accept 0-5V, 0-10V, -5V-+5V, -10V - +10V range on chip basis.

8. Applications

8.1 Analog section:

For measurement of analog signal such as:

- temperature
- voltage
- current
- flow
- light
-

Note: The analog signal should be pre-processed to the acceptable range of the card.