A-626 / 628

User's Manual

Warranty

All products manufactured by ICP DAS are warranted against defective materials for a period of one year from the date of delivery to the original purchaser.

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CONTENTS

1.Introduction

The A-626 / A-628 Provides 6 / 8 Channel analog outputs, 16 channel digital outputs and 16 channel inputs . Each analog output channel can be user configurable , range of :

Voltage output :0-5V,0-10V,±5,±10V or Current loop :4-20mA .

The A-626/ A628 has 16 channel digital input and digital output . All the D/I/O channel are TTL compatible. and it can connection with DB-16P (16 channel isolation digital input board) or DB-16R(16 Channel Relay output board) daughter board.

1.1.Features

- A-626 6 Channel analog output
  A-628 8 Channel analog output
- 12-bit resolution, double buffered D/A converter
- Voltage range : 0-5V,0-10V,±5V,±10V
- Current loop :4-20mA
- IRQ level : IRQ3-IRQ15
- 16 Channel Digital Output
- 16 Channel Digital Input
- D/I/O are TTL Compatible

1.2. Applications

- Servo control
- On/Off control
- Energy management
- Programmable current sink

1.3. Specifications

- Analog Output

● Channel	A-626 6 Channel D/A A-628 8 Channel D/A
● Resolution	12-bit
● Non-linearity	±1 LSB
● Voltage Output Range: Unipolar	0~5V,0~10V
Bipolar	±5V,±10V
Current loop	4~20mA
● Reference Voltage	Internal reference -5V or -10V
	External reference ±10V(MAX) AC or DC
● Current loop exciting voltage	8V~35V
● D/A Converter	B.B. DAC7541 or Equivalent
● Settling Time	70 micro Sec
● Voltage Output Driver	5mA (Max.)

- Digital Input

● Channel	16 Channels , TTL Compatible
● Low Level Voltage	-0.5V~0.8V
● High Level Voltage	2.0V~5.0V

- Digital Output

● Channel	16 Channels , TTL Compatible
● Logic High Voltage	2.0V at 15mA
● Logic Low Voltage	0.5V at 24mA

- General Specification

● Dimensions	341mm X 98mm (Half Size)
● Bus	PC/AT Bus
● Input / Output Connector	Voltage output : 37-Pin D-Sub Connector Digital input / Output :20-Pin Flat cable connector
● Operation Temperature	0~50°C
● Power Consumption	
+5V (A-626/A-628) :	450 / 600mA (Typical), 900/1200mA (Max)
+12V (A-626/A-628) :	50 / 60mA (Typical), 110 / 120mA (Max)
-12V (A-626/A-628) :	14 / 16mA (Typical), 90 / 130mA (Max)

2. Install A-626 / A-628

2.1. Product Check List

In addition to this manual, the package includes the following items.

- A-626 / A-628 Analog output Card
- A-626 / A 628 utility diskette

Note : If any of these items is missing or damaged , contact the dealer who provides you this product. Save the shipping materials and carton in case you want to ship or store the product in the future.

The A-626 / A-628 Card contains sensitive electronic components that can be easily damaged by static electricity.

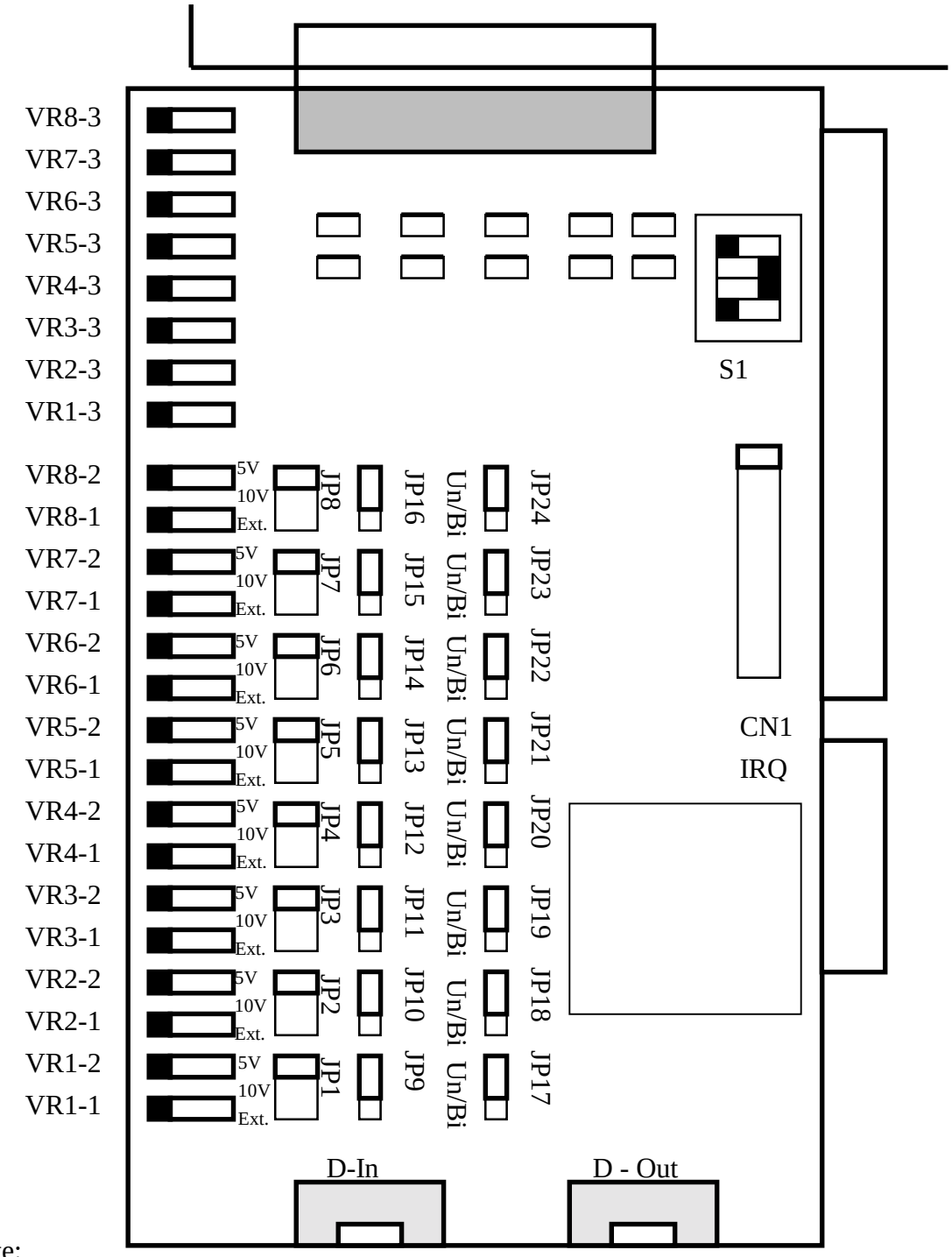
The card should be protection on a grounded anti-static mat. and operator should be wearing an a grounded anti-static wristband.

2.2. Jumper and DIP Switch Setting

When you use the A-626 / A-628 , You should set the I/O address and voltage range first . you can configure output voltage of each channel and I/O address by jumper and switch.

The position of jumper please refer the section 2.3 A-626 / A-628 layout

2.3. A-628's Layout

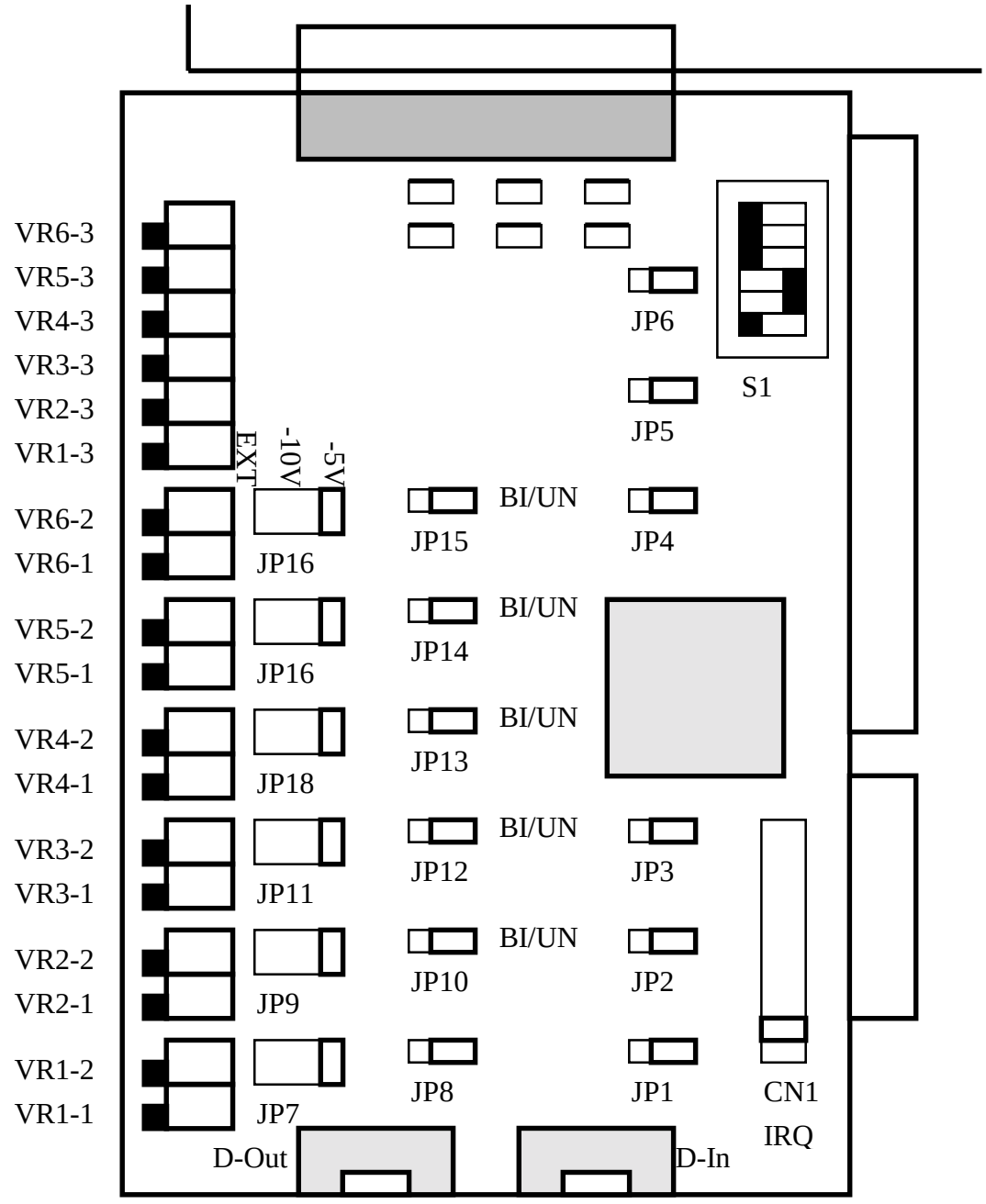


Note:

UN :Unipolar JPn : Jumper Number Ext. :External S : Dip Switch

Bi :Bipolar VR :Veritable Resister CN : Connector

A-626's Layout



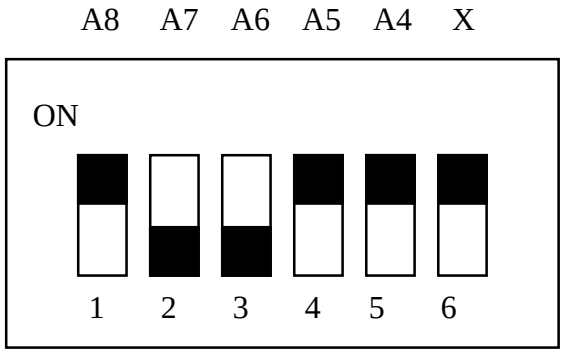
Note :

UN	Unipolar
BI	Bipolar
-5V	Internal Reference Voltage -5V
-10V	Internal Reference Voltage -10V
EXT	External Reference Voltage Input

2.4. I/O Address Setting

2.4.1. A-626 Address Setting

The A-626 requires consecutive locations in I/O address space. The base address is set by DIP switch S1 .The default address is 2C0 Hex .



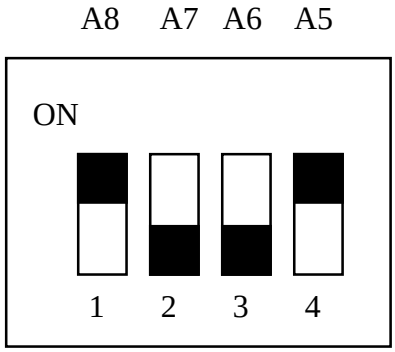
S1 : Base Address
Default :2C0 Hex

Base Address	A8	A7	A6	A5	A4
200-20F	ON	ON	ON	ON	ON
210-21F	ON	ON	ON	ON	OFF
220-22F	ON	ON	ON	OFF	ON
:	:	:	:	:	:
★2C0-2CF	ON	OFF	OFF	ON	ON
2D0-2DF	ON	OFF	OFF	ON	OFF
:	:	:	:	:	:
3F0-3FF	OFF	OFF	OFF	OFF	OFF

★Default Base Address is 2C0 Hex

2.4.2. A-628 Address Setting

The A-628 requires 20 consecutive locations in I/O address space. The base address is set by DIP switch S1 .The default address is 2C0 Hex .



S1 : Base Address
Default :2C0 Hex

Base Address	A8	A7	A6	A5
200-20F	ON	ON	ON	ON
210-21F	ON	ON	ON	ON
220-22F	ON	ON	ON	OFF
:	:	:	:	:
★2C0-2CF	ON	OFF	OFF	ON
2D0-2DF	ON	OFF	OFF	ON
:	:	:	:	:
3F0-3FF	OFF	OFF	OFF	OFF

★Default Base Address is 2C0 Hex

2.4.5. I/O Address Mapping

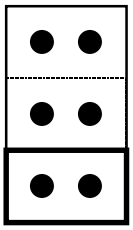
Address	Device	Address	Device
000-1FF	PC RESERVED	320-32F	XT Hart Dosk
200-20F	Game Port	378-37F	Parallel Port
210-21F	XT Expansion Unit	380-38F	SDLC
238-23F	Bus Mouse	3A0-3AF	SDLC
278-27F	Parallel Port	3B0-3BF	MDA/Parallel Port
2B0-2DF	EGA	3C0-3CF	EGA
2E0-2E7	AT GPIB	3D0-3DF	CGA
2E8-2EF	Serial Port	3E0-3EF	Serial Port
2F8-2EF	Serial Port	3F0-3F7	Floppy Disk
300-31F	Prototype Card	3F8-3FF	Serial Port

2.5. Jumper Setting

2.5.1. A-626 Jumper Setting

The A-626 each D/A channel can be configurable. You can setting the voltage range for your applications.

The A-626 provides -5V or -10V internal reference voltage and unipolar or bipolar voltage output . Each channel is individually jumper selectable to any ranges.

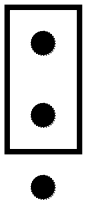


EXT External Reference

-10V Internal Reference -10V

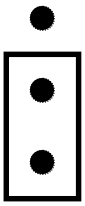
-5V Internal Reference -5V

Jumper Number: JP7 , JP9 , JP 11, JP18 , JP17 , JP16



BI: Bipolar

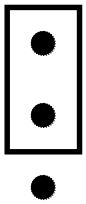
UN : Unipolar



BI: Bipolar

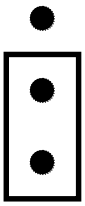
UN : Unipolar

Jumper Number : JP8 , JP10 , JP12 , JP13 , JP14 , JP15



BI: Bipolar

UN : Unipolar



BI: Bipolar

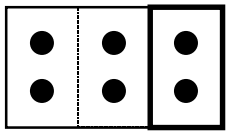
UN : Unipolar

Jumper Number :JP1 , JP2 , JP3 , JP4 , JP5 , JP5 , JP6

2.5.2. A-628 Jumper Setting

The A-628 each D/A channel can be configurable. You can setting the voltage range for your applications.

The A-628 provides -5V or -10V internal reference voltage and unipolar or bipolar voltage output . Each channel is individually jumper selectable to any ranges.



EXT -10V -5V

EXT	External Reference
-10V	Internal Reference -10V
-5V	Internal Reference -5V

Jumper Number: JP1 , JP2 , JP3, JP4 , JP5 , JP6 , JP7 , JP8

Unipolar Mode Bipolar Mode

Jumper Number : JP9 , JP10 , JP11 , JP12 , JP13 , JP14 , JP15 , JP16

Unipolar Mode Bipolar Mode

Jumper Number :JP17 , JP18 , JP19 , JP20 , JP21 , JP22 , JP23 , JP24

2.5.3. Reference Voltage Table

Reference Voltage Table

Reference Voltage	Unipolar	Bipolar
-5V Reference	0 ~ 5V	±5V
-10V Reference	0 ~ 10V	±10V
External Reference	0~ - (Ext. Reference Voltage)	(Ext.. Reference Voltage) ~ -(Ext. Reference Voltage)

Voltage Range Table

Voltage Range	Reference Voltage	Unipolar / Bipolar
0 ~ 5V	-5V	Unipolar
0~10V	-10V	Unipolar
± 5V	-5V	Bipolar
± 10V	-10V	Bipolar
4 ~ 20mA Current loop	-5V	unipolar

A-626 Jumper Setting Table

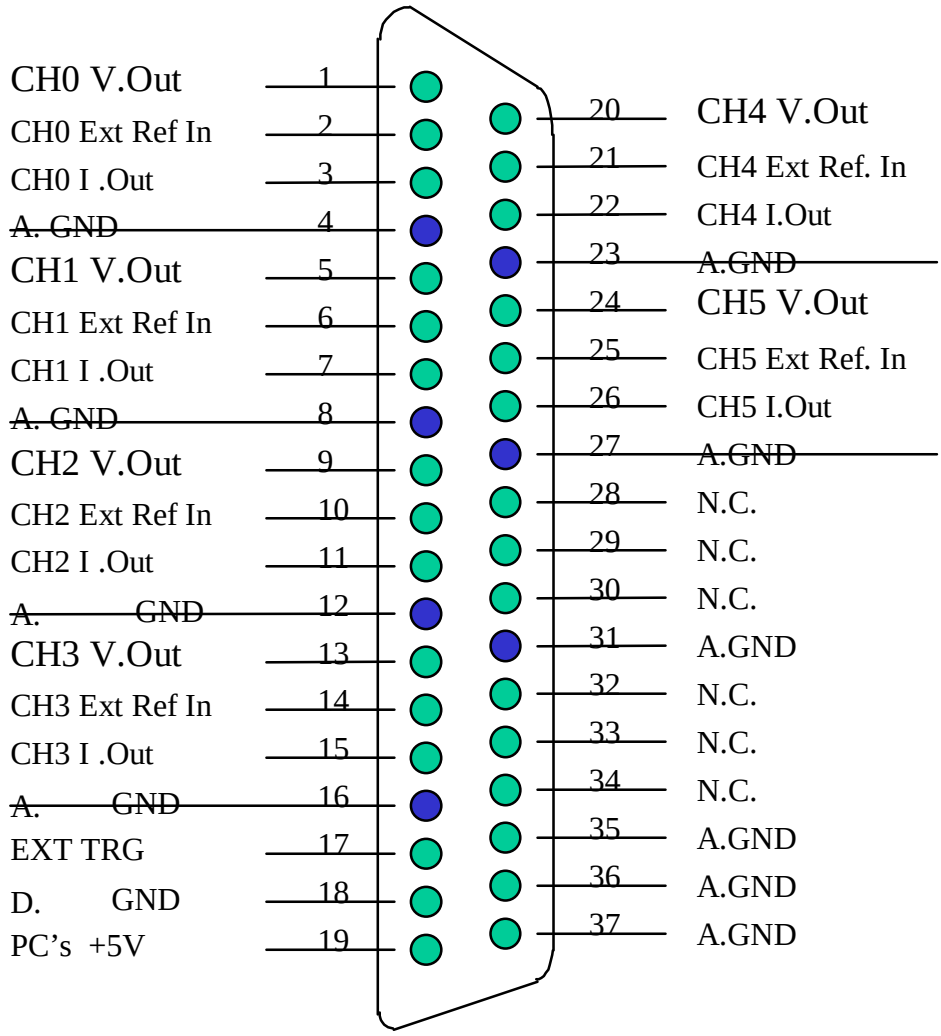
D/A Channel	Corresponding Jumper Unipolar/Bipolar	Corresponding Jumper Reference Voltage
Channel 0	JP 1 & JP 8	JP 7
Channel 1	JP 2 & JP10	JP 9
Channel 2	JP 3 & JP12	JP11
Channel 3	JP 4 & JP13	JP18
Channel 4	JP 5 & JP14	JP17
Channel 5	JP 6 & JP15	JP16

A-628 Jumper Setting Table

D/A Channel	Corresponding Jumper Reference Voltage	Corresponding Jumper Unipolar/Bipolar
Channel 0	JP 1	JP 9 & JP17
Channel 1	JP 2	JP 10 & JP18
Channel 2	JP 3	JP 11 & JP19
Channel 3	JP 4	JP 12 & JP20
Channel 4	JP 5	JP 13 & JP21
Channel 5	JP 6	JP 14 & JP22
Channel 6	JP 7	JP 15 & JP23
Channel 7	JP 8	JP 16 & JP24

2.6. Pin Assignment

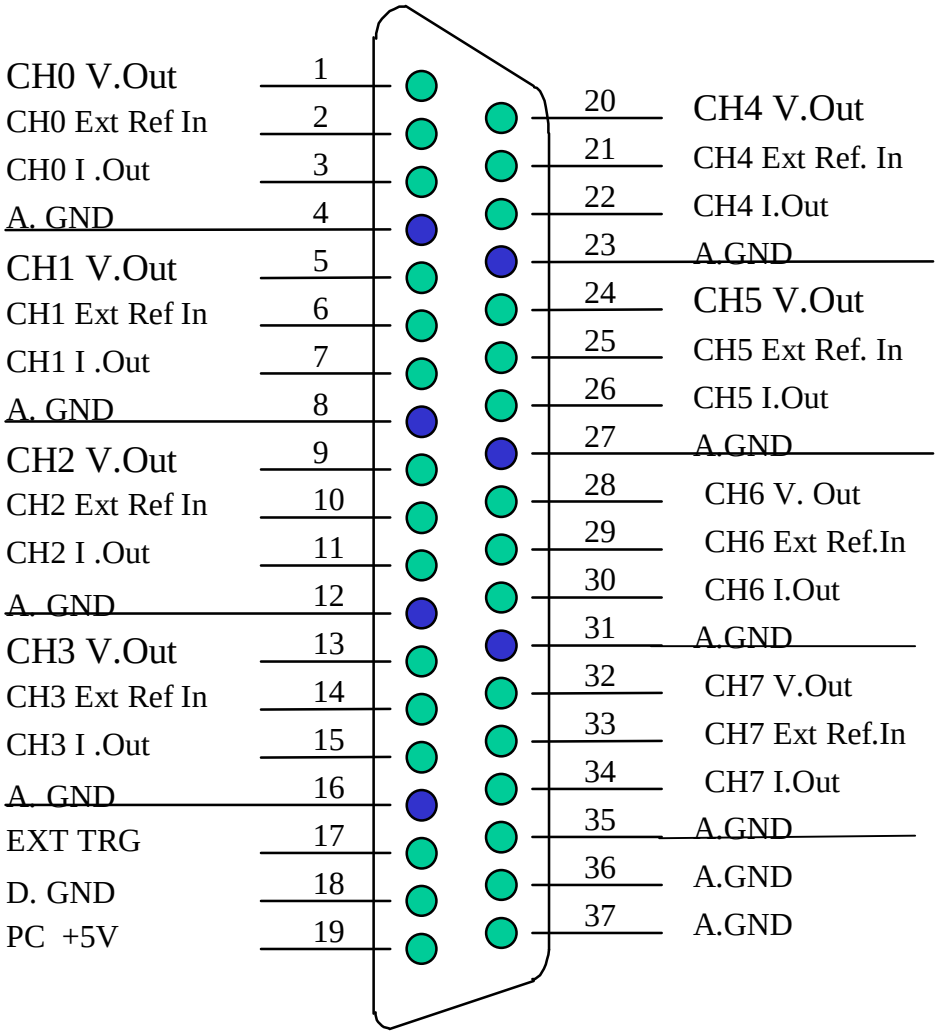
A-626 P1: 37-Pin Connector for Voltage Output & Current Loop



Note :

- CH n V.Out D/A Voltage Output Channel n
- CH n Ext Ref In D/A External Reference Input Channel n
- CH n I. Out Current Loop Output Channel n
- A. GND Analog Ground
- D.GND Digital Ground
- PC's +5V From PC Power Supply +5V

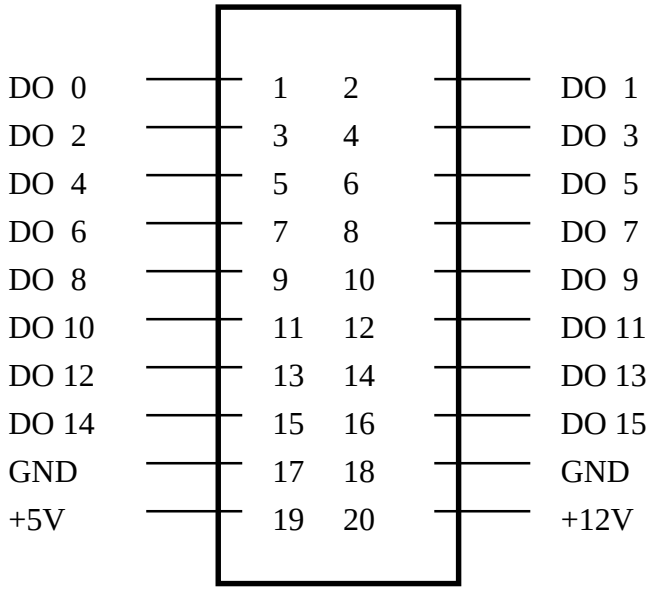
A-628 CN1: 37-Pin Connector for Voltage Output & Current Loop



Note :

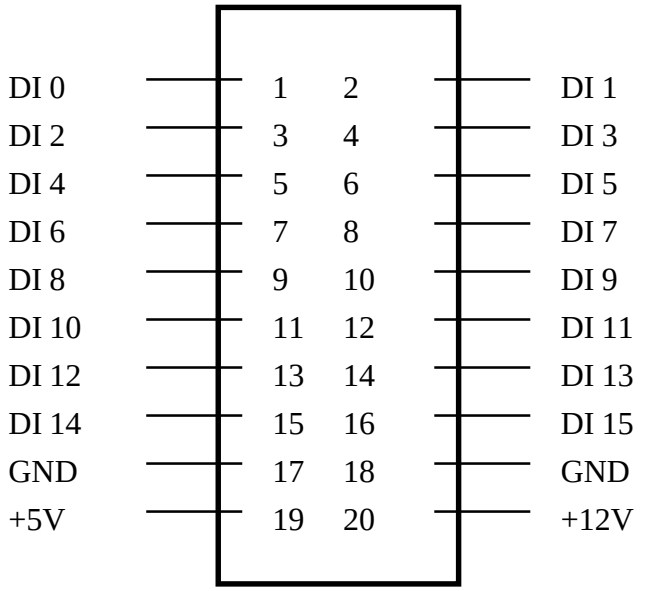
- CH n V.Out — D/A Voltage Output Channel n
- CH n Ext Ref In — D/A External Reference Input Channel n
- CH n I. Out — Current Loop Output Channel n
- A. GND — Analog Ground
- D.GND — Digital Ground
- PC's +5V — From PC Power Supply +5V

A-626 CN3: Digital Output Connector
A-628 CN2 : Digital Output connector



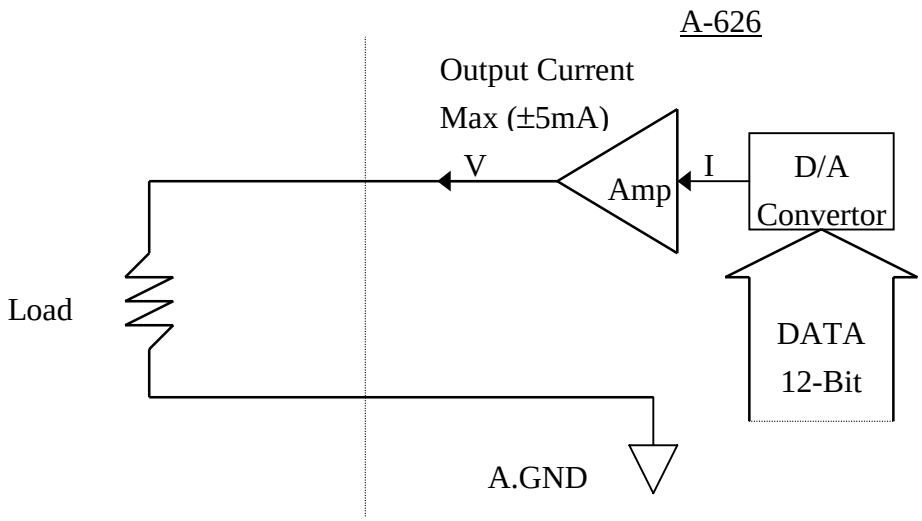
The A-626 / A-628 has 16 channel digital output /Input , all of the digital channels are TTL compatible.
The DB-16R (16 Channel Relay Actuator Board) or DB-24PR (24 Channel Power Relay Actuator Board) and DB-16P (16Channel Isolation Input Board) are designed for going with the digital input and output connector

A-626 CN4: Digital Input Connector
A-628 CN3 : Digital Input Connector



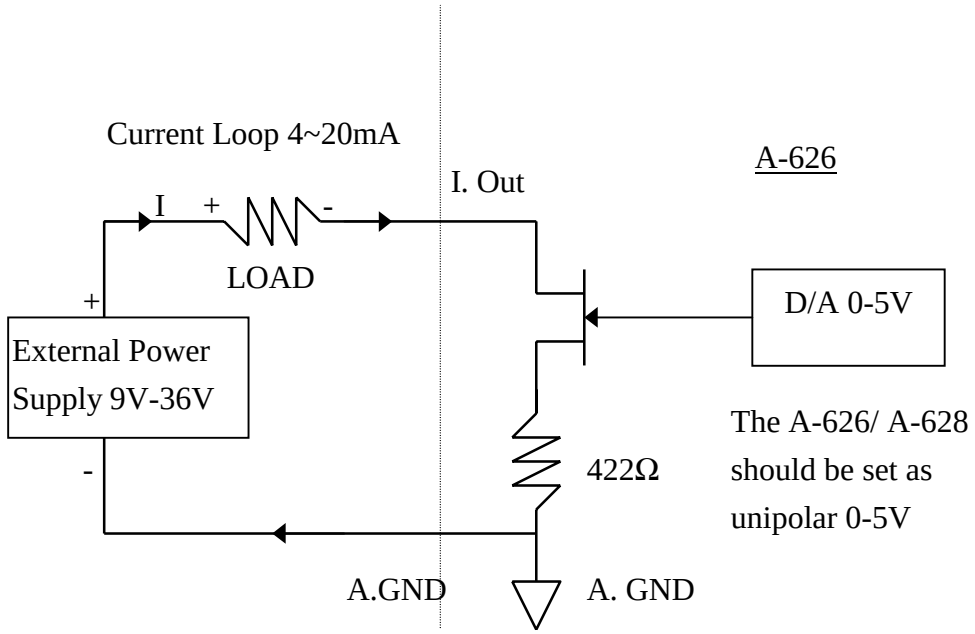
2.7. Signal Connection

2.7.1. Voltage Output



The A-626 / A-628 D/A Voltage Output Maximum Current :± 5 mA

2.7.2. Current Loop



3. Programming

3.1. I/O Register

3.1.1. A-626 I/O Port Address

Address	Function	Read/Write
Base + 0x0	D/A CH0 High Byte	Write
Base + 0x1	D/A CH0 Low Byte	Write
Base + 0x2	D/A CH1 High Byte	Write
Base + 0x3	D/A CH1 Low Byte	Write
Base + 0x4	D/A CH2 High Byte	Write
Base + 0x5	D/A CH2 Low Byte	Write
Base + 0x6	D/A CH3 High Byte	Write
Base + 0x7	D/A CH3 Low Byte	Write
Base + 0x8	D/A CH4 High Byte	Write
Base + 0x9	D/A CH4 Low Byte	Write
Base + 0xA	D/A CH5 High Byte	Write
Base + 0xB	D/A CH5 Low Byte	Write
Base + 0xC	D/O Bit 0 - 7	Write/ Read
Base + 0xD	D/O Bit 8- 15	Write/ Read

A-626 D/A Register

D/A Channel	High Byte Address	Low Byte Address
0	Base + 0	Base + 1
1	Base + 2	Base + 3
2	Base + 4	Base + 5
3	Base + 6	Base + 7
4	Base + 8	Base + 9
5	Base + A	Base + B

3.1.2. A-628 I/O Port Address

Address	Function	Read/Write
Base + 0x0	D/A CH0 High Byte	Write
Base + 0x1	D/A CH0 Low Byte	Write
Base + 0x2	D/A CH1 High Byte	Write
Base + 0x3	D/A CH1 Low Byte	Write
Base + 0x4	D/A CH2 High Byte	Write
Base + 0x5	D/A CH2 Low Byte	Write
Base + 0x6	D/A CH3 High Byte	Write
Base + 0x7	D/A CH3 Low Byte	Write
Base + 0x8	D/A CH4 High Byte	Write
Base + 0x9	D/A CH4 Low Byte	Write
Base + 0xA	D/A CH5 High Byte	Write
Base + 0xB	D/A CH5 Low Byte	Write
Base + 0xC	D/A CH6 High Byte	Write
Base + 0xD	D/A CH6 Low Byte	Write
Base + 0xE	D/A CH7 High Byte	Write
Base + 0xF	D/A CH7 Low Byte	Write
Base + 0x10	D/I/O Bit 0 - 7	Write/ Read
Base +0x11	D/I/O Bit 8 -15	Write/ Read

A-628 D/A Register

D/A Channel	High Byte Address	Low Byte Address
0	Base + 0x0	Base + 0x1
1	Base + 0x2	Base + 0x3
2	Base + 0x4	Base + 0x5
3	Base + 0x6	Base + 0x7
4	Base + 0x8	Base + 0x9
5	Base + 0xA	Base + 0xB
6	Base + 0xC	Base + 0xD
7	Base + 0xE	Base + 0xF

3.2. Data Register

12-bit D/A Data Format:

D/A Low Byte							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
D7	D6	D5	D4	D3	D2	D1	D0

D/A High Byte							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
X	X	X	X	D11	D10	D9	D8

Note: You should be write the high byte data first then write low byte data
Example : (Basic Language)

```
Bas=&h2c0
OUT bas+0,&H80        ‘ send High byte
OUT bas+1,&H0         ‘ send Low byte
                      ‘Unipolar 0-5V D/A Channel 0 will output 2.5 V
```

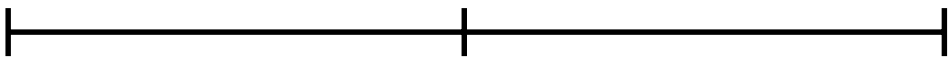
High Byte Data								Low Byte Data							
D7	D6	D5	D4	D3	D2	D1	D0	D7	D6	D5	D4	D3	D2	D1	D0
X	X	X	X	11	10	9	8	7	6	5	4	3	2	1	0

0x000	0	0	0	0	0	0	0	0	0	0	0	0
0x800	1	0	0	0	0	0	0	0	0	0	0	0
0xFFF	1	1	1	1	1	1	1	1	1	1	1	1

12 Bit Data

Output Range	Output Voltage	Binary Code	Hex.	Dec.
	5V	1111 1111 1111	FFF	4095
0-5V	2.5V	1000 0000 0000	800	2048
(Unipolar)	0V	0000 0000 0000	0	0
	10V	1111 1111 1111	FFF	4095
0-10V	5V	1000 0000 0000	800	2048
(Unipolar)	0V	0000 0000 0000	0	0
	5V	1111 1111 1111	FFF	4095
±5V	0V	1000 0000 0000	800	2048
(Bipolar)	-5V	0000 0000 0000	0	0
	10V	1111 1111 1111	FFF	4095
±10V	0V	1000 0000 0000	800	2048
(Bipolar)	-10V	0000 0000 0000	0	0
	20mA	1111 1111 1111	FFF	4095
4~20mA	12mA	1000 0000 0000	800	2048
(Current Loop)	4mA	0000 0000 0000	0	0

0V (0~5V)	2.5V	5V
0V (0~10V)	5V	10V
-5V (±5V)	0V	+5V
-10V (±10V)	0V	+10V
4mA (4~20mA)	12mA	20mA



0 (0x000)
0000 0000 0000

2048 (0x800)
1000 0000 0000

4095 (0xFFF)
1111 1111 1111

12 bit Data Format

Calculation :

VD = High Byte x 256 + Low Byte

Unipolar :

VD = 2050 (Dec.) Converted Data

High Byte = 8 , Low Byte = 2

Output Range : 0~5V

Voltage Output = 5 (V)X 2050 / 4095 = 2.503(V)

Bipolar :[=[p-[

Coveted Data = 1024 (Dec.)

High Byte = 4 , Low Byte = 0

Output Range = ±10V

Voltage Output = 5 (V) X (1024-2048)/2048= - 2.4926(V)

Current Loop:

Coveted Data = 3076 (Dec)

High Byte = 12 , Low Byte = 4

Output Range = 4~20mA

Current Sink = ((20-4) X 3076/4095)+ 4=16.0185(mA)

Example Program : (Quick Basic)

```
BasAddress=&H2C0          ‘ A-626 / A-628 Base Address
RefVol=5                  ‘ Reference Voltage = -5V
                            ( Unipolar 0 - 5 V )
Vo = 3.5                  ‘ Output 3.5V

Vd = int(Vo*4095/Refvol)  ‘ Conversion Binary Data
HighByte = int(Vd/256)    ‘          High Byte Data
LowByte = Vd - HighByte*256 ‘        Low Byte Data

OUT ( BasAddress + 0 , HighByte)   ‘ Write high byte data first
OUT ( BasAddress + 1 , LowByte)    ‘ Then low byte data to D/A channel 0
```

3.3. Digital Input / Output Register

A-626 Digital Input / Output Register

Address	Write	Read
Base + 0x0C	Digital Output Channel 0~7	Digital Input Channel 0~7
Base + 0x0D	Digital Output Channel 8~15	Digital Input Channel 8~15

Digital Input / Output Data Format

Bit	7	6	5	4	3	2	1	0
Base + C	DO15	DO14	DO13	DO12	DO11	DO10	DO9	DO8
Base + D	DO7	DO6	DO5	DO4	DO3	DO2	DO1	DO0
Base + C	DI15	DI14	DI13	DI12	DI11	DI10	DI9	DI8
Base + D	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0

A-628 Digital Input / Output Register

Address	Write	Read
Base + 0x10	Digital Output Channel 0~7	Digital Input Channel 0~7
Base + 0x11	Digital Output Channel 8~15	Digital Input Channel 8~15

Digital Input / Output Data Format

Bit	7	6	5	4	3	2	1	0
Base + 0x10	DO 7	DO 6	DO 5	DO 4	DO 3	DO 2	DO 1	DO 0
Base + 0x11	DO 15	DO 14	DO 13	DO 12	DO 11	DO 10	DO 9	DO 8
Base + 0x10	DI 7	DI 6	DI 5	DI 4	DI 3	DI 2	DI 1	DI 0
Base + 0x11	DI 15	DI 14	DI 13	DI 12	DI 11	DI 10	DI 9	DI 8

Digital Input / Output Example program .

A-626 For Basic Language

```
Bas = &H2C0
Out Bas + &HC , &HFF      ‘ Write Data to Channel 0-7 of Digital Output
Out Bas + &HD , &HFF      ‘ Write Data to Channel 8-15 of Digital Output

DIL = INP(Bas + &HC)      ‘ Read Channel 0-7 of Digital Input
DIL = INP(Bas + &HD)      ‘ Read Channel 8-15 of Digital Input
```

4. Calibration

The each channel of A-626 /A-628 has three VR can be adjust to current value.

A-626 VR's Table

D/A Channel	Unipolar Full Scale	Bipolar Off-set	Current loop 4mA
0	VR1-2	VR1-1	VR1-3
1	VR2-2	VR2-1	VR2-3
2	VR3-2	VR3-1	VR3-3
3	VR4-2	VR4-1	VR4-3
4	VR5-2	VR5-1	VR5-3
5	VR6-2	VR6-1	VR6-3

Calibration step:

A. Unipolar (0-5V)

1. You need a 6 1/2 digital voltage meter.
2. Set D/A channel : (1) Unipolar mode. (2) Reference Voltage : -5V
3. Connect DVM to D/A Channel 0
4. Write 0xFFF (Hex) Data to D/A Channel 0
5. Trim VR1-2 until the DVM reading 4.9988V

B. Bipolar (±5V)

1. Set D/A channel : (1) Bipolar mode. (2) Reference Voltage : -5V
2. Connect DVM to D/A Channel 0
3. Write 0x800 (Hex) Data to D/A Channel 0
4. Trim VR1-1 untill the DVM reading 0.0000V
5. Write 0xFFF (Hex) to D/A Channel 0
6. Trim VR1-2 until the DVM reading 4.9988V

C. Current loop 4-20mA

1. Set D/A Channel : (1) Unipolar mode . (2) Reference Voltage : -5V
2. Ref. Sec. 2.7 signal connection connect DAM to current loop channel
3. Write 0x000 (Hex) to D/A Channel 0
4. Trim VR1-3 until the DAM reading 4.0000mA
5. Write 0xFFF (Hex) to D/A Channel 0
6. Trim VR1-2 until the DAM reading 20mA

A-628 Calibration

The each channel of A-628 has three VR can be adjust to current value.

D/A Channel	Unipolar Full Scale	Bipolar Off-set	Current loop 4mA
0	VR1-2	VR1-1	VR1-3
1	VR2-2	VR2-1	VR2-3
2	VR3-2	VR3-1	VR3-3
3	VR4-2	VR4-1	VR4-3
4	VR5-2	VR5-1	VR5-3
5	VR6-2	VR6-1	VR6-3
6	VR7-2	VR7-1	VR7-3
7	VR8-2	VR8-1	VR8-3

Calibration step:

A. Unipolar (0-5V)

1. You need a 6 1/2 digital voltage meter.
2. Set D/A channel : (1) Unipolar mode. (2) Reference Voltage : -5V
3. Connect DVM to D/A Channel 0
4. Write 0xFFF (Hex) Data to D/A Channel 0
5. Trim VR1-2 until the DVM reading 4.9988V

B. Bipolar (±5V)

1. Set D/A channel : (1) Bipolar mode. (2) Reference Voltage : -5V
2. Connect DVM to D/A Channel 0
3. Write 0x800 (Hex) Data to D/A Channel 0
4. Trim VR1-1 untill the DVM reading 0.0000V
5. Write 0xFFF (Hex) to D/A Channel 0
6. Trim VR1-2 until the DVM reading 4.9988V

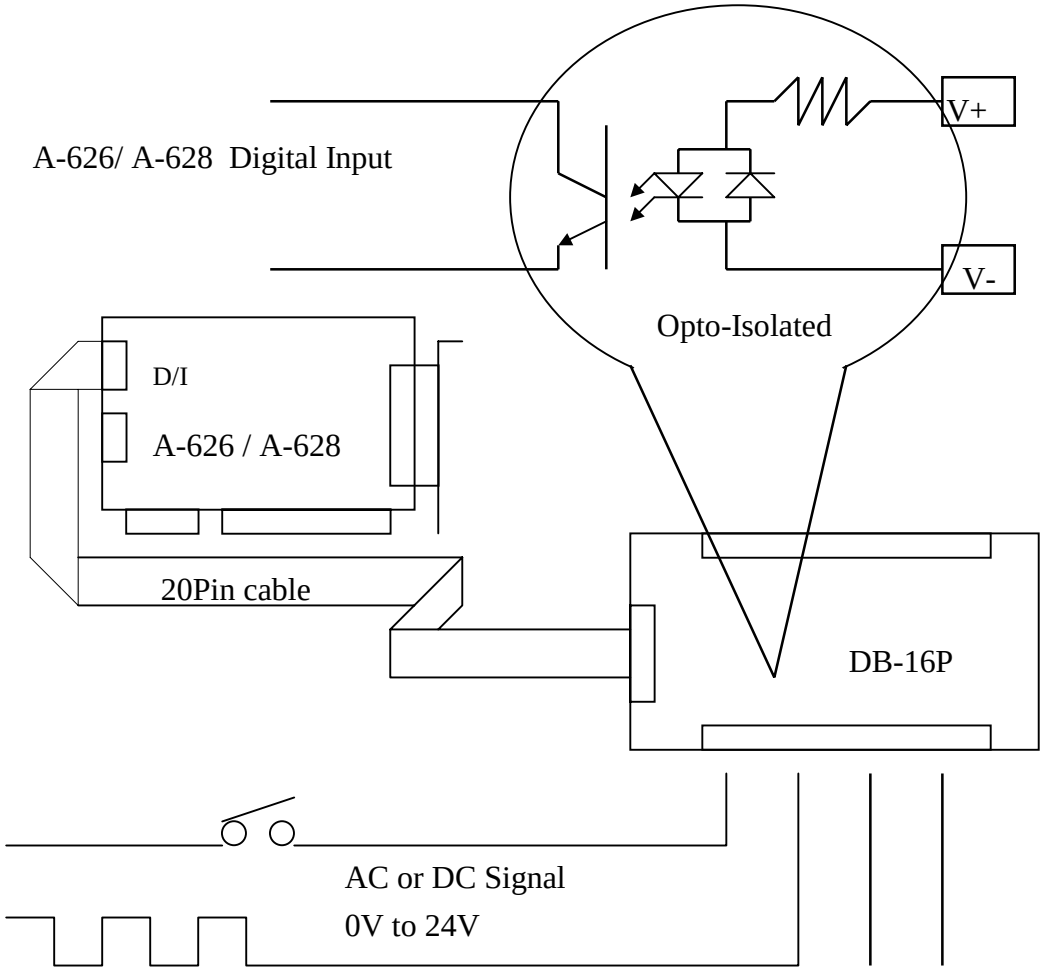
C. Current loop 4-20mA

1. Set D/A Channel : (1) Unipolar mode . (2) Reference Voltage : -5V
2. Ref. Sec. 2.7 signal connection connect DAM to current loop channel
3. Write 0x000 (Hex) to D/A Channel 0
4. Trim VR1-3 until the DAM reading 4.0000mA
5. Write 0xFFF (Hex) to D/A Channel 0
6. Trim VR1-2 until the DAM reading 20mA

5. Terminal Board

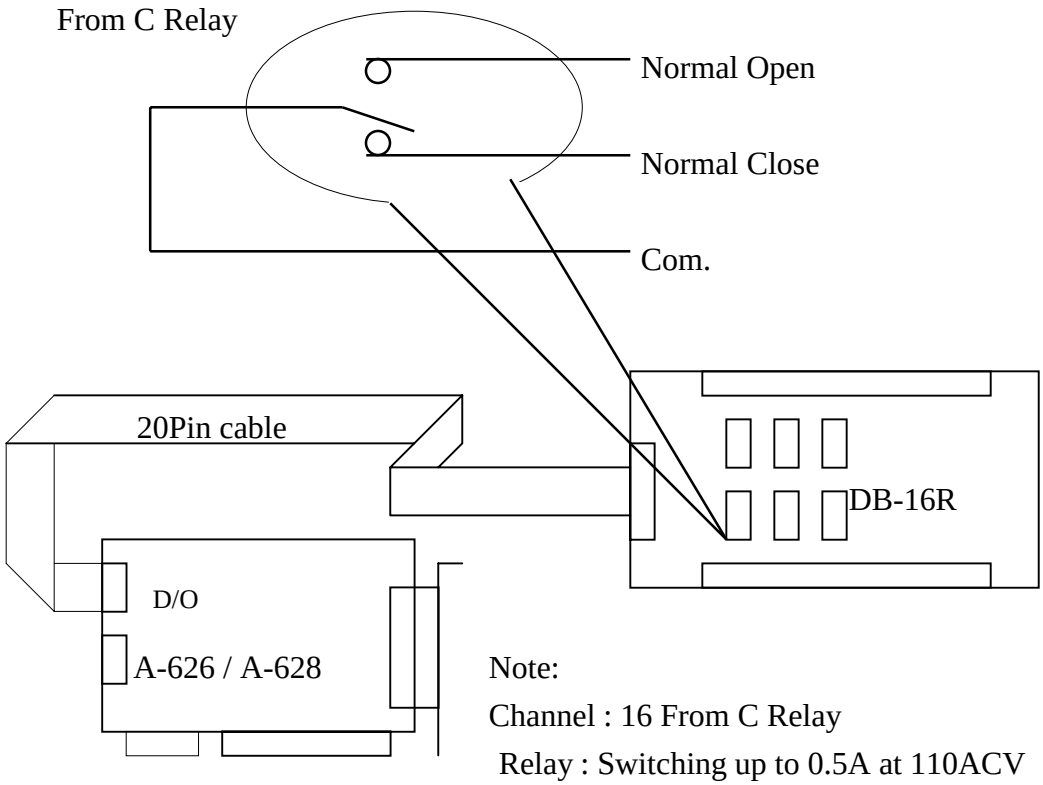
5.1. DB-16P Isolated Input Board

The DB-16P is a 16 Channel isolated digital input daughter board .
The optically isolated inputs of the DB-16P consists of a bi-directional optocoupler with a resistor for current sensing . You can use the DB-16P to sense DC signal from TTL levels up to 24V. or use the DB-16P to sense a wide range of AC signals. You can use the board to isolated the computer from large common-mode voltages, ground loops and voltage spikes that often occur in industrial environments.



5.2. DB-16R Relay Board

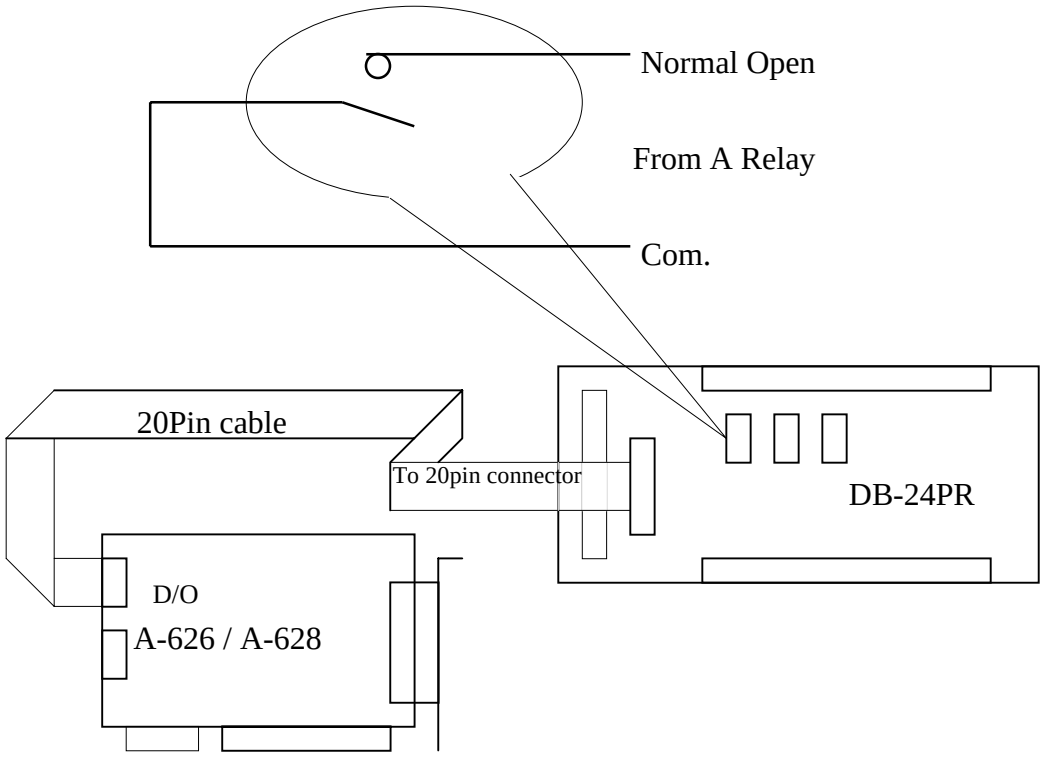
The DB-16R 16 channel relay output board consists of 16 from C relays for efficient switch of load by programmed control . It is connector and functionally compatible with 785 series board but with industrial type terminal block . The relay are energized by apply 5 voltage signal to the appropriated relay channel on the 20-pin flat connector 16 enunciator LED's, One for each relay, light when their associated relay is activated . To avoid overloading your PC's power supply, this board provides a screw terminal for power supply.



Note:
Channel : 16 From C Relay
Relay : Switching up to 0.5A at 110ACV / 1A at 24DCV

5.3. DB-24PR Power Relay Board

The DB-24PR 24-Channel Power relay output board consists of 8 form C and 16 form A electromechanical relay s for efficient switching of load programmed control . The contact of each relay can control a 5A load at 250ACV/30VDCV . The relay is energized by applying a 5 voltage signal to the appropriate relay channel on the 20-pin flat cable connector (Just used 16 relays) or 50-pin flat cable connector .(OPTO-22 compatible , for DIO-24 series) . Twenty - four enunciator LEDs , one for each relay, light when their associated relay is activated . To avoid overloading your PC's power supply , this board needs a +12VDC or +24VDC external power supply.



Note:

50-Pin connector (OPTO-22 Compatible) For DIO-24 , DIO-48 , DIO-144

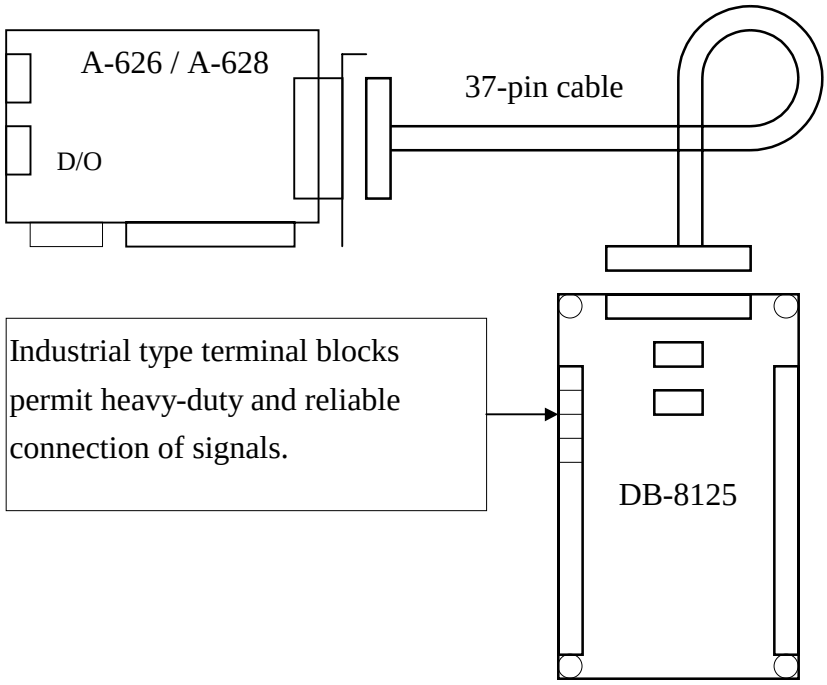
20-Pin connector For 16 Channel digital output , A-82X ,A-62X , DIO-64

Channel : 16 From A Relay , 8 From C Relay

Relay : Switching up to 5A at 110ACV / 5A at 30DCV

5.4. DB-8125 Screw Terminal Board

The DB-8125 is low cost universal screw terminal board . for 37-pin D-type connector or two 20-pin connector.



5.5. DN-37 (D-Sub I/O Connector Block With DIN Rail Mounting)

Termination accessory with 37 screw terminals for easy connection of field I/O signals to 37-pin boards. Includes one 37-pin D-sub connector for direct connection to 37-pin cables with hardware for mounting on a standard DIN rail.