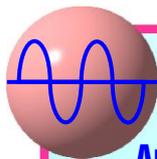


# Bridging the Gap between Real World and Computer



## AIO-6328/A Analog I/O and Digital I/O PCI-104 Module



### Features

- ▶ Software programmable Single end 8 channel or differential 4 channel AD input
- ▶ AD resolution : 12-bit (AIO-6328), 16-bit (AIO-6328A)
- ▶ Software selectable input range : -10V~ +10V, -5V~ +5V, 0~ +10V, 0~ +5V
- ▶ 2 channel DA output for -10~ +10V
- ▶ DA resolution : 13-bit (AIO-6328), 17-bit (AIO-6328A)
- ▶ 8 bit isolated digital input
- ▶ 8 bit isolated digital output
- ▶ No output transition during start up
- ▶ Software debounce : No debounce, 100Hz, 200Hz, 1KHz
- ▶ Keep output state after hot reset (jumper selectable)
- ▶ External triggered interrupt (IN00~IN07)
- ▶ 32-bit timer with time up interrupt

### Introduction

AIO-6328 has single end 8 channel/differential 4 channel Analog input and 2 channel DA Analog output, 8-bit isolated digital input and 8-bit isolated digital output.

AIO-6328 is a 12-bit resolution in the analog input port for 0~5V, 0~10V, -5V~ +5V and 10V~ +10V ranges, the analog output is 13-bit resolution for 10V~ +10V. If you want more accuracy, the AIO-6328A is the 16-bit advanced model for your selection.

Digital input IN00~IN07 can work as interrupt source for high speed signal, A/D end of conversion can also trigger a interrupt.

An extra 32-bit counter based on 1us time base provides fix time interrupt trigger which is suitable for sample data system.

A small card with abundant functions.

DII is provided for WinXP, Win7 and later or LINUX platform and sample programs come with VB source code.

### Applications

- ▶ Analog Input 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
- ▶ Analog Output Section :  
For control or signal generation such as : inverter speed, servo motor speed, wave generation, valve control, light control...
- ▶ Digital Section :  
For the control of digital i/o : switch input, relay control, trigger output.....
- ▶ Timer Section : event counting, periodic interrupt source, duration counter

### Pin Assignments

JM2		
AGND	14	1 AI00
AGND	15	2 AI01
AGND	16	3 AI02
AGND	17	4 AI03
AGND	18	5 AI04
AGND	19	6 AI05
AGND	20	7 AI06
AGND	21	8 AI07
AGND	22	9 NC
AGND	23	10 NC
AGND	24	11 NC
AGND	25	12 DA0
		13 DA1

DB25PM		
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

### Software Support

#### ▶ PC OS Support

WinXP, Win7 and later or Linux O.S.  
Embedded XP, Win CE (at request)

#### ▶ Library

DLLs, VI library

#### ▶ Develop Software

Visual C++, Visual Basic,  
Borland C/C++ Builder, LabVIEW etc

#### ▶ Example Source Code

Visual Basic, Linux



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## Specifications (With Matched Wiring Board)

### Analog Input

- ▶ Input Channels : single end 8 channel(max) or differential 4 channel(max)
- ▶ Resolution : 12-bit (AIO-6328), 16-bit (AIO-6328A)
- ▶ Input Range : -10V~ +10V, -5V~ +5V, 0~ +10V, 0~ +5V
- ▶ Input Impedance : 21K ohm (unipolar), 16K ohm (bipolar)
- ▶ Conversion Speed : 10us per channel
- ▶ Integral linearity Error : -1~ +1 LSB
- ▶ Zero Error : Bipolar -10~ +10 LSB(max),  
Unipolar -5~ +5 LSB(max)
- ▶ Gain error : -10~ +10 LSB(max)

### Analog Output

- ▶ Output Channel : 2
- ▶ Resolution : 13-bit (AIO-6328), 17-bit (AIO-6328A)
- ▶ Range : -10~ +10V

### Digital I/O

- ▶ IO channel : isolated 8 DI, 8 DO
- ▶ Output range : open collector 0~45Vdc (without wiring board)
- ▶ Sink current : 500mA(peak) per output bit (without wiring board)
- ▶ Switch speed : 20KHz (without wiring board or MOS type output)
- ▶ Output rating : using wiring board ADP-9201DIN series  
3A @250Vac, 30Vdc (Relay)  
1A @ 24Vdc (PMOS)  
2A @ 240Vac (SSR)

### Timer/Counter

- ▶ Channels : 1
- ▶ Data Length : 32-bit
- ▶ Time Base : timer @1MHz
- ▶ Interrupt : time up interrupt

### General

- ▶ PCI data width : 32-bit
- ▶ Card ID : 0~3
- ▶ Insulation resistance : 100M Ohm (min) at 1000Vdc
- ▶ Isolation voltage : 2500Vac 1Min (digital block only)
- ▶ Connector : One 20-pin male flat-cable connector  
One slim type 26-pin male flat-cable connector
- ▶ Operation Temperature : 0 °C ~ +70 °C
- ▶ Storage Temperature : -20 °C ~ +80 °C
- ▶ Operation Humidity : 5~95% RH, non-condensing
- ▶ Dimension : 90(W)\*96(H)mm, 3.6(W)\*3.8(H)in

## Ordering Information

- ▶ **AIO-6328** : 12-bit Analog I/O and Digital I/O PCI-104 Module
- ▶ **AIO-6328A** : 16-bit Analog I/O and Digital I/O PCI-104 Module
- ▶ **JS51053** : DIN rail mounted dummy wiring board (20p Male to terminals) I.12
- ▶ **ADP-9201DIN(R)** : DIN rail mounted wiring board with 16 I/O LED indicators and Relay output for 8 DI, 8DO P.113
- ▶ **ADP-9201DIN(P)** : DIN rail mounted wiring board with 16 I/O LED indicators and PMOS output for 8 DI, 8DO P.113
- ▶ **ADP-9201DIN(S)** : DIN rail mounted wiring board with 16 I/O LED indicators and SSR output for 8 DI, 8DO P.113
- ▶ **M23207** : 20 pin flat cable 1.5M for JM1 I.13
- ▶ **M23209** : 20 pin flat cable 3.0M for JM1 I.13
- ▶ **JS510501** : DIN rail mounted dummy wiring board (D type 25p female to terminals) for JM2 I.13
- ▶ **M270325X4** : D type 25p male-female extension cable 1.5M for JM2 I.13
- ▶ **M270325X4S** : D type 25p male-female extension cable 1.5M, shielding for JM2 I.13
- ▶ **M270325X0** : D type 25p male-female extension cable 3.0M For JM2 I.13
- ▶ **M270325X0S** : D type 25p male-female extension cable 3.0M, shielding For JM2 I.13
- ▶ **SM23405** : Extension kit for JM2 (flat cable for 25p male D-type connector)

## Note