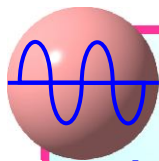


Bridging the Gap between Real World and Computer



AIO3320A/1A

Isolated Analog I/O and Digital I/O Card



Features

- ▶ Isolated 8 channel 16-bit analog inputs
- ▶ Software selectable input range :
-10V~ +10V, -5V~ +5V, 0~10V, 0~5V
- ▶ Isolated 8/16 channel 16-bit analog output (8AO : AIO3320A, 16AO : AIO3321A)
- ▶ Output range : -10V~ +10V
- ▶ 8-bit isolated digital input
- ▶ 8-bit isolated digital output
- ▶ IN0, IN1 as trigger/counter in, OUT0, OUT1 as trigger out of timer/counter function
- ▶ 2 32-bit multifunction counters up to 33MHz
 - programmable one-shot
 - square wave generator
 - event counter
 - PWM generator

Introduction

AIO3320A/21A has isolated 8/16 channels analog output and isolated 8 channel analog input with programmable input range, 8-bit isolated digital input and 8-bit isolated digital output.

The extra 2 32-bit timer/counter ports also provide you versatile functions such as : programmable one-shot, rate generator, square wave generator, software/hardware triggered strobe, event timer/counter, triggered timer/counter, PWM generator, ... 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.

Pin Assignments

JF1			
N.C	37	19	N.C
N.C	36	18	N.C
+5Vout	35	17	+5Vout
AGND	34	16	DA7
AGND	33	15	DA6
AGND	32	14	DA5
AGND	31	13	DA4
AGND	30	12	DA3
AGND	29	11	DA2
AGND	28	10	DA1
AGND	27	9	DA0
AGND	26	8	AI7
AGND	25	7	AI6
AGND	24	6	AI5
AGND	23	5	AI4
AGND	22	4	AI3
AGND	21	3	AI2
AGND	20	2	AI1
AGND		1	AI0

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.....
- ▶ Counter/Timer Section : event counting, periodic interrupt source, PWM generator (can work as D/A with external low pass filter), counter/timer with trigger out, duration counter

JM1			JM2			
AGND	1	14	AGND	1	2	OUT0
DA8	2	15	AGND	3	4	OUT1
DA9	3	16	AGND	5	6	OUT2
DA10	4	17	AGND	7	8	OUT3
DA11	5	18	AGND	9	10	OUT4
DA12	6	19	AGND	11	12	OUT5
DA13	7	20	AGND	13	14	OUT6
DA14	8	21	AGND	15	16	OUT7
DA15	9	22	AGND	17	18	0V
AGND	10	23	+15Vout	19	20	EXT +24Vin
+15Vout	11	24	-15Vout			
+15Vout	12	25	-15Vout			
-15Vout	13					



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Specifications (With Matched Wiring Board)

Analog Input

- ▶ Input Channels : isolated 8 channel single end
- ▶ Resolution : 16-bit
- ▶ Input Range : -10V~ +10V, -5V~ +5V, 0~10V, 0~5V
- ▶ Input Impedance : 21K ohm (unipolar), 16K ohm (bipolar)
- ▶ Conversion Speed : 13us 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 : 8 (AIO3320A)
16 (AIO3321A)
- ▶ Resolution : 16-bit
- ▶ Range : -10V~ +10V
- ▶ Auto Scan Update Rate : 2.1KHz

Digital I/O

- ▶ I/O Channels : isolated 8DI, 8DO
- ▶ 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 : 2
- ▶ Data Length : 32-bit
- ▶ Specific Input : trigger in/counter in via digital I/O port 0
- ▶ Specific Output : trigger out/counter out via digital I/O port 1
- ▶ Time Base : timer @4MHz, counter @33MHz
- ▶ Multi-Functions : - programmable one-short
- square wave generator
- event counter
- PWM generator

Main Card General

- ▶ Interrupt : from Timer/counter
- ▶ PCI Data Width : 32-bit
- ▶ Card ID : 4-bit
- ▶ Operation Temperature : 0 °C ~ +70 °C
- ▶ Storage Temperature : -20 °C ~ +80 °C
- ▶ Operation Humidity : 5~95% RH, non-condensing
- ▶ Dimension : 175(W)*120(H)mm, 6.9(W)*4.8(H)in

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

Ordering Information

- ▶ **AIO3320A** : Isolated Analog I/O Card, 8 channels analog input, 8 channels analog output and 16 isolated digital I/O and multi function timer/counter (include kit for digital I/O)
- ▶ **AIO3321A** : Isolated Analog I/O Card, 8 channels analog input, 16 channels analog output and 16 isolated digital I/O and multi function timer/counter (include kit for digital I/O)
- ▶ **JS51053** : DIN rail mounted dummy wiring board (20p Male to terminals) I.12
- ▶ **ADP9201DIN(R)** : DIN rail mounted wiring board with 16 I/O LED indicators and Relay output for 8 DI, 8DO P.79
- ▶ **ADP9201DIN(P)** : DIN rail mounted wiring board with 16 I/O LED indicators and PMOS output for 8 DI, 8DO P.79
- ▶ **ADP9201DIN(S)** : DIN rail mounted wiring board with 16 I/O LED indicators and SSR output for 8 DI, 8DO P.79
- ▶ **M23207** : 20 pin flat cable 1.5M for JM2 I.17
- ▶ **M23209** : 20 pin flat cable 3.0M for JM2 I.17
- ▶ **JS51026** : DIN rail mounted dummy wiring board (D type 37P male to terminals) I.12
- ▶ **M270337X0** : D type 37P male-female cable 1.5M for JF1 I.17
- ▶ **M270337X0S** : D type 37P male-female cable 1.5M, shielding for JF1 I.17
- ▶ **M270337X2** : D type 37P male-female cable 3.0M for JF1 I.17
- ▶ **M270337X2S** : D type 37P male-female cable 3.0M, shielding for JF1 I.17
- ▶ **JS51050** : DIN rail mounted dummy wiring board (D type 25P male to terminals) for JM1 (AIO3321A only) I.12
- ▶ **M270325X4** : D type 25P male-female cable 1.5M (for AIO3321A only) for JM1 I.17
- ▶ **M270325X4S** : D type 25P male-female cable 1.5M, shielding (for AIO-3321A only) for JM1 I.17
- ▶ **M270325X0** : D type 25P male-female cable 3.0M (for AIO3321A only) for JM1 I.17
- ▶ **M270325X0S** : D type 25P male-female cable 3.0M, shielding (for AIO3321A only) for JM1 I.17
- ▶ **SM23404** : Extension kit for JM1 (bracket and flat cable for 25p female D-type connector) (AIO3321A only)