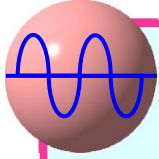


Bridging the Gap between Real World and Computer



AIO3315/A Analog Multi-I/O Card 32AI 2AO 16TTL IO Card



Features

- ▶ On board Analog and digital I/O over voltage/ current protection
- ▶ 32 channels 12-bit analog input (16-bit : AIO3315A)
- ▶ Software selectable input range : -10V~ +10V, -5V~ +5V , 0~10V, 0~5V
- ▶ single end or differential analog input
- ▶ End of conversion interrupt
- ▶ 2 channel 12-bit analog output, (16-bit : AIO3315A)
Output range : -10V~ +10V
- ▶ 2 port TTL digital I/O channels
- ▶ Programmable digital filter at 100Hz, 200Hz, 1KHz and no de-bounce for input
- ▶ No output transition during start-up
- ▶ Output status read back
- ▶ External triggered interrupt (on IO07~IO00)
- ▶ 32-bit timer with time up interrupt

Introduction

AIO3315/A is a multi-channel multi-range analog I/O and TTL digital I/O card. The basic type AIO3315 is 12-bit resolution type and the upgrade version AIO3315A is 16-bit resolution type. The analog input can be configured as differential or single-end or mixed mode by software.

The input range : 0~5V, 0~10V, -5~ +5V, -10~ +10V are also software programmable.

Two channel analog output at -10~+10V range, 2 port configurable TTL I/O and 32-bit time at 1us time base also the highlight of the card.

Except for above, the input and output PTC protection for mal-connection and A/D total throughput up to 100K samples per second are the distinguished merits.

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

Pin Assignments

JF1

DA1	37	19	DA0
GND	36	18	GND
AI37	35	17	GND
AI35	34	16	AI36
AI33	33	15	AI34
AI31	32	14	AI32
AI27	31	13	AI30
AI25	30	12	AI26
AI23	29	11	AI24
AI21	28	10	AI22
AI17	27	9	AI20
AI15	26	8	AI16
AI13	25	7	AI14
AI11	24	6	AI12
AI07	23	5	AI10
AI05	22	4	AI06
AI03	21	3	AI04
AI01	20	2	AI02
		1	AI00

JM1

IO00	1	14	IO10
IO01	2	15	IO11
IO02	3	16	IO12
IO03	4	17	IO13
IO04	5	18	IO14
IO05	6	19	IO15
IO06	7	20	IO16
IO07	8	21	IO17
GND	9	22	GND
GND	10	23	GND
GND	11	24	GND
+5Vout_PC	12	25	+5Vout_PC
+5Vout_PC	13		

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.....



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Specifications (With Matched Wiring Board)

Analog input

- ▶ Input Channel : 32 channel single end or 16 channels differential
- ▶ Resolution : 12-bit (AIO3315), 16-bit (AIO3315A)
- ▶ Input Range : -10V~ +10V, -5V~ +5V, 0~10V, 0~5V
- ▶ Input Impedance : 42K ohm(unipolar), 31K ohm (bipolar)
- ▶ conversion speed : 10us per channel
- ▶ Integral linearity error : -1~ +1 LSB(max, AIO3315),
-3~ +3 LSB(max, AIO3315A)
- ▶ Zero error : Bipolar -9 ~ +9 LSB(max, AIO3315),
-28~ +28 LSB(max, AIO3315A)
Unipolar -6~ +6 LSB(max, AIO3315),
-25~ +25 LSB(max, AIO3315A)
- ▶ Full scale error : Bipolar -0.45% ~ +0.45%(max, AIO3315),
-0.4% ~ +0.4% (max, AIO3315A)
Unipolar -0.75% ~ +0.75%(max)
- ▶ On board analog input protection : -24V~ +24V 50mA

Analog output

- ▶ Output channel : 2
- ▶ Resolution : 12-bit (AIO3315), 16-bit (AIO3315A)
- ▶ Range : -10~ +10V
- ▶ Conversion time : < 1us
- ▶ Integral linearity error : -4~ +4 LSB(max)
- ▶ Differential linearity error : -0.5 ~ +0.5 LSB(max)
- ▶ Zero error : 9 LSB(max)
- ▶ Offset error : 9 LSB(max)
- ▶ Full scale error : -0.7% ~ +0.7%(max)
- ▶ On board analog output protection : 50mA

TTL I/O

- ▶ IO Channels : 16(max) TTL level
- ▶ Interrupt : at IO00~IO07
- ▶ On board input protection : 24V 50mA
- ▶ Output source : 35mA(peak) per channel
- ▶ Output Sink : 35mA(peak) per channel
- ▶ On board IO channel protection : -24V~ +24V 50mA

Timer

- ▶ Channels : 1
- ▶ Data length : 32-bit
- ▶ Time Base : @1MHz

Main Card General

- ▶ Interrupt : from TTL port0 or Timer/counter
- ▶ Card ID : 4-bit
- ▶ Operation temperature : 0 °C ~ +70 °C
- ▶ Storage temperature : -20 °C ~ +80 °C
- ▶ Operation humidity : 5~95% RH, non-condensing
- ▶ Dimensions : 130(W) * 102(H)mm, 5.2(W) * 4.1(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

- ▶ **AIO3315** : Analog I/O Card for 12-bit
- ▶ **AIO3315A** : Analog I/O Card for 16-bit
- ▶ **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 I.12
- ▶ **M270325X4** : D type 25P male-female cable 1.5M for JM1 I.17
- ▶ **M270325X4S** : D type 25P male-female cable 1.5M,shielding for JM1 I.17
- ▶ **M270325X0** : D type 25P male-female cable 3.0M for JM1 I.17
- ▶ **M270325X0S** : D type 25P male-female cable 3.0M,shielding for JM1 I.17
- ▶ **SM23404** : Extension kit for JM1 (bracket and flat cable for 25P female D-type connector)

Note