AX10410A

High Speed Data Acquisition Module

FEATURES

¥PC/104 standard expansion module
¥Compatible with Keithley Metrabyte DAS-16G
¥Programmable gains: 1, 2, 4 and 8
¥16 Single-ended or 8 differential analog inputs with 12-bit resolution
¥Up to 100KHz sample rate through DMA mode operation
¥2 channels of 12-bit D/A output
¥8-bit TTL/DTL compatible inputs and outputs
¥1 channel counter/timer
¥Software drivers containing Basic, C, Pascal and Windows¤ 3.1, Windows¤ 95 and Windows¤ NT

GENERAL DESCRIPTION

The AX10410A is a member of PC/104 family. This module can be installed to any PC/104 CPU boards to become a high performance data acquisition and control system. It offers five most desired functions in a PC/104 form-factor package: Analog Input, Analog Output, Digital Input, Digital Output and Counter/ Timer.

The AX10410A features 8 differential or 16 single-ended analog input with 12-bit resolution. The AX10410A has a maximum sample rate of 100KHz. The AX10410A provides ranges for signal level inputs of +10V, +5V, +2.5V, +1.25V for unipolar and 10V, 5V, 2.5V, 1.25V for bipolar. The transfer of data can be accomplished in 3 ways: by software trigger, interrupt service routine or DMA.

In addition to its analog inputs, the AX10410A als provides two channels of 12-bit analog output. The D/A converter may be operated with internal reference voltage 5V bipolar or 0 to 10V unipolar.

16 bits of digital I/O are available on the AX10410A. Eight bits of digital output and eight bits of digital input are brought out through the AX10410A's 50-pin connector.

APPLICATION

¥ Laboratory Automation
¥ Signal Analysis
¥ Chromatography
¥ Process Control

SPECIFICATIONS

Analog Input Subsystem

¥ Number of inputs: 16 S.E. or 8 D.I.
¥ Resolution: 12-bit
¥ Gain: 1, 2, 4, 8
¥ Input Range:
Unipolar: 0-1.25, 2.5, 5, 10V
Bipolar : ±1.25, 2.5, 5, 10V
¥ Sampling Rate: 100KHz max.
¥ System Accuracy (Gain=1): ±0.03% FSR
¥ Channel Acquisition Time to –1/2 LSB
Gain=1, 2, 4, 8
¥ A/D Conversion Time: 10µs
¥ Input Impedance
Off Channel: 100MΩ, 20pF
On Channel: 100MΩ, 20pF
¥ Maximum Input Voltage Without Damage
Power On: ±35V
Power Off: ±20V
¥ Common Mode Rejection Ratio:
Gain=1 : 90dB
¥ Integral Nonlinearity: ±1 LSB
¥ Number of Interrupts: 1
¥ Channel of DMA: 1 or 3

Analog Output Subsystem

¥ Number of Channel: 2
¥ Output Ranges:
5V or 0 to +10V, internal reference supplied
¥ Current Output Capacity: +5mA max.

Digital I/O Subsystem
¥ Digital Input Lines: 8
¥ Digital Output Lines: 8
¥ Logic Family: LSTTL
¥ Input/Output Level: TTL/DTL compatible

Counter/Timer Subsystem
¥ Type:
programmable interval timer counters Three 16-bit down counters
¥ Clock Input: D.C. to 10MHz
¥ Input Level: TTL, DTL, CMOS compatible
¥ Output Range: 2.5MHz to 72 minutes/pls

Power Requirement
¥ +5VDC : 0.6A typ.

Physical/Environmental
¥ Dimensions (L x W): 95 x 90mm
¥ Weight: 130g
¥ Relative Humidity:
20 to 90%, non-condensing

ORDERING INFORMATION

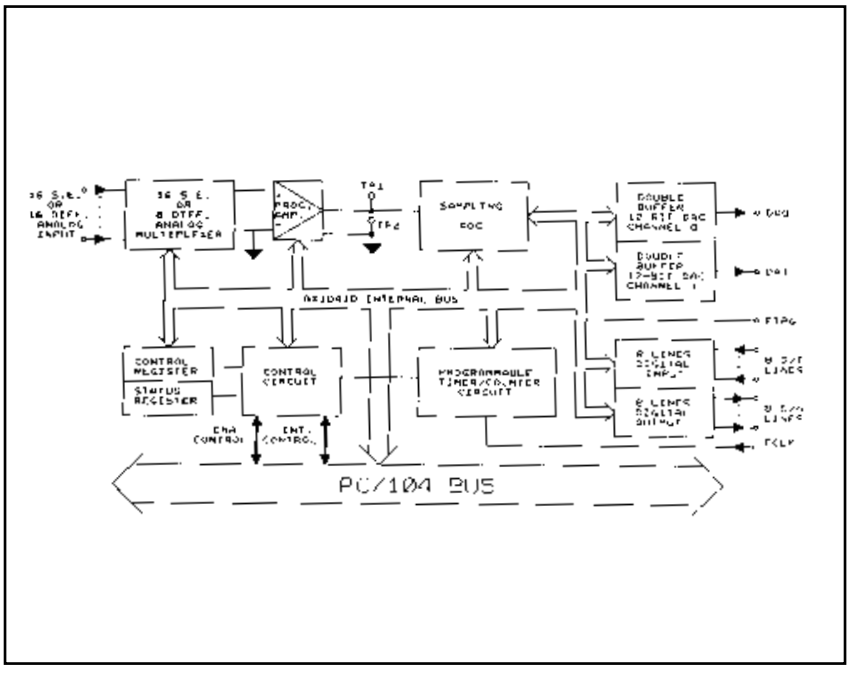
¥ AX10410A
High Speed Data Acquisition Module, Gains: 1, 2, 4, 8, including user's manual, utility diskette with Basic, C, Pascal and Windows drivers

Screw Terminal Panel
¥ AX750
General Purpose Screw Terminal Panel, with 1 meter cable and 50-pin connector, is a convenient connection interface for A/D, D/A and DIO signal

Other Terminal Panel
¥ AX752
16 Channel Amplifier & Multiplexer Panel
¥ AX757
8 Channel Relay Output & Optoisolated DI Panel

Software Driver
¥ AS59099 DOS, Windows® 3.1, Windows® 95/98/NT DDL driver, and device utility (in CD-ROM)
(Note: for PCI board, DOS and Windows® 3.1 DLL driver are not avaiable)
¥ AS59080 Including ActiveX control driver, 3rd party drivers (LABTECH, Labview, Dasylab), and OPC server

BLOCK DIAGRAM



CONNECTOR PIN ASSIGNMENT

Name		JP1		Name
AI0	1		2	AI8
AI1	3		4	AI9
AI2	5		6	AI10
AI3	7		8	AI11
AI4	9		10	AI12
AI5	11		12	AI13
AI6	13		14	AI14
AI7	15		16	AI15
AGND	17		18	N/C
N/C	19		20	N/C
OUT0	21		22	ECLK0
DA0	23		24	DA1
AGND	25		26	AGND
DO0	27		28	DI0
DO1	29		30	DI1
DO2	31		32	DI2
DO3	33		34	DI3
DGND	35		36	DGND
DO4	37		38	DI4
DO5	39		40	DI5
DO6	41		42	DI6
DO7	43		44	DI7
+5VP	45		46	+12VP
ERTG	47		48	RSVD
DGND	49		50	DGND