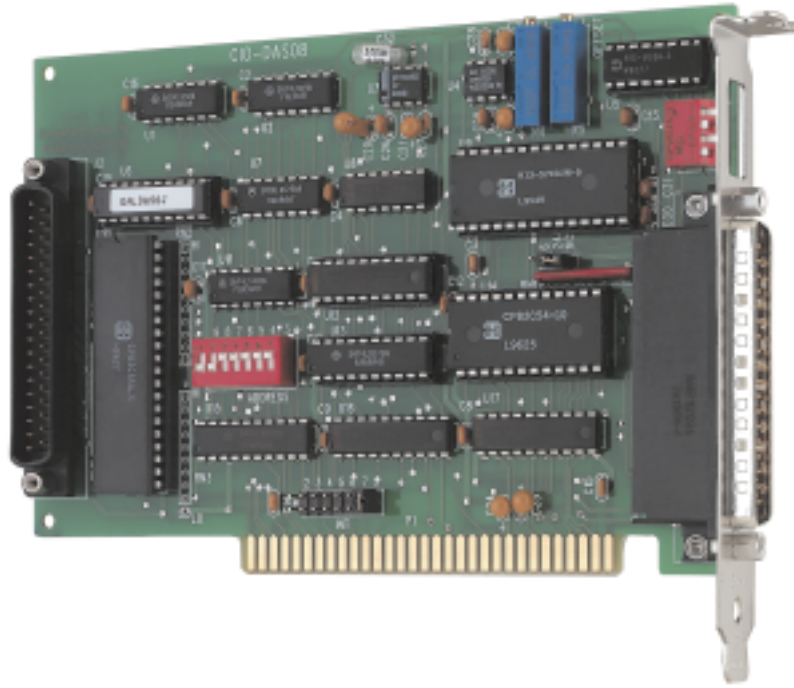


CIO-DAS08

Medium Speed, 8 Channel Analog Input, 3 Counters, 31 Digital I/O



DESCRIPTION

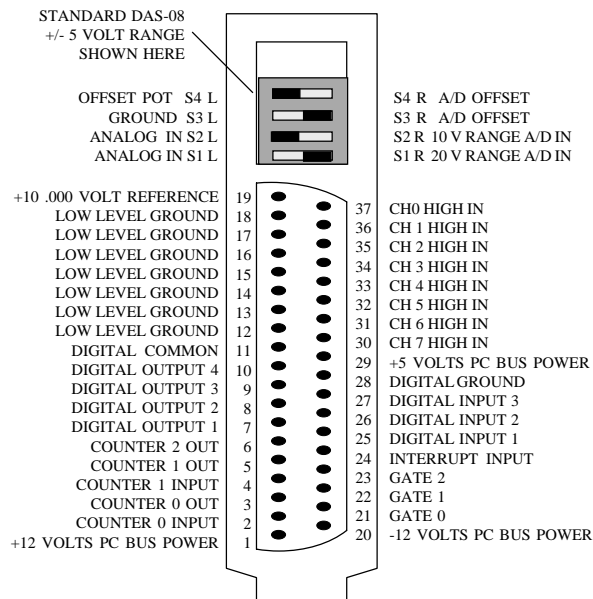
The CIO-DAS08 multifunction analog and digital I/O board is designed to be compatible with MetraByte's popular DAS08.

Installed in any IBM PC/XT/AT/PS30 or compatible computer the CIO-DAS08 turns your personal computer into a medium speed data acquisition and control station suitable for laboratory data collection, instrumentation, production test, or industrial monitoring.

The CIO-DAS08 is supported by a broad range of software to allow programmed control in BASIC, C, Windows and PASCAL. Many menu controlled data logging, analysis and control programs are available from a number of third party developers. In fact, any software designed for MetraByte's popular DAS-08 will work with the CIO-DAS08; we guarantee it!

In addition, the CIO-DAS08 comes with a complete PIO-12 compatible 8255 and 37 pin connector!

CIO-DAS08 CONNECTOR



ANALOG INPUTS

The analog input section of the CIO-DAS08 has been designed for flexibility and accuracy in a number of configurations and ranges. The analog signals are brought on board by a standard 37 pin 'D' type connector directly to an analog multiplexor. The multiplexor provides 8 channels of single ended input and is protected against +/-35 volts max.

A 2 uSec sample & hold captures the signal which is converted by a 574 A/D converter. The 12 bit A/D converter provides a resolution of 1/4096 parts of full scale. Please see the gain and range switch configuration diagram below.

RANGE SELECTION

Three range combinations are provided by selecting options from the gain & range switches, as seen in the table below. Ranges +/-5v and 0-10 volts provide 2.44 mV per bit; +/-10V range has a resolution of 4.88 mV per bit.

SWITCH	+/-5V	+/-10V	0-10V	NOTE:
S4	R	R	L	Positions other than those shown to the left are undefined and will not produce valid results
S3	L	L	R	
S2	R	L	R	
S1	L	R	L	

TRIGGERING

A Trigger is the event that begins an acquisition/transfer cycle. There are three ways to trigger a CIO-DAS08; software, internal or external. There are two ways to transfer data from the CIO-DAS08; program or interrupt service routine.

An internal trigger is useful for synchronizing samples to a known time base, such as the on board 8254 programmable divider and PC Bus Peripheral Clock signal. Using an external trigger allows you to synchronize samples to an external event.

SPECIFICATIONS

ANALOG INPUT

A/D Resolution	12 Bits
Channels	8 Single Ended
Ranges	See Table
Conversion Speed	25uS
Linearity	+/-1 Bit
Zero Drift	20 ppm/Deg C
Gain Drift	35 ppm/Deg C
Input Impedance	>100Mohm

INTERRUPT

Positive Edge Triggered	
PC Bus IRQ	Jumper 2-7
Enable	INTE Cntrl

VREF OUTPUT

+10V +/-0.1V @ 2mA Max

COUNTER/TIMER

Type	8254
Channels	3 Down Count
Counter Size	16 Bit
Max Input	10MHz
XTAL Osc.	PC Bus Clck

POWER CONSUMPTION

5V	180mA Typ
+12V	15mA Typ
-12V	25mA Typ

DIGITAL I/O

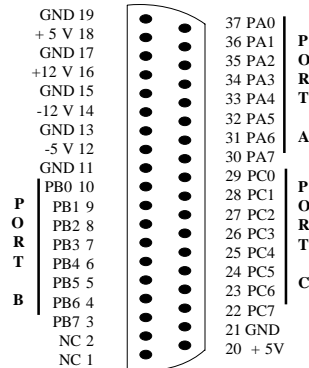
Out Only	4 Bits
In Only	3 Bits
Type	LSTTL
Out or In	24 Bits
Type	CMOS TTL (82C55)
Source/Sink	2.5mA

ENVIRONMENTAL

Operating Temp	0 to 50 Deg C
Storage Temp	-20 to 70 Deg C
Humidity	0-95% Non Cond.

24 BIT DIGITAL I/O CONNECTOR

A 37 Pin D type connector, mounted on the CIO-DAS08 board is the connector for a PIO-12 compatible 24 line bidirectional digital I/O port. The 8255 on board raises the digital I/O count to 31 lines. The 8255 BASE address is located at CIO-DAS08 BASE address + 8. To access the 8255 from a menu driven program just install a PIO-12 at CIO-DAS08 BASE + 8.



Connect external digital signals to the CIO-DAS08 using a 37 pin connector and cable (#C37FF-2) or a 37 pin connector and cable attached to a 37 pin male connector mounted in a backplate; BP37.

I/O & CONTROL REGISTER MAP

The CIO-DAS08 and MetraByte DAS-08 are software compatible because the I/O register have identical functions on each board. I/O registers are the locations which the computer writes commands and data to and reads status and data from.

I/O ADDR.	CIO-DAS08 FUNCTION	R W	Address 300H shown	SW	HEX
BASE + 0	A/D Low Byte Start 8 bit A/D			A9	200
BASE + 1	A/D High Byte Start 12 bit A/D			A8	100
BASE + 2	Mux Settings Mux Scan Control			A7	80
BASE + 3	Not Used			A6	40
BASE + 4	Read Counter 0 Load Counter 0			A5	20
BASE + 5	Read Counter 1 Load Counter 1			A4	10
BASE + 6	Read Counter 2 Load Counter 2			A3	8
BASE + 7	Not Used Counter Control				
BASE + 8	Port A In Port A Out			9	↓
BASE + 9	Port B In Port B Out			8	↓
BASE + 10	Port C In Port C Out			7	↑
BASE + 11	NA 8255 Control		6	↑	
			5	↑	
			4	↑	
			3	↑	

ORDERING GUIDE

CIO-DAS08 multifunction A/D board.
8 Ch A/D, 31 DIO, 3 CTR CIO-DAS08

Analog Multiplexor, Thermocouple & CJC
32 Ch. Diff. Input, 2 Gains, up to 4 per CIO-DAS08. CIO-EXP32
16 Ch. Diff. Input, 1 Gain, up to 8 per CIO-DAS08. CIO-EXP16

Screw Terminal Boards
16" X 4" all signals from one 37 D plus proto area & circuitry. CIO-TERMINAL
4" X 4" all signals from one 37 D connector. CIO-MINI37
16" X 4" all signals from one 37D, Spade Lug Terminals. CIO-SPADE50
6" X 4" identical to MetraByte STA-08. CIO-STA08

Cables
2 foot ribbon cable, 37 conductor, female connectors. C37FF-2
'N' foot ribbon cable, 37 conductor, female connectors. C37FF-N
5 foot shielded cable, molded female connectors, 37 cond. C37FFS-5
10 foot shielded cable, molded female connectors, 37 cond. C37FFS-10