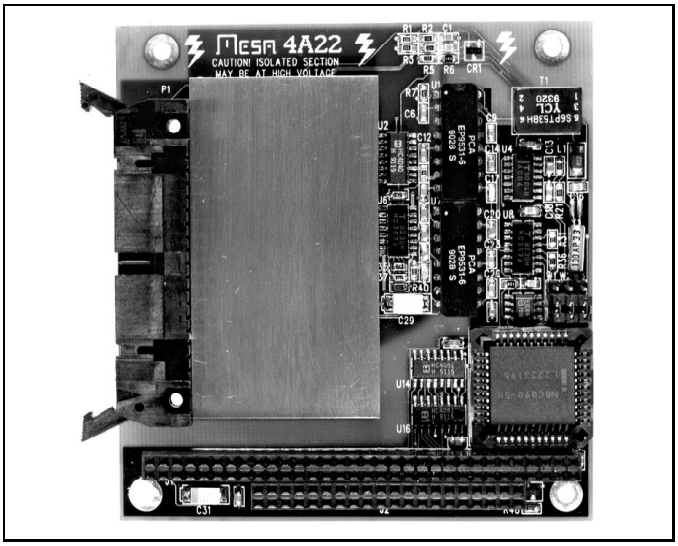
MESA ELECTRONICS 4A22 PC/104 18 BIT A-D

FEATURES:

- 18 bit integrating A-D
- 500V input isolation
- 14 input channels
- 0.5 and 5V full scale ranges
- EEPROM calibration storage
- Software selectable interrupt
- Made in USA - local support
- Better than +- .05% accuracy
- 2 year warranty
- Driver software included



The 4A22 is low power integrating 18 bit data acquisition system for the PC/104 bus. The 4A22 has 14 input channels with 500V isolation from system ground. The analog inputs have software selectable 0.5V or 5V full scale ranges.

The galvanic isolation of input signals from the computer system ground eliminates ground loop problems common with high resolution A-D converters and allows floating measurements to be made.

The conversion rate of the 4A22 is 16 conversions per second. An optional model is capable of 64 conversions per second at reduced resolution.

4A22 calibration data is stored in an on card EEPROM, so no potentiometers are needed. In fact, calibration requires no access to the 4A22 card itself. The lack of potentiometers improves calibration stability and defeats 'knob twiddlers'. Calibration data includes when the card was last calibrated, and who calibrated the card.

An on card temperature readout channel allows the 4A22 driver software to compensate for the 4A22's temperature coefficient. This keeps overall measurement accuracy within +- .05% over the 0 to 70 °C operating temperature range.

The 4A22 can be programmed to generate an interrupt when it has completed a conversion, allowing background data acquisition at an accurate crystal controlled rate. The 4A22 can use any of the AT bus interrupts. The IRQ line selection is software programmable (no interrupt jumpers).

Driver software for background data collection is supplied with the 4A22. This driver acquires data in the background on an interrupt driven basis, and provides calibrated data to application programs. The driver channel scan and range sequence is determined by a simple text file. The driver is capable of signal averaging on user selected channels

Data acquired by the driver is pushed onto a software FIFO that can be read by application programs. Each FIFO record contains the A-D data plus the channel and range tags. This makes it easy for the application program to process the data. This FIFO stores up to 64 samples, meaning that the application program only needs to poll the FIFO every 4 seconds or so

Source code for the driver program and example interfacing programs is supplied with the 4A22.

MESA ELECTRONICS 4A22 PC/104 18 BIT A-D

4A22 INPUT CONNECTOR

PIN	FUNCTION	PIN	FUNCTION
1	Input shield	2	Input shield
3	Input 0	4	Input 1
5	Input 2	6	Input 3
7	Input 4	8	Input 5
9	Input 6	10	Input 7
11	Input shield	12	Input shield
13	Input 8	14	Input 9
15	Input 10	16	Input 11
17	Input 12	18	Input 13
19	NC	20	NC
21	Input shield	22	Input shield
23	Input common	24	Input common
25	+ 2.5V reference	26	+ 2.5V reference
27	Input common	28	Input common
29	Ext CS	30	Ext Data
31	Ext Clk	32	Unreg -6 power
33	Input shield	34	Unreg +6 power

4A22 SPECIFICATIONS:	Min	Max	Units	Notes
POWER REQUIREMENTS:				
Supply voltage	4.5	5.5	V	
Supply current	----	75	mA	
INPUT CHARACTERISTICS				
Input current	-1	+1	nA	at 25°C
Capacitance to system ground	---	50	pF	
Isolation voltage	---	500	VDC	
Common mode dV/dT	---	20	V/uSec	
Maximum input voltage	-6	+6	V	Input to input-common
ENVIRONMENTAL:				
Temperature range -C version	0	+70	°C	
Temperature range -I version	-40	+85	°C	
Relative humidity	0	90	Percent	Non-Condensing

ORDERING INFORMATION:

MESA 4A22-16	4A22 16 CPS 18 bit resolution
MESA 4A22-64	4A22 64 CPS 13 bit resolution

Add -C or -I to specify commercial or industrial temperature range

MESA ELECTRONICS -- 4175 Lakeside Drive, Suite 100, Richmond, CA 94806
PHONE (510) 223-9272 -- FAX (510) 223-9585