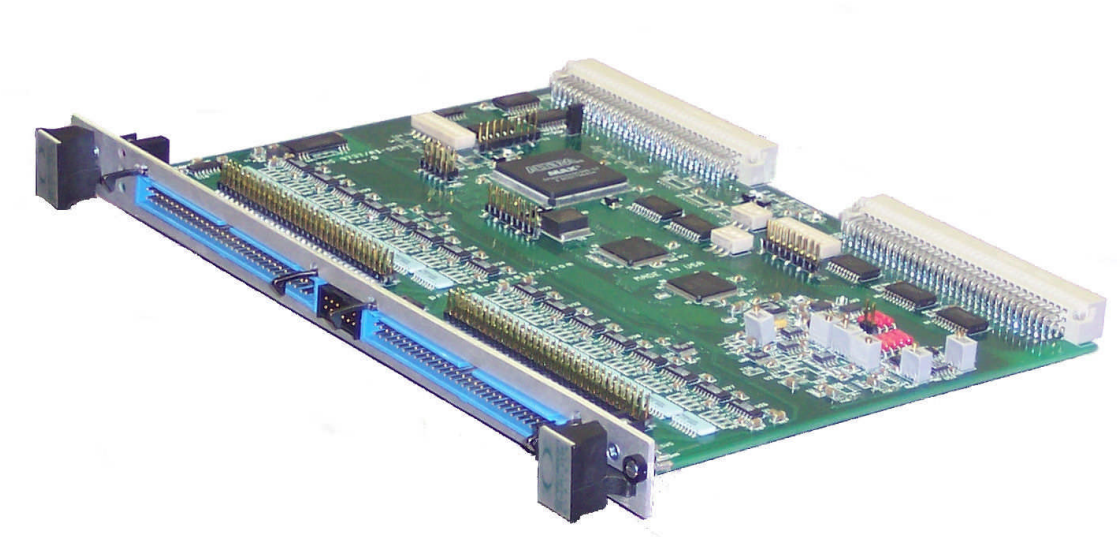
PAS 9737/AI

64 Channel 16 Bit VME Analog Input Card



GENERAL DESCRIPTION

The **PAS 9737/AI** provides 64 analog input channels multiplexed into a scanning 16-bit Analog to Digital Converter, (ADC). Low pass filters are provided for the analog input signals and four different cutoff frequencies are available as options.

The card is available with a Programmable Gain Amplifier (PGA) with gains of 1 to 128 in eight binary steps. Input voltage ranges of 0 to 10.24V and ± 10.24 Volts at a gain of 1 are available as order options. At a gain of 128 this translates into 0 to 80 mV or ± 80mV ranges. Another version of this card is available with out the PGA and an input voltage range of +/- 10.00 Volts

Input signals enter the card through a pair of 64-pin shrouded headers, located at the front panel. These connectors can be used with mass termination ribbon cable.

Two 25uA current sources are provided to drive external resistive transducers, such as thermistors and RTDs. These signals are available in a 12-pin connector located between the two analog input connectors.

Two scan rates are available as orderable options. The card can scan at either 100K SPS or 12.5K SPS. Reducing the scan rate to 12.5K SPS provides better accuracy at higher gains. This version of the card is better at measuring low level signals, and uses lower noise amplifiers that require a longer settling time. The 100 KHz card uses higher speed FET amplifiers in the front end, in order to settle in less than 10 microseconds. The ordering options are defined by dash numbers, which are described in the ordering information section of the specification.

Digitized analog data is available to the VME bus through a dual ported RAM interface that can be read while the card continues scanning. Thirty-two bit data reads are supported, which allows two converted values to be read with a single VME transfer. VME systems with A16, A24, or A32 addressing are supported, which allows the card's base address to be located anywhere in the VME address range.

Additional features include board identifier registers, control and status register, and scan configuration registers.

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Electrical Specifications *(Un-filtered Cards)*

Number of Channels	64 differential or single ended inputs
Analog Input Range @ G=1	Bipolar +/-10.20 or +/- 10.24 Volts Unipolar 0.000 to + 10.240
Conversion Rate	100KHz or 12.5 KHz
Programmable Gains	1,2,4,8,16,32,64,128
Resolution	16 bits
Accuracy	+/-(0.005% of reading + 0.005% FSR +100 uV)
Temperature stability	+/-(10 PPM of reading + 7.5 PPM of FSR + 2.5 uV)/deg. C
Input bias current	40 nAmps (max.) at 0.0 Volts input
Input Impedance	5 M Ohm in parallel with 50 pF
CH.-to-CH. crosstalk	90 dB
Common mode voltage	+/- 11 Volts signal plus common mode
Common mode rejection (DC to 60 Hz, 350-ohm imbalance)	Gain =1 90 dB (min.),100 dB (typ.)
Over voltage protection	+/- 35 VDC sustained, power on or off
Card Power Requirements	5 Volts @ 1 Amp, (typ.)

Features

VME Interface: A32, A24, A16; D32, D16 slave, no interrupts

Longword Read: Two channels can be read with a single VME longword

Input Scanning: Channels scanned constantly and stored in dual port memory

Low Pass Filters: 10 Hz, 50 Hz, 100Hz, and 500Hz corner frequencies available

Current Sources: Two 25 uA sources for transducer excitation

Status Indicators: Pass, Fail, and Board Access LED's on front panel

Board Identifier: VME ID PAS 9737/AI C0, programmed in FPGA

Analog Input Power Supply: On board +/- 15 volt DC to DC converter

Environmental Specifications

Operating Temperature Range	0 to 60 degrees C.
Storage Temperature Range	-20 to 85 degrees C.
Relative Humidity Range	20% to 80%, non-condensing

Physical Specifications

Dimensions	233mm x 160mm, 6U x 160 VME form factor
Weight	12 oz. (typ)
Connectors	2 ea. 96 position, (VME bus connectors)
Analog Inputs	terminate on two each 64 pin connectors

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