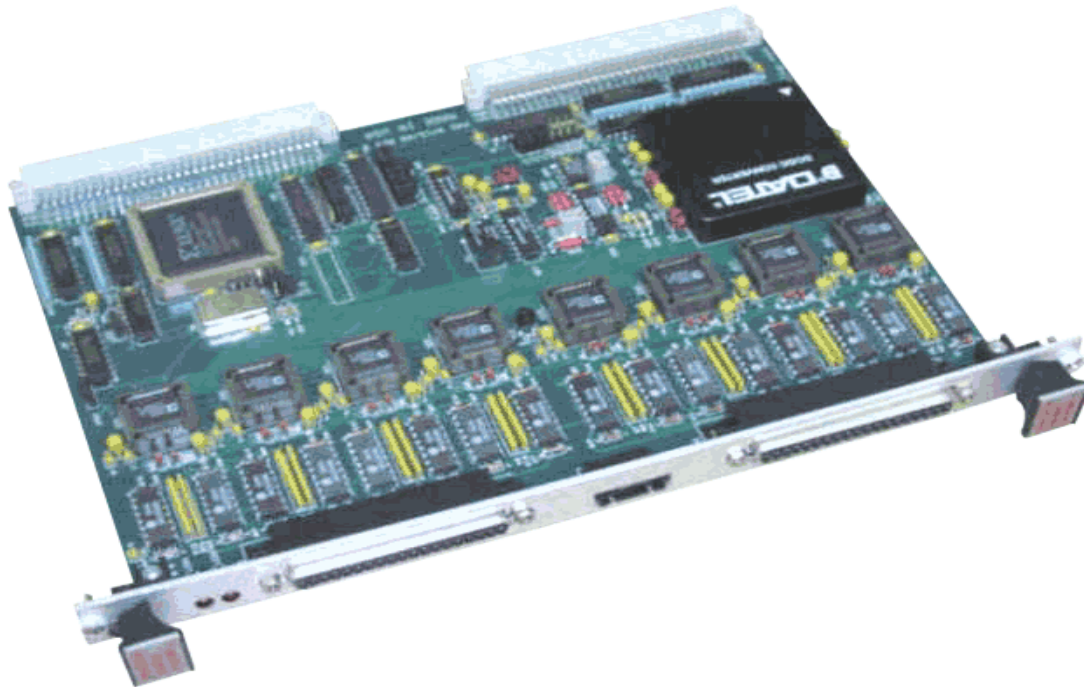


# PAS 9715/AO

## 32 Channel 12 Bit VME Analog Output Card



### GENERAL DESCRIPTION

The **PAS 9715/AO** provides thirty-two, twelve bit analog voltage output channels on a 6U VMEbus card. VME systems with A16, A24, or A32 addressing are supported, and data writes of 16 or 32 bits can be used. Pluggable jumpers are used to configure the width of the address bus and the data bus width is specified by the instruction type.

Eight, quad high speed voltage output DACs, with 6  $\mu$ Sec settling times are used to provide a total of thirty two analog output channels. The voltage output signals are available on a pair of 37 pin D connectors mounted through the front panel. These connectors also terminate four digital output signals. All of the analog outputs can be disconnected from the field wiring through on board, low impedance FET switches.

Six analog output ranges are available, under program control, which allows the card's output voltage to be tailored to your application. Bipolar ranges from  $\pm 10$  volts to  $\pm 2.5$  volts and unipolar ranges from 0 to 10 volts to 0 to 2.5 volts are supported. All output ranges provide a minimum of 5 milliamps of output current.

External synchronization signals and the card's voltage reference are available in a separate six-position connector at the front panel. Additional features include a board identifier PROM, control and status register, and DAC loop back registers.



## Electrical Specifications

<b>Number of Channels</b>	32 Analog Outputs, 4 Digital Outputs
<b>Resolution</b>	12 bits
<b>Output Voltage</b>	+/- 10 Volts, +/- 5 Volts, +/- 2.5 Volts 0 to 10 Volts, 0 to 5 Volts, 0 to 2.5 Volts
<b>Output Current</b>	+/- 5 mAmps
<b>Settling Time</b>	6 uSec (typ) to 0.01%
<b>Integral Nonlinearity</b>	+/- 1 LSB (max.)
<b>Differential Nonlinearity</b>	+/- 1 LSB (max.)
<b>Zero Scale Error</b>	+/- 2 LSB
<b>Full Scale Error</b>	+/- 2 LSB
<b>Digital Outputs</b>	4 Outputs, 74ALS14 Output Drivers
<b>Low Level Output Voltage</b>	0.35 V (typ), 0.50 V (max.) @ I out = 8mA
<b>High Level Output Voltage</b>	3.5 V (typ), 2.7 V (min.) @ I out + -0.4mA
<b>Card Power Requirements</b>	5 Volts @ 3 Amp, (typ)

## Features

32 channels of analog voltage outputs, with a 12 bit D/A Converter per channel

Software selectable +/- 10 V, +/- 5V, +/- 2.5 V, 0-10V, 0 to 5V, 0 to 2.5V ranges

Output current 5mA per channel

All DACs are calibrated with a precision on board voltage reference

Offset binary or two's complement data format software selectable

DAC's reset to bipolar zero during power up reset

Outputs can be disconnected from field wiring through low impedance FET switches

Output impedance of 0.6 ohm

Output slew rate of 2.2 Volts per uSec, Settling time of 6 uSec to 0.01%

DACs have digital readback registers

Two DACs can be updated with a single VME long word write

Double buffered DACs can be updated simultaneously with software or external sync

VME access: D32, D16; A32, A24, A16 Slave

## Environmental Specifications

<b>Operating Temperature Range</b>	0 to 60 degrees Celsius
<b>Storage Temperature Range</b>	-20 to 85 degrees Celsius
<b>Relative Humidity Range</b>	20% to 80%, non-condensing

## Physical Specifications

<b>Dimensions</b>	233 mm X 160 mm, 6 U X 160 VME form factor
<b>Weight</b>	16 oz. (typ)
<b>Connectors</b>	2 ea. 96 position, (VME bus connectors) 2 ea. DB37 female, (Analog Output connectors) 1ea. 6 pin shrouded header (external sync. input, output & voltage ref.) Mating connector, Molex P/N 50-57-9406

