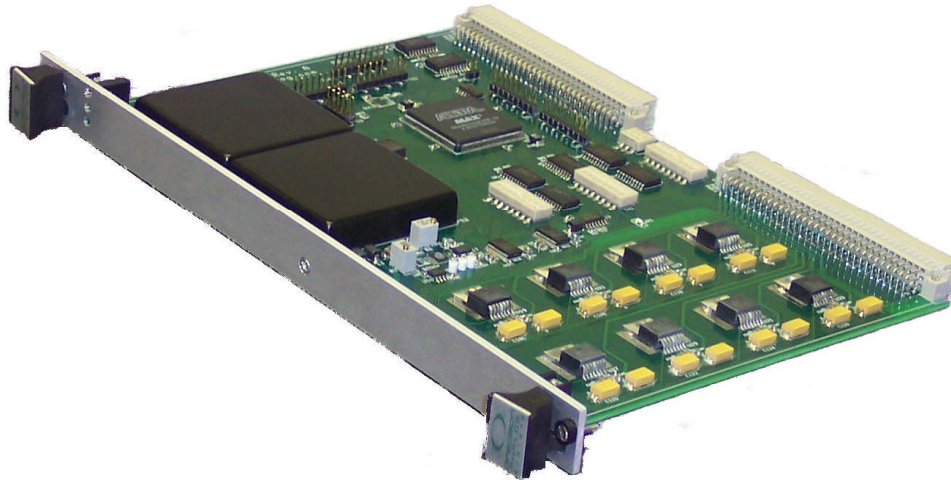


# PAS 9912/AO

## 8 Channel High Power VME Analog Output Card



### GENERAL DESCRIPTION

The **PAS 9912/AO** provides eight, twelve bit high power analog voltage output channels on a 6U VMEbus card. Two, quad high speed voltage output DACs, with 10 uSec settling times provide a total of eight analog output channels. Eight high-power operational amplifiers buffer the DAC output signals and provide a gain of 1.5 or 2.5 as an ordering option. Voltage output signals are available on the a and c rows of the P2 connector.

Four analog output ranges are available, under program control, allowing the card's output voltage to be tailored to your application. Bipolar ranges from +/- 15 Volts to +/- 7.5 Volts and unipolar ranges from 0 to 15 Volts to 0 to 7.5 Volts are supported on one version of the card. The 25 Volt version provides ranges of +/- 25 Volts, +/- 12.5 Volts; 0 to 25 Volts and 0 to 12.5 Volts. All output ranges provide a minimum of 40 milliamps of output current.

VME systems with A16, A24, or A32 addressing are supported, and data writes of 16 or 32 bits can be used. DIP switches configure the width of the address bus. Data bus width is specified by the instruction type.

External synchronization signals can be connected to the P2 connector, if required.

Additional features include board identifier registers, control and status register, and DAC loop back registers.



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## Electrical Specifications

<b>Number of Channels</b>	8 Analog Outputs
<b>DAC Resolution</b>	12 bits
<b>Output Voltage Ranges</b> (15 volt version)	+/- 15 Volts, +/- 7.5 Volts 0 to 15 Volts, 0 to 7.5 Volts
<b>Output Voltage Ranges</b> (25 volt version)	+/- 25 Volts, +/- 12.5 Volts 0 to 25 Volts, 0 to 12.5 Volts
<b>Output Current</b>	+/- 40 mAmps (min)
<b>Slew Rate</b>	2.2 Volts uSec
<b>Settling Time</b>	10 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>	+/- 4 LSB
<b>Card Power Requirements</b>	5 Volts @ 1.5 Amp, (typ)

## Additional Features

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

**Data Format:** Offset binary or two's compliment, software selectable

**Data Read-Back:** DAC's have digital read-back registers

**Long-Word Write:** Two DAC's can be updated with a single VME long-word

**Simultaneous Update:** Software or external sync updates DAC's simultaneously

**Reset Valve:** DAC's reset to bipolar zero during power up reset

**Calibration:** All DAC's are calibrated with a precision on-board voltage reference

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

**Board Identifier:** VME ID PAS 9912/AO A0, programmed in FPGA

**DAC Power Supply:** On board +/- 15 Volt DC to DC converter

**Power Amp Supply:** On board +/- 30 Volt DC to DC converter

## Environmental Specifications

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

## Physical Specifications

<b>Dimensions</b>	233mm x 160mm, 6U x 160 VME form factor
<b>Weight</b>	16 oz. (typ)
<b>Connectors</b>	2 ea. 96 position, (VME bus connectors) Analog Outputs terminate on the a and c row of P2



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