

Document PAS089  
Revision A -08/09/13

---

---

**PAS 9409/AMP  
ENGINEERING SPECIFICATION**

---

---

**32 CHANNEL INSTRUMENTATION  
AMPLIFIER CARD**

Additional copies of this manual or other Precision Analog Systems (PAS) literature may be obtained from:

Precision Analog Systems Co.  
1021 SW 75<sup>th</sup> Avenue  
Plantation, Florida 33317  
Phone: (954) 587-0668  
E-mail: [inquiry@precisionanalog.com](mailto:inquiry@precisionanalog.com)

The information in this document is subject to change without notice.

PAS makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Although extensive editing and reviews are performed before release, PAS assumes no responsibility for any errors that may exist in this document. No commitment is made to update or keep current the information contained in this document.

PAS does not assume any liability arising out of the application or use of any product or circuit described herein, nor is any license conveyed under any patent rights or any rights of others.

PAS assumes no responsibility resulting from omissions or errors in this manual, or from the use of information contained herein.

PAS reserves the right to make any changes, without notice, to this product to improve reliability, performance, function or design.

All rights reserved.

# 32 Channel Instrumentation Amplifier Card

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
I	<b>INTRODUCTION</b>	
	General Description	5
	Card Features	6
II	<b>SPECIFICATIONS</b>	
	Electrical Specifications	7
	Environmental Specifications	7
	Physical Specifications	7
	Connector Definitions	8

# 32 Channel Instrumentation Amplifier Card

## LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Pluggable Jumper Definitions	8

## I. INTRODUCTION

### GENERAL DESCRIPTION

The PAS 9409/AMP board is a 32-channel, differential, low-level, analog input signal conditioner for the VMEbus. Channel voltage gain is individually selectable as x1, x10, x100, or x1,000, and produces full-scale input ranges from  $\pm 10$  mV to  $\pm 10$  V. The output from each channel is a single-ended voltage source with a maximum full-scale range of  $\pm 10$  V.

Three-pole low pass filters are supplied in one of four operation ranges, 4 Hz, 40 Hz, 400 Hz, or 4kHz. A no filter option is also available, see the ordering information. Filter modules control eight channel groups and are pluggable. Analog inputs are accepted through two front panel connectors, P3 and P4, which can be supplied to mate with either discrete wire or insulation displacement ribbon (IDC) 64-pin DIN connectors. The 64 pin connectors are stacked and referred to as a 128 pin 'CONDO' header. The analog outputs are connected to the system through a 64-pin DIN connector, P5, which is also located on the front panel. Electrical power is obtained from the +5 VDC bus through the P1 connector. The PAS 9409/AMP board uses the backplane only for electrical power.

**Card Features: PAS 9819/AO**

- 32 differential or single ended analog inputs
- Selectable gain per channel
- Gain selection of X1, X10, X100, X1,000 provides input ranges from  $\pm 10$  Volts
- Each channel provides individual
  - Selectable gain amplifier
  - 3 pole active filter, available in 4, 40, 400 or 4KHz

## II. SPECIFICATIONS

### Environmental Specifications

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

### Physical Specifications

Dimensions	Form factor: Double (160 mm x 233 mm)
Weight	16 oz. (typ.)
Connectors	2 ea. 96 position, (VME bus connectors)

### **Connector Definitions**

Two 96-position DIN connectors, (P1 and P2) are installed on the backplane end of the board to make the standard VME bus connection. A DB37 female connector, installed through the board's front panel, is available to provide access to the four analog output channels.

The pin definitions of the connector are defined on the following page.