The high-density Model 104-AIM-32 provides 32 single-ended or 16 differential inputs with flexible gain for use with factory configured options such as conditioning for Thermocouples, RTDs, Bridge type load cells and strain gages, and 4-20mA inputs with fault detection. Also available in a kit as model 104-AIM-32A Kit (signal conditioning mux & A/D board pair), the solution features an excellent price/performance value for temperature control and monitoring, scalable Data Acquisition Systems (DAS), environmental monitoring of pH, humidity, pressure, flow and other low-level signal applications.

All sensor signals are conditioned, amplified and calibrated then digitized by a 12-bit, 8-input A/D Board (included with kit version). Alternately, the 104-AIM-32 can be paired with either a 12-bit or 16-bit multifunction I/O board for applications where analog outputs or digital I/O are also needed. Up to eight signal conditioning boards can be stacked together to realize 256 S.E. or 128 Differential inputs, multiplexed into the eight channels of the A/D board. User and Factory Calibration constants for zero and span of each gain on each channel are stored onboard for use in widely varying temperature environments. The user calibration constants are invaluable and useful for a complete end-to-end system calibration including the sensor and lead wires.

SOFTWARE

The 104-AIM-32 is supported for use in all operating systems and includes a free DOS, Linux and Windows 95/98/Me/NT/2000/XP compatible software package. This includes sample programs and source code in “C” and Pascal for DOS, and Visual Basic, Delphi, C++ Builder, and Visual C++ for Windows. Also included is a graphical setup program in Windows. Linux support includes installation files and basic samples for programming from any user level via an open source kernel driver.
### Analog Inputs

- **Input channels**: 32 single-ended or 16 differential
- **Software programmable ranges**: ±25mV, ±50mV, ±0.1V, ±2.5V, ±5V, ±10V (additional ranges available per channel by selection of factory installed on-board attenuation resistors)
- **Current input**: 4-20mA (factory option)
- **Throughput**: Up to 100KHz
- **Settling time**: 9µs to 0.01%
- **Slew rate**: 2V/µs
- **Input impedance**: 10M Ohms
- **Common mode voltage**: 15V
- **Common mode rejection ratio**: Over 100dB
- **Maximum input voltage**: 40V (higher with factory installed on-board attenuation resistors)
- **ESD protection**: Up to 2000V

### Analog Outputs

- **Output channels**: 1 of 8, jumper selected
- **Output voltage range**: 5V
- **Output drive capability**: 600 Ohms

### General

- **Power required**: +5V at 200mA with no load on excitation
- **Operating temperature**: 0 to 70°C, -40 to +85°C optional, all versions
- **Storage temperature**: -55° to +125°C
- **Gain non-linearity**: ±0.005%
- **Temperature coefficient of gain**: Removed by calibration
- **Operating humidity**: 5% to 95% RH, non-condensing

### Ordering Guide

- **104-AIM-32**: 32 channel analog input signal conditioner & multiplexer
- **104-AIM-32A**: Kit - Includes A/D board