

104-AIM-32

32-Channel PC/104 ANALOG SIGNAL CONDITIONER



KEY FEATURES:

- Designed to pair with an A/D board to increase channel count and signal conditioning capabilities
- 32 single-ended or 16 differential inputs
- 6 software programmable ranges:
±25mV, ±50mV, ±0.1V, ±2.5V, ±5V, ±10V
- Up to 8 104-AIM-32s can be stacked per A/D board for up to 256 S.E. or 128 diff. inputs
- +5VDC only operation
- 15VDC sensor excitation
- Input Signal Conditioning

FACTORY OPTIONS:

- 4-20mA inputs with offset
- RTD & thermocouple measurement
- Voltage divider on each input
- RC filters on each input
- Bridge completion configuration
- 0 to 70°C and -40 to +85°C versions available

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.

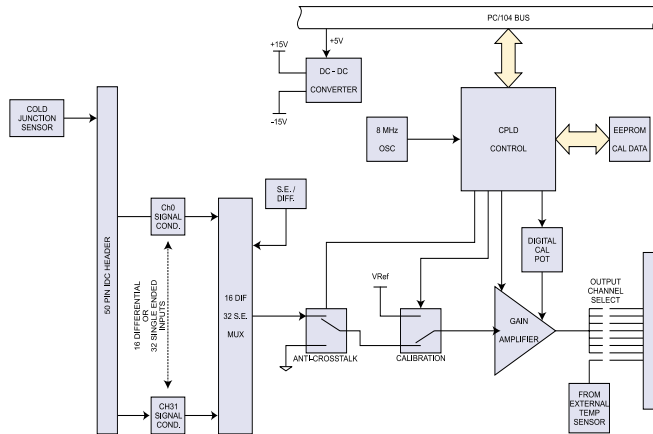


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104-AIM-32

32-Channel
PC/104 ANALOG SIGNAL CONDITIONER

Block Diagram & Pin Configuration



Input Header	
AIN0+ / AIN0 S.E.	01
AGND	03
AIN1- / AIN1 S.E.	05
AIN2+ / AIN2 S.E.	07
AGND	09
AIN3- / AIN3 S.E.	11
AIN4+ / AIN4 S.E.	13
AGND	15
AIN5- / AIN5 S.E.	17
AIN6+ / AIN6 S.E.	19
AGND	21
AIN7- / AIN7 S.E.	23
Temperature Sense	25
AIN8+ / AIN8 S.E.	27
AGND	29
AIN9- / AIN9 S.E.	31
AIN10+ / AIN10 S.E.	33
AGND	35
AIN11- / AIN11 S.E.	37
AIN12+ / AIN12 S.E.	39
AGND	41
AIN13- / AIN13 S.E.	43
AIN14+ / AIN14 S.E.	45
AGND	47
AIN15- / AIN15 S.E.	49

Output Header	
Vref	01
AGND	03
NC	05
ADOUT0	07
NC	09
ADOUT1	11
NC	13
ADOUT2	15
NC	17
ADOUT3	19
NC	21
ADOUT4	23
NC	25
ADOUT5	27
NC	29
ADOUT6	31
NC	33
ADOUT7	35
NC	37
ADOUT8	39
NC	41
ADOUT9	43
NC	45
ADOUT10	47
NC	49

Specifications

Analog Inputs

Input channels	32 single-ended or 16 differential
Software programmable ranges	±25 mV, ±50 mV, ±0.1 V, ±2.5 V, ±5 V, ±10 V (additional ranges available per channel by selection of factory installed on-board attenuation resistors)
Current input	4-20mA (factory option)
Throughput	Up to 100 KHz
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

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



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Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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