

Low Cost Isolated Analog Input PCI Board

PCI 9113A

Registered
ISO 9001
Company

- **16 Differential, 32 Single ended analog inputs of 12 bit resolution**
- **1,500Vrms isolators**
- **Over-voltage protection of 35V maximum**
- **Sampling rate up to 100KHz**
- **On-board A/D 1K FIFO memory**
- **Isolated programmable gain amplifier, with gains of 1, 10 & 100**
- **32-bit PCI bus architecture**
- **Auto scanning channel detection**
- **Accuracy of 1 LSB (0.015% of reading)**

The PCI 9113A is an ideal analog input board for applications where there must be an isolation barrier between the PC and the wires carrying the analog signals under test. Typical applications are pharmaceutical, industrial process control or where there can be earth loop problems.

Isolation

The isolation barrier is situated between the output of the multiplexer and the input of the A/D converter. The isolators are rated 1,500Vrms continuous or 2,500Vrms for one minute. The guaranteed continuous isolation at the connector is 70Vdc.

Normally if your signals share one ground your PC has a different ground, you would then need to use differential inputs. The isolation of the PCI 9113 makes this unnecessary.

Easy installation

The PCI 9113A board is Plug 'n' Play which minimises installation time. All configuration is controlled by the system BIOS and software so there are no configuration jumpers. The two jumpers on the board are for selecting the polarity and range of the analog inputs.

Termination

The pin out of the PCI9113A is clearly labelled on the ACLD9881 to make wiring as quick as possible.

Trigger modes

The A/D conversion can be started by one of two trigger sources; software trigger for

low speed sampling, or timer pacer trigger for high speed sampling. The pacer is supplied by two counter timers on an 8254 chip which are cascaded together to generate trigger pulses of precise period.

There are also four methods available for transferring data to the PC RAM:

- Software Data Polling - Single reading from the FIFO
- FIFO Half-Full Polling - Software controlled emptying of the FIFO every 5.12mS for full speed sampling
- End of Conversion Interrupt Transfer - Suitable for low speed real time data transfer to PC one sample at a time.
- FIFO Half-Full Interrupt Transfer - suitable for high speed real time acquisition, to lower CPU overhead

Software

The PCI9113A is supported by a comprehensive set of drivers and programming tools. These software drivers support C/C++ under MS DOS. A DLL for programming in Windows 3.1x and Windows 95/8 NT/2000 is provided. The PCI-DASK is also available for advanced programming in Windows.

DESCRIPTION	PRODUCT CODE
PCI-9113A 32CH isolated A/D board and Software	909 868 17
ACLD-9881 labeled screw terminal assembly with cable for PCI-9113	909 868 21



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SPECIFICATION

ANALOG INPUT

Channels	32 single-ended
Converter	Successive approximation
Resolution	12-bit
Isolation	70Vdc
Overvoltage protection	Continuous $\pm 35V$ maximum
Barrier impedance	10M Ω 10pf
Leakage current	0.8 μA
Input range bipolar	$\pm 10V$, $\pm 1V$, $\pm 0.1V$, $\pm 0.01V$ (Software controlled)
Throughput	60kS/s (Gain =1 or 10) 10kS/s (Gain=100)
Accuracy	0.015% of reading ± 1 bit
Input impedance	10 M Ω
Trigger source	Software, External
Data transfer	Program control or interrupt
FIFO buffer size	1024 samples
Trace mode	Pre-trigger, post-trigger mid-trigger mode

PHYSICAL

Connector	37-pin D-type connector
Operating temp.	0°C - 60°C
Storage temp.	-20°C - 80°C
Humidity	5-95%, non-condensing
Power consumption	+5V @ 960mA (max.)
Dimension LxW	162mm x 124mm (6.25" x 4.85")
Compliance	CE EMC