APC330
16-bit A/D Analog Input

APC330 boards provide fast, high resolution A/D conversion. The APC330 has many features to improve your overall system throughput rate. You can scan all channels or define a subset for more frequent sampling. Burst mode scans selected channels at the maximum conversion rate. Uniform mode performs conversions at user-defined intervals. Both modes can scan continuously, or execute a single cycle upon receiving a trigger.

“Mail box” memory allows the CPU to read the latest data in 32 storage buffer registers without interrupting the A/D converter.

Features
■ 16-bit A/D converter (ADC)
■ 8μS conversion time (125KHz)
■ 16 differential or 32 single-ended inputs (±5V, ±10V, 0-5V, and 0-10V input ranges)
■ Individual channel mailbox with one or two storage buffer registers per channel
■ Programmable scan control
■ Four scanning modes
■ User-programmable interval timer
■ External trigger input and output
■ Programmable gain for individual channels
■ Post-conversion interrupts

Benefits
■ “Mailbox” memory eliminates scanning interruptions for optimum throughput.
■ Data register indicates new and missed (overwritten) data values in the mail box.
■ Programmable interrupts simplify data acquisition by providing greater control.

Specifications

Analog Input
Input configuration: 16 differential or 32 single-ended channels.
A/D resolution: 16 bits.
Input ranges: ±5V, ±10V, 0-5V, and 0-10V.
Programmable gains: 1x, 2x, 4x, 8x.
Maximum throughput rate:
Only one channel can be updated at a time.
One channel: 125KHz (8μS/conversion)
[66KHz (15μS/conversion) recommended]
16 channels (differential): 4.2KHz (240μS/16 ch)
32 channels (single-ended): 2.1KHz (480μS/32 ch).
Data sample memory: Individual channel mailbox with one or two storage buffer registers per channel
A/D triggers: Internal timer, external source, and software.
Internal timer: One user programmable timer for data acquisition.
System accuracy: ±3 LSB (0.005%) typical
(5V calib., gain=1, 25°C).
Data format: Straight binary or two’s compliment.
Input overvoltage protection: Vss -20V to Vdd 40V with power on, -35V to 55V power off.
Common mode rejection ratio (60Hz): 96dB typical.
Channel-to-channel rejection ratio (60Hz): 96dB typical.

Environmental
Operating temperature: 0 to 70°C
(E version -40 to 85°C).
Storage temperature: -55 to 100°C.
Relative humidity: 5 to 95% non-condensing.
MTBF: Consult factory.
Power: 230mA at +5V (275mA maximum).

PCI Bus Compliance
This device meets or exceeds all written PCI local bus specifications per rev. 2.2 dated December 1998.
System base address: This board operates in memory space. It consumes 4K of memory space.
Data transfer bus: Slave with 32, 16, and 8-bit data transfer operation.
Interrupts (INTA#): Interrupt A is used to request an interrupt.

Ordering Information
I/O Boards
APC330
Analog input board
APC330E
Same as APC330 plus extended temperature range

Software
PMCSW-API-VXW: VxWorks® software support package
PCISW-API-WIN32: 32-bit Windows® DLL Driver software package
PCISW-API-WIN64: 64-bit Windows® DLL Driver software package
PCISW-API-LNX: Linux™ support (website download only)

Accessories
5028-378
Termination panel, SCSI-2 connector, 50 screw terminals.
5028-438
Cable, shielded, SCSI-2 connector at both ends

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