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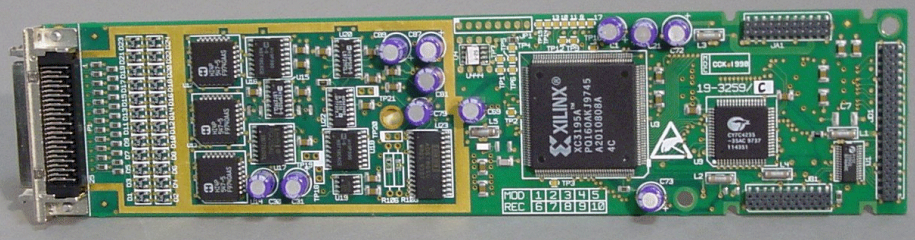
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ProDAQ

# ADVANCED VXI DATA ACQUISITION SYSTEMS

## 3411
## 24-CHANNEL ENHANCED ADC FUNCTION CARD



VXI bus

- 24 Differential Channels
- Accuracy better than 0.02% (with optional Vref Source)
- Less than 1 $\mu$V RMS Noise
- Accuracy for Thermocouples 1° C, for PT100 0.1° C
- Open Thermocouple Detection
- 16-bit Resolution
- 100 kHz Internal, 20kHz Aggregate Conversion Rate
- Programmable Gain and Filtering
- 2 or 16 kSamples FIFO
- Up to 192 Differential ADC Channels per VXIbus Slot

POWER

The ProDAQ 3411 Enhanced Analog-to-Digital Converter Function Card is one of the ProDAQ high density cards, which can be fitted into ProDAQ Motherboards. ProDAQ modules are the most versatile VXIbus modules in the market. They provide the user with the highest channel density and functionality available today.

The ProDAQ 3411 Enhanced ADC Function Card contains a 100 kHz Analog-to-Digital Converter with 24 fully differential inputs, each having a $\pm$10V max. range. This results in a remarkable number of 192 fully differential input channels in a single VXIbus slot, if eight ADC function cards are fitted into one ProDAQ Motherboard.

The gain is programmable from 1 to 1000, providing the user with voltage ranges from $\pm$10V to $\pm$10mV. Three different filter bandwidth and bypass can be selected by software.

The voltage from the ProDAQ 3201 Programmable Voltage Reference card can be switched directly to the programmable gain amplifier for calibration ”on-the-fly” or self-test purposes. Using the Voltage Reference Option an accuracy of better than 0.02% can be achieved.

The accuracy for temperature measurements is 1° C for thermocouples and 0.1° C for PT100s over the entire temperature range, if used with our ProDAQ 5000 series of Signal Conditioning Cards and our Signal Conditioning Unit. (Note this does not include any sensor errors).

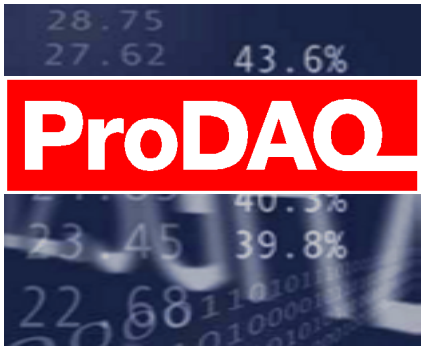
The RMS noise is less than 1$\mu$V at a gain of 1000.

The ProDAQ 3411 Enhanced ADC Function Card is supplied with VXI*plug&play* drivers, that can be used with all popular software packages. The driver automatically detects and initializes all the function cards installed in one of the ProDAQ motherboard modules, removing any possibility of configuration errors.

The ProDAQ modules and function cards allow the user to safely and simply expand their existing hardware and software systems.

bustec

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| | |
|---|---|
| **Number of Input Channels** | 24 |
| **Input Type** | Differential |
| **Input Voltage Range** | max. ±10V<br>min. 10 mV |
| **Resolution** | 16 bit (monotonic) |
| **Gain Selection** | 1, 10, 100, 1000 |
| **Sensitivity** | 0.305mV / bit (at gain 1)<br>0.381$\mu$V / bit (at gain 1000) |
| **Filter Selection** | 1000Hz, 100Hz, 10Hz 2-pole Butterworth and Bypass |
| **Filter Bandwidth** | 6kHz @ 20$V_{pp}$<br>10kHz @ 16$V_{pp}$ |
| **Dynamic Range** | 92dB |
| **Integral Linearity Error** | Typ. ±0.01%<br>Max. ±0.02% |
| **Diff. Linearity Error** | Max. +1.5 LSB<br>Min. -1 LSB |
| **Total Full Scale Error** | < 0.2% uncalibrated<br>< 0.02% cal. with $V_{ref}$<br>Note: @ 25° ±1° C |
| **Sampling Rate** | 100kHz Internal, 20 kHz Aggregate |
| **Settling Time** | 51 $\mu$sec to 0.01%<br>(gain 1, filter bypass) |
| **Input Impedance** | > 10MΩ / 25pF |
| **Input Protection** | ±35V |
| **Input Coupling** | DC |
| **Input Offset Voltage** | max. ±5mV<br>typ. ±1mV (gain 1)<br>±50$\mu$V (gain 1000) |
| **CMRR** | 120dB typ. @ 1kHz<br>80db min. @ 1kHz |

| | |
|---|---|
| **Thermal Drift** | ±1 LSB / 10° C |
| **Noise** | < 1$\mu$V RMS (gain 1000, 10Hz Filter) |
| **Trigger Input** | Motherboard or Front-Panel Connector |
| **Trigger Output** | Motherboard or Front-Panel Connector |
| **FIFO** | 2 kSamples or 16 kSamples |
| **Operating Temperature** | 0° C to 50° C |
| **Storage Temperature** | -40° C to 70° C |
| **Input Connector** | 50-pin SCSI Female |
| **Dimensions** | 235 x 53mm<br>(2.1 x 9.1 inch) |
| **Weight** | < 100g |
| **Current Consumption** | Voltage (V) Current (mA)<br>+15 20<br>-15 10<br>+12 40<br>+5 190<br>Note: ±15V derived from VXIbus ±24V |
| **Power Consumption** | < 1.9 Watts |
| **Warm-up Time** | < 30 Min. |
| **Software Support** | VXI*plug&play* driver for the WIN95 and WINNT frameworks |
| **Configuration** | Cards can be factory installed or field installed by user |
| **Warranty Period** | 12 month standard<br>(Extended periods available at additional cost) |

**Ordering Information**

| | |
|---|---|
| 3411-AA | 24 Ch. Enhanced ADC with 2 kWord FIFO |
| 3411-AB | 24 Ch. Enhanced ADC with 16 kWord FIFO |

**Related Products:**

| | |
|---|---|
| 3120-AA | Standard Motherboard |
| 3150-AA | High-Performance Motherboard |
| 3201-AA | Voltage Reference Card |
| 5010-AA | Signal Conditioning Unit |
| 5X1Y-AA | Power Supply Unit |
| 5310-AA | Isothermal Termination Panel |
| 5410-AX | 4 Wire Connector Card |
| 8010-AA | 0.5 Meter SCSI Cable |

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