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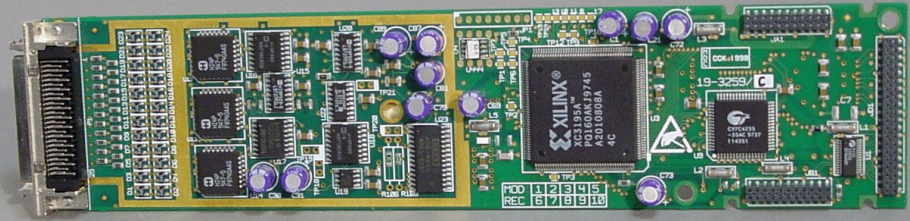
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### 3411 24-CHANNEL ENHANCED ADC FUNCTION CARD



- 24 Differential Channels
- Accuracy better than 0.02% (with optional Vref Source)
- Less than 1  $\mu\text{V}$  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  $\pm 10\text{V}$  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  $\pm 10\text{V}$  to  $\pm 10\text{mV}$ . 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  $\mu\text{V}$  at a gain of 1000.

The ProDAQ 3411 Enhanced ADC Function Card is supplied with VXIplug&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.



<b>Number of Input Channels</b>	24	<b>Thermal Drift</b>	±1 LSB / 10° C
<b>Input Type</b>	Differential	<b>Noise</b>	< 1µV RMS (gain 1000, 10Hz Filter)
<b>Input Voltage Range</b>	max. ±10V min. 10 mV	<b>Trigger Input</b>	Motherboard or Front-Panel Connector
<b>Resolution</b>	16 bit (monotonic)	<b>Trigger Output</b>	Motherboard or Front-Panel Connector
<b>Gain Selection</b>	1, 10, 100, 1000	<b>FIFO</b>	2 kSamples or 16 kSamples
<b>Sensitivity</b>	0.305mV / bit (at gain 1) 0.381µV / bit (at gain 1000)	<b>Operating Temperature</b>	0° C to 50° C
<b>Filter Selection</b>	1000Hz, 100Hz, 10Hz 2-pole Butterworth and Bypass	<b>Storage Temperature</b>	-40° C to 70° C
<b>Filter Bandwidth</b>	6kHz @ 20V <sub>pp</sub> 10kHz @ 16V <sub>pp</sub>	<b>Input Connector</b>	50-pin SCSI Female
<b>Dynamic Range</b>	92dB	<b>Dimensions</b>	235 x 53mm (2.1 x 9.1 inch)
<b>Integral Linearity Error</b>	Typ. ±0.01% Max. ±0.02%	<b>Weight</b>	< 100g
<b>Diff. Linearity Error</b>	Max. +1.5 LSB Min. -1 LSB	<b>Current Consumption</b>	Voltage (V)    Current (mA) +15            20 -15            10 +12            40 +5             190 Note: ±15V derived from VXIbus ±24V
<b>Total Full Scale Error</b>	< 0.2% uncalibrated < 0.02% cal. with V <sub>ref</sub> Note: @ 25° ±1° C	<b>Power Consumption</b>	< 1.9 Watts
<b>Sampling Rate</b>	100kHz Internal, 20 kHz Aggregate	<b>Warm-up Time</b>	< 30 Min.
<b>Settling Time</b>	51 µsec to 0.01% (gain 1, filter bypass)	<b>Software Support</b>	VXI <i>plug&amp;play</i> driver for the WIN95 and WINNT frameworks
<b>Input Impedance</b>	> 10MΩ / 25pF	<b>Configuration</b>	Cards can be factory installed or field installed by user
<b>Input Protection</b>	±35V	<b>Warranty Period</b>	12 month standard (Extended periods available at additional cost)
<b>Input Coupling</b>	DC		
<b>Input Offset Voltage</b>	max. ±5mV typ. ±1mV (gain 1) ±50µV (gain 1000)		
<b>CMRR</b>	120dB typ. @ 1kHz 80db min. @ 1kHz		

#### 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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