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DIAMOND SYSTEMS CORPORATION

DIAMOND-MM

12-bit Analog I/O PC/104 Module



- 16 12-bit A/D with 100KHz sample rate, programmable input ranges and 512 sample FIFO
- 2 12-bit D/A
- 8 digital inputs and 8 digital outputs
- Counter / timers for A/D control and general use
- -40 to +85°C operation

DESCRIPTION

Diamond-MM has all the primary features you expect in a high-performance analog I/O board, at a reduced price. The analog input circuit uses a 12- bit A/D converter and can be configured for single-ended or differential mode and unipolar or bipolar mode. It also offers 10 different input ranges, so it can work with a wide variety of input signals. The maximum A/D conversion rate is up to 20,000 per second using interrupts or up to 100,000 per second using DMA.

Two optional analog outputs provide 12-bit resolution over a 0-5V or user-adjustable range with 8mA drive current and 4µs settling time. The D/A can also be used as a digital attenuator for an analog signal fed into one of the reference inputs.

The board contains 8 digital inputs and 8 digital outputs. It also has an on-board 82C54 counter/ timer chip to control the A/D sampling rate and provide general purpose counting functions.

Diamond-MM is available in four versions: With or without analog outputs, and in commercial (0-70°C) or industrial (-40 to +85°C) operating temperature range.

SPECIFICATIONS

Analog Inputs	
Number of inputs	16 16-bit
Input Modes	Single-ended, Differential
Input Ranges	±10V, ±5V, ±2.5V, ±1.0V, ±0.5V, 0-10V, 0-5V, 0-2.5V, 0-1.0V, 0-0.5V, jumper selected
Max Sample Rate	100KHz
Nonlinearity	±1LSB, no missing codes
On-board FIFO	None
Calibration	Manual calibration
Analog Outputs	2, 12-bit resolution
Output Ranges	0-5V
Output Current	±8mA max per channel
Settling Time	4mS max to ±1/2 LSB
Analog Outputs	
Relative Accuracy	±1 LSB
Digital I/O Lines	8 In, 8 Out
DIO Input Voltage	Logic 0: 0.0V min, 0.85V max Logic 1: 2.0V min, 5.0V max
DIO Output Voltage	Logic 0: 0.0V min, 0.33V max Logic 1: 3.8V min, 5.0V max
Counter / Timers	1 - 32-bit; 1 - 16-bit
Clock Source	10MHz clock or external signal
Power Supply	+5VDC±10%@165mA
Operating Temp	0 to 70°C (standard) -40°C to +85°C (XT models)
Weight	3.2oz / 91g

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ORDERING INFORMATION

Part No.	Description
DMM	16 12-bit A/D, 100KHz, 2 12-bit D/A, 8 digital inputs, 8 digital outputs, 0-70°C
DMM-XT	16 12-bit A/D, 100KHz, 2 12-bit D/A, 8 digital inputs, 8 digital outputs, -40°C to 85°C

FOR MORE INFORMATION

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