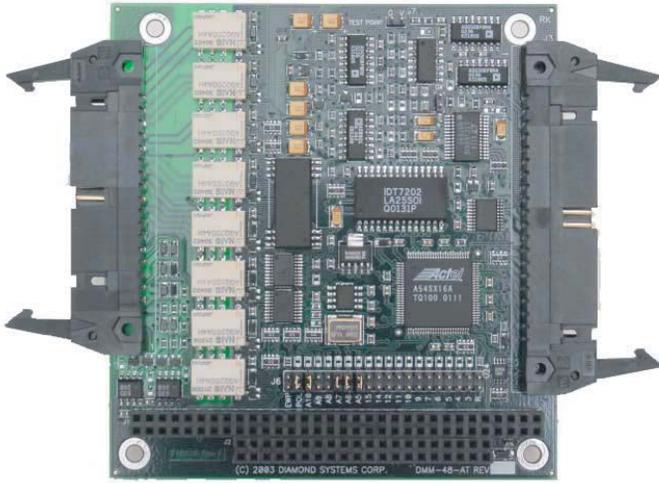


DIAMOND-MM-48-AT

Autocalibrating 16-ch 16-bit A/D + 8-ch 12-bit D/A Ext Temp



- 2-in-1 design reduces size, weight, and cost
- 16 analog inputs, 16-bit A/D
- Single-channel, multi-channel round robin, and multi-channel scan sampling
- Interrupt-based A/D data transfer with FIFO support
- Autocalibration for highest accuracy

DESCRIPTION

Diamond-MM-48-AT is the newest in Diamond Systems' popular AT series of PC/104 autocalibrating analog I/O boards. It combines the features of two different I/O boards into a single board to reduce the size and weight of your PC/104 stack:

The analog I/O features are similar to our DMM-16-AT board: 16 analog inputs with 16-bit A/D, 8 analog outputs with 12-bit D/A, and on-board counter/timer for A/D sample rate and interrupt control.

The digital I/O features are similar to our Opal-MM board: 8 relays with SPDT (form C) contacts and 4 optocouplers with up to 28V AC/DC input capability. The optocouplers feature an interrupt on edge detection feature for safety applications. An additional 4 TTL level digital I/O lines are also provided on the board, and these lines also feature interrupt on edge detection capability.

Diamond-MM-48-AT is designed for rugged environments. It uses latching I/O connectors, and all jumpers can be bypassed with the installation of 0-ohm resistors to provide a vibration-proof fixed configuration. In addition the board is tested and guaranteed to operate reliably over the industrial temperature range of -40 to +85°C.

SPECIFICATIONS

Analog Inputs	
Number of inputs	16 single-ended
A/D resolution	16 bits (1/65,536 of full scale)
Bipolar ranges	±10V, ±5V
Unipolar ranges	0-5V
Input bias current	±20pA max
Input impedance	10 ¹³ Ohms typical
Overtoltage protection	±35V on any analog input without damage
Input Impedance	10 ¹³ ohms
Nonlinearity	±3LSB, no missing codes
Conversion rate	200,000 samples/sec.max
Conversion trigger	software trigger, internal pacer clock, or external TTL signal
Analog Outputs	
Number of outputs	8
D/A resolution	12 bits (1/4096 of full scale)
Output ranges	0 - 4.096V (1mV/LSB)
Output current	2mA max per channel (2K ohm load min)
Settling time	3µS max to ±1/2 LSB
Relative accuracy	±6 LSB
Nonlinearity	±1 LSB, monotonic

ANALOG I/O

The analog input circuit features 16 A/D input channels with 16-bit resolution, single-ended configuration, and a fixed input range of +/-10V (0-10V and +/-5V are also available as factory settings). The maximum sampling rate is increased to 200KHz and is supported by a new larger 2K sample FIFO.

The analog output circuit has 8 D/A channels with 12-bit resolution and a 0-4.096V output range. This range provides an intuitive conversion formula of 1mV per LSB to simplify programming and provide a more appropriate set of true output voltages.

ORDERING INFORMATION

Part No.	Description
DMM-48-AT	Diamond-MM Autocalibrating 16-ch 16-bit A/D + 8-ch 12-bit D/A Ext Temp
DMM-48U-AT	Autocalibrating 16-ch. 16-bit unipolar A/D, 4 optoisolated inputs, 8 relays

FOR MORE INFORMATION

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