



Data Acquisition Boards

Introduction

Humusoft offers several data acquisition boards for PCI and ISA bus. Basic board for standard applications is AD512 containing eight 12-bit analog input channels with sample & hold circuit and software programmable input ranges, 12-bit analog output channels, eight digital inputs and eight digital outputs. This low-cost board is suitable for standard analog and digital I/O applications. Multifunction boards MF604 and MF614 are designed for more demanding applications. They have identical A/D and digital I/O, and four 12-bit analog outputs, four encoder inputs with differential line receivers and digital input signal filters and five high speed counters/timers. Line receivers with Schmitt triggers are used on encoder and counter inputs to improve noise resistance. These boards offer most of the functions required in process control or measurements applications.



MF614 multifunction board

All boards are designed for standard data acquisition and control applications and optimized for use with the Real Time Toolbox and Real-Time Windows Target for MATLAB®. Drivers for Windows, Real-Time Toolbox, Real-Time Windows target and xPC Target are available. Because of the small size and low power consumption boards can be used not only in the desktop computers but also in portable computers and notebooks with docking station. I/O signals are connected by one or two standard DB37 connectors. Although no special cables are necessary, screw terminal boards TB620 can be used for easy wiring. MF604 and MF614 have second connector on additional bracket and therefore require two slots in PC.

Applications

- DC voltage measurement
- Transducer and sensor interfacing
- Vibration and transient analysis
- Process monitoring and control
- Waveform acquisition and analysis
- Multichannel data acquisition
- Real-time simulation
- Programmable voltage output
- Position measurements

- Servo systems
- PWM
- Frequency measurements
- Time measurements
- Pulse/frequency generation
- Pulse counting

Features

- Eight single-ended 12-bit analog input channels with programmable gain
- Sampling rate up to 100 kHz
- Four 12-bit analog output channels (AD512 has 2 channels only)
- 8 digital inputs, 8 digital outputs, TTL compatible
- Four quadrature encoder inputs, single ended or differential inputs with index (MF604 and MF614 only)
- Five counters/timers (MF604 and MF614 only) with Schmitt trigger inputs
- Interrupt
- Low power consumption
- Drivers for Windows, Real-Time Windows Target, Real Time Toolbox and xPC Target for MATLAB included



AD512 data acquisition board

Accessories

Screw terminal board TB620 can be used with all boards. It is connected to the board by 1.2 m flat cable (included with TB620). Two terminal boards can be used with MF604 and MF614.



TB620 terminal board

Specifications:

Board		AD512	MF604	MF614
Bus		ISA	ISA*	PCI*
I/O connector		DB-37	2 x DB-37	2 x DB-37
Board length		110 mm	155 mm	155 mm
Power	+5V	100 mA	400 mA	400 mA
	+12V	50 mA	50 mA	50 mA
	-12V	50 mA	50 mA	50 mA
A/D	inputs	8 single-ended	8 single-ended	8 single-ended
	resolution	12 bits	12 bits	12 bits
	conversion time	10 μ s	10 μ s	10 μ s
	ranges	\pm 10, \pm 5, 0-10, 0-5 V	\pm 10, \pm 5, 0-10, 0-5 V	\pm 10, \pm 5, 0-10, 0-5 V
	overvoltage	\pm 16 V max.	\pm 16 V max.	\pm 16 V max.
	input resistance	> 10 k Ω	> 10 k Ω	> 10 k Ω
D/A	outputs	2	4	4
	resolution	12 bits	12 bits	12 bits
	ranges	\pm 10, \pm 5, 0-10, 0-5 V	\pm 10 V	\pm 10 V
	output current	5 mA	10 mA	10 mA
Digital I/O	inputs	8 bits	8 bits	8 bits
	outputs	8 bits	8 bits	8 bits
Timer/ counter	chip	-	9513	9513
	channels	-	4 + 1 internal	4 + 1 internal
	resolution	-	16 bits, 50 ns	16 bits, 50 ns
Encoder	channels	-	4 SE or DIFF	4 SE or DIFF
	inputs	-	A, B, Index	A, B, Index
	frequency	-	max. 2.5 MHz	max. 2.5 MHz
	resolution	-	24 bits	24 bits

* requires additional free slot for second connector bracket

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