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Find the *Keithley DAS-HRES* at our website: *Click HERE*

DAS-HRES

Compatible with Existing Applications. For New Applications See the DAS-1800 Series.

47 Kilosample/s, 16-bit Analog and Digital I/O Board

FEATURES

- 16-bit resolution
- 8 fully differential input channels
- 47kS/s acquisition rate
- 2 16-bit analog output
- 3 counter/timers
- Software-selectable gains of 1, 2, 4, and 8
- 16 bits digital I/O

APPLICATIONS

- Signal analysis
- Sensor interface
- Chromatography
- Process monitor/control
- Laboratory automation

QUESTIONS?

1-800-552-1115 (U.S. only)

Call toll free for technical assistance, product support or ordering information, or visit our website at **www.keithley.com**.

Functional Description

The DAS-HRES is a multi-function, 16-bit resolution Analog and Digital I/O board. The DAS-HRES plugs directly into any I/O slot of an IBM PC/XT/AT or IBM PS/2 model 25/30 or compatible computer.

The DAS-HRES offers 8 differential input channels, plus two channels of analog output both with 16-bits resolution. In addition, the DAS-HRES has 16-bits of digital I/O, three counter/timers, and switch selectable unipolar or bipolar inputs.

ORDER	DESCRIPTION
DAS-HRES*	47kS/s 16-Bit Analog and Digital I/O Board
OPTIONS	
STA-HRES	Screw Terminal Accessory Board
STP-50	Screw Terminal Panel for 50-pin Connectors
CDAS-2000	DAS-HRES to STA-HRES Cable
SDAS-2000	Shielded DAS-HRES to STA-HRES Cable

See page 479 for descriptions of all accessories.

The DAS-HRES uses a high performance sampling converter. It has a maximum sampling rate of 47.6kSamples/s, software-programmable gains of 1, 2, 4, and 8, and switch-selectable input ranges of 0 to +10V or ±10V.

The DAS-HRES includes an onboard 3-channel programmable interval timer (Intel 8254) to provide trigger pulses for the A/D. Two channels operate in a fixed divider configuration from an internal 1, 8, or 10MHz crystal clock. The third channel is uncommitted and provides a gated 16-bit binary counter.

The DAS-HRES has two 16-bit analog output channels that have a standard voltage output of ±10V.

Digital I/O consists of an 8-bit digital output port and an 8-bit digital input port.

DMA operation is switch-selectable for levels 1 or 3. Interrupts are software-selectable for any level between 2 and 7. Both DMA and interrupts are tri-stated when disabled and can share levels with other peripherals that have the same capability.

Software

The DAS-HRES is supported by a comprehensive set of drivers and programming tools. The standard software package is included with each board and provides a Mode Call Driver compatible with BASIC programming languages.

SPECIFICATIONS

CHANNELS: 8 differential (HI/LO/GND).
RESOLUTION: 16 bits.
CONVERSION RATE: 47.6kS/s max.
INPUT RANGES: 0–10, 5, 2.5, 1.25V; ±10, 5, 2.5, 1.25V.
ABSOLUTE ACCURACY WITH AUTOCALIBRATION ENABLED:
(GAIN OF 1, 2, 4): .0003% FS ±1 bit.
(GAIN OF 8): 0.0045%FS ±1 bit
ACCURACY WITH AUTOCALIBRATION DISABLED: ±0.01%FS, ±1 bit.
RELATIVE ACCURACY: 0.003%.

PEAK-TO-PEAK NOISE

	Sampling Rate Integer Submultiple of Clock		Sampling Rate Non-integer Submultitude of Clock	
Gain	Bipolar	Unipolar	Bipolar	Unipolar
1	±2.5 LSB	±3.0 LSB	±3.0 LSB	±4.5 LSB
2	±2.5 LSB	±3.5 LSB	±3.5 LSB	±4.5 LSB
4	±3.0 LSB	±3.5 LSB	±3.5 LSB	±5.0 LSB
8	±3.0 LSB	±4.5 LSB	±3.5 LSB	±6.0 LSB

D/A OUTPUTS

CHANNELS: 2 independent.
TYPE: 16-bit double buffered.
LINEARITY: 0.006% FS.
OUTPUT RANGE: ±10V.

INTERRUPT CHANNEL

LEVEL: 2 – 7 software-selectable.
ENABLE: Via INTE of CONTROL register.

PROGRAMMABLE TIMER

TYPE: 8254-2 programmable interval timer.
COUNTERS: 3 down counters, 16-bit; 1 16-bit counter free.
OUTPUT DRIVE: 2.2mA @ 0.45V capability (5 LSTTL loads).
INPUT GATE: TTL/DTL/CMOS compatible.
CLOCK INPUT FREQUENCY: DC to 10MHz.
ACTIVE COUNT EDGE: Negative.
MINIMUM CLOCK PULSE WIDTHS: 30ns high/50ns low.

POWER REQUIREMENTS

+5V: 1.4A typ/1.9A max.

GENERAL ENVIRONMENTAL

OPERATING TEMP: 0 to 50°C.
STORAGE TEMP: –20 to + 70°C.
HUMIDITY: 0 to 90% non-condensing.
DIMENSIONS: 13.3in L × 4.25in H × .75in D (33.8cm × 10.8cm × 1.9cm).

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