

DAS-4

Low-Cost, 8-Channel, 8-Bit Analog Input Board

FEATURES

- 8 A/D channels with 8-bit resolution
- 7 digital I/O bits (4 outputs, 3 inputs)
- ± 5 volt inputs (for 39mV resolution)
- Interrupt handling capability

APPLICATIONS

- Data logging
- Alarm condition monitoring
- Laboratory automation
- Student experiments
- Home experiments
- Energy management

Functional Description

The DAS-4 is an extremely low cost, yet powerful analog input board for the IBM PC/XT/AT and compatibles. The DAS-4 includes 8 single-ended analog input channels with an 8-bit successive approximation A/D converter. The 8-bit resolution combined with the DAS-4's fixed ± 5 V full-scale input range provide a minimum resolution of 0.039V (39mV).

Seven bits of TTL/CMOS-compatible digital I/O are provided on the board, 4 digital outputs and 3 digital inputs. Each output will handle 5 standard TTL loads and can sink 8mA. An external interrupt input is provided that is jumper-selectable to any of the PC interrupt levels (2-7). This allows the DAS-4 to sample data triggered by an external digital signal. +5V and ± 12 V from the PC are provided on the DAS-4's connector, allowing external circuitry to be operated from the computer.

Software

The Mode Call Driver included with the DAS-4 simplifies programming and supports BASICA, QuickBASIC, and other interpreted BASIC languages. This software package also includes example programs, initialization and setup routines, and a simple strip-chart recorder emulation routine.

SPECIFICATIONS

Analog Inputs

A/D TYPE: Successive approximation
 CONVERSION TIME: 20 μ s typ, 30 μ s max
 MONOTONICITY: Guaranteed over operating temperature range
 LINEARITY: ± 1 bit
 ACCURACY: 0.2% of reading ± 1 bit
 OVERVOLTAGE: Continuous single channel to ± 35 V
 CONFIGURATION: Single ended
 INPUT CURRENT: 100nA max at 25°C
 TEMPERATURE COEFFICIENTS: Gain drift ± 50 ppm/ $^{\circ}$ C of FS max
 Zero drift ± 10 μ V/ $^{\circ}$ C max
 SAMPLE & HOLD ACQ TIME: 10 μ s to 0.1% typ time for full-scale step input

VOLTAGE REFERENCE OUTPUT

REF. VOLTAGE: +5.0V \pm 0.2V
 TEMP. COEFFICIENT: 50ppm/ $^{\circ}$ C max
 LOAD CURRENT: ± 2 mA max

DIGITAL I/O

INPUTS (& INTERRUPTS) (LSTTL): 3
 INPUT LOW: V_{IL} = 0.8V max; I_{IL} = -0.4mA max
 INPUT HIGH: V_{IH} = 2.0V min; I_{IH} = 20 μ A max
 OUTPUTS (STANDARD LSTTL): 4
 OUTPUT LOW: V_{OL} = 0.5V max @ I_{OL} = 8mA
 OUTPUT HIGH: V_{OH} = 2.4V min @ I_{OH} = -400 μ A

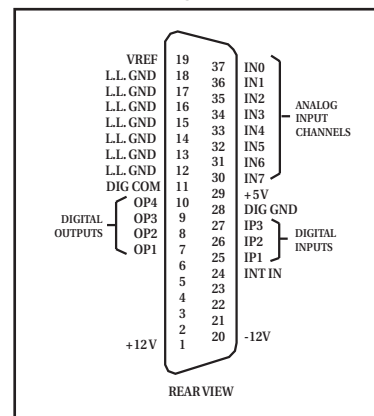
ENVIRONMENTAL

TEMPERATURE: 0 to 50 $^{\circ}$ C (operating); -20 to +70 $^{\circ}$ C (storage)
 HUMIDITY: 0 to 90% non-condensing
 WEIGHT: 4oz (120g)
 DIMENSIONS: 4.25in \times 5.0in (10.8cm \times 12.7cm)

POWER REQUIREMENTS

+5V: 105mA typ/175mA max
 +12V: 26mA typ/30mA max
 -12V: 16mA typ/20mA max

Connector Pin Assignments



ORDER DESCRIPTION

DAS-4 8-Channel, 8-Bit Analog Input Board

OPTIONS

- STA-U Screw Terminal Accessory Board
 - STP-37 Screw Terminal Panel
 - C-1800 DAS-4 to STA-U or STP-37 Cable
 - STC-37 Screw Terminal Connector
- See page 479 for descriptions of all accessories.

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.