

DASCON-1

Compatible with existing applications.
For new applications see Selection Guide.

General Purpose ISA-Bus
Analog and Digital I/O Board

Functional Description

The DASCON-1 is a multifunction analog/digital I/O expansion board for the ISA-bus compatible PCs. It is designed to allow use of the IBM PC/XT in low-speed, high-precision data acquisition and control.

Channels 0 and 1 of the A/D converter are equipped with instrumentation amplifiers with switch-selectable gains of 1, 10, 100, or 1000. Channels 2 and 3 are switch-selectable for direct input or use with the built-in interfaces for 2-, 3-, or 4-wire RTDs for temperature measurement. If input signals are unavoidably noisy, a low-pass filter (30dB of attenuation at 60Hz) can be switched into each channel.

There are 2 optional channels of 12-bit D/A output available. Output ranges of $\pm 10V$, $\pm 5V$, $\pm 2.5V$, and $+5V$ are DIP-switch selectable.

Two precision, adjustable voltage reference outputs are included, and each output can be adjusted between $\pm 6.8V$ at 5mA. Two precision 1mA constant current sources are provided (-10 to $+2.5V$ compliance).

Twelve bits of digital I/O (4 input and 4 output) are available as one port of 8 bits and another of 4 bits.

External interrupt control is provided so that you can select any of the IBM PC interrupt levels (2-5) for programmed interrupt routines.

Two built-in RTD interfaces can be switched into analog input channels 2 and 3.

Software

The DASCON-1 provides a simple-to-use Call Driver accessed by single BASIC "CALL" statements.

ORDER DESCRIPTION

DASCON-1 General Purpose Analog and Digital I/O Board with software on 3.5 inch disks

OPTIONS

STA-01 Screw Terminal Accessory Board

STP-37 Screw Terminal Panel

C1800 STA-01 or STP-37 to DASCON-1 Cable

DAC-12 D/A Chip (max 2 per board)

See page 479 for descriptions of all accessories.

FEATURES

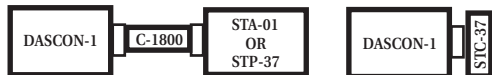
- 12-bit plus sign low noise dual slope integrating A/D converter
- 12 bits of digital I/O
- 4 analog input channels with overvoltage protection to 120V rms
- 4 analog input 30dB (60Hz) switchable filters
- 2 switch-selectable RTD interfaces
- 2 analog output channels (optional)
- 2 precision adjustable voltage references
- 2-, 3-, 4-wire RTD operation
- 2 precision 1mA constant current sources
- 30 samples per second throughput

Connector Pin Assignments

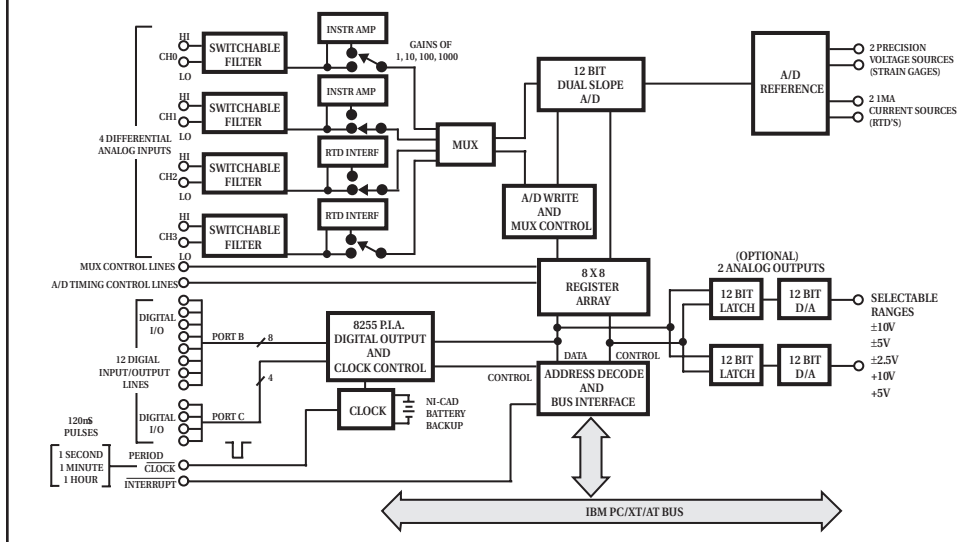
LOW LEVEL GND	19	37	CH0 HI IN
CH0 LO IN	18	36	CH1 HI IN
CH1 LO IN	17	35	CH2 HI IN
CH2 LO IN	16	34	lexe2
lexe3	15	33	CH3 HI IN
CH3 LO IN	14	32	REF #0 OUT
REF #1 OUT	13	31	D/A #0 OUT
D/A #1 OUT	12	30	CLOCK
DIG COM	11	29	PC0
PB0	10	28	PC1
PB1	9	27	PC2
PB2	8	26	PC3
PB3	7	25	BUSY
PB4	6	24	CH ADDR 0
PB5	5	23	CH ADDR 1
PB6	4	22	ID CH ADDR
PB7	3	21	RUN/ HOLD
CONV COMP	2	20	+5V
IRQ IN	1		

REAR VIEW OF EACH 37-PIN D CONNECTOR

Configuration Guide



Block Diagram



SPECIFICATIONS

Analog Inputs

RESOLUTION: 12 bits plus sign (0.5mV/bit)
ACCURACY: 0.01% of reading ± 1 bit
FULL SCALE: $\pm 2.0475V$
CONVERSION RATE: 30 conversions/s max
SWITCHABLE GAIN RANGES: 1, 10, 100, or 1000

RTD Interfaces

ALLOCATED CHANNELS: 2 and/or 3.
RTD TYPE: 100 Ω Alpha = 0.00385 (DIN or European) platinum 2/3/4 wire.
EXCITATION CURRENT: 1.000mA.
LEAD RESISTANCE COMPENSATION: Included for 3 & 4 wire RTD types.

D/A Output Channels

SWITCH-SELECTABLE OUTPUT RANGES: 0 to $+10V$, 0 to $+5V$ (unipolar), $\pm 2.5V$, $\pm 5V$, $\pm 10V$ (bipolar).
OUTPUT CURRENT: $\pm 5mA$ min.

Voltage and Current Sources

VOLTAGE SOURCES: $\pm 6.8V$ at 5mA max (user-adjustable).
CURRENT SOURCES: 1.000mA with 1000M Ω output impedance at DC.

Power Supplies

+5V SUPPLY: 450mA typ./600mA max.
-5V SUPPLY: 8mA typ./15mA max.
+12V SUPPLY: 70mA typ./100mA max.
-12V SUPPLY: 60mA typ./100mA max.