

MAI-16

16-Channel, 12-Bit Analog Input Board For the METRABUS

FEATURES

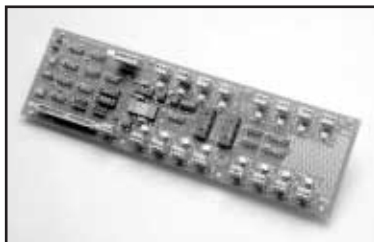
- 16, 12-bit inputs
- Fully differential inputs
- Software- or hardware-selectable input ranges
- Up to 256 analog I/O points per PC expansion slot
- Onboard 10-volt output reference
- Simple to program
- Detachable screw terminals greatly reduce field wiring and replacement time

APPLICATIONS

- Voltage and current measurement
- Interface to temperature, pressure, flow, rate, and other transducers
- Monitor 4–20mA outputs
- Data logging
- Signal analysis

Functional Description

Keithley's MAI-16 is a 16-channel, 12-bit analog input board for the METRABUS system. The board has 4 standard software or hardware selectable input ranges. The addition of a user-installable resistor allows other input ranges for special applications.



The MAI-16 uses 4 consecutive METRABUS addresses within the METRABUS 64-bit address space. This allows up to 16 MAI-16 boards (256 analog input points) to be controlled by a single METRABUS driver board. Writing to the MAI-16 addresses initiates conversions, controls input ranges and selects the channel to sample. Reading from the MAI-16 board address +0 will return the MSBs of the conversion while reading the board address +1 will return the LSBs.

Jumpers on the MAI-16 allow a hardware selection of input ranges if software control is not desired. Annunciator LEDs on each input light to show which channel is being scanned.

The MAI-16 allows a wide range of input configurations. The standard input contains a 50Hz single pole low pass filter. The filter can be easily changed or removed.

SPECIFICATIONS

METRABUS ADDRESS SPACE

4 consecutive addresses

INPUTS

INPUT CHANNELS: 16 fully differential

INPUT RANGES: 4 standard (software- or hardware-selectable) plus special range based on user-installed resistor; ± 10 , ± 5 , ± 2.5 or ± 1.25 volts Full Scale

CONVERTER TYPE: 12-bit successive approximation

CONVERSION SPEED: 35 μ s max

ACCURACY: $\pm 0.1\%$ typ

TEMPERATURE COEFFICIENT: ± 45 ppm/ $^{\circ}$ C

DATA FORMAT: Offset Binary

INPUT BIAS CURRENT: 2nA typ, 6nA max

INPUT IMPEDANCE: 100M Ω

COMMON MODE VOLTAGE: ± 10 V max

INPUT OVERVOLTAGE: 30V continuous max

REFERENCE

VOLTAGE: $+10.0 \pm 0.1$ V

DRIVE CURRENT: 10mA max

POWER REQUIREMENTS

+5V: 180mA typ, 220mA max

+15V: 33mA typ, 40mA max

-15V: 44mA typ, 50mA max

PHYSICAL

OPERATING TEMPERATURE: 0 to 70 $^{\circ}$ C

STORAGE TEMPERATURE: -40 to +100 $^{\circ}$ C

HUMIDITY: 0 to 95% non-condensing

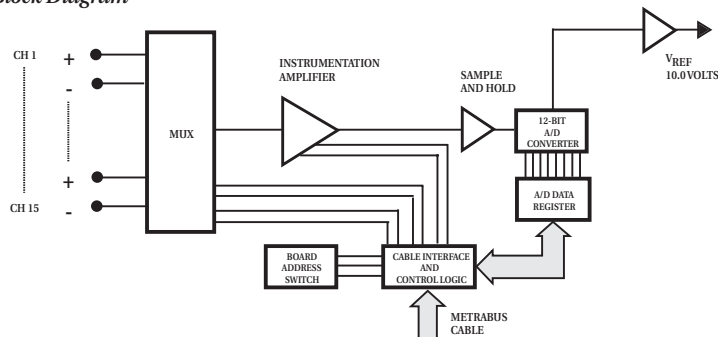
DIMENSIONS: 16in \times 4.75in (40.63cm \times 12.06cm)

WEIGHT: 11.5oz (326g)

ORDER DESCRIPTION

MAI-16 METRABUS 16-Channel, 12-Bit Analog Input Board

Block Diagram



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.