

## MAI-16

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

## FEATURES

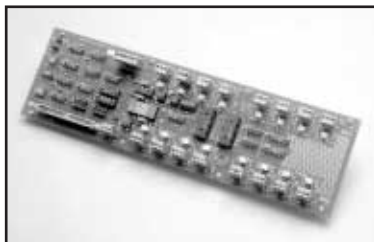
- 16, 12-bit inputs
- Fully differential inputs
- Software- or hardware-selectable input ranges
- Up to 256 analog I/O points per PC expansion slot
- Onboard 10-volt output reference
- Simple to program
- Detachable screw terminals greatly reduce field wiring and replacement time

## 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;  $\pm 10$ ,  $\pm 5$ ,  $\pm 2.5$  or  $\pm 1.25$  volts Full Scale

**CONVERTER TYPE:** 12-bit successive approximation

**CONVERSION SPEED:** 35 $\mu$ s max

**ACCURACY:**  $\pm 0.1\%$  typ

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

**DATA FORMAT:** Offset Binary

**INPUT BIAS CURRENT:** 2nA typ, 6nA max

**INPUT IMPEDANCE:** 100M $\Omega$

**COMMON MODE VOLTAGE:**  $\pm 10$ 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

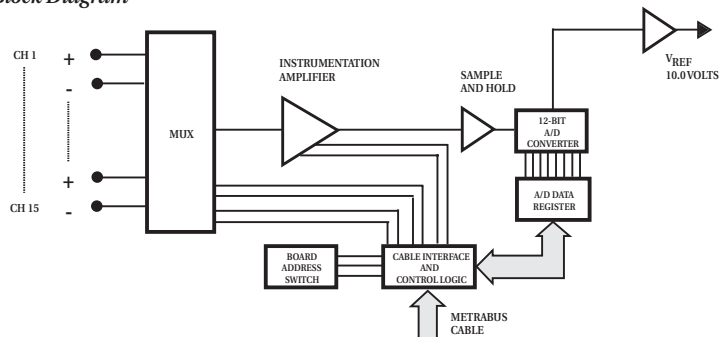
**DIMENSIONS:** 16in  $\times$  4.75in (40.63cm  $\times$  12.06cm)

**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](http://www.keithley.com).