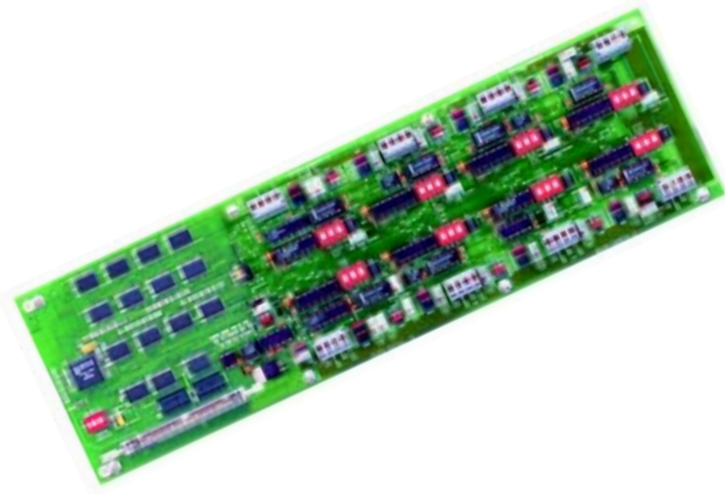


MAO-12

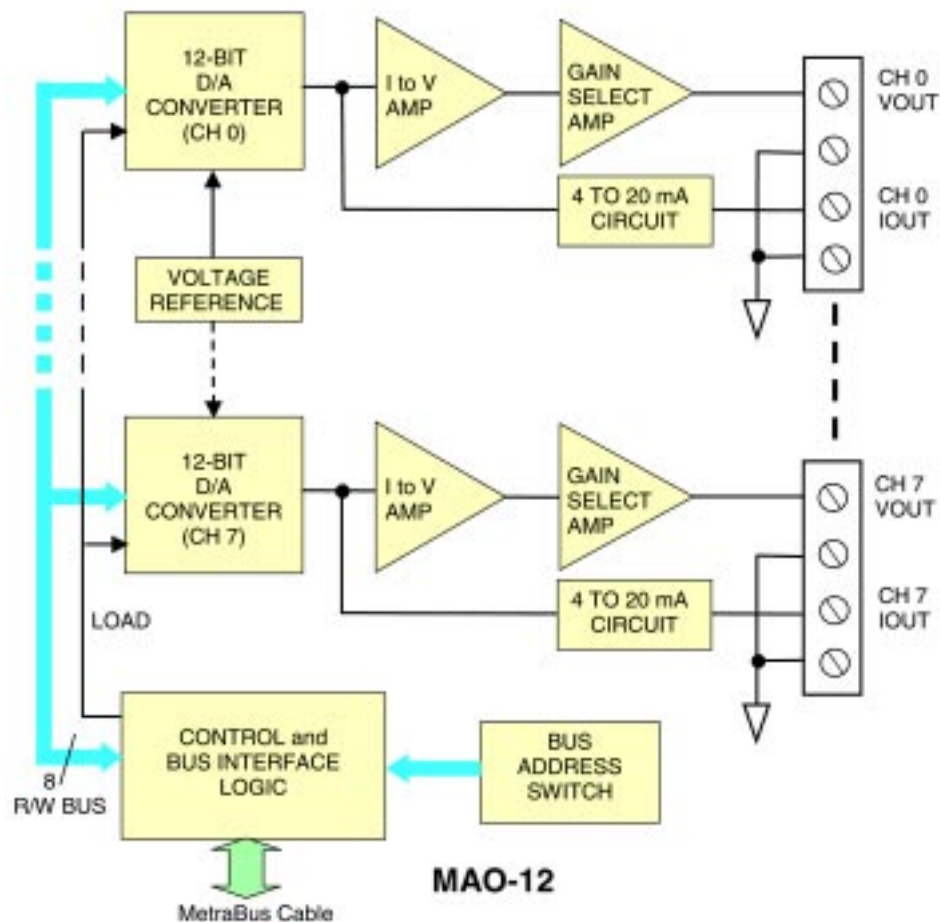
8-Channel, 12-Bit Analog Output Board for the MetraBus



Features

- 8 analog outputs
- 12-bit resolution
- 4 Voltage output ranges or 0 - 20 mA
- Detachable screw terminals simplify field wiring
- Low cost
- Monitor up to 64 outputs per PC slot
- Can be installed up to 100 feet from host computer
- Includes powerful *InstaCal* configuration and test software application.

Block Diagram



Functional Description

The MAO-12 is an 8-channel, 12-bit resolution analog output board for the MetraBus. The outputs provide four voltage ranges and 4-20 mA outputs. Output ranges are set by a DIP switch on the board. The table below shows the available output ranges with their corresponding resolutions in millivolts or milliamps.

| <u>Output Range</u> | <u>Resolution</u> |
|---------------------|-------------------|
| 0 - 10 V | 2.44 mV |
| 0 - 5 V | 1.22 mV |
| ±10V | 4.88 mV |
| ±5 V | 2.44 mV |
| 4-20mA | 3.91 µA |

In voltage output mode, the MAO-12 can sink or source up to 5 mA at rated accuracies. The 4-20 mA mode offers a wide 8 V to 36 V output compliance range at rated accuracy. The outputs may be programmed to update as they are written, or any of the outputs may be set to update simultaneously. All outputs are reset to 0 volts upon power-up or MetraBus clear.

The MAO-12 board uses eight consecutive addresses on the MetraBus. This allows a single MetraBus driver board to control up to 8 MAO-12 boards or up to 64 analog outputs. Common applications of the MAO-12 include large-scale process control and automated test applications.

Detachable screw terminals on the MAO-12 simplify field wiring, and accept standard 12-22 AWG wire sizes. The MAI-16 is compatible with all MetraBus mounting and installation chassis and hardware, making it easy to install the boards in NEMA chassis, in 19-inch racks, on DIN rails, or on any flat surface.

MetraBus programming is very easy. You may write direct register I/O programs, take advantage of the Universal Library, or use SoftWIRE, DAS Wizard, or any of a wide variety of compatible software packages.

Specifications

Analog output section

| | |
|------------------------------|----------------------------------|
| Outputs | 8 |
| Resolution | 12 bits |
| Output ranges | ±10, ±5, 0-10, 0-5V, & 4 - 20 mA |
| Output current | ±5 mA |
| Short circuit current | ±25 mA, indefinitely |
| Output impedance | 0.1 ohm |
| Output settling time | 10 µS max (FS step to 1/2 LSB) |
| Output slew rate | 7 V / µS |
| Range selection | On-board dip switch |
| Output pacing | Software driven |
| Maximum sample rate | System dependant, up to 10 kHz |
| Offset error | ± 600 µV |
| Monotonicity | 12 bits, guaranteed |
| Relative accuracy | ±1.5LSB |
| Differential linearity error | ±0.75 LSB |
| Integral linearity error | ±0.5 LSB typ, ±1.5 LSB max |

Power Consumption

| | |
|-------|-----------------------------|
| +5V | 400 mA typical, 520 mA max. |
| +15 V | 24 mA typical, 28 mA max |
| -15 V | 52 mA typical, 60 mA max |

Environmental

| | |
|------------------------|------------------------|
| Operating temperature: | 0 to 70 °C |
| Storage temperature: | -40 to 100 °C |
| Humidity | 0 to 90% noncondensing |

Physical

| | |
|-------|-------------------------------------|
| Size: | 16 x 4.8 inches (40.64 x 12.192 cm) |
|-------|-------------------------------------|

Ordering Guide

MAO-12 8-Channel analog output board for the MetraBus