TELETRONICS

A Curtiss-Wright Company

MAMM-124B Datasheet

High Speed, 24-Channel Multiplexed Signal Conditioning Module with Programmable Gains and Multiple Channel Filtering Options

Features

- 24 configurable channels per module
  - 24 single-ended input channels
  - 12 fully differential input channels
  - Any combination of single-ended and differential input channels
- Programmable input attenuation of 1x or 4x (channel based)
  - 1x (attenuator off): up to ±10 Volt input range plus 2.4% overrange
  - 4x (attenuator on): up to ±40 Volt input range plus 2.4% overrange
- High channel input impedance
  - ≥10 MΩ without input attenuator
  - 1.0 MΩ ±0.5% with input attenuator
- 4 KHz, 3-pole Butterworth low-pass analog channel filter
- Programmable gains (channel based)
  - Analog primary gains, 1x, 2x, 4x, 8x or 16x
  - Digital secondary gain, >1000 discrete settings from 1x to 1.98x
- Programmable moving average digital channel filter (channel based) Averaging: 1 sample (no MAV filter), 2, 4, 8, 16, 32, 64 or 128 samples
- Programmable digital offset, up to ±51.2% of full scale (channel based)
- Dynamic temperature compensated gain and offset correction
- ±0.25% system accuracy
- 16-bit output resolution
- Choice of sampling methods (module based)
  - Format based with 10 µs sample restriction between channels
  - Current Value Table (CVT) based with all channels in format updated sequentially, one channel every 10 µs
- Microsoft Windows based setup software included

Applications

- Flight test instrumentation
- Factory automation
- Laboratory testing
- Research measurements and experiments

Description

The MAMM-124B-1 is a 24-channel, analog multiplexer designed for use in TTC's miniature series of Distributed Data Acquisition products (Miniature Programmable Data Acquisition Unit – MPDAU-2000). It can be configured with up to 24 single ended, high-level input channels, up to 12 high-level differential input channels or with any combination of single-ended and differential inputs that are required (i.e. 12 single-ended input channels and 6 differential input channels). The module can accept voltages from various system sources including sensors, transducers, batteries, and other pre-conditioned analog voltages. A 4x attenuator may be selected on a per-channel basis that allows measurement of input voltages up to ±40VDC. Each channel has a 3-pole analog low-pass Butterworth characteristic filter with -3 dB frequency at 4 KHz as well as a programmable moving average digital filter (MAV). MAV Filter options are: Last 1 sample (no MAV filter), last 2, 4, 8, 16, 32, 64 or 128 samples.

One of two modes of output sampling may be selected on a module-wide basis. Time Correlation or format based mode samples channels as and when they appear in the PCM format. CVT mode employs a Current Value Table where channels are sampled in sequence, one channel every 10 µs. The most recent sample of any channel is then sent to the format as required.

Data is output to the PCM format at up to 16-bit resolution with an overall accuracy of better than ±0.25% of the channel's full-scale range over the module's operating temperature range.

CAIS Compatible

DEKRA Certified

Management System AS9100C ISO 9001:2008

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