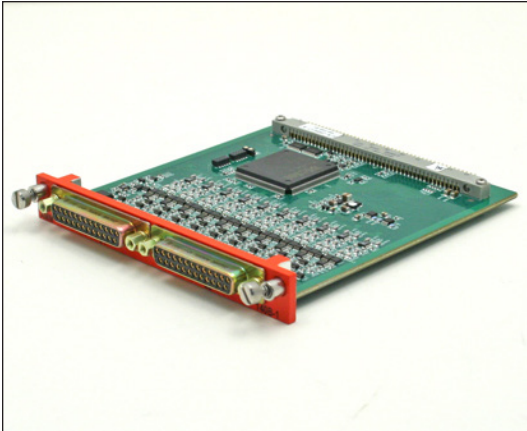




High Speed, 40-Channel Multiplexed Signal Conditioning Card with Programmable Gains and Multiple Channel Filtering Options



Features

- 40 configurable channels per card
 - 40 single-ended input channels
 - 20 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 M Ω without input attenuator
 - 1.0 M Ω $\pm 0.5\%$ 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 $\pm 51.2\%$ of full scale (channel based)
- Dynamic temperature compensated gain and offset correction
- $\pm 0.25\%$ system accuracy
- 16-Bit output resolution
- Choice of sampling methods (card based)
 - Format based with 10 μ s sample restriction between channels
 - Current Value Table (CVT) based with all channels of each MUX in format updated sequentially, one channel every 10 μ s
- Programmable constant voltage excitation, +10.0VDC or +5.00VDC, $\pm 0.3\%$
- Microsoft Windows based setup software included

Applications

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

Description

The AMM-140B-1 is a 40-channel, analog multiplexer designed for use in TTC's EDAU/CDAU/WDAU-20xx products. It can be configured with up to 40 single ended, high-level input channels, up to 20 high-level differential input channels or with any combination of single-ended and differential inputs that are required (i.e. 20 single-ended input channels and 10 differential input channels). The card provides precision constant voltage excitation, software programmable to either +10.0VDC or +5.00VDC. The card 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 ± 40 VDC. 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 from on a card-wide basis. Time Correlation (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 μ s. 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 $\pm 0.5\%$ of the channel's full-scale range over the card's operating temperature range.

Revision 05/11/2015

AMM-140B Datasheet

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CAIS
Compatible



Management
System
AS9100C
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