

Airborne Telemetry

MSC1000-017 RTD Conditioning Module (16 Channel) Airborne Data Acquisition Products

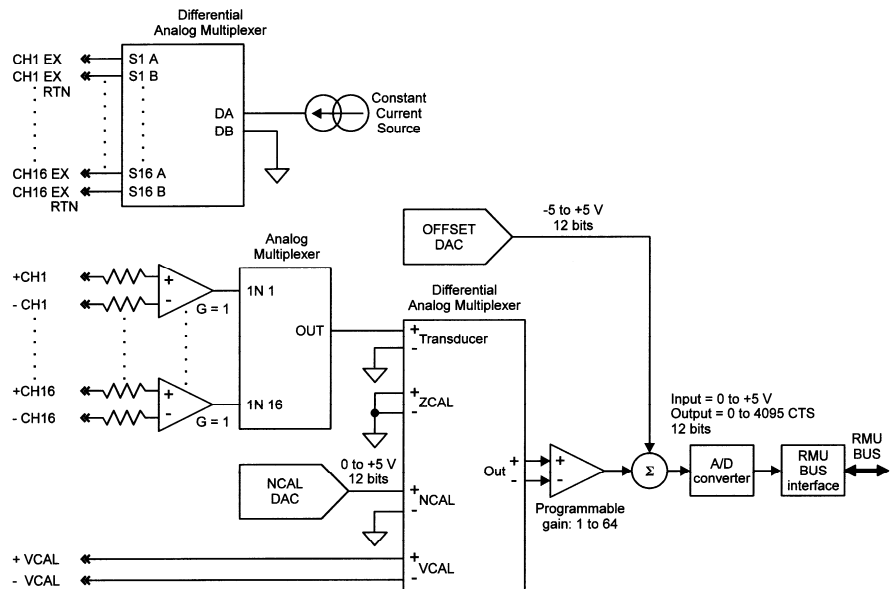
FEATURES

- Each channel is independently programmable via DASM software
- 2 mA DC current per channel, multiplexed
- 7 gains (1 to 64)
- 6 pole pre-sample filter with selectable passband (7 to 220 Hz)
- Programmable offset in 2.44 mV steps from -5V to +5V
- ZCAL, NCAL, and VCAL.
- Overvoltage protected to ± 32 VDC



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DESCRIPTION

The MSC1000-017 is a fully programmable signal conditioning module designed to interface to Resistive Temperature Devices (RTD) sensors (between 40 and 3000 ohms) which require constant current rather than constant voltage. The module utilizes a multiplexed constant current technique for reduced power consumption. It offers a high channel density solution to systems requiring many RTD channels. This module has the following salient features:

ELECTRICAL SPECIFICATIONS

Excitation (Per Channel)

- Factory set over the range of 1 to 10 mADC, multiplexed
- Accuracy: 0.5% of selected value
- Load regulation: $\pm 0.5\%$ of selected value from no load to full load (5V)
- Stability: $\pm 0.25\%$ of selected value over temperature
- Compliance voltage: 5V minimum

Input Characteristics (Per Channel)

- 4 wire interface
- Input impedance: 1 Megohm minimum
- ACCMR at a gain of 1 is 70 db minimum at 400 Hz with a 1 Kohm unbalance
- Overvoltage protection of $\pm 32V$

Gains (Per Channel)

- Program selectable gains of 1, 2, 4, 8, 16, 32, 64
- Gain accuracy: $\pm 0.5\%$ of selected value
- Temperature stability: $\pm 0.25\%$
- Linearity: ± 0.1 BSL

Channel Offset

- Program selectable in 2.44 mV steps from -5 VDC to +5 VDC referenced to output. Offset is defined such that a 0 volt offset with a grounded channel input will produce 0 volts at the channel output.

Cal Types

- NCAL: NCAL DAC connected to channel input 0 to 5 Volts, 1.22 mV increments. Accuracy is ± 1 mV, referenced in input. Temperature stability is ± 1 mV, referenced to input.
- VCAL: Channel inputs are connected to system VCAL.
- ZCAL: Channel inputs are connected to signal ground.

Balance (Per Channel)

- Algorithm type: amplifier offset
- Balance Algorithm accuracy: $\pm 0.5\%$ full scale

Sample and Hold (Per Channel)

- To occur "on word" only

Output (Per Channel)

- A 5 volt full scale analog signal at a gain of one (1), converted to a 12 bit digital word (1.22 mV/bit)

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