

Airborne Telemetry

MSC1000-056 Voltage Conditioner (4 Channel) Airborne Data Acquisition Products

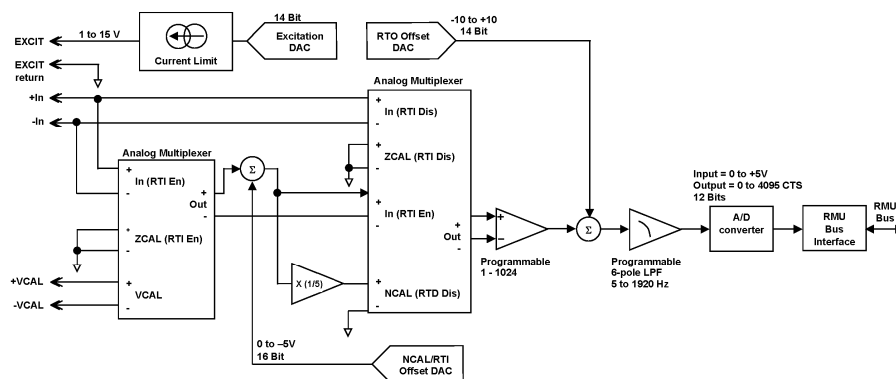
FEATURES

- Each channel is independently programmable via DASM software or Vista TEC
- Balance type is selectable as: Amplifier offset, transducer offset, or manual offset.
- 1 to 1024 in increments of 0.01
- 6 pole pre-sample filter with selectable passband (5 to 1920 Hz)
- Offset range from -10V to +10V
- Excitation range from +1V to +15V with current limiting of 40 mA.
- ZCAL, NCAL and VCAL.
- Sample and hold per channel.
- Overvoltage protected to ± 32 VDC
- Nominal channel accuracy of 0.5%



communications
Telemetry & RF Products

Excellence You Can Measure



1 of 4 Channels Shown

DESCRIPTION

The MSC1000-056 provides everything needed for precision voltage increments. This module is a fully programmable unit with the following features:

ELECTRICAL SPECIFICATIONS

Excitation (Per Channel)

- Programmable in steps of 0.915 mV from +1VDC to +15VDC
- Accuracy: 0.5%
- Load Regulation: $\pm 0.5\%$ from no load to full load (30 mA)
- Current limited to 40 mA

Differential Input Characteristics (Per Channel)

- Full scale range equals 5VPP differential
- Input Impedance: 1 Megohm minimum
- ACCMR at a gain of 1 of 50 db minimum at 400 Hz with a 1 Kohm unbalance, 55 dB with RTI disabled
- Overvoltage protection to $\pm 32V$

Gains (Per Channel)

- Program selectable gains of 1-1024 in increments of 0.01
- Gain Accuracy: $\pm 0.5\%$ of selected value
- Gain Temperature Stability: $\pm 0.75\%$ of selected value, including effects of excitation drift
- Linearity: $\pm 0.1\%$ BSL

Channel Offset

- Program selectable in 1.22 mV steps from -10VDC to +10VDC referenced to output
- Channel offset stability $\pm 0.5\%$ FS over temperature at a gain of 32
- Offset capability: Any signal between -7.5V and +12.5V (referenced to output) can be offset to half scale output
- RTI offset 0 to -5V in steps of 76.3 μV

Pre-Sample Filter (Per Channel)

- Program selectable pass band frequencies of 5, 10, 15, 20, 30, 40, 60, 80, 120, 160, 240, 320, 480, 640, 960, and 1920 Hz.
- Within the passband, inter-channel correlation is ± 1.5 degrees maximum
- Within the passband, the amplitude response is flat to within 0.5% PP
- Attenuation at four times the passband frequency is 40 db minimum
- 6 pole Butterworth response

Cal Types

Range: 0 to 1 volt in 15.259 μV increments (16 Bit)

For RTI Disabled Description: The NCAL DAC is connected to the channel input

For RTI Enabled Description: NCAL Field is a Delta from the RTI_OFFSET.
The Calibration Voltage = (NCAL Field + RTI_OFFSET)

The Calibration Limit = (-5 - RTI_OFFSET) to (-RTI_OFFSET) where RTI_OFFSET is a Voltage between 0 to -5 Volts.

Balance (Per Channel)

Selectable from transducer offset, amplifier offset or manual offset.

Accuracy: $\pm 0.5\%$ full scale

Sample and Hold (Per Channel)

- Program selectable on minor frame, on major frame, or on word.

Output

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

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