



DESCRIPTION

The MSC1000-034-02 is a 16 channel signal conditioner with DSP. It provides a fully programmable interface to differential voltage signals requiring a precision voltage excitation such as: pressure bridges, strain gage bridges, and RTD bridges. The pre-sample filter is implemented with DSP technology which provides maximum flexibility in filter design. This module is a fully programmable unit with the following salient features:

FEATURES

- Each channel is independently programmable via DASM software for: filter, frequency, filter type, gain, and offset.
- Gain range of 32 through 1024
- ZCAL and RCAL Calibrations.
- Overvoltage protected $\pm 32\text{VDC}$.
- Nominal channel accuracy of 0.5%



communications

ELECTRICAL SPECIFICATIONS

Excitation (Per Module)

- Four independently regulated voltage sources, programmable in 2.44 mV increments from +2V to +10V
- Full load: 120 mA per source
- Accuracy: $\pm 0.5\%$
- Load regulation: $\pm 0.5\%$
- Current limiting: 140 to 160 mA per source
- Stability: $\pm 0.25\%$

Input Characteristics (Per Channel)

- Differential inputs
- Full scale range equals 5VPP Gain
- Input impedance: 10 Megohm minimum
- Overvoltage protection to $\pm 32V$
- CMR at 400 Hz is 66 db at a gain of 1 with 1 Kohm imbalance

Gains and Linearity

- Programmable, gain range is 32 through 1024
- Four gain values are independently selectable per module. Channels 1 through 4 have a common gain control as do channels 5 through 8, 9 through 12, and 13 through 16.
- Accuracy: $\pm 0.5\%$ of nominal
- Stability: $\pm 0.25\%$ of nominal over temperature range
- Linearity: $\pm 0.1\%$ BSL

Channel Offset/Autobalance (Per Channel)

- Manual Mode: Program adjustable in steps of 1.526 mV through a range of -0.625V to +5.625V.
- Autobalance Mode: RTO offset is adjusted under program control using a successive approximation algorithm. A target value is selected in the channel configuration menu in the range of 0 to 5V, corresponding to 0 to 4095 counts on the A/D Converter.
- Reference: a 0V offset and grounded input produce a channel output of 0 counts from the A/D converter.
- Channel offset stability $\pm 0.5\%$ FS for gains greater 512

Cal Types

- RCAL and ZCAL when the MSC1000-034 is configured with the MSC1000-037, Input Configuration Module.

Output (One A/D per module)

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

