



## DESCRIPTION

The MSC1000-029 is a 16 channel analog multiplexer for use with higher level analog signals. This module is a fully programmable unit with the following salient features:

## FEATURES

- Each channel is independently programmable via DASM software.
- Factory set input filters
- Auto balance for amplifier offset
- 7 programmable gains (1 to 64)
- Programmable offset in 2.44 mV increments from -5V to +5V
- Four excitation voltages (+28V, +14.5 V, +12 V, and -14.5V)
- ZCAL, NCAL, and VCAL.
- Overvoltage protected to  $\pm 32$  VDC.
- Nominal channel accuracy of 0.5%



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## ELECTRICAL SPECIFICATIONS

### Excitation (Per Module)

- Four voltage sources (+28V, +14.5V, +12V, and -14.5V)
- Total RMU excitation at full load: 1.0 A minimum for positive supplies, 250 mA minimum for negative supplies.
- Total RMU excitation current limit: 1.3 A maximum for positive supplies, 300 mA maximum for negative supplies.
- Accuracy:  $\pm 1\%$  of selected value for the +14.5V, +12V, and -14.5V supplies,  $\pm 3\%$  for the +28V supply.
- Load regulation:  $\pm 3\%$  from no load to full load

### Input Characteristics (Per Channel)

- Full scale range equals 5VPP differential
- Interfaceable with isolated sources
- Input impedance: 1 Megohm minimum
- AC CMR at a gain of 1 is 70 db at 400 Hz with a 1 Kohm unbalance
- Overvoltage protection to  $\pm 32V$

### Gains (Per Channel)

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

### Channel Offset (Per Channel)

- Program selectable in 2.44 mV steps from -5VDC to +5VDC referenced to output
- Channel offset stability  $\pm 0.25\%$  FS
- Single pole RC filter (lowest frequency 10 Hz) designated by dash number: -xyz  
where x = most significant digit  
y = lease significant digit  
z = number of zeroes

### Cal Types

- NCAL: Channel input is connected to NCAL DAC (0 to 5V in 1.22 mV increments). Accuracy at channel output:  $\pm 0.5\%$  FS,  $\pm 0.75\%$  at a gain of 64. Temperature stability at the channel output:  $\pm 0.5\%$  FS.
- 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:  $\pm 0.5\%$  FS

### Sample and Hold (Per Channel)

- Occurs on word only
- Maximum sample rate: 42 K samples per second.

### 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)

