



DESCRIPTION

The MSC1000-030 is a 16 channel analog multiplexer for use with low level analog signals. This module offers high channel density, fixed input filters, and programmable gain and offset. Other salient features are:

- Four excitation voltages (+28V, +14.5V, +12V, and -14.5V)
- ZCAL, NCAL, and VCAL
- Overvoltage protected to ± 32 VDC
- Nominal channel accuracy of 0.5%

FEATURES

- Each channel is independently programmable via DASM software
- Factory set input filters
- Auto balance for amplifier offset
- 6 programmable gains (32 to 1024)
- Programmable offset is 2.44 mV increments from -5V to +5V



communications

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
- Temperature stability: $\pm 1\%$ of selected value

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 60 db at 400 Hz with a 1 Kohm unbalance
- Overvoltage protection to $\pm 32V$

Gains (Per Channel)

- Program selectable gains of 32, 64, 128, 256, 512, and 1024
- 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 = least significant digit
z = number of zeros

Cal Types

- NCAL: Channel input is connected to NCAL DAC (0 to +100 mV in 24.4 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)

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

Output (One A/D per module)

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

