



## Features

- ❑ Only 500µe for 10V output
- ❑ Less than .004% /°F zero shift at Maximum Gain
- ❑ 32 Channels in 3-1/3 x 19 rack panel
- ❑ 4 to 7 wire bridge, 1 to 4 arm operation
- ❑ Remote Calibration option – Selectable Excitation
- ❑ Operates in MC170 module cases

## Specifications

**Input** 1mV/V -50mV/V, Switch selected  
**Sensitivity:** in 1, 2.5, 5 - sequence  
**Gain Vernier:** 0.3 to 1.3 X range, 20 turn gain adjustment potentiometer  
**Bridge** Selectable 5 or 10V, using 1200 gages may limit the number of channels when using 10V excitation.  
**Excitation:**

**Differential Input Impedance:** Greater than 10 Meg Ohms

**Bridge Balance:** Fine and coarse 20 turn potentiometer, +/-2mV/V with 350 Ohm bridge (User changeable range)

**Output:** +/-10Vdc, 0 to +/-2mA, not affected by cable capacitance. Less than 10 Ohms

**Output Resistance:**  
**Output Noise:** Less than 20mV rms at 1mV/V sensitivity with 1000 Hz filter

### FREQUENCY RESPONSE

**Wide Band Mode:** 20KHz  
**Low Pass Switch:** 2 pole Butterworth low pass filter, -3db cutoff @ 1, 10, 100, 1000Hz  
**Linearity:** 0.05% BSL for +/-10Vdc output  
**Common Mode Rejection Ratio:** -80db at 60Hz, and 1mV/V  
**Maximum Common Mode Voltage:** +7.5V to -1V

**Common Mode Impedance:** 100 Meg Ohms Minimum (with balance resistor open)  
**Zero Coefficient:** +/-0.2µ V/°F RTI @ 1mV/V sensitivity (.004%/°F)  
**Gain Coefficient:** +/-0.005%/°F typical

**Power Requirements:** +/-15Vdc @ +/-10mA, and +15Vdc (provided by module case)

## DESCRIPTION

The Model SG297A Strain Gage Conditioner Is a plug-in module in the MCI 70 family of Signal Conditioning Module Cases.

The SG297A consists of a DC Amplifier, bridge excitation circuit, bridge balance and shunt calibration network, and low pass filter and output stage. The high gain DC amplifier has a chopper stabilized differential input stage for outstanding DC stability. The bridge excitation circuit is buffered, short circuit proof, and compensates for excitation lead wire resistance, when used in the 7 wire configuration. The 4 range low pass filter allows unwanted noise to be reduced.

The high sensitivity of the SG297A allows a strain of 500 micro inches per inch to produce a 10 volt output. This is equivalent to 5000 psi in Aluminum or 15,000 psi in steel using a 4 arm strain gage bridge with a gage factor of 2,