Description

The Strain Gauge Amplifier was designed to amplify strain gauges arranged in a full Wheatstone bridge configuration for use in the flight testing of parachute and unmanned aerial vehicles, and is suitable for many applications where a bridge or differential input amplifier is required. The amplifier has been used in a number of flight test programs as well as a variety of laboratory and field test systems. This device is one of a number of modular signal conditioners that have been developed to support the instrumentation requirements of the telemetry and design engineering community. These include; Barometric Pressure Sensor, Tri Axis Accelerometer, Differential Pressure Sensor (suitable for use with pitot tube for airspeed), tri axis rate gyroscope, rotating fan airspeed sensor, and six channel switch closure event to single channel analog output encoder.

Based on the Linear Technology LT1167 low power, precision instrumentation amplifier integrated circuit. The Strain Gauge Amplifier includes a 5 volt regulator to provide a stable 5 volt excitation voltage to a strain gauge bridge.
FEATURES:
- Power Supply Voltage: +5.3 to +26VDC, Note device rated for 60VDC maximum.
- Bridge excitation voltage: +5V (Referenced to power supply Ground / Return).
- Suitable for use with bridge resistances of from 75 ohms to 5K ohms.
- On board radio frequency interference (RFI) attenuation to minimize the effects of external RFI interference.
- Remote power enable: pull enable terminal to ground to turn device off, leave open or apply >= 2V to enable device (Note: Pin has 10K Pullup Resistor to (+) Power In).
- Bipolar output: -4.0V to +4.0V signal output range.
- Unipolar output: 0 to +4.0V signal output range.
- Integral 100 Hz four pole Butterworth anti-aliasing filter (corner frequency may be specified by user at time of order).
- Potentiometer adjustment of fine span and offset: Option for use of fixed resistors for span and offset.
- Output offset adjustment range: -5V to +5V.
- Typical output load: >= 10K ohms
- Operating Ambient Temp. Range: -40°C

CONNECTIONS:
- Pin 1 - (+) Signal IN (From Bridge)
- Pin 2 - (-) Signal IN (From Bridge)
- Pin 3 - (+) Excitation OUT (To Bridge)
- Pin 4 - (-) Excitation OUT (To Bridge)
- Pin 5 - Amp OUT (To Instrumentation System)
- Pin 6 - (+) Power IN (+5.3 to +26VDC)
- Pin 7 - GND (Power Return / Output Signal Return)
- Pin 8 - Power Disable Input (Leave Unconnected for normal operation / 0V Disable, >= 2V Enable)

CIRCUIT BOARD PHYSICAL DIMENSIONS, MOUNTING, and TERMINAL HOLE LOCATIONS: