

The 6739 input module has eight channels of high performance signal-conditioning amplifier-digitizers for strain gages and bridge transducers. Each channel has programmable excitation with remote sensing, voltage and shunt calibration, programmable gain instrumentation amplifier. Analog output is digitized to 24 bits then provided to the 6700 data bus. The filter is programmable providing 9 digital Butterworth filters and wideband.

The 6739 is used with ¼ (120 and 350 Ohm s/w selectable), ½ and full bridge transducers, potentiometers and low-level voltage signals in demanding, dynamic measurement applications. It is particularly suited to strain gages and bridge transducers. A shielded eight-wire input provides independent excitation, sense, calibration and signal connections to the transducer. Excitation is programmable from 0 to 12 Volts with remote sensing providing regulated excitation at the transducer. The input connector also provides access to ±12 or ±15 or 28 Volt DC power.

Gain calibration may be done by voltage substitution using an external voltage standard. A calibration attenuator enables the voltage standard to be used on its highest accuracy ranges and has a post-attenuator output for accuracy verification. Two steps of bipolar resistive shunt calibration are provided for transducer calibration. Calibration and gain and zero correction can be automated using software such as Pacific's PI660. Two alarms with programmable upper and lower limits are provided.

SPECIFICATIONS

INPUT

Configuration8 channels, 2 to 8 wire with guard shield. Bridge config is programmable for ¼, ½ and full bridge. 120 and 350 Ohm completion resistor standard, alternate value may be specified.

BalanceAutomatic by program control. Balance accuracy ±0.05% of range, ±1 mV RTO. Stability ±0.02% for 8 hours, ±0.005%/°C. Coarse and fine balance are jumper selectable..

Impedance10M Ohm shunted by 500 pF.

Protection±50 Volts differential, ±50 Volts common mode. Optional lightning protection. Card-to-card common mode voltage 300V.

EXCITATION / TRANSDUCER POWER

VOLTAGE EXCITATION

VoltageProgrammable per channel from 1-12 Volts in 1 Volt steps with 1.2 mV accuracy, or adjustable with 3.3 mV resolution.

Current50 mA limited to 70 mA.

Regulation±0.01% for ±10% line and no-load to full-load using remote sensing.

Stability±0.005%, ±12 µV/C.

Noise200 µV peak to peak (not individually tested).

MonitorCalibration mode measures excitation voltage with ±0.2% accuracy.

TRANSDUCER POWER

Voltage±12 or ±15 Volts or 28V jumper selectable per module.

Current200 mA maximum per card.

ConfigurationTransducer power available on separate pins from voltage excitation.

AMPLIFIER

GainGains 1 to 500 ±0.01%.
Gains 1 to 5000 ±0.02%.

Gain Stability±0.01%, ±0.004%/°C.

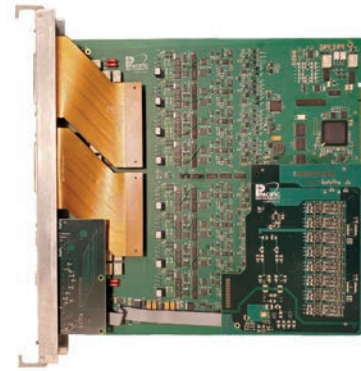
Linearity±0.01% for gains <1,000, ±0.02% for gains 1,000 and higher.

Common ModeBetter than 80dB (between input & excitation ground).

ZeroAutomatic to ±1 µV RTI, ±0.5 mV RTO.

Zero Stability X1...Better than than ±1µV/°C RTI

Source Current±10 nA, ±1 nA/°C



FEATURES

- Programmable input configuration, ¼, ½ & full bridge
- Programmable voltage excitation with remote sensing
- Additional ±12 or ±15 Volt transducer power
- Two-step shunt & voltage substitution calibration
- Gains 1 to 5,000 with 0.01% to 0.02% accuracy
- 9 digital Butterworth filters
- Up to 250 kS/s per channel with 24-bit resolution
- Two alarms with programmable upper & lower limits
- Digital alarm output option

Noise (10 Hz)0.1 uV rms RTI, 0.5 mV rms RTO.
Noise (1 kHz)1.0 uV rms RTI, 0.5 mV rms RTO.
Bandwidth>5 kHz.
Slew Rate>10 V/uS.
Analog Output±10 Volts full scale, 20 mA.
Recovery120 µS to ±0.1% for 10X overload to ±10 V.

FILTER

Type9 digital Butterworth.
Frequency10 Hz to 1 kHz
OtherOther filter characteristics and cut offs available.

DIGITIZER

SampleSimultaneous, within ±50 nS channel-to-channel.
Droop is less than ±0.005%.

Resolution24 bits, two's complement.

Sample RateUp to 250 kS/s per channel.

ContinuityNo Missing Codes

AlarmsTwo alarms each with programmable upper and lower limits and persistence checked on each ADC sample.

CALIBRATION

ShuntTwo step bipolar shunt with 0.05% resistors.
Nominal deflection is 0.5025 mV/V and 0.245 mV/V for 350 Ohm bridge, and 0.17235 mV/V and 0.08402 mV/V for a 120 Ohm bridge.

Voltage Subst.Attenuator accuracy is 0.02% for 1 and 0.01% for 0.1 and 0.01.

ZeroAmplifier input disconnected and shorted.

MECHANICAL

MountingOccupies one slot in Series 6700 enclosure.

ConnectorsFour D-subminiature connectors, compatible with 6000 series pinouts. Two 50 position transducer socket, one 9-position analog output socket, one 9-pin status output. Other connector arrangements are possible.

Temperature0°C to +50°C operating.

ORDERING INFORMATION

67398-Ch Strain-Bridge-Position, 9 Freq Digital Butterworth Filter