

The 6014 input module has eight channels, each with AC or DC coupled programmable gain instrumentation amplifier, low pass filter and sample and hold. The high level outputs are multiplexed and digitized to 16 bits then output to the 6000 data bus. Each channel has a 2-20 mA current source for powering low impedance, voltage mode charge transducers.

The 6014 is used with low impedance, piezoelectric transducers and low or high-level voltage signals. The input may be AC coupled for amplifying dynamic signals without the DC signal component or by changing jumpers it becomes a DC-coupled instrumentation amplifier.

Voltage substitution is provided for channel gain calibration utilizing 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 calibration. Using Pacific's PI660 software zero and gain calibration and correction are automatic.

Bandwidth is 5 kHz for gains to 100 and 1 kHz for higher gains. A four-pole, low-pass filter uses easily changed plug-in modules to set bandwidth. Either the wideband or filtered output may be digitized and sent to the 6000 data bus. Two programmable alarms with upper and lower limits are checked each time the outputs are digitized. The high-level analog outputs provide a means to independently monitor or record each channel.



FEATURES

- AC or DC input coupling
- 2 to 20 mA excitation
- Gains 1 to 5,000 with 0.05% accuracy
- Automatic zero
- Four pole, low pass filter
- 10 kS/s with 16-bit ADC
- Programmable alarm levels
- Analog outputs

SPECIFICATIONS

TRANSDUCER POWER

Level2 to 20 mA set by resistor for each channel.
 Factory set to 6 mA. Compliance is 24-28 Volts. Requires optional supply for the enclosure.

Supply.....Power is supplied from an external source connected to the enclosure or optional supply in the enclosure. If the user is providing power, it should be 30 Volts maximum and fused at 1 Amp or less. Compliance voltage will be 2-4 Volts less than the supplied voltage.

INPUT

Range±100 mV to ±10 Volts (±2 mV to ±10 Volts with reduced bandwidth).

Type.....Jumper selection of AC or DC input coupling.

ConfigurationDifferential, 2 wire with shield.

DC Coupled.....50 Megohms, shunted by 1,000 pF.

AC Coupled.....100K Ohms.

Protection.....±50 Volts differential, ±30 Volts common mode.

CALIBRATION

Substitution.....Alternate input for external voltage standard. Programmable attenuation steps of 1, 0.1, and 0.01 with ±0.02% accuracy. Output of attenuator is provided for calibration.

ZeroAmplifier input disconnected and shorted.

AMPLIFIER

GainProgrammable steps are 1, 2, 3, 5, 10, 20, 30, 50, 100, 200, 300, 500, 1,000, 2,000, 3,000 and 5,000 with ±0.05% accuracy.

Gain Stability.....±0.01%, ±0.005%/°C.

Bandwidth (DC)....DC to 5 kHz for gains 1 to 100. DC to 1 kHz for gains above 100 (-3dB).

Bandwidth (AC)....0.5 Hz to 5 kHz for gains 1 to 100. 0.5 Hz to 1kHz for gains above 100 (-3dB).

Linearity±0.01% for gains 1 to 1,000, ±0.02% for gains above 1,000.

Common Mode60dB plus gain in dB up to 110dB, DC to 60Hz.

CM Voltage.....±10 Volts.

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

Zero Stability.....±2 µV RTI, ±1 mV RTO. ±1 µV/°C RTI, ±0.2 mV/°C RTO. Short term: ±2µV RTI, ±0.04 mV RTO for 8 hours.

Source Current±2nA, ±0.01nA/°C.

Noise (10 Hz)0.5 µV peak, RTI.

Noise (1kHz)1.5 µV peak, RTI.

Recovery.....800 µS to ±0.1% for 10X overload to ±10V.

Analog Output±3 Volts full scale, unfiltered.

FILTER

Type.....Four-pole, low-pass Butterworth.

Frequency.....Plug-in, 40 Hz to 5 kHz, 1 kHz supplied.

Noise2 mV peak RTO.

SAMPLE & HOLD, ADC

Sample.....Simultaneous sample and hold with ±50 nS channel-to-channel time correlation. Droop error is less than ±0.005%.

Resolution16 bits, two's complement output.

Sample Rate0 to 10 kS/s per channel.

Linearity±2 LSB (±0.006%)

Continuity.....Monotonic to 15 bits.

GENERAL

Mounting.....Occupies one slot in Series 6000 enclosures.

ConnectorsInput connector is 50-pin Type D. Output connector is 9-pin Type D. Connectors are mounted on the front and mates are supplied.

Temperature0°C to +50°C operating.

SCREW TERMINAL ADAPTER (6081)

Termination8 channels, screw clamp terminals for inputs and outputs, #18 to #28 wire.

Mounting.....Installs on the front of the input module behind the enclosure door.

ORDERING INFORMATION

60148-channel Instrumentation Amplifier-Digitizer, 16-bits, 10 kS/s.

6081Screw Terminal Adapter.