

The 6028 input module has eight channels each with a differential input, unity gain instrumentation amplifier, low pass filter and 16-bit analog to digital converter. Each channel is capable of digitizing high-frequency signals at up to 100,000 samples per second. In addition each channel has a continuous, wideband analog output.

The 6028 is used to digitize high level signals, usually the output of signal conditioning amplifiers or other measuring instruments. The four-pole filters may be employed to prevent alias errors in the sampled data and are available with bandwidths from 100 Hz to 20kHz. The ADC-per-channel architecture provides sampling rates up to 100 kS/s with 50 nS time correlation between data sampled on different channels.

The differential inputs have 50 Megohm input impedance, 80 dB common mode rejection, and are protected to ± 50 Volts. Zero and gain calibrations are automatic. Up to four programmable alarm limits are provided and checked each time the output is digitized. The high-level analog outputs provide a means to independently monitor and record each channel.



FEATURES

- Differential input, ± 10 Volts, ± 50 Volts with optional attenuator
- Four-pole filter, 100 Hz to 20 kHz
- ADC per channel, 16-bits
- 100 kS/s per channel
- Programmable alarms
- Analog outputs

SPECIFICATIONS

INPUTS

ConfigurationDifferential, 2-wire with shield.
 Range ± 10 Volts, ± 50 Volts with optional attenuator.
 Attenuator (opt) ...5:1, $\pm 0.2\%$.
 Impedance50 Megohms, shunted by 1,000 pf, 100K Ohms with attenuator.
 Protection..... ± 50 Volts differential, ± 30 Volts common mode. ± 200 Volts differential with attenuator.

AMPLIFIER

Gain $1 \pm 0.05\%$
 Gain Stability..... $\pm 0.01\%$, $\pm 0.005\%/^{\circ}\text{C}$.
 Linearity $\pm 0.01\%$.
 Common Mode80 dB DC to 60 Hz.
 CM Voltage..... ± 10 Volts.
 ZeroAutomatic to ± 1 mV.
 Zero Stability..... ± 1 mV, ± 0.2 mV/ $^{\circ}\text{C}$.
 Noise (1 kHz)0.25 mV peak.
 Noise (50 kHz) ...1.5 mV peak.
 Bandwidth100 kHz (-3dB), 30 kHz with attenuator.
 Slew Rate3.2 V/ μs , 100 kHz full power bandwidth.
 Analog Output ± 10 Volts full scale, unfiltered.

FILTERS

TypeFour-pole, low-pass Butterworth, 100 Hz to 20kHz. Bessel available on special order.
 Frequency.....Plug-in, 1kHz supplied.

ANALOG-TO-DIGITAL CONVERTER

Sample..... ± 50 nS time correlation channel-to-channel.
 Resolution16-bits, two's complement output.
 Sample Rate100K samples per second per channel.
 Linearity ± 2 LSB ($\pm 0.006\%$).
 Continuity.....Monotonic to 15 bits.

GENERAL

Mounting.....Occupies one slot in Series 6000 Mainframe or 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.
 Temperature 0°C to $+50^{\circ}\text{C}$.

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. Cables route to the rear through the enclosure's cable tray.

ORDERING INFORMATION

60288-Channel Digitizer, 16-bit, 100 kS/s.
 6028-AAttenuator, 5:1.
 6081Screw Terminal Adapter.