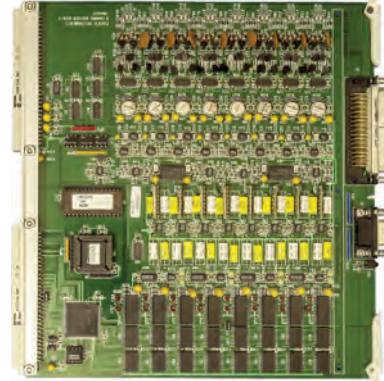


The 6028 input module has eight channels each with a differential input, unity gain instrumentation amplifier, low pass filter and 16-bit analog to digital converter. Each channel is capable of digitizing high-frequency signals at up to 100,000 samples per second. In addition each channel has a continuous, 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  $\pm 50$  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,  $\pm 10$  Volts,  $\pm 50$  Volts with optional attenuator
- Buffered  $\pm 10$  Volts analog outputs for redundancy
- Four-pole filter, 100 Hz to 20 kHz
- Up to 100 kS/s per channel with 16-bit digitizer
- Two alarms with programmable upper and lower limits

### SPECIFICATIONS

#### INPUT

Configuration .....8 channels, differential, 2-wire with shield.  
 Range ..... $\pm 10$  Volts,  $\pm 50$  Volts with optional attenuator.  
 Attenuator (opt) .....5:1,  $\pm 0.2\%$ .  
 Impedance .....50 Megohms, shunted by 1,000 pf, 100K Ohms with attenuator.  
 Protection ..... $\pm 50$  Volts differential,  $\pm 30$  Volts common mode.  $\pm 200$  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 Mode .....80 dB DC to 60 Hz.  
 CM Voltage ..... $\pm 10$  Volts.  
 Zero .....Automatic to  $\pm 1$  mV.  
 Zero Stability ..... $\pm 1$  mV,  $\pm 0.2$  mV/ $^{\circ}\text{C}$ .  
 Noise (1 kHz) .....0.25 mV peak.  
 Noise (50 kHz) ...1.5 mV peak.  
 Bandwidth .....100 kHz (-3dB), 30 kHz with attenuator.  
 Slew Rate .....3.2 V/ $\mu\text{s}$ , 100 kHz full power bandwidth.  
 Analog Output ..... $\pm 10$  Volts full scale, unfiltered.

#### FILTER

Type .....Four-pole, low-pass Butterworth.  
 Frequency .....Plug-in 100 Hz to 20kHz., 1kHz supplied.  
 Other .....Other filter characteristics and cut offs available.

#### DIGITIZER

Sample ..... $\pm 50$  nS time correlation channel-to-channel.  
 Resolution .....16-bits, two's complement output.  
 Sample Rate .....Up to 100kS/s digitizer per channel.  
 Linearity ..... $\pm 2$  LSB ( $\pm 0.006\%$ ).  
 Continuity .....Monotonic to 15 bits.  
 Alarms .....Two alarms each with upper and lower limits that are programmable from negative to positive full scale. Limits checked on each ADC sample.

#### CALIBRATION

Voltage Subst. ....Alternate input for external voltage standard. Programmable attenuation steps of 1, 0.1, and 0.01 with  $\pm 0.01\%$  accuracy. Output of the attenuator is provided on a rear panel connector for calibration.  
 Zero .....Amplifier input disconnected and shorted.

#### MECHANICAL

Mounting .....Occupies one slot in Series 6000 enclosures.  
 Connectors .....Input 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 $^{\circ}\text{C}$  to +50 $^{\circ}\text{C}$ .

#### ACCESSORIES

##### SCREW TERMINAL ADAPTER (6081)

Termination .....8 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

6028 .....8-Ch Voltage Digitizer.  
 6028-HV .....8-Ch Voltage Digitizer w/ 100:1 Attenuator.  
 6081 .....Screw Terminal Adapter.