HAI 118 Data Acquisition System

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- 100K Hz 16 bit A/D converter
- Easy to install USB connection
- Built-in stimulator and digital outputs
- Low noise
- Full gain telegraph support for Warner Instruments clamp amplifiers

The HAI 118 is a fast high-resolution data acquisition system suitable for most data recording studies in the research laboratory. It offers 8 analog input channels, 8 digital outputs, 4 digital inputs and 2 DACs. The Hardware connects to PC compatible computers via the popular USB interface, so setup is plug-and-play easy.

Hardware Features

DAC

The HAI 118 offers two ±10V DACs. Each DAC is independently programmable and can be synchronized with one another. Basic stimulus parameters for each DAC, such as pulse width, frequency and amplitude can be changed on the fly using handy controls located in the LabScribe® software tool bar. Standard protocols include pulse, train, and step waveform. Each standard protocol allows the quiescent state to be a holding voltage thereby making it ideal for voltage clamping applications.

Resolution and Noise

The HAI 118 employs a 16 bit A/D converter to sample data over its ±10 V input range. Typical noise on any input is less than 1 V. This allows the recording of signals from 10 mV to 10V without the need for additional external gain.

Digital Input/Output

8 digital output lines are available. The digital output connectors are industry standard BNC, eliminating the need for custom cables. Programming the output lines is point-and-click easy as well - no complicated scripting language is required. Four digital input lines are also provided, with one configured as an external trigger.

Speed

The HAI 118 is a fast recorder. At top speed it can collect 100,000, 16 bit samples per second on a single channel. With 8 channels enabled it can collect data at 10,000 samples per second on each of the open channels.

Specifications

Input:	
Number of Inputs	8 single ended BNC
Input Impedance	1 MΩ
Input Range	±10 V
Noise	1 mV typical
Gain Telegraph	Software or hardware 8 bit
Output:	
Number of DACs	2
DAC Resolution	12 bit
DAC Speed	100 k s/sec independent of sample speed
DAC Output Range	±10 V
Digital Output Lines	8 TTL
Digital Output Connector	BNC
A/D Converter:	
Sample Speed	1 S/sec-100 k S/sec
Resolution	16 bit
Interface	USB
Trigger/Digital Input Lines	4, TTL
Enclosure	Aluminum
Power	120/220 VAC, 60/50 Hz, CE compliant
Trigger Modes	External trigger, Threshold trigger from data, User trigger
Display	Real time, User definable screen time independent of sample rate. User definable units, AutoScale, Full Scale or User defined scale
DAC Modes	Pulse, Train, Step, DC, Custom
DAC Performance:	
Pulse Width	0.01 msec to 6500 msec (Pulse mode)
Frequency	0.2 Hz to 50 kHz (Pulse Mode)

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