

The iWorx 228 Data Acquisition System is a 10 channel device with both a low voltage and high voltage stimulator. Channels 1 and 2 can be configured for isolated recording of biopotentials or as DC coupled inputs. Channels 3 through 10 each include a transducer amplifier. These recorders exhibit the high resolution (16 bit) and low noise (3 to 4 LSB) required for small animal cardiovascular research, and other basic physiological applications. The iWorx 228 Data Acquisition System includes LabScribe2 Data Acquisition and Analysis Software for Windows and Macintosh computers, 5-lead ECG/EEG/EMG cable, USB cable and manuals.



### Resolution and Noise

The iWorx 228 uses a 16-bit A/D converter to sample data over its full input range of  $\pm 10V$  at speeds up to 100 kHz. The low noise ( $<1mV$ ) greatly reduces the need for gain and offset.

### Versatile Bioamplifier

A wide selection of low pass and high pass filters\*. In addition, the two channel configuration of the bioamplifier allows simultaneous recording of any combination of ECG, EMG or EEG signals.

\*IX-228 high pass filter values (mHz): DC, 0.03, 0.3, 3

\*IX-228 low pass filter values (mHz): DC, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 150, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 90, 10000, 20000

### Amplifier Channels

Channels 3 through 10 are equipped with a transducer amplifier to allow connection of virtually any physiologic transducer.

### High Voltage Stimulator

The iWorx 228 includes a 150 volt compliant isolated stimulator with an amplitude range of 0 to 20 milliamps. This stimulator is suitable for pacing a rodent's heart during pressure-volume loop recording.

### Low Voltage Stimulator

The iWorx 228 has a software programmable 16 bit,  $\pm 10V$  stimulator (DAC). Parameters for stimulator, such as pulse width, frequency and amplitude, may be changed "on-the-fly" using handy controls located in the LabScribe2™ software tool bar.

### Digital Output

Eight digital outputs are available to control devices. Programming the output lines is point-and-click easy, with no complicated scripting language required.

#### Transducer Inputs

Number of Transducer Inputs:	1
Input Range:	$\pm 10$ VDC
Resolution:	16 Bit
Isolation:	No
Excitation:	$\pm 5$ VCD, 100 mA
Connector:	DIN
Gain:	Programmable with Input Resistor

#### Biopotential Inputs

Number of Biopotential Inputs:	2
Input Range:	Software Configurable
Resolution:	16 Bit
High Pass Filters:	Software Configurable
Low Pass Filters:	Software Configurable
Isolation:	3 kV
Connector:	AAMI Safety

#### High Voltage Stimulator Output

Number:	1
Resolution:	12 bit
Connectors:	HV Safety
Output Range:	0 - 20 mA
Compliance:	150 VDC
Max. ON Time:	10 msec.

#### Low Voltage Stimulator Output

Number:	1
Resolution:	16 bit
Connectors:	BNC
Output Range:	$\pm 10$ VDC
Modes:	Pulse, Train, Constant, Step, Ramp, Triangle

#### A/D Converter

Sample Speed:	100 kHz Aggregate
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#### Interface

USB	1.1/2.0 Full Speed
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#### Power

5 VDC 2.6A
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