



e-corder 401 (Model ED401)



- Turns your PC or Macintosh into a precision data recorder
- No programming required – plug and play installation
- Powerful on-line and off-line analysis
- Continuous recording up to 200 000 samples/s
- Independently selectable input gains ± 2 mV to ± 10 V
- 16 bit A/D resolution
- Bipolar output for pulse and waveform generation
- Trigger input TTL or contact closure
- USB 2.0 and 1.1 compliant

Description

The **e-corder 401** is a high performance four channel data recording and analysis system. It records analog data from a wide variety of transducers and instruments, along with eDAQ Amps and Pods. It features four programmable input amplifiers, two of which can be configured for differential input. The system can record 16 bit resolution data directly to your PC at speeds of up to 200 000 samples/s via a USB 2.0 compliant interface. A built-in software controlled analog output, provides basic pulse and waveform generation.

Computer System Compatibility

e-corder is compatible with the following computer environments.

Windows 2000 or XP or later. Systems with a minimum of 128 MB RAM and USB port.

MacOS X or later. Systems with minimum 128 MB RAM and USB port.

Applications

The **e-corder** is an ideal data recorder for use in physical science applications, where simple recording and analysis of experimental data is required. Absolutely no programming is required and the powerful on-line and off-line analysis functions allow results to be quickly extracted from the recorded data. The system can be used to replace paper based chart recorders and data acquisition cards in applications such as Chromatography, Acoustics, Optics, Materials Testing, Engineering, Thermal Analysis and Electrochemistry.

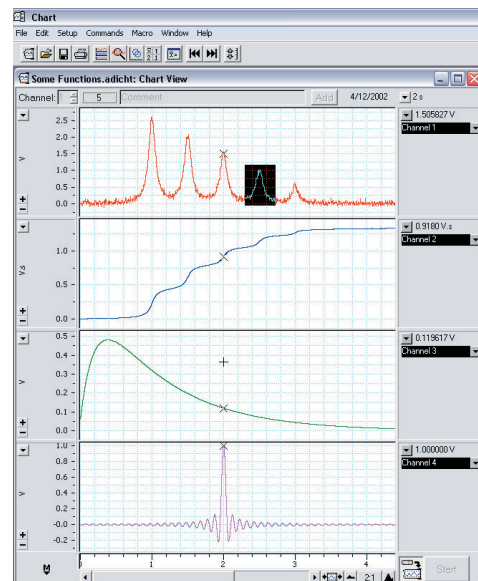
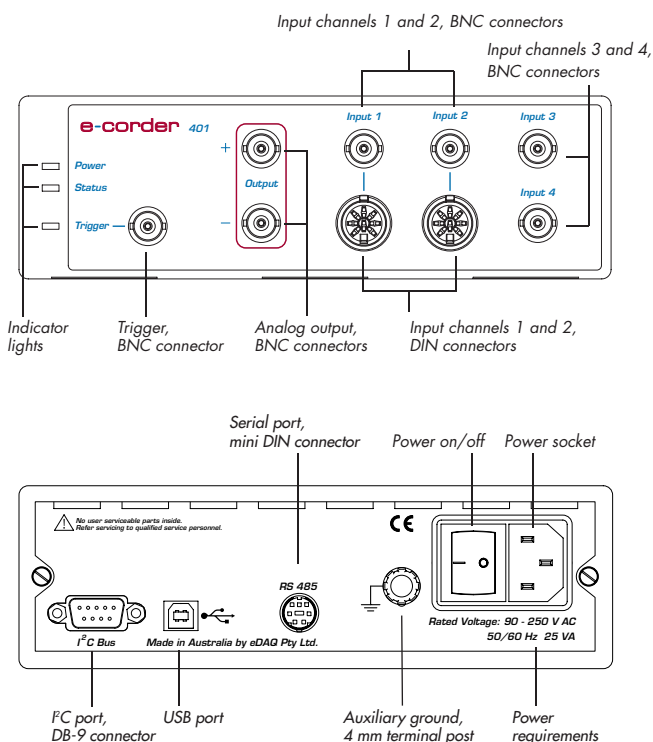
Software

Chart™ and Scope™ software is shipped with every **e-corder** for both Windows and Macintosh.

Chart™ – lets you use your computer as a multichannel strip chart recorder, polygraph and digital voltmeter.

Scope™ – lets you use your computer as a two-channel storage oscilloscope, or XY plotter.

Specialist software and analysis extensions are also available for use with **e-corder** units.



Main Chart window (Windows XP). All software has a user friendly interface and does not require additional programming to develop applications.

Specifications

Analog Inputs																																								
Number of Input channels:	4																																							
Input configuration:	2 x single-ended BNC or differential 2 x single-ended BNC																																							
Amplification range:	±2 mV to ±10 V full scale in 12 steps <table border="1"> <thead> <tr> <th>Range</th> <th>Resolution (µV)</th> <th>Gain</th> </tr> </thead> <tbody> <tr><td>±10 V</td><td>312.5</td><td>1</td></tr> <tr><td>±5 V</td><td>156.25</td><td>2</td></tr> <tr><td>±2 V</td><td>62.5</td><td>5</td></tr> <tr><td>±1 V</td><td>31.25</td><td>10</td></tr> <tr><td>±0.5 V</td><td>15.625</td><td>20</td></tr> <tr><td>±0.2 V</td><td>6.25</td><td>50</td></tr> <tr><td>±0.1 V</td><td>3.125</td><td>100</td></tr> <tr><td>±50 mV</td><td>1.56</td><td>200</td></tr> <tr><td>±20 mV</td><td>0.625</td><td>500</td></tr> <tr><td>±10 mV</td><td>0.3125</td><td>1000</td></tr> <tr><td>±5 mV</td><td>0.15625</td><td>2000</td></tr> <tr><td>±2 mV</td><td>0.0625</td><td>5000</td></tr> </tbody> </table>	Range	Resolution (µV)	Gain	±10 V	312.5	1	±5 V	156.25	2	±2 V	62.5	5	±1 V	31.25	10	±0.5 V	15.625	20	±0.2 V	6.25	50	±0.1 V	3.125	100	±50 mV	1.56	200	±20 mV	0.625	500	±10 mV	0.3125	1000	±5 mV	0.15625	2000	±2 mV	0.0625	5000
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Maximum input voltage:	±15 V																																							
Input impedance:	~1 MΩ 47 pF @ DC																																							
Low-pass filtering:	20 kHz fixed 2nd order (further filtering via software)																																							
AC coupling:	DC or 0.15 Hz (software-selectable)																																							
Frequency response (-3 dB):	20 kHz @ ±10 V full scale, all ranges																																							
DC drift:	Software corrected zero																																							
CMRR (differential):	>96 dB @100 Hz on 10 mV range																																							
Channel crosstalk:	> -82 dB (typical) between adjacent channels.																																							
Input noise:	<2.4 µV _{rms} + 250 µV _{rms} /Gain RTI																																							
Pod Connectors																																								
Connector type:	8-pin DIN																																							
Supply voltage:	±5 V regulated																																							
Maximum current:	50 mA per Pod port																																							
Communications:	2 wire I ² C																																							
Signal input:	Differential or single-ended analog inputs																																							
Sampling																																								
ADC resolution:	16 bit																																							
Linearity error:	±2 LSB (from 0 to 70 °C)																																							
Maximum sampling rates:	200 kHz single channel 100 kHz for 2 channels 40 kHz for 4 channels																																							
Available sampling rates:	0.003 Hz to 200 kHz using Chart for Mac 2 Hz to 200 kHz using Scope 1 Hz to 200 kHz using Chart for Windows																																							
Output Amplifier																																								
Output configuration:	Bipolar																																							
Output resolution:	16 bits																																							

Maximum output current:	±100 mA (200 mA @ 50% duty cycle)														
Output impedance:	0.1 Ω typical														
Slew rate:	10 V/µs														
Settling time:	2 µs (to 0.1% of FSR)														
Output range:	±200 mV to ±10 V (software-selectable) <table border="1"> <thead> <tr> <th>Range (V)</th> <th>Resolution (µV)</th> </tr> </thead> <tbody> <tr><td>±10</td><td>312.5</td></tr> <tr><td>±5</td><td>156.5</td></tr> <tr><td>±2</td><td>62.5</td></tr> <tr><td>±1</td><td>31.25</td></tr> <tr><td>±0.5</td><td>15.625</td></tr> <tr><td>±0.2</td><td>6.25</td></tr> </tbody> </table>	Range (V)	Resolution (µV)	±10	312.5	±5	156.5	±2	62.5	±1	31.25	±0.5	15.625	±0.2	6.25
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Output Zero error	<0.5 mV														
External Trigger															
Trigger mode:	TTL level (non-isolated) or contact closure (iso- lated) software selectable.														
Trigger threshold:	+1.8 ± 0.4 V														
Hysteresis:	<0.5 V														
Maximum input voltage:	±12 V														
Maximum detectable event:	10 µs														
Microprocessor and Data Communication															
CPU:	PPC403 GCX (30 MHz)														
RAM:	4 MB DRAM														
ROM:	1 Mbit FLASH ROM														
Data communication:	USB 2.0 or 1.1 compliant (up to 480 Mbits/s)														
Expansion Ports															
I ² C expansion port:	Power and control bus for eDAQ Amps (maxi- mum of 500 mA). Interface communications rate of up to 10 000 bits/s.														
RS485 Serial Port	Provided for internal diagnostic purposes only														
Physical Configuration															
Dimensions (w x h x d):	200 x 65 x 250 mm (7.9" x 2.6" x 9.8")														
Weight:	2 kg (4.41 lb)														
Operating voltage:	90 to 250 V AC 50/60 Hz														
Nominal power needs:	12 – 25 VA (dependant on number of eDAQ Amps and Pods attached). 50 mA @ 240 V or 100 mA @ 115 V)														
Operating conditions:	0 to 40 °C 0 to 90% humidity (non-condensing)														
eDAQ Pty Ltd reserves the right to alter these specifications at any time.															

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