



## e-corder 210 (Model ED210)



- 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 100 000 samples/s
- Independently selectable input ranges  $\pm 20$  mV to  $\pm 10$  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 210** is a high performance two channel data recording and analysis system. It records analog signals from a wide variety of transducers and instruments, as well as from eDAQ Amps and Pods. It features two programmable differential input amplifiers and can record 16 bit resolution data directly to your PC at speeds of up to 100 000 samples/s via the computer USB interface. A built-in software controlled analog output, provides basic pulse and waveform generation.

### Computer System Compatibility

**e-corder** is compatible with the following computers:

Windows 2000, XP or Vista. 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 ideal for the recording and analysis of experimental signals in physical science applications. 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 Electrochemistry, Kinetics, Chromatography, Acoustics, Optics, Materials Testing, Engineering, and Thermal Analysis.

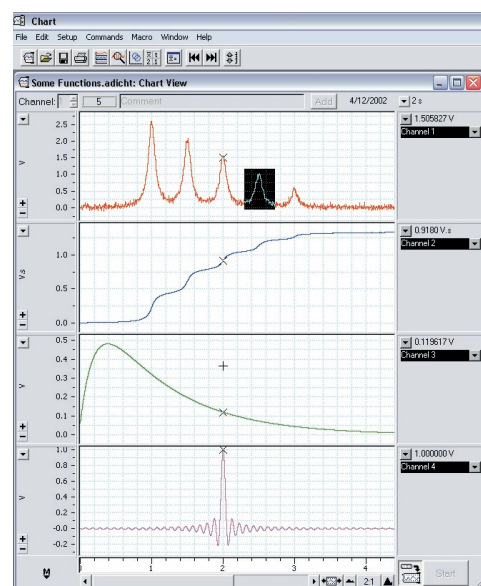
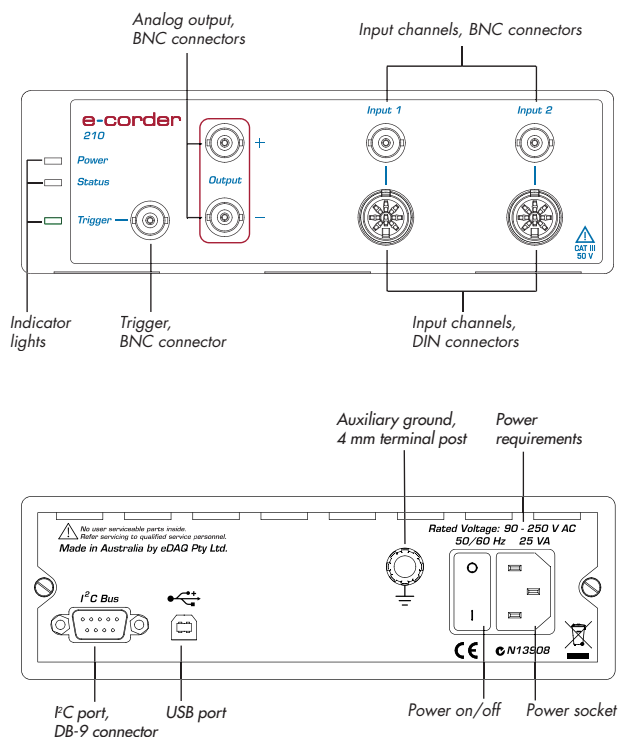
### Software

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:	2 (BNC or 8-pin DIN connector)																				
Input configuration:	Single-ended or differential																				
Amplification range:	$\pm 20$ mV to $\pm 10$ V full scale in 9 steps <table> <tr> <th>Range</th><th>Gain</th></tr> <tr> <td><math>\pm 10</math> V</td><td>1</td></tr> <tr> <td><math>\pm 5</math> V</td><td>2</td></tr> <tr> <td><math>\pm 2</math> V</td><td>5</td></tr> <tr> <td><math>\pm 1</math> V</td><td>10</td></tr> <tr> <td><math>\pm 0.5</math> V</td><td>20</td></tr> <tr> <td><math>\pm 0.2</math> V</td><td>50</td></tr> <tr> <td><math>\pm 0.1</math> V</td><td>100</td></tr> <tr> <td><math>\pm 50</math> mV</td><td>200</td></tr> <tr> <td><math>\pm 20</math> mV</td><td>500</td></tr> </table>	Range	Gain	$\pm 10$ V	1	$\pm 5$ V	2	$\pm 2$ V	5	$\pm 1$ V	10	$\pm 0.5$ V	20	$\pm 0.2$ V	50	$\pm 0.1$ V	100	$\pm 50$ mV	200	$\pm 20$ mV	500
Range	Gain																				
$\pm 10$ V	1																				
$\pm 5$ V	2																				
$\pm 2$ V	5																				
$\pm 1$ V	10																				
$\pm 0.5$ V	20																				
$\pm 0.2$ V	50																				
$\pm 0.1$ V	100																				
$\pm 50$ mV	200																				
$\pm 20$ mV	500																				
Maximum input voltage:	$\pm 50$ V																				
Input impedance:	$\sim 1$ M $\Omega$    47 pF @ DC																				
Anti-aliasing filter:	25 kHz																				
Frequency response ( $\sim 3$ dB):	25 kHz @ all ranges																				
DC drift:	Software corrected zero																				
CMRR (differential):	105 dB @ 100 mV range																				
Channel crosstalk:	less than $-90$ dB																				
Input noise:	$< 2.4$ $\mu$ V <sub>rms</sub> referred to input																				
Pod Connectors																					
Connector type:	8-pin DIN																				
Supply voltage:	$\pm 5$ V regulated																				
Maximum current:	50 mA per Pod port																				
Communications:	2 wire I <sup>2</sup> C																				
Signal input:	Differential or single-ended analog inputs																				
Sampling																					
ADC resolution:	24 bit hardware 16 bit Chart and Scope software 16 – 24 bits EChem and PowerChrom software																				
Linearity error:	$\pm 0.1\%$																				
Maximum sampling rates:	100 kHz/channel																				
Available sampling rates:	12/h to 100 kHz using Chart software 2 Hz to 100 kHz using Scope software																				
Output Amplifier																					
Output configuration:	Bipolar																				
Output resolution:	16 bits																				
Maximum output current:	20 mA continuous																				
Output impedance:	0.01 $\Omega$ typical																				
Slew rate:	2.3 V/ $\mu$ s																				

Settling time:	5 $\mu$ s (10 V step on 10 V range)														
Output range:	$\pm 200$ mV to $\pm 10$ V (software-selectable) <table> <tr> <th>Range (V)</th><th>Resolution (<math>\mu</math>V)</th></tr> <tr> <td><math>\pm 10</math></td><td>312.5</td></tr> <tr> <td><math>\pm 5</math></td><td>156.5</td></tr> <tr> <td><math>\pm 2</math></td><td>62.5</td></tr> <tr> <td><math>\pm 1</math></td><td>31.25</td></tr> <tr> <td><math>\pm 0.5</math></td><td>15.625</td></tr> <tr> <td><math>\pm 0.2</math></td><td>6.25</td></tr> </table>	Range (V)	Resolution ( $\mu$ V)	$\pm 10$	312.5	$\pm 5$	156.5	$\pm 2$	62.5	$\pm 1$	31.25	$\pm 0.5$	15.625	$\pm 0.2$	6.25
Range (V)	Resolution ( $\mu$ V)														
$\pm 10$	312.5														
$\pm 5$	156.5														
$\pm 2$	62.5														
$\pm 1$	31.25														
$\pm 0.5$	15.625														
$\pm 0.2$	6.25														
Output Zero error	$< 0.5$ mV														
External Trigger															
Trigger mode:	TTL level (non-isolated) or contact closure (isolated) software selectable.														
Trigger threshold:	$2.0 \pm 0.25$ V														
Hysteresis:	0.6 V typical														
Maximum input voltage:	$\pm 12$ V														
Minimum detectable event:	3 $\mu$ s														
Microprocessor and Data Communication															
CPU:	Freescall DSP56858														
RAM:	4 Mbit SRAM														
ROM:	1 Mbit flash ROM														
Data communication:	USB 2.0 compliant (up to 480 Mbits/s)														
Expansion Port															
I <sup>2</sup> C expansion port:	Power and control bus for eDAQ Amps (maximum of 500 mA).														
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 (4.4 lb)														
Operating voltage:	90 to 250 V AC 50/60 Hz														
Nominal power needs:	$< 18$ VA (including 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.															

WARRANTY: eDAQ Hardware units are supported by a one year warranty

[www.eDAQ.com](http://www.eDAQ.com)

E-mail: [info@edaq.com](mailto:info@edaq.com)

e-corder is a registered trademark of eDAQ Pty Ltd.  
All other trademarks are the property of their respective owners.

Document Number: M-ED210-0708

Copyright © eDAQ 2008