



QuadStat (Model EA164)



- Fully software-controlled
- Applied potentials of up to ± 2.5 V (or 10 V with external input)
- Current range settings from 200 pA to 10 mA per channel
- Current signal resolution 16 bits (0.0015% of range)
- Suitable for use with amperometric biosensors
- Can be used as a bipotentiostat
- Compact! Use inside Faraday cages, or inert atmosphere boxes

Description

The EA164 QuadStat is a software-controlled, four-channel potentiostat. Each channel can be used as a single three-electrode potentiostat, or two to four working electrodes can be used in a single reaction chamber with a common reference and auxiliary electrode.

Potential at each working electrode can be independently adjusted between ± 2.5 V, or by using an external waveform generator to between ± 10 V. Current ranges on each channel are from 200 pA to 10 mA.

Compatibility

The EA164 must be used with an **e-corder** unit (models ED821 or ED1621 recommended) and a computer with Windows XP or later. It includes electrode cables terminated with alligator clips.

Specifications

Maximum control voltage:	± 2.5 V (± 10 V with external input)
Maximum current per channel:	± 1 mA (± 10 mA on high current model)
Compliance voltage:	>10 V >5 V on 10 mA range
Input resistance:	$10^{13} \Omega \parallel 1$ pF
Input bias current:	<1 pA @ 25 °C
Current range settings:	± 10 mA $\pm 500, 200, 100, 50, 20, 10, 5, 2, 1 \mu\text{A}$ $\pm 500, 200, 100, 50, 20, 10, 5, 2, 1 \text{ nA}$ $\pm 500, 200$ pA
I/V Gain:	$10^6, 10^5, 10^4, 10^3, 100, 10, 1, 0.1$ nA/V
DC current error:	< $\pm 1\%$ FS on ranges 200 nA – 10 mA < $\pm 0.5\%$ FS on ranges 200 pA – 100 nA
Current signal offset:	$\pm 5000 \mu\text{A}$ on ranges 2 μA – 10 mA $\pm 5 \mu\text{A}$ on ranges 20 nA – 1 μA ± 50 nA on ranges 200 pA – 10 nA
Low-pass filter:	10 Hz, 3rd order Bessel

Applications

Single channel operation with EChem software:

- *Cyclic voltammetry*: compound characterization
- *Analytical chemistry research or teaching*: differential pulse, normal pulse, square wave voltammetry, stripping techniques
- *Kinetics*: pulse chronoamperometric techniques

Multichannel operation with Chart software:

- *Simultaneous monitoring* of sensors in multiple reaction vessels
- *Bipotentiostat operation*: two working electrodes with common auxiliary and reference electrode; also 3 or 4 working electrodes with common auxiliary and reference.
- *Sensors*: use with amperometric sensors providing current signals down to the picoampere ranges
- *Neurochemistry*: *in vivo* amperometry for neurotransmitter monitoring

e-corder filter settings:	10 kHz to 1 Hz in 10:5:2 steps
Bandwidth, unfiltered:	>10 kHz, on ranges of 20 nA – 10 mA >1 kHz, on ranges of 200 pA – 10 nA
Drift with temperature:	<10 $\mu\text{V}/^\circ\text{C}$
I ² C input and output:	Male and female DB-9 pin connectors. Provides control and power.
Power requirements: (supplied by e-corder)	± 17 V DC, ~ 20 mA +8 V DC, ~ 20 mA ~0.6 W quiescent
Dimensions (h x w x d):	60 x 150 mm x 200 mm (2.4 x 5.9 x 7.9")
Weight:	1.5 kg (3.3 lb)
Operating temperature:	0 to 35 °C 0 to 90% humidity (non-condensing)
eDAQ reserves the right to alter these specifications at any time.	

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

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