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See our information resources at www.edaq.com/wiki
e-corder (ED410, ED821 and ED1621)

e-corder units are high performance data recorders capable of recording at up to 100,000 data points per second, in the range 10 mV to 10 V. They can collect and display signals from many types of transducers, sensors, and laboratory instruments. They connect to a computer via USB and are supplied with Chart and Scope software for real-time display and analysis of analog voltage signals. Models with 4, 8 and 16 channels are available.

Mini-corder Systems (ER180C, ER181C)

Mini-corder systems record and analyse voltage signals at 1000 data points per second, in the range 10 mV to 10 V inputs, as typically found in a physical science laboratory. They are supplied with Chart and Scope software. The units connect to a computer via USB and can record signals from one (ER181C) or two (ER180C) detectors.

PowerChrom Systems (ER180R and ER181R)

These PowerChrom systems record and analyse signals from gas and liquid chromatographs, and capillary electrophoresis systems. They are supplied with PowerChrom software. The units connect to a computer via USB and can record signals from one (ER181R) or two (ER180R) detectors.

Flow Analysis System (ER180F and ER181F)

The Flow Analysis System is used for the detection, display and analysis of peaks from Flow Injection Analysis (FIA) and similar experiments. It collects signals from one or two detectors and features automatic peak detection and calibration. The software can generate user configurable reports and it is easy to copy and paste results into other applications.

Mega Teaching Kit (ER7004)

This kit includes the hardware, software, electrodes and transducers required to conduct a range of exciting experiments for chemistry and biochemistry laboratory courses. It includes a potentiostat, electrodes kit, isoPod meters and sensors for measuring pH, dO₂, temperature, and conductivity. Also includes Chart, Scope, EChem and PowerChrom software packages.

Many eDAQ systems can be configured as kits to save $$$$$$
Electrochemistry Systems

Integrated Potentiostat (ER466) Now available as 1 amp model (ER467)

An integrated unit containing potentiostat, waveform generator, and data acquisition unit. Ideal for research and teaching use, this fully software controlled potentiostat can measure from sub-nanoampere currents up to 100 mA (ER466) or 1 amp (ER467), at up to ±10 V. Ideal for cyclic voltammetry and electroanalytical chemistry. Two auxiliary data acquisition channels are provided for recording ancillary signals such as temperature, pressure, quartz crystal microbalance, surface plasmon resonance, etc.

Potentiostat (EA165)

A modular 1 amp potentiostat with a high bandwidth, must be used with either an e-corder unit for electroanalytical chemistry and cyclic voltammetry, or the Z100 for electrochemical impedance spectroscopy experiments.

Dual Picostat (EA362)

A high sensitivity, electrically isolated, modular potentiostat that can measure from sub-picoampere currents up to 10 µA at up to ±10 V. Ideal for use with in vivo microelectrodes (including carbon fibers for neurotransmitter monitoring) and other low current sensors. The Dual Picostat can also be used as a bipotentiostat, or 4-electrode (two reference and two working electrodes) potentiostat for membrane or ITES experiments. Ideal for use with an e-corder 410 unit.

QuadStat (EA164)

The QuadStat is a four–channel modular potentiostat that can be used with one, two (bipotentiostat), three or four working electrodes, with either common or separate reference and auxiliary electrodes. It is ideal for microbial fuel cell, and sensor research, and other work where replicate samples are required. It has a current range settings of 200 pA — 10 mA per channel at up to ±10 V. The QuadStat is best suited for use with either the 8 or 16 channel e-corder unit.

Waveform Generator (ER175) Brings new life to old potentiostats!

The Waveform Generator has been designed to produce pulses, ramps, as well as triangular and sinusoidal signals that can be sent to an eDAQ or other potentiostats to facilitate various electrochemical experiments. A triangular waveform can be paused, or even reversed, during slow speed cyclic voltammetry experiments. This unit is a modern replacement for the PAR 175 Universal Programmer.

Dual Reference Adaptor (EA167) Turns potentiostats into 4 electrode systems

The Dual Reference Adaptor connects to the reference electrode lead of a 3-electrode eDAQ or other potentiostat and enables its use with two reference electrodes. The potentiostat thus becomes a 4–electrode system with one working, one counter, and two reference electrodes suitable for studies of membranes (4–electrode voltage clamp), or the interface between two immiscible electrolyte solutions (ITES), or other liquid junction.
EChem Startup System  [ER461]

This electrochemistry system includes an ER466 Integrated Potentiostat, software and electrodes. Two data acquisition channels are provided for recording other experimental signals. It is an ideal system for research and teaching.

QuadStat Bundle  (ER7005)

This electrochemistry kit includes a EA164 QuadStat, ED821 8-channel e-corder data recording unit, ER175 Waveform Generator and software. It is an ideal system for multichannel channel studies of biosensors, microbial fuel cells, and in vivo oxygen or nitric oxide electrodes.

Dual PicoStat Bundle  (ER7162)

An electrochemistry kit comprising EA362 Dual Picostat, ED410 4-channel e-corder, ET014 Electrode Kit, and software. It is an ideal system for research with microelectrodes including in vivo recording of neurotransmitter levels with carbon fiber electrodes.

Electrochemical Impedance System  (ERZ102)

This system comprises a ERZ100 Electrochemical Impedance Analyzer and the EA163 Potentiostat. Designed to perform both potentiostatic or galvanostatic electrochemical impedance spectroscopy (EIS).

Advanced Electrochemistry System  (ERZ101)

A complete system for many electrochemistry techniques. Comprises:

- ERZ100 EIS Analyzer
- EA163 Potentiostat
- ED410 e-corder
- ET014 Electrode kit
- ES260 EChem software
Contactless Conductivity Measurements

Capacitively-coupled contactless conductivity detection (C4D) can be used in three classes of applications:

- **CLASS I: Detectors** - High sensitivity detection of virtually all charged species: inorganic anions and cations, as well as organic ions, such as carboxylic acids, amines, amino acids, peptides, proteins, DNA fragments, antibiotics and many other pharmaceutical compounds.
- **CLASS II: Monitors** - Measurement of relative changes in conductivity of a fluid in a capillary.
- **CLASS III: Meters** - Measurement of actual conductivity in mS/cm in a capillary or tube

**Advantages of C4D Techniques:**

- Requires very small sample volumes
- Electrodes are not contaminated
- Electrodes do not degrade in use
- Can measure very low conductivities

**C4D Data System (ER225)**

The C4D Data System is designed to be used with eDAQ PowerChrom software. Requires a C4D Headstage. This unit has an input for external detectors and four digital outputs for controlling external devices.

**C4D Detector (ER815)**

This single channel C4D Detector can be used with many third party systems such as ChemStation from Agilent, and 32 Karat from Beckman Coulter, or your own systems designed with LabVIEW etc. It can also be configured to support Chart and PowerChrom software. Requires a C4D Headstage.

**C4D Multichannel Detector (ER825)**

This multichannel C4D Detector is fitted with 1 – 8 inputs to measure multiple signals simultaneously (specify number when ordering). Each channel can either record a contactless conductivity signal, or record pH, temperature or other detector signals. The unit can be configured to be used with either third party software such as ChemStation, 32 Karat or LabVIEW etc, or eDAQ software such as PowerChrom and Chart. Each input channel requires a C4D Headstage or an analog input module.

**High Voltage Sequencer (ER430)**

Four channel high-voltage supply (+/- 3000 V at 100 uA) suitable for microchip electrophoresis, electrokinetic chromatography, or as a voltage source for micro reactors and mixers based on EOF pumping. Includes sequencing software.
Contactless Conductivity Headstages

C^4D Headstage for Capillary Electrophoresis (ET120)

This C^4D headstage will connect to 365 µm OD capillaries, the standard for capillary electrophoresis. Order the ET120-150 model for use with 150 µm OD capillaries.

General Purpose C^4D Headstage (ET125, ET130, ET131)

These C^4D headstages record the conductivity of a liquid flowing in a tube. They fit tubing with 1/16 inch (1.6 mm) outer diameter (can be less for ET131). They are configured for specific applications:
- ET125 is a general purpose headstage.
- ET130 for ion chromatography (IC) and flow injection analysis (FIA).
- ET131 is configured to meet customer defined applications.

Microchip Electrophoresis C^4D Platforms (ET121, ET225)

ET121: Platform for microchip electrophoresis experiments with C^4D detection. The C^4D electrodes are on the platform.
ET225: Platform for Micronit microfluidic chips with integrated C^4D electrodes. It includes cables for connection to a high voltage sequencer.

Octal Contactless Conductivity System (ER818)

The ER818 allows for the simultaneous contactless-conductivity measurement of up to eight samples that have a conductivity of between 0 – 20 mS/cm. It features low-volume samples, low wastage and zero cross contamination. It is manufactured to receive either pipette tips, melting point tubes, NMR tubes or capillaries.

Microchip Electrophoresis Bundle (ER455)

Complete system for microchip electrophoresis experiments. Includes C^4D Data System, high voltage sequencer, chip platform, chips, test solutions and software.
eDAQ isoPods are miniature amplifiers for various sensors. They are fully controlled by software and are electrically isolated to reduce noise and interference from ground loops. The USB isoPods (EPUxxxx) connect directly to a Windows XP, or later, computer and can be used with Pod-Vu, or third-party software such as LabVIEW. Ordinary isoPods (EPxxxx) must be connected to an e-corder (page 3) and used with Chart software.

**Biosensor isoPod** (EP352 and EPU352)
The Biosensor isoPod provides a bias voltage and records the resulting current signal from many types of amperometric sensors, including biosensors.

**pH/ISE isoPod** (EP353 and EPU353)
The pH/ISE isoPod is suitable for use with most pH, ion selective and oxidation/reduction potentiometric (ORP) electrodes. Signal range is more than pH 0 – 14 with better than 0.001 pH resolution.

**Dissolved Oxygen isoPod** (EP354 and EPU354)
The Dissolved Oxygen isoPod is used for monitoring polarographic (Clark) dissolved oxygen (dO₂) electrodes.

**Nitric Oxide isoPod** (EP355 and EPU355)
The Nitric Oxide isoPod is a compact, low noise, signal conditioner for monitoring polarographic nitric oxide electrodes.

**Thermocouple isoPod** (EP356 and EPU356)
The Thermocouple isoPod is suitable for use with B, E, J, K, N, R, S and T-type thermocouples.

**Conductivity isoPod** (EP357 and EPU357)
The Conductivity isoPod can be used with 2-electrode conductivity probes for solution conductivity measurements. Range settings: 0.002, 0.02, 0.2, 2, 20, and 200 mS.

**Thermistor/RTD isoPod** (EP358 and EPU358)
This temperature isoPod can be used with 1000 ohm Pt RTD, or 30 kohm thermistor temperature probes.

**Quad MF isoPod** (EPU452)
This multifunction (MF) isoPod can support up to four sensor probes on its four channels. Each channel can be independently configured by its user software to be suitable for a pH/ISE, dissolved oxygen (dO₂), conductivity, or temperature (thermistor or RTD) probe. Specifications are at least as good as for the single channel isoPods, and the channels are independently electrically isolated from each other, and from ground. Available only as USB version for direct connection to a Windows XP or later computer.

**Quad pH isoPod** (EPU168)
This isoPod can support up to four pH, ion selective, and/or oxidation/reduction potentiometric (ORP) electrodes. Signal range is ±2000 mV with better than 0.1 mV resolution (ie more than pH 0 – 14 with better than 0.001 pH resolution). The channels are electrically isolated from ground. Available only as USB version for direct connection to a Windows XP or later computer.
The tethaPatch™ is designed for use with a tethaPlate™ for patch-clamp style experiments with a ER466 Potentiostat system. The six separate chambers of the tethaPlate can be addressed individually for convenient replicate experiments, or separate experiments can be performed in each chamber.

**tethaPod (SDx-R1)**

The SDx tethaPod™ measures conductance of tethered phospholipid bilayer membranes. Up to six samples can be measured at the same time using the tethaPlate sample holders. Ideal for studies of embedded ion channel proteins, including screening experiments for potential pharmaceuticals. Supplied with SDx-APP2 tethaQuick software which includes control and data analysis features.

**tethaPatch (SDx-R2)**

The tethaPatch™ is designed for use with a tethaPlate™ for patch-clamp style experiments with a ER466 Potentiostat system. The six separate chambers of the tethaPlate can be addressed individually for convenient replicate experiments, or separate experiments can be performed in each chamber.

**tethaPod Starter Kit (SDx-K1)**

An economically priced bundle for the continuous monitoring of the conductivity of tethered bilayer membranes comprising:

- SDx-R1 tethaPod;
- SDx-T10 tethaPlate cartridges;
- SDx-S1 Phospholipid Mix;
- SDx-A1 tethaPlate Assembly Jig; and
- SDx-A2 SDx tethaPod test card

**tethaPlate (SDx-T10)**

The tethaPlate™ is a 6-chamber sample holder for tethered membrane preparations. It is used in conjunction with a tethaPod or tethaPatch system for the determination of membrane conduction and studies of protein ion channels.

**Phospholipid Mix (SDx-S1)**

A 1 mL vial containing a ethanolic solution of lipids suitable for phospholipid bilayer membrane formation when used with a tethaPlate.
eDAQ has a range of disc and screen-printed electrodes for voltammetry experiments. We also have a selection of electrodes for measuring temperature, pH, conductivity and oxygen. Accessories and cables are available.

**EChem Electrode Kit (ET014)** Ideal start-up electrode kit for research and teaching

The EChem Electrode Kit contains three working electrodes (gold, platinum and glassy carbon), reference and auxiliary electrodes, plus reaction vials and a stand.

**Voltammetric Disk Electrodes**

Glassy carbon, platinum, gold, silver, copper, and nickel working disk electrodes with PEEK (polyetheretherketone) body. Other metals available on request. Active disk material of 1 or 3 mm diameter.

**Reference Electrodes**

Leakless (ET069), Leakless Miniature (ET072) and Refillable Miniature (ET073) Ag/AgCl reference electrodes. The Hydroflex Hydrogen Reference Electrode (ET070) has a replaceable hydrogen producing cartridge.

**Inert Wire Electrodes**

Inert wire electrodes, ET078 (70 mm long) and ET086 (150 mm long), are 1.6 mm diameter titanium rods with a 2.5 micron coating of platinum. They are very resistant to corrosion and can be used as a miniature anode, cathode, or auxiliary electrode in many electrochemistry experiments.

**Screen-Printed Electrodes**

A range of Kanichi and Zensor screen-printed electrodes, with working, reference and auxiliary electrodes on one strip. Available with different working electrode material. They can be used as low cost disposable electrodes for teaching experiments or for routine analyses. Flow cells available.

**Probes for Temperature, pH, Conductivity and Oxygen**

A range of electrodes and sensors for measuring:

- temperature: thermocouples, thermistors and RTD probes.
- pH and oxidation/reduction potential.
- conductivity: 'dip in' or flow-through probes.
- oxygen: galvanic or polarographic probes.
eDAQ has a selection of software to support different applications; We will help you chose the software that best suits your needs. The software can be purchased individually or as part of a package. For example, e-corder systems include both Chart software and Scope software, while PowerChrom Systems includes the PowerChrom software. Utilities and tools provide essential support for our products.

**Chart Software and Scope software (ES500)**

Chart software provides an intuitive data acquisition interface for e-corder units (page 3). Signals on multiple channels are simultaneously recorded in a series of adjacent blocks, within the one file, as you start and stop recording. Many calibration, annotation, and signal analysis features are included including the display of transformed signals on extra ‘virtual channels’. As well, there are specialised software plug ins, ‘Chart Extensions’, free at www.edaq.com/chart_extns_list.html

Scope software acquires data in a series of sweeps (or ‘pages’) within the one file. These sweeps can be overlayed to compare results from one sweep or you can average the signal from successive sweeps (to increase signal-to-noise levels) or subtract a ‘baseline’ sweep from others, or apply various mathematical transforms. Scope software can be used in place of XY, XYT plotters, or oscilloscopes.

**PowerChrom Software (ES280)**

PowerChrom software is used for the collection, display and analysis of chromatographic data. It’s the ideal data acquisition system for upgrading your GC, HPLC or IC instrument. Throw away integrators, chart recorders and DOS-based systems. The software can collect signals from one or two detectors. Easily create reports or copy and paste your data to third party software for publishing. Supplied with PowerChrom 180 and 181 systems (page 3), or optionally with e-corder systems.

**EChem Software (ES260)**

EChem software controls the collection, display and analysis of data from electroanalytical voltammetric experiments. EChem is fully compatible with the eDAQ range of potentiostats (page 4). When used with an e-corder unit (page 3), many older third-party potentiostats can be upgraded to the full range of EChem techniques including cyclic, square wave, normal pulse, and differential pulse voltammetry and their stripping voltammetric equivalents.

**Pod-Vu Software (ES350)**

Pod-Vu software enables your Windows XP, or later, computer to calibrate, display, and store signals from up to eight eDAQ USB isoPod channels (page 8).