Dual Picostat (Model EA362)

- Software-controlled
- Plug and Play installation with **e-corder** units
- Electrically isolated
- High sensitivity, range settings ±1 pA to ±10 µA
- Compact! Use in Faraday cages

Description

The Dual Picostat is a two channel, high sensitivity potentiostat suitable for the monitoring of small current signals (to less than a picoampere). .

It is electrically isolated and is resistant to interference from neural stimulators, and ground loops. Because it uses 12 V DC power it can be used inside Faraday cages if required.

The Dual Picostat must be used in conjunction with an e-corder unit. The e-corder 410 is recommended.

The current signal can be zeroed to enable monitoring of small signal variations.

Compatibility

Supplied ready for use with an **e-corder** unit the Dual Picostat includes two electrode cables terminated with three 2 mm pins, each fitted with a miniature alligator clip for attachment to a wide variety of electrodes.

Applications

The Dual Picostat is commonly used for in vivo or in vitro monitoring of dopamine by amperometry with carbon fibre electrodes. Similarly it can be used to monitor dissolved oxygen, nitric oxide, hydrogen peroxide, or hydrogen sulfide with suitable electrodes.

There are two potentiostat channels that can be used to perform duplicate experiments with separate samples, each with a working, reference and auxiliary electrode.

Alternatively it can be used as a bipotentiostat (two working electrodes with a common reference and auxiliary electrode).

A 'four electrode' mode (two working and two reference electrodes) is provided for transmembrane, or ITES (interface between two immiscible electrolyte solutions) experiments.

There is also a ZRA (zero resistance ammeter) mode which supports a high impedance voltmeter function on the voltage outputs.

Specifications

Compliance voltage:	13 V
Maximum voltage:	±2.5 V
Maximum current:	±10 µA
Input impedance:	10^{13} Ω || 2 pF
Input bias current:	<100 fA @ 25 °C, 60 fA typical
Current ranges:	±10, 5, 2, 1 µA ±500, 200, 100, 50, 20, 10, 5, 2, 1 nA ±500, 200, 100, 50, 20, 10, 5, 2, 1 pA
Gain:	1 µA/V 100, 10, 1 nA/V 100, 10, 1 pA/V
Current signal offset:	10 µA on 10 µA range x2 of gain range on other range settings.
DC current error:	<±1% FS on ranges of 1 pA to 1 nA <±0.5% FS on ranges of 2 nA to 10 µA

Low pass filter settings:	Off, 2, 1 kHz 500, 100, 50, 20, 10, 5, 2, 1 Hz
Bandwidth, unfiltered:	Phase shift less than one degree at 1 kHz on all ranges
Isolation:	250 V_{rms} max
Drift with temperature:	<10 µV/°C
I^2C input and output:	Male and female DB-9 pin connectors. Provides control of the Dual Picostat.
Power requirements:	12 V DC, ~500 mA 100 – 240 V AC mains adaptor supplied
Dimensions (h x w x d):	200 mm x 65 mm x 250 mm (7.9" x 2.6" x 9.8")
Weight:	1.52 kg (3.3 lb)
Operating conditions:	0 to 35 °C 0 to 90% humidity (non-condensing)
eDAQ reserves the right to alter these specifications at any time.	

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