traxReader™

The traxReader was designed to characterize and help commercialize biological electrochemical sensors.

It has the required circuitry to produce stable voltages for Gate/WE, Source/CE, and drain connections as well as reliably read the source/drain bias current. The gate amperage can also be monitored and a reference electrode utilized..

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Specifications

Gate/WE Voltage Range	-1500 mV to 1500mV (When Source is 1500mV)
Gate/WE Voltage Resolution	~45 µV
Gate/WE Voltage Stability	+/- 0.1 %
Gate/WE Voltage Accuracy	+/- 0.1 %
Gate/WE Response Time	~5 µs
Gate/WE Output Resistance	~2 Ω
Max Gate/WE Current	~60.7 µA
Gate/WE Current Resolution	~7.2 pA
Source/CE Voltage	0 to 3000mV (Gate & Drain are relative to Source)
Source/CE Voltage Stability	+/- 0.1 %
Source/CE Voltage Accuracy	+/- 0.1 %
Source/CE Response Time	~5 µs
Source/CE Output Resistance	~100 mΩ
Drain Voltage	-1500 mV to 1500mV (When Source is 1500mV)
Drain Voltage Stability	+/- 0.1 %
Drain Voltage Accuracy	+/- 0.1 %
Drain Response Time	~5 µs
Drain Output Resistance	~2Ω
Reference Voltage	0 to 3000mV
Reference Input Resistance	>50 GΩ
Max Source/Drain Current Range 1	27mA
Source/Drain Current Resolution Range 1	3.6nA
Max Source/Drain Current Range 2	3mA
Source/Drain Current Resolution Range 2	0.36nA
Available Electrode Oversampling Rates	32 @ 38400Hz, 64 @ 19200Hz, 128 @ 9600Hz, 256 @ 4800Hz, 512 @ 2400Hz, 1024 @ 1200Hz, 2048 @ 600Hz, 4096 @ 300Hz, 8192 @ 150Hz , 16384 @ 75Hz, 20480 @ 60Hz, 24576 @ 50Hz, 40960 @ 30Hz, 49152 @ 25Hz, 81920 @ 15Hz, 98304 @ 12.5Hz

Features

Custom command patterns
Command batching and repetition
Chronoamperometry
USB-C port
USB power pass-through
breakout board for external sensors
traxInsight for data storage and analysis
myTrax on mobile device for field usage

Internal calibration
Square wave voltammetry
Linear sweep voltammetry
Pulse voltammetry
Integrated sensor port

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