

Specifications DECADE II

General specifications

Power	100-240 VAC, 50/60 Hz, 260 VA max., auto-sensing
Operating modes	DC, PAD and Scan
Potential range	between +2.00 and -2.00 V in 10 mV increments
Output	between +1 and -1 V or between +10 and -10 V (20 bit D/A converter)
Offset	between +50% and -50% of max. output voltage, 5% steps
Event marker	pulse of 10% of max. output
Auto zero	triggered by keyboard, rear panel TTL, or RS232C control
RS232C	full parametric instrument control, data acquisition at 1, 2, 5 and 10 Hz
Injector sensor	starts system clock at injection
Oven	height 37 cm, from 7°C above ambient to 45°C, accuracy 0.5°C, stability 0.1°C; accommodates column and flow cell(s)
Diagnostics	LCD screen, keyboard and noise (internal dummy cell)
Service mode	system settings and calibration parameters
Configuration	menu for system customisation and optimisation
Firmware	upgradeable via PC (RS232), flash technology
Environmental	operating temperature: 4 – 40°C, RH 20 to 80%, non-condensing

DC mode

Ranges	10 pA – 200 µA in 1, 2, 5 steps
Filter (cut off)	Advanced Digital Filter, 0.5 - 0.001 Hz, 1, 2, 5 steps
Noise	better than 2 pA with a dummy cell (load of 300 MΩ and 0.5 µF), filter off, Ec +800mV and temperature of 30°C.

PULSE mode

Range	10 nA – 200 µA in 1, 2, 5 steps
Filter (cut off)	Advanced Digital Filter, 0.5 - 0.001 Hz, 1, 2, 5 steps
Pulse times	t1: 100 - 2000 ms; t2: 0 - 2000 ms; t3: 0 - 2000 ms in 10 ms steps
Sample times	20, 40, 60, 80 and 100 ms

SCAN mode

Range	10 nA – 200 µA in 1, 2, 5 steps
Scan rate	1 - 50 mV/s in 1, 2, 5 steps
Cycle	half, full or continuous

AUTO mode

DC mode (5 files) and pulse mode (4 files), cycle time, number of cycles and oven temperature. Time-based control of 50 time points as to range, filter, output contacts (2 TTL, 2 relays), auto zero, board id, offset, valve position (if present) and cell potential.

Rear panel I/O connections

Mains, Output, 2 Connectors 15 pins (A, B), manual valve (C), RS232C connector

Physical specifications

Dimensions	44 (D) x 22 (W) x 44 (H) cm = 17.3" (D) x 8.7" (W) x 17.3" (H)
Weight	14.6 kg (32 lbs) without flow cell and column

The Next DECADE Ahead!



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The Benchmark in Electrochemical Detection



Flexible

The DECADE II platform fully exploits the state-of-the-art in electronic components and design. We call it a platform because the circuitry is modular and very flexible, such that it is fully prepared for future needs and requirements. Due to Flash technology, software updates and upgrades can be downloaded via RS232. We provide the DECADE II with time-based, full parametric control.

Accurate

Both chromatographic profiles and EC detector responses are strongly affected by temperature fluctuations. That is why we have developed the LC-EC 'workstation' concept. It accommodates flow cell and column in a Faraday-shielded, precisely thermostatted oven.

Versatile

The DECADE II platform is prepared for controlling 2 flow cells. So, either 2 separate column/flow cell combinations can be accommodated, but also serial arrangements are possible.

Sensitive

The DECADE II platform again demonstrates the superiority of the LC-EC workstation concept and sets a new standard in EC detector electronics, design and performance. For most users sensitivity is the crucial parameter in LC-EC analyses. This concept has proven to be a prerequisite for sensitivity. Electronic noise suppression adds to it, hence for the DECADE II we have developed Advanced Digital Filtering (ADF), breaking new grounds in detection limits.



Flow cells

Two flow cell configurations can be supplied, the VT-03 developed for maximum sensitivity (=S/N ratio) in standard, μ -bore and capillary LC and the FLEXCELL characterised by the quick and easy exchange of working electrodes. Both models can be equipped with a variety of working and reference electrodes covering a wide range of LC-EC applications.



Injectors

The DECADE II can be furnished with bracket-mounted manual or electrically actuated injectors. The DECADE II hard- and software is fitted to control (inject/load switching by timed events) or being controlled (start and stop of time files) by such injectors. After connecting the injector electrically, the firmware detects its presence and identity ('auto-sensing'). The position of the bracket is such, that the critical dead volume between injector and column is reduced to an absolute minimum.

Data acquisition, firmware and circuitry

The outputs of the DECADE II are equipped with highest resolution A/D (24 bits, RS232 data acquisition output) and D/A (20 bits, analogue output) converters to maintain data integrity. Extensive timed event tables can be programmed via the user interface or via RS232 (Dialogue II software). Moreover, we supply software for data acquisition and full parametric control (ALIS). Firmware updates can be downloaded via Flash technology. In the firmware extensive configuration and service modules are accessible for customisation, troubleshooting and service.