1 General Description

Model 2551 is the smallest potentiostat of AMEL’s tabletop series. It has been conceived to be a perfect compromise between affordability and performances. The instrument is fully controlled by VApeak software for both electrochemical or electroanalytical techniques. AMEL’s electrochemical equipment reliability stands on long time experience dating back to 1959.
2 Metrological Properties

2.1 Counter Electrode

Voltage Output  ± 19V max
Current Output  ± 1,2A max
Slew Rate  0,01mV/s to 10V/s
Protection  Thermal, overload and short-circuit

2.2 Working Electrode

Current Measure  From 10nA to 1A Full Scale in 9 ranges
Current Resolution  From 10pA at 10nA Full Scale to 100μA at 1A Full Scale
Measuring Accuracy  < 1% of Full Scale in 10nA to 1μA ranges
                    < 0,25% of Full Scale in 10μA to 1A range

2.3 Reference Electrode

Input Impedance  > 1TΩ
Input Capacitance  < 20pF (1m cable)
Biasing Current  < 10pA at 25°C
Common Mode Rejection  > 60dB full frequency response
Voltage Range  ± 10V max
Input BNC  Grounded outer contact

2.4 Polarization Capability

Voltage  ± 10V max
Current  ± 1A max
Voltage Resolution  0,1mV
Current Resolution  10pA
Accuracy  ± 0,2% & 0,1% (conversion at Full Scale)

2.5 IR Compensation

Positive Feedback Range 2Ω to 100MΩ (depending on current range)

2.6 Response Time

Potensiostatic Rise Time  < 1μs resistive load (1000Ω)
Galvanostatic Rise Time  < 17μs resistive load (1000Ω)
2.7 Meters and Interfaces
A/D Converter  16 BIT
D/A Converter  16 BIT
Temperature Meter  0 to +100°C with PT1000 probe (0,1°C resolution and ± 0,2°C accuracy)
Sampling Rate  200μs

2.8 Digital Interface
Connection  USB with full instrument control (baud rate 57600 – N – 8 – 1)
Memory  EEPROM 64kB – SRAM 32kB
Port Output  8 external accessories
I/O port  8 optional

2.9 Cell Connections
Cables  2, 3, 4 cables. BNC connector for Reference (Hi & Low) and PL258 for Working and Counter electrodes.

2.10 Power Supply and Dimensions
Voltage Mains  115 or 230V AC  ±10%  50/60Hz
Power Consumption  60VA max
Dimensions (L x W x H)  400 x 440 x 85mm
Weight  8kg

3 Implemented Electrochemical Techniques

3.1 Detection
AD  Amperometric Detection
PD  Potentiometric Detection
DSA  Double Step Amperometry
DSV  Double Step Potentiometry
PAD  Pulsed Amperometric Detection

3.2 Voltammetric
LSV  Linear Scan Voltammetry
CVV  Cyclic Voltammetry
GLV  Galvanostatic Linear Voltammetry
GCV  Galvanostatic Cyclic Voltammetry
SWV  Square Wave Voltammetry
NPV  Normal Pulse Voltammetry
ACV  Alternating Current Voltammetry
DPV  Differential Pulse Voltammetry
DNV  Differential Normal Pulse Voltammetry
DAV  Differential Alternate Pulse Voltammetry

3.3 Stripping
LSS  Linear Scan Stripping
ACS  Alternate Current Stripping
SWS  Square Wave Stripping
DAS  Differential Stripping
DPS  Differential Pulse Stripping
DNS  Differential Normal Pulse Stripping
PSA  Potentiometric Stripping Analysis
CCSA Constant Current Stripping Analysis

4 Spare Parts
191/GPC  Grid power cable
191/USB  USB cable
191/4BN4 Set of 4 WE, RE and CE cables
191/C4  Set of 4 crocodile clips for WE, RE and CE 4mm banana plugs