

µStat 400 Bipotentiostat/Galvanostat



01

Ref. STAT400



µStat 400 is the **portable biPotentiostat/galvanostat** from **Metrohm DropSens** that can be applied for **Voltammetric, Amperometric** or **Potentiometric** measurements, including **24 electroanalytical techniques**, and can be used with one- or two- working electrodes configuration.

This portable bipotentiostat/galvanostat is **Li-ion Battery powered** (USB charger adapter compatible). It can be easily connected to a PC via USB, RS232 and **through Wireless connection**.

µStat 400 has eight current ranges: 1 nA to 10 mA, and Auto (the instrument automatically selects the optimal current range), with a **maximum measurable current of 40 mA**.

The included **DropView 8400 software** is used to control the instrument and to plot the measurements and perform the analysis of results. **DropView 8400 software** provides powerful functions such as:

- manual control of the experiment, for tailoring your electrochemical measurements
- plot overlay, peak integration, smoothing, subtraction, derivative curve, baseline fitting, etc
- script editor for programming specific work routines
- peripheral configuration (digital inputs/outputs) for synchronised operation with other devices
- 3D plotting of curves

Available techniques:

POTENTIOSTAT

Voltammetry

LSV	Linear Sweep Voltammetry
CV	Cyclic Voltammetry
SWV	Square Wave Voltammetry
DPV	Differential Pulse Voltammetry
NPV	Normal Pulse Voltammetry
NDPV	Differential Normal Pulse Voltammetry
ACV	AC Voltammetry
LPR	Linear Polarization Resistance

Amperometry

AD	Amperometric Detection
ZRA	Zero Resistance Amperometry
FA	Fast Amperometry ($t_{int} < 0.1$ s)
PAD	Pulsed Amperometric Detection
MAD	Multipulsed Amperometric Detection
COUL	Coulometric Detection

GALVANOSTAT

LSP	Linear Sweep Potentiometry
CP	Cyclic Potentiometry
PD	Potentiometric Detection (galvanostatic)
ZCP	Zero Current Potentiometry (OCP)
FP	Fast Potentiometry ($t_{int} < 0.1$ s)
PSAG	Potentiometric Stripping Analysis (galvanostatic)
PSAF	Potentiometric Stripping Analysis (faradaic)
MPD	Multipulsed Potentiometric Detection

MIXED TECHNIQUES

LSV+AD	Linear Sweep Voltammetry + Amperometric Detection
CV+AD	Cyclic Voltammetry + Amperometric Detection

Instrument Specifications	
Power	Li-ion Battery (1250 mAh) USB DC charger adaptor compatible (5 V)
PC interface	Wireless connection USB
Operating modes	BIPotentiostat, Potentiostat, Galvanostat
DC-Potential range	±4 V
Current ranges (potentiostat)	±1 nA to ±10 mA (8 ranges)
Maximum measurable current	±40 mA
Voltage ranges	±100 mV, ±1 V (2 ranges)
Applied Potential Resolution	1 mV
Measured Current Resolution	0.025 % of current range (1 pA on lowest current range)
Applied Current Resolution	0.1 % of current output range
Measured Potential Resolution	0.012 % of potential range
Potential Accuracy	±0.2 %
Current Accuracy	≤0.5 % of current range at 100 nA to 10 mA
External inputs/outputs	Iout, Eout 2 Analog inputs 1 Analog output 2 Digital input/outputs TX, RX, RTS signals for RS232 connection
LED indicators	Power, Status, Measuring, Wireless connection
Dimensions	13.2 cm x 10.0 cm x 3.6 cm (L x W x H)
Weight	480 g

Control Specifications			
General Pretreatment	Conditioning stage duration:	0 – 1300 s	
	Deposition stage duration:	0 – 1300 s	
	Equilibration stage duration:	0 – 1300 s	
General Parameters	Begin, End, Base, Vertex potentials:	-4 V to +4 V	
	Step potential:	1 mV to 500 mV	
	Pulse potential:	1 mV to 250 mV	
	Scan rate:	1 ms up to 1.3 s per step	
	WE2 offset:	± 2 V	
Specific Parameters	SWV	Frequency:	1 Hz to 400 Hz
		Amplitude:	1 mV to 250 mV
	DPV, NPV, NDP	Modulation time:	1 ms to 1300 ms
		Pulse time:	1 ms to 1300 ms
	ACV	Frequency:	2 Hz to 250 Hz
		Amplitude:	5 mV to 250 mV (RMS)
	LPR	dE/dt lim:	1 µV/s to 1000 µV/s
		tmax OCP:	5 s to 6550 s
		tprecond	0 s to 1300 s
Chrono. Methods (AD, PD, ZCP, ZRA, MAD, COUL, MPD)	Interval time:	0.1 s to 1300 s	
	Run time:	Hours (65000 points)	
Fast Chrono. Methods (FA, FP)	Interval time:	1 ms to 1300 ms	
	Run time:	Hours (65000 points)	
PAD	Pulse time:	1 ms to 1300 ms	
	Interval time:	10 ms to 1300 ms	
	Run time:	Hours (65000 points)	
PSA	Potential limit:	±4 V	

Specifications are subject to change without previous notice

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