

One-Quadrant Potentiostats

EL-Series

Add-on modules for Electrochemical Workstations IM6/Zennium

Modern Electrochemistry



at high currents

Impedance Spectroscopy, Cyclic Voltammetry, Polarisation Curves ...
for Batteries, Fuel Cells, Electrolysis, Electro-Plating ...

ZAHNER[®]
M e s s y s t e m e

Today electronic loads are indispensable tools in several fields of electrochemistry, e.g. in the research of batteries and fuel cells. The *EL-Series* potentiostats are designed to sink currents up to 200A at a total power dissipation of up to 1000W and may be connected in full cell or half cell schemes. Using an additional external power supply you easily can extend an electronic load of the *EL-Series* to a two-quadrant potentiostat you need e.g. in the field of electrolysis.

The *EL-Series* potentiostats are controlled by an *EPC42*, a plug-in module for the *Electrochemical Workstations IM6* and *Zennium*. Each *EPC42* can address up to four *EL-Series* potentiostats. Up to four *EPC42* cards can control up to 16 *ELs* by one *IM6/Zennium*. Each potentiostat will hold the control parameters from one access to the next one, so that no potential or current disturbances can occur while scanning the potentiostats. If series measurements are performed with more than one *EL-Series* potentiostat, spectra are taken from all modules in a definable order.

The *EL-Series* is completely integrated into the *IM6/Zennium* environment. Thus, all acquisition and analysis techniques that run on the *IM6/Zennium* can be applied with the *EL-Series* potentiostats as well. The installation of one or more *EL-Series* potentiostat will upgrade your *IM6/Zennium* to an even more versatile, high-current electrochemical workstation.

The *EL1000* potentiostats can alternatively be controlled by a Windows®-PC. In this case they provide methods, summarized in the table below. They also work as a LabView® virtual instrument under the LabView® software. To implement the *EL1000* potentiostats into existing test environment, a supporting DLL is available on demand.

You can control the *EL1000* potentiostats in a mixed mode with an *IM6/Zennium* and a PC in parallel. One of both devices can be connected and disconnected during operation.

Supported methods with IM6/Zennium	Software module
Impedance spectroscopy	IM
Simulation & model fitting	SIM
Cyclic voltammetry	CV
Polarisation curves	I/E
Multicell multitasking voltammetry	CV
Arbitrary current/potential/time meas.	PVI
Capacity/potential measurements	C/E
Automatic series measurements	AS

Supported methods with PC EL1000
Test Sampling
U vs. time, I vs. time
Current Potential Curves (U/I)
Cyclic Voltammetry, CV at OCP
Charging/Discharging, Battery Cycling
LabView® Virtual Instrument
DLL support available

	EL101	EL300	EL1000
Operating modes	pot/gal/oc	pot/gal/oc	pot/gal/oc
Potential range	±12 V	±12 V	±100 V
Potential accuracy	±0.1 % / ±1 mV	±0.1 % / ±2 mV	±0.1 % / ±25 mV
Current range	0 A ... 25 A	0 A ... 100 A	0 A ... 200 A
Current accuracy	±0.25 % / ±1 mA	±1 % / ±4 mA	±0.25 % / ±10 mA
Power dissipation	100 W @ T _a	100 W @ T _a 300 W water cooled	1000 W @ T _a
Frequency range	10µHz - 10kHz	10µHz - 3kHz @ 100A 10µHz - 10kHz @ 25A	10µHz - 10kHz @ 200A 10µHz - 30kHz @ 80A
Ambient temperature	0°C ... 30°C	0°C ... 30°C	0°C ... 30°C
System requirements	IM6/Zennium+EPC42	IM6/Zennium+EPC42	IM6/Zennium+EPC42 or PC

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