Boost your potential...

Power Boosters

Charge/discharge 12V20A 24V10A 50V5A 100V3A
Discharge only 50V25A

Tel. 2310855844, 2106452848
Email. contact@megalab.gr
www.megalab.gr

Solartron's range of power boosters, in combination with single or multi-channel potentiostats, enables high performance electrochemical tests to be run on a wide range of ultra-low impedance energy storage devices and electrochemical cells.

Applications include:

- Development of energy sources for laptop PCs, mobile phones and power tools.
- Fuel cell and supercapacitor research for electric vehicle or standby power.
- Battery research including Li-Ion automotive batteries.
- Solar Cells
- Electrochemical etching and electroplating.

High performance...

These power boosters are designed to operate with Solartron single and multi-channel potentiostats.

- Floating design - enables tests on grounded cells
- DC and impedance tests on short stack fuel cells and individual cells within the stack (depending on potentiostat auxiliary channel capability)
- Choice of models with 100 V / 25 A range
- 100 kHz impedance measurement bandwidth for SOFC and other high frequency applications
- Automatically controlled by the potentiostat

For DC tests...

An extensive range of DC techniques are available for use with these boosters:

- potentiostatic / galvanostatic
- cyclic voltammetry
- ohmic drop / ESR equivalent series resistance analysis
- high-speed voltage / current pulse techniques (e.g. for testing GSM mobile phone and satellite communication energy storage devices)

For impedance...

The following impedance analysis techniques are available depending on the potentiostat and FRA:

- Swept sine analysis - for ultimate accuracy and repeatability
- Multi-sine / Fast Fourier Transform (FFT) - for fast impedance analysis
- Harmonic and intermodulation analysis - for optimisation of stimulus levels and detection of noise and interference

The frequency range of these power boosters is 10 µHz to 100 kHz allowing a wide range of energy storage devices to be characterized over their full frequency range.

Software

This range of power boosters is fully integrated with the full range of Solartron Analytical single and multi-channel software packages. All scaling factors and control issues are taken care of by the software.

Specification

Models	Max V	Min V	Max I	Min I
Boost 12V20A	+12 V	-3 V	+20 A	-20 A
Boost 24V10A	+24 V	-3 V	+10 A	-10 A
Boost 50V5A	+50 V	-3 V	+5 A	-5 A
Boost 100V3A **	+100 V	-3 V	+3 A	-3 A
Boost 50V25A *	+50 V	-3 V	0 A	-25 A

(* discharge mode only, for fuel cell tests, maximum power 125 W)

Voltage Drive

Maximum voltage	Depends on booster model
Voltage scaling	x10 (**100 V model x13.5)
Voltage ranges	Selected by potentiostat
Voltage accuracy	±0.1% of full scale

Voltage Monitor

Scaling	1/10 of Cell Voltage (**100 V model 1/13.5)
Range	0 to +5 V (**3.7 V) Corresponds to 0 to +50 V

Current Drive

Maximum current	Depends on booster model
Current scaling	x1000
Current ranges	Selected by potentiostat
Current accuracy	±0.1% of full scale

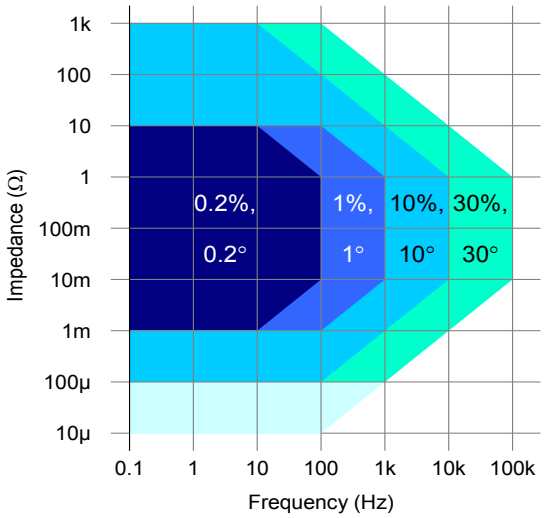
Current Monitor

Scaling	1/1000 of Cell Current
Range	0 to ±25 mA Corresponds to 0 to ±25 A

Cell Connections

Drive	2 x 4 mm banana plug
Sense	2 x 4 mm banana plug

Potentiostat errors should be added to the above specification



Impedance measurement accuracy

Note: 1V ac excitation, except at lower impedance levels where the excitation is reduced to maintain the current limit.

Front Panel Controls

Stop Button	Mechanical Latching

General

Power consumption	500 VA
Supply (single phase)	47-63 Hz 90 V to 264 V
Dimensions (w x h x d)	8.25 in (210 mm), 10 in (254 mm), 17.75 in (451 mm)
Weight	13.5 kg (30 lbs)
Safety complies with	EN61010-1: 2001 / IEC61010-1: 2001
EMC complies with	EN61326-1: +A1 +A2 IEC61326-1: +A1 +A2

Potentiostat Cables (one set included)

BOOSTMODCABLES	ModuLab XM ECS ModuLab ECS
BOOST1470CABLES	CellTest system
BOOST1287CABLES	1287, 1285, 1280

solartron analytical

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2/2015

Boost your potential...

Power Booster

Charge/discharge 6V100A | 8V50A | 10V60A

Solartron's range of power boosters, in combination with single or multi-channel potentiostats, enables high performance electrochemical tests to be run on a wide range of ultra-low impedance energy storage devices and electrochemical cells.

Applications include:

- Development of energy sources for laptop PCs and power tools
- Fuel cell and supercapacitor research for electric vehicle or standby power
- Battery research including Li-Ion automotive batteries
- Solar Cells
- Electrochemical etching and electroplating

High performance...

These power boosters are designed to operate with Solartron single and multi-channel potentiostats.

- Floating design - enables tests on grounded cells
- DC and impedance tests on individual cells including anode/cathode investigations (depending on potentiostat auxiliary channel capability)
- 50kHz impedance measurement bandwidth for high frequency applications
- Automatically controlled by the potentiostat

For DC tests...

An extensive range of DC techniques is available for use with these boosters:

- potentiostatic / galvanostatic
- cyclic voltammetry
- ohmic drop / ESR equivalent circuit analysis
- high-speed voltage / current pulse techniques (e.g. for testing fast charge storage devices)

For impedance...

The following impedance analysis techniques are available depending on the chosen configuration of potentiostat and FRA:

- Swept sine analysis - for ultimate accuracy and repeatability
- Multi-sine / Fast Fourier Transform (FFT) - for fast impedance analysis
- Harmonic and intermodulation analysis - for optimisation of stimulus levels and detection of noise and interference

The frequency range of this power booster is 10 µHz to 50 kHz allowing a wide range of energy storage devices to be characterized over their full frequency range.

Software

All Solartron Analytical power boosters are fully integrated with the full range of single and multi-channel software packages. All scaling factors and control issues are taken care of by the software.

Specification

Booster Model	Max V	Min V	Max I	Min I
Boost 6V100A	+6 V	-2 V	+100 A	-100 A
Boost 8V50A	+8V	-2V	+50A	-50A
Boost 10V60A	+10 V	-2 V	+60 A	-60 A

Voltage Drive

Maximum voltage	Depends on booster model
Voltage scaling	x1
Voltage ranges	Selected by potentiostat
Voltage accuracy	±0.1% of full scale

Voltage Monitor

Scaling	x1 of Cell Voltage
Range	Min V to Max V

Current Drive

Maximum current	Depends on booster model
Current scaling	x10,000
Current ranges	Selected by potentiostat
Current accuracy	±0.1% of full scale

Current Monitor

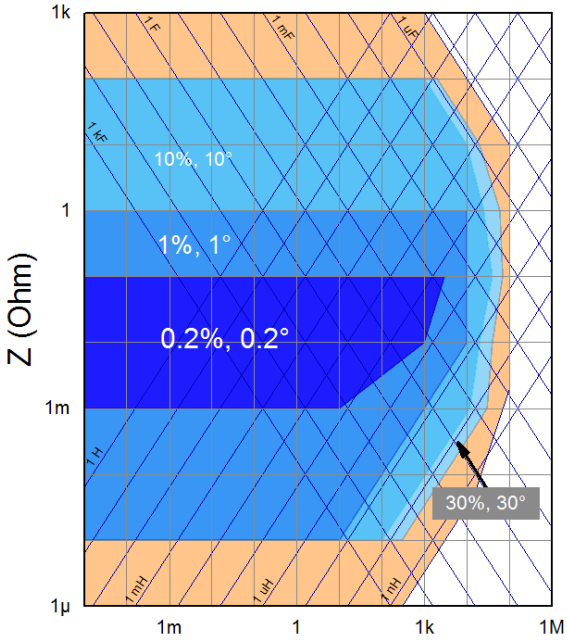
Scaling	1/10,000 of Cell Current
Range	±10 mA Corresponds to ±100 A

Cell Connections

Drive	2x Screw connections
Sense	Direct to potentiostat

Front Panel Controls

Stop button	Mechanical latching



Impedance measurement accuracy

Note: 1V ac excitation, except at lower impedance levels where the excitation is reduced to maintain the current limit.

General

Power consumption	1500 VA
Supply (single phase)	47-63 Hz 100 V to 240 V
Dimensions (w x h x d)	483 x 390 x 630 mm 19 x 15.4 x 24.8 in
Weight	35 kg / 77 lbs
Safety complies with	EN61010-1: 2001 / IEC61010-1: 2001
EMC complies with	EN61326-1: +A1 +A2 IEC61326-1: +A1 +A2

Potentiostat Cables (one set included)

BOOSTMODCABLES	ModuLab XM ECS ModuLab ECS
BOOST1470CABLES	CellTest system
BOOST1287CABLES	1287A, 1285A, 1280Z

Potentiostat errors should be added to the above specification.

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