

MM58E *VarioV* series

Very high Power potentiostats
for electrolyzer studies

Features

- High power deliverable : 1500 or 3000 W
- Wide voltage range to 60 V (and above)
- 4 types available to customize an optimal solution
- Efficiently integrates DC and AC performances
- 1 to 2 quadrants operations
- Built-in Impedance Spectroscopy 1mHz -100KHz range, with additional inputs
- Synchronous operation on multichannel configuration
- Built to test electrochemical processes, and electrolyzers at life-size conditions



For over 10 years the MMI 500 series potentiostats have been delivering to our customers reliable operations and consistent results with an unbeatable record of MTBF of more than 100 yrs calculated on real data.

The *VarioV* technology gives for the first time independent choice of power and voltage compliance paired with optimized performances and energy efficiency as needed in energy-related studies.

The monolithic construction outperforms the use of boosters without sacrificing the flexibility: single potentiostats can be connected in parallel or in series, or even work in synchronicity for sensitive multi-electrodes or segmented applications.

Built-in 1mHz-100KHz EIS and high rate DC sampling in both sustained and burst mode make the choice simple, with no need for options.

Conveniently housed in rack enclosures, they can be combined in multichannel systems with no effort.

Ethernet based communication let you run the system locally or by remote control.

The 58E *VarioV* will be your workhorse in the lab as well in the production plant for outstanding QC procedures on processes membranes or other products

Materials Mates Italia (MMI) offers complete solutions for electrochemistry , from impedance spectroscopy to high-power multichannel systems for stacks, including standard and customized cells. MMI also integrates in their systems a series of additional ancillary equipment to complete the test setup.

We furthermore supply flexible software drivers to manage the equipment from external programs.

Please feel free to contact us for a free evaluation of your system requirements.



58E V family common features

Generation	
Voltage control range (pstat mode)	Vmin to Vmax-1 (@ full current output)
Voltage compliance	Vmin to Vmax
Current output	To specified current limits
Voltage resolution	10 uV to 10 V 100uV to 100 V
Output modes	One quadrant with zero volt (2 quadrant with 10% of current on sink opt.)
Current resolution	1 mA /0.1 mA
Accuracy	0.1 % +/- 0.1% f.s up to 20 A 0.3 % +/- 0.1% f.s up to 200 A
Slew rate	>1 V / μ S rise and fall (Hi speed set)
Potentiostat Bandwidth	Selectable 50 Khz- 1 Khz (Hi speed/Hi stab) on < 250 mV pk
Protection	Hardware Current limiter @ 1,2 Imax + thermal bi-stable cutoff
Measurement	
Current measure	2 ranges 0.1 / 1 FS
Current resolution	1 mA /0.1 mA
Current Measuring accuracy	0.1 % +/- 0.1% f.s up to 20 A 0.3 % +/- 0.1% f.s up to 200 A
Voltage measure	+/- 10 -100 V
Voltage resolution	10 uV to 10 V , 100uV to 100 V
Voltage Measuring accuracy	0.1 % +/- 0.1 % f.s. (RE1-RE2)
Reference Electrodes	
Input impedance	5 x 10 ¹¹ up to +/- 48 V > 10 Mohm other ranges
Biassing current (amp. Only)	< 1 nA @ 25 °C up to +/-48 V < 10 nA above
Common mode range	+/- full scale
Common mode rejection	> 60 dB over the full freq. range
Meters and Interfaces	
A/D resolution	22-16 bit
Max sampling rate	1000 sample/sec (continuous) 800Ksamples/sec (Burst mode)
Synch and triggering interfaces	3-5 V TTL compatible inputs, 3.3 V outputs
EIS module performance	
Measuring frequency range	1mHz- 100 KHz
Accuracy	+/- (0.05% + 0.1/kHz) of the desired frequency
Amplitude accuracy	0.1 %
Phase accuracy	+/- (0.05 Deg. + 0.01 Deg. /Khz)
Operating modes	Standard/fast/low noise/low freq. optimized
Basic Accuracy in impedance	0.1%
Integration time control	Time /n° of sinusoid / mixed (time or n° of sinusoids whatever is the greatest)
General	
Communication Port	Ethernet 10/100 J45

58E power stages

Models available

Model	Volt	Current
58E-10100	10 V	100 A
58E-10200	10 V	200 A
58E-20100	20 V	100 A
58E-6050	60 V	50 A

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