

Powerstat-20 Specifications

Powerstat-20 is equipped with a modern high performance differential electrometer.

General Cell Control

Compliance Voltage	±12 V
Max Output Current	±20 A
Rise Time	60 us for 0.2 Ohm load (0%-100% signal)
Slew Rate	0.8 V/μs
Bandwidth	6 kHz (-3 dB, 1 Ohm load)
Applied DC Potential Ranges	1 (±10 V)
Applied Potential Resolution	0.3 mV
Applied Potential Accuracy	< 0.04% FSR
Current Autoranging	In Galvanostat Mode
Applied DC Current Ranges	4 (±1 mA, ±100 mA, ±1 A, ±20 A)
Input Impedance	250 GOhm parallel to 8 pf
Maximum Update Rate	4 μs
Maximum Scan Rate	100 V/s
External Control	1 AO, 1 AI, 2 DO

Potentiostat Mode Control

Applied DC Potential Ranges	1 (±10V)
Applied Potential Resolution	0.3mV
Applied Potential Accuracy	<0.04% FSR
Slew Rate	0.2 V/us
MAX scan rate	500 V/s
Input Bias Current	2 pA

Potentiostat Mode Current Measurement

Current Ranges	4(±1mA, ±100mA, ±1A, ±20A)
Potentiostat Min to Max Measured Current	0.3uA to 20A
	0.6mA at ±20A
	32uA at ±1A
Best Current Resolution	3uA at ±100mA
	30nA at ±1mA
Best Current Accuracy	0.3 - 0.03% of FSR Depending on Range

Galvanostat Mode Control

Applied DC Current Ranges	4($\pm 1\text{mA}$, $\pm 100\text{mA}$, $\pm 1\text{A}$, $\pm 20\text{A}$)
	0.6mA at $\pm 20\text{A}$
Applied Current Resolution by Range	32 μA at $\pm 1\text{A}$
	3 μA at $\pm 100\text{mA}$
	30nA at $\pm 1\text{mA}$
Applied Current Accuracy	0.3 - 0.03% of FSR Depending on Range

Galvanostat Mode Potential Measurement

Potential Ranges	1 ($\pm 10\text{V}$)
Best Potential Resolution	0.3mV
Accuracy	0.03% FSR

EIS Measurement

Frequency Range	10mHz - 10kHz
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Potentiostat Mode

Max Applied AC amplitude	20mV
AC Applied Potential Resolution	0.6 μV
Min Applied AC amplitude	60 μV
	0.6mA at $\pm 20\text{A}$
AC Current Best Resolution	32 μA at $\pm 1\text{A}$
	3 μA at $\pm 100\text{mA}$
	30nA at $\pm 1\text{mA}$

Galvanostat Mode

Max AC amplitude	maximum selected current range
	0.6mA at $\pm 20\text{A}$
AC Applied Current Resolution	32 μA at $\pm 1\text{A}$
	3 μA at $\pm 100\text{mA}$
	30nA at $\pm 1\text{mA}$
AC Voltage Range	1 ($\pm 10\text{V}$)
AC Voltage Best Resolution	300 μV

iR Compensation

Mode:	Current interrupt
Min Interrupt time:	8 μs
Max Interrupt time:	800s

AUX inputs outputs

Analog Input for AUX Potentiostat Control	±10V
2 Digital Outputs	±10mA MAX current sink
Thermocouple input	2
Frequency counter	1
External Trigger Input/Output	1

Data Acquisition

Acquisition Speed	250 k samples/s (Aggregate) 125 k samples/s/ch. (min 2 channels)
DAC Resolution	16 bits

http://nuvant.com/products/potentiostat_galvanostat/powerstat/