

HIGH POWER POTENTIOSTAT / GALVANOSTAT

WENKING MODEL

HP 96

The high - power potentiostat HP 96 is a most valuable instrument for high - current applications in electrochemistry, replacing its predecessor HP 88. New features make it both more convenient and more powerful: It can be operated either in potentiostatic and galvanostatic mode, the potential is displayed on a 4 1/2 digit LCD meter, and the bandwidth has further increased, now exceeding 100 kHz. The new power stage made it possible to reduce weight and size of the housing. On the other hand, it has inherited the good properties of the HP 88: The rugged construction, the enormous life-time and the accuracy. Furtheron, the CE voltage range can be switched between 40 V and 20 V, corresponding to 5 A or 10 A rated current, respectively. So the output limitations can be best adapted to the electrochemical requirements.

Main applications of this versatile potentiostat are potential or current control techniques when large surface areas of the working electrode and high current densities are conditioned by the test. Battery and fuel cell investigations, electroplating tests, metallographic preparations or other preparative work are examples for the use.

For special high - current applications, the model **HP 96 - 20** offers up to 25 A current at max. 12.5 V CE voltage.



- CE Output range selectable: 20 V / 10 A and 40 V / 5 A
- Optionally 12.5 V / 20 A (**HP 96 - 20**)
- Potentiostatic / Galvanostatic Function
- Option: Control Interface PC-H

The interface PC-H offers digital control of range and operation mode settings. It is compatible to Keithley DAS boards (1602, 1702, or 1802), but can be used also with other A/D - D/A boards having similar combination of A/D, D/A and digital I/O channels. Our electrochemical software (CPC-DA V3.7) is best fitted for convenient handling of the HP 96 power potentiostat family.

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INTELLIGENT CONTROLS

SPECIFICATIONS HP 96

AC - power 115 / 230 V, 50 to 60 Hz, 450 VA
Stabilisation Range $\pm 10\%$ of nominal line voltage

POTENTIAL UNITY - GAIN - BUFFER (REFERENCE ELECTRODE INPUT)

Input impedance $> 10^{12} \Omega$, 5 pF in parallel
Input range $\pm 10 \text{ V}$
Input bias current $3 \cdot 10^{-11} \text{ A}$ at 25 °C ambient temperature
Bandwidth (-3dB) 3 MHz
Small signal rise time $< 10^{-6} \text{ s}$
Slew rate 10 V/ μs
Output noise $< 20 \mu\text{V rms}$, ripple negligible
Drift 50 $\mu\text{V}/10 \text{ h}$, 100 $\mu\text{V}/100 \text{ h}$, 5 $\mu\text{V}/^\circ\text{C}$

CONTROL VOLTAGE SOURCE

Range $\pm 1000, 2000$ or $4000 \text{ mV} \pm 0.2\%$
Temperature coefficient $3 \times 10^{-5}/^\circ\text{C}$

POTENTIOSTAT

Control input resistance 200 k Ω }
Superimposing accuracy 0,1% } both inputs
Control input range $\pm 10 \text{ V}$ }
Open loop gain $> 2 \times 10^6$ at d. c.
Unity gain crossover 100 kHz
Small signal rise time $< 10 \mu\text{s}$ (closed loop, resistive load)
Slew rate 10 V/ μs
Full power output 25 kHz
Noise referred to control input 50 $\mu\text{V rms}$, ripple negligible
Current output noise and ripple $< 1 \mu\text{A rms}$ (reduced by bandwidth clipping)
Drift referred to control input 50 $\mu\text{V}/10 \text{ H}$, 100 $\mu\text{V}/100\text{h}$, 10 $\mu\text{V}/^\circ\text{C}$
Current ranges 0,1 mA, 1 mA, 10 mA, 100 mA, 1 A, 10 A
(correspond to 2 V output voltage)
Accuracy (current -to-voltage conversion) Range 10 A: 1%, other ranges better than 0.3%

Operating limits	max. voltage	max. current	rated output power
High CE voltage	$\pm 60 \text{ V}$	$\pm 5,5 \text{ A}$	$\pm 40 \text{ V}$ at $\pm 5 \text{ A}$
Low CE voltage	$\pm 30 \text{ V}$	$\pm 10,5 \text{ A}$	$\pm 20 \text{ V}$ at $\pm 10 \text{ A}$

Galvanostatic Mode

Bandwidth (load: short circuit) 70 kHz
Slew rate 5 V / μs

Option PC-H Interface

Interface Type: 8 bit I/O, requires Keithley DAS 1602 or DAS 1802 multifunction board or similar boards
Controlled functions: Range setting, operation mode
Additional features 32 pin Centronics type connector, feeds also potential and current signals using our cable combination.

Dimensions

Housing 550 x 200 x 380 mm W x H x D
Weight net 19 kg net, 26 kg gross

<http://www.bank-ic.de>