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POTENTIOSTAT / GALVANOSTAT WENKING TG 97

The TG 97 Laboratory Potentiostat is an economically priced instrument for standard electrochemical applications in many fields of investigation. It replaces our predecessor model LT 87.

The medium power output of 20 W will be sufficient for most laboratory work. The TG 97 can be switched from the potentiostatic mode to the galvanostatic mode by the operation switch. The current resolution reaches down to the nA range. The grounded working electrode principle keeps the sensitivity to noise-pickup low.

- Small, but Powerful: ± 20 V at ± 1 A
- Easy to Operate
- Potentiostatic / Galvanostatic Function

The internal control voltage source operates from -2 to 2 V. An external control voltage can be superimposed in the range ± 10 V. All our auxiliary equipment fits this potentiostat.

Both the low-impedance potential output and the current output refer to ground. The current signal level of 2 V per full range current is well adapted for A/D - conversion.

The TG 97 is easy to operate. It is safeguarded against operating errors. Inputs are protected against overvoltages up to 100 V. Output voltage overload is indicated by signal lamps. The output current is limited slightly above 1 A, so short - circuits in the cell do not affect the instrument.

Working electrode and counter electrode are connected by standard banana terminals, the reference electrode by a BNC - connector. The working electrode can be connected by two separate cables, thus avoiding errors by cable and contact resistances of the current conductor.

Specifications TG 97

AC-Power	230 V (optionally 115 V), 50 to 60 Hz, 30 W
Stabilisation rang	+ 10% and - 15% of nominal line voltage

Potential Unity - Gain - Buffer (reference electrode input)

Input impedance	$> 10^{11}$ Ohms, 5 pF in parallel
Input control range	± 5 V, overload protected up to ± 100 V
Input bias current	$3 * 10^{-11}$ A at 25° C ambient temperature
Bandwidth (-3 dB)	3 MHz
Small signal rise time	less than 10^{-7} s
Slew rate	10 V / µs
Potential output	1 k W source resistance
Noise	< 30 µV rms
Drift	< 50µV / 10 h, 100 µV / 100 h, 10 µV / °C
Line voltage feed through	negligible for fluctuations of ± 10%

Control Voltage Source

Range	± 2000 mV
Accuracy	2 mV deviation from dial reading
Temperature coefficient	$< 10^{-4}$/°C

Potentiostat Amplifier

Control input resistance	200 kOhms
Control input range	± 10 V, overload protected up to ± 150 V
Open loop gain	typ. 10^6 at DC
Roll - off	20 dB/decade of frequency
Unity gain crossover frequency	100 kHz
Small signal rise time	< 5 µs (closed loop, resistive load) typically
Slew rate	5 V / µs max.
Noise referred to	30 µV rms, ripple included,
Drift referred to control inputs	< 50 µV / 10 h, 100 µV / 100 h, 10 µV / °C

Current ranges	0.01 mA	0.1 mA	1 mA	10 mA	100 mA	1 A
Accuracy	± 2 %	0.2%	0.2%	0.2%	0.2%	0.5%

Accuracy (meter)	2 %
Overload protection	unlimited

Galvanostat

Conrtrol input	± 2 V corresponds to full range current
Current rise time	< 10 µs (cell resistance < range resistor resistance)
Potential output	carries the reference potential within 0.1%

Dimensions	245 x 210 x 120 mm
Weight	3.5 kg

Option

USB-Interface MYDAQ from National Instruments, including connection cable set for TG97 and basic electrochemical software