



Overview



Potentiostat/Galvanostat

- $\pm 500 \text{ mA}$, $\pm 10 \text{ V}$
- Frequency range: $10 \text{ }\mu\text{Hz}$ - 100 kHz
- Portable
- Computerized
- For lab usage or outdoor experiments
- Special evaluation routines
- Implemented methods:
 - EPR
 - LPR
 - CoulCount (ECN)

Description

PguTouch is a high-performance potentiostat/galvanostat that combines modern operation with proven measurement technology. It is either controlled via an integrated 7-inch touchscreen for intuitive, direct operation without additional controls or via an Ethernet connection and the software EcmWin as a standard potentiostat. At its core is a fast, power-efficient ARM Cortex microcontroller, paired with a 4-channel 24-bit AD converter for measurement and a 26-bit DA converter for the scanner, giving the device the features of a high-quality lab instrument. It also includes a built-in impedance analyzer covering a frequency range of $10 \text{ }\mu\text{Hz}$ – 100 kHz .

The device connects to our EcmWin software to operate as a standard potentiostat, or can be pre-programmed with stand-alone “sequences” for field use, covering all typical measurement modes (OCP, Hold, Scan, Pulse, and combinations thereof), as well as electrochemical potential and current noise measurement. It also supports 3/4 working electrodes in multiplexed mode, allowing two electrode materials to be measured in one continuous process — useful, for example, for field analysis of special samples.

A 16 GB SD card lets the controller store large amounts of data, enabling stand-alone measurements in the lab as well. The current measurement state can be saved, so a long-term measurement can resume from the same point after a power interruption. The instrument can also run on an external battery pack. With a maximum current of 500 mA and a lowest range of 1 nA , it offers portability alongside strong resolution for low signals. The built-in touch display allows comfortable operation and on-device charting of measured data. Included evaluation routines make it suitable for quality testing in various processes, such as monitoring a galvanic bath during automotive component coating.

Technical details

Output parameter	
Compliance voltage	$\pm 12\text{V}$
Polarisation ranges	Potentiostat: $\pm 10\text{V}$ Galvanostat: $\pm 500\text{mA}$
Current ranges	10 steps to 1 nA
Resolution	$1\text{ mV} = 1\text{ pA}$
Supply parameter	
Supply voltage	$9\text{--}36\text{ V}$
Supply current	$0.3 - 1\text{A}$
General parameter	
Modes	Potentiostat and Galvanostat
Impedance analyzer	additionally available, Frequency range: $10\text{ }\mu\text{Hz} - 100\text{ kHz}$
Electrode connections	CE, RE, WE-SENSE +2 WE, WE-shield for ZRA
Floating mode	Yes, switchable
Electrometer input impedance RE	$10^{13}\text{ }\Omega / 10^{15}\text{ }\Omega$ on request
Bandwidth	100 kHz
ADC	24 bit, max. resolution $1\text{ }\mu\text{V}$
DAC	26 bit at $\pm 10\text{ V} \rightarrow 330\text{ nV}$ steps
Resolution of setvalue	$< \pm 1\text{ mV}, \pm 0,01\text{ }\%$
Resolution of measurements	$< \pm 1\text{ mV}, \pm 0,01\text{ }\%$
Sample rate	Standard 100 Hz at 24 bit, 1 kHz at 16 bit
Interface	Ethernet/USB
Software	EcmWin, EcmView
Methods	OCP, hold experiments, reversed scan cyclic voltammetry, chronoamperometry, sequence measurement with battery charging and discharging functions, measurement current density versus time, current density versus potential
Additional inputs	none
Additional outputs	none

Equipment

- 7" TFT display in a well shielded aluminum chassis
 - RJ45-connector for communication to PC
 - 7-pole circular connector for connection to electrodes
 - Micro USB for firmware update
 - SD Card for saving measurement results
- Optional:
- Case (optional)
 - $9 - 36\text{ V}$ DC power supply via AC adapter or battery pack (optional)