



Overview

Potentiostat, Galvanostat

- Portable
- Computerized
- For lab usage or outdoor experiments
- Special evaluation routines
- Implemented methods:
 - EPR
 - LPR
 - CoulCount (ECN)

Description

The **PguTouch** is our new stand-alone potentiostat. We have transferred our embedded interface software to a powerful ARM Cortex microcontroller, that is much faster and use less power, and developed an own interface with 24 Bit A/D converters for measurement and 26 Bit D/A converters for highest resolution of the scanner (300nV steps). The Ethernet connection allows a very flexible communication between computer and potentiostat. A WLAN interface for wireless communication with the potentiostat is in preparation.

The user can work with this instrument in a lab as well as in the field. The device can be connected with a computer to our EcmWin Software and work like a normal potentiostat. But the instrument also can "loaded" with routines (so-called sequences) that allow the stand alone mode in the field basically with all typical measurement modes like **OCP**, **Hold-**, **Scan-**, **Puls** and a combination of these methods. Another feature is the measurement of electrochemical potential and current noise (impedance in preparation). Furthermore we designed the connection of four working electrodes that can measure in a multiplexed mode. More than one electrode material can used in a continuous process of measurement, for instance for the analysis of some specials in the field.

The controller of the potentiostat is equipped with an 2 GB SD card to save a lot of data. This feature also can be used in the laboratory so you need no computer for measurement. It is possible to save the state of the actual measurement and in case of a power down a long time measurement can be restarted at the same point as the power breaks. The instrument can also be driven with an external battery power pack.

With maximum current of 100mA and the lowest range of 10nA, the user has a nice portable instrument with also a good resolution of lower signals. The build-in touch panel with graphic display allows a comfortable operation of the instrument as well as the display of charts of the measured data.

Special evaluation routines are included, so the customer can use this for quality tests in several processes, for example for quality control of a galvanic bath during the coating of components for the car industry.

Equipment

- 4.3" TFT display in a well shielded aluminium chassis
- RJ45-connector for communication to PC
- 7-pole circular connectors for connection to electrodes
- 9 – 36 V DC power supply via battery pack or AC adapter
- Power consumption 5 – 8 W
- Micro USB for firmware update
- SD Card for saving measurement results

Technical Details

Dynamic range	
Compliance voltage	±12V
Polarization range	+/- 8V potentiostatic, +/-100mA galvanostatic
Current range	8 Steps from 100mA up to 10nA
Input resistance	
Reference electrode	10 ¹³ Ohm
Internal resistance of ammeter	10 ⁻⁴ Ohm (current to voltage converter)
Interface	
Connection	Ethernet
Converter	1 A/D converter for multiplexed detection of U and I with 24 bit, resolution theoretically 1µV, practically ca. 50µV
Current measurement	10nA as current-proportional voltage of +/- 10V results 1pA = 1mV, recorded with 24 bits for theoretically 1fA, practically 0,5 pA
Max. acquisition rate of the interface	200 Values per second per channel

