



Overview



Potentiostat/Galvanostat

- • ± 300 mA (500 mA peak), ± 10 V
- 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 controlled entirely via an integrated 7-inch touchscreen, which enables intuitive and direct operation without the need for additional controls. Core of the instrument is a powerful ARM Cortex microcontroller that is much faster and uses less power. A 4-channel 24 bit AD converter for measurement and a 26-bit DA converter for the scanner give the features of a high-quality lab instrument to the device. 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 device can be connected with a computer to our EcmWin Software and work like a normal potentiostat. But the instrument can also be "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-, Pulse and a combination of these methods. Another feature is the measurement of electrochemical potential and current noise. Furthermore we designed the connection of 3 working electrodes that can measure in a multiplexed mode. More than one electrode material can be 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 a 2 GB SD card to save a lot of data. This feature can also be used in the laboratory so no computer for measurement is needed. 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 300 mA and the lowest range of 10 nA, the user has a portable instrument with a good resolution of lower signals as well. 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 it can be used for quality tests in several processes, for example for quality control of a galvanic bath during the coating of components for the car industry.

Technical details

Output parameter	
Compliance voltage	± 12V
Polarisation ranges	Potentiostat: ± 10V Galvanostat: ± 500mA (± 300mA continuous)
Current ranges	10 steps from 500 mA to 1 nA
Resolution	1 mV = 1 pA
Supply parameter	
Supply voltage	9–36 V
Supply current	0.3 - 1A
General parameter	
Modes	Potentiostat and Galvanostat
Electrode connections	CE, RE, WE-SENSE +2 WE, WE-shield for ZRA
Floating mode	Yes, switchable
Electrometer input impedance RE	$10^{13} \Omega / 10^{15} \Omega$ on request
Bandwidth	100kHz
ADC	24 bit, max. resolution 1 µV
DAC	26 bit at ±10 V → 330 nV steps
Resolution of setvalue	< ±1 mV, ±0,01 %
Resolution of measurements	< ±1 mV, ±0,01 %
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 V DC power supply via AC adapter or battery pack (optional)