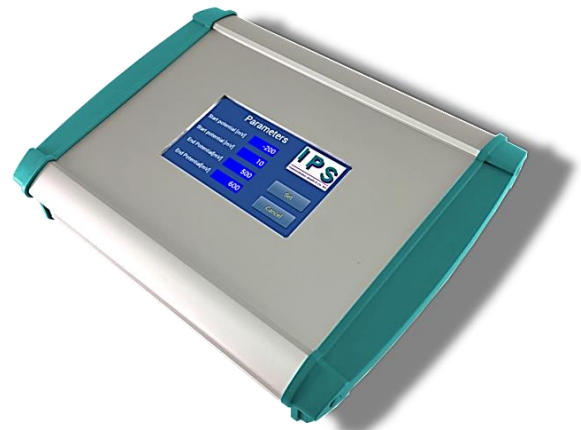


PguTouch

Overview

The portable, computerized potentiostat / galvanostat for lab usage inside and field experiments outdoor.



Description

The **PguTouch** is derived from our Pgu-MOD TP. This was our first version of a stand-alone potentiostat. In the meantime we have transferred our embedded interface software to a powerful ARM Cortex microcontroller, that is much faster and use less power. Additionally we developed an own measurement 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 is in preparation, we plan to finish it this year, so we can communicate wireless with the potentiostat.

The main idea of this instrument was to design a potentiostat/galvanostat that can be used in a lab as well as in the field. In a first step the device can be connected to our EcmWin Software and work like another 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 be measured 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 an 8 GB SD card, so we can also save a lot of data (this feature also can be used in the lab, you need no computer for measurement).

We also can save the state of the actual measurement. In case of a power down, we can restart a long time measurement at the same point as the power breaks (or you use a battery power pack to supply the instrument).

With a maximum current of 100mA, you have a good power for a portable instrument. The lowest range is 10nA, it's also OK for an acceptable resolution of lower signals.

The built-in touch panel with graphic display allows a comfortable operation of the instrument as well as the display of charts of the measured data.

For the future we plan to include some special evaluation routines that customer can use this for quality tests in several processes. The older model was used for quality control of a galvanic bath during the coating of components for the car industry.

Equipment

- anodized aluminium chassis
- 4.3 " TFT display with 480 x 272 resolution
- RJ45-connector for network communication to PC
- Micro USB
- 7-pole circular connectors with threaded joint

Technical Details

Dynamic range	
Compliance voltage	±11V
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	1000 Values per second per channel