PGU-MOD

Overview

Potentiostat/Galvanostat

- Compact design
- Low noise power supply
- optional module for electrochemical noise

Description

The potentiostat/galvanostat **PGU-MOD** is mainly designed for computer driven applications. It is a compact device and will be connected via Ethernet to a computer. The main power is 115 V/230 V and the stabilization of the internal voltage is done by linear components and therefore extra ordinary low noise and stable voltage. This is very effective for the performance of the system due to the existing spikes in almost every switching power supply. These spikes can be eliminated in the measurement by special methods but they are still present and have an influence of the electrochemical process.

A software package is included in the system consisting of **EcmWin** for controlling, polarizing, data acquisition, and data storage (ASCII-files) and **EcmView** for visualization and data handling.

Electrodes are connected via BNC-connectors. Operation of the system can be standard 3/4 electrode arrangement as well as a 2 electrode arrangement, where the counter electrode and the reference electrode are short-circuited. There is also an optional module for measurement of electrochemical noise available.

Technical details

Output parameter	
Compliance voltage	± 12V
Polarisation ranges	Potentiostat: ± 10V Galvanostat: ± 200mA (± 500mA)
Current ranges	8 steps from 200 (500) mA to 100 nA
Resolution	100 nA=10000 mV in 100 nA range, 10 pA=1 mV
Supply parameter	
Supply voltage	9–18 V DC via wide range desktop power supply double galvanically isolated (in floating mode) Power supply: Input: 100–240 V, 47–63 Hz
Supply current	1.6A
General parameter	
Modes	Potentiostat and Galvanostat
Impedance analyzer	none
Electrode connections	2, 3, 4 Electrode (CE, RE, WE, WE-Sense)
Floating mode	Yes, switchable
Electrometer input impedance RE	10^{13} Ω
Bandwidth	10kHz
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 200 Hz at 24 bit, 1 kHz at 16 bit
Interface	Ethernet
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