

## CHEMICAL AND PHYSICAL CHARACTERIZATION

### Electrochemical analyser

PGSTAT 302N

The potentiostat/galvanostat PGSTAT 302N is used for the study of the electrochemical properties of metallic materials and coatings: it allows to test the corrosion resistance of the samples in different environmental conditions.

In potentiostatic mode, a potentiostat/galvanostat (PGSTAT) will accurately control the potential of the Counter Electrode (CE) against the Working Electrode (WE, tested material) so that the potential difference between the working electrode and the Reference Electrode is well defined, and corresponds to the value specified by the user.

In galvanostatic mode, the current flow between the WE and the CE is controlled. The potential difference between the RE and WE and the current flowing between the CE and WE are continuously monitored.

The value specified by the user is accurately controlled anytime during the measurement by using a negative feedback mechanism.

Thanks to the additional module (FRA32M), it is furthermore possible to perform electrochemical impedance spectroscopy (EIS).

### Specifications

- Compliance voltage range in volt  
30
- Current resolution  
0.0003 % (of current range)
- Input impedance in Ohm  
1 TOhm
- Maximum bandwidth in Hz  
1 MHz
- Maximum current in ampère  
2
- Maximum number of channels  
1
- Maximum number of modules  
8
- Modular instrument  
Up to 4 connections - EIS Module FRA32M
- Number of current ranges  
9.0
- Number of current ranges remarks  
10 nA to 1 A
- Potential and current accuracy  
0.2 % or 0.2 % of current range
- Potential range in volt  
10
- Potential resolution  
0.3  $\mu$ V (gain 1000)

