Features

- Principles of corrosion and corrosion protection on metallic materials
- Oxygen corrosion
- Electrochemical corrosion (local elements)
- Corrosion protection with external voltage and sacrificial anodes

Corrosion damage to metallic components causes considerable economic and technical damages.
The issue of corrosion and corrosion protection therefore plays an important role in technical training.
Corrosion Experimental Unit 32380 allows a variety of factors that influence corrosion processes to be investigated in parallel. Eight glass vessels are available to do this. They allow different materials to be compared under different conditions. The required electrolyte solution is added to the vessels. Up to six specimens can be attached to the cover of each vessel and these are immersed in the solution.
It is possible to connect specimens to an electrical conductor to investigate local elements and the principle of sacrificial anodes. An adjustable power pack allows an external voltage to be connected.
This counters the current flow between precious and base metals in local elements. As result the corrosion rate of the more base metal is reduced.
A diaphragm pump conveys ambient air into the electrolyte solution as required. Flow control valves can be used to individually adjust the gas flow rate for each vessel. It is also possible to feed other gases provided by the laboratory into the electrolyte solution. A pH meter is included to allow the influence of the electrolyte solution on corrosion processes to be investigated and compared.

Specifications

- Investigation of corrosion and corrosion protection measures
- 8 electrolyte vessels with covers and 6 specimen holders each
- Adjustable power pack for application of external voltage
- Air supply via diaphragm pump
- Reversing valve for air or external gas supply
- Adjustment of gas flow rate for each vessel using flow control valves
- Recording of pH value of electrolyte solutions using manual unit
- Pressure range for external gas supply: 0,2...1,0bar

Note: Specifications are subject to change.

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Technical Specifications

- Electrolyte vessels
  - Capacity: 1000mL
  - Material: glass
- Power pack
  - Voltage: 0...30VDC
  - Current: 0...5A
- Diaphragm pump: approx. 260L/h
- Specimens
  - 6x stainless steel, steel, copper, brass, aluminum
  - 3x glass
  - Dimensions: 100x15x1mm
- Measuring ranges
  - pH value: 0...14
  - Resolution: 0,01

Experiments

- Corrosion behavior of different metallic materials (rust / passivation)
- Formation of local elements
- Influence of pH value of the electrolyte solution
- Influence of salt concentration in the electrolyte solution
- Oxygen corrosion
- Corrosion protection
  - External voltage
  - Sacrificial anodes
  - Protective layers

Requirements

- Mains Power 220 – 240V @ 50Hz, 1Ph

Note: Specifications are subject to change.

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