



Overview

The **IPS FlatCell NG (IPS-FC NG)** is an improved version of the proven original version of IPS's modular three-electrode and heatable corrosion measuring cell. Still very useful for larger flat samples that cannot be divided into smaller pieces. Therefore a wide variety of samples can conveniently be mounted as working electrode.

All the benefits of the original IPS-FC are still available. For example, the size of the hole in the lid of the cell cover determines the contact area of a given sample size with the electrolyte. Thus the sample does not have to be shaped to conform to the measuring cell.

What's new

This improved version uses for the filling port for the electrolyte now a plastic plug (PVDF) with a diameter of 20 mm and a cone hole (10 mm + NS ground cone hole) is used. The piece has an M14 standard thread at the bottom with which it is screwed into the plate. A Viton O-ring seal with 13x2.5mm is used as a gasket. Next to the filling hole, there is now a venting hole. It is also equipped with a plastic insert made of PVDF. This insert has a diameter of 8mm and a M12 standard thread at the bottom. The sealing ring is made of Viton with 11x3mm. The drilling hole for the reference electrode is cut to size with a 12mm reamer. In addition to the reference electrode hole, there is also an 8mm hole that is fitted with the same insert as the venting hole. This hole can be used to install a temperature sensor, for liquid degassing or for personal test dependent application.



A Teflon seal (3mm) is now installed in the sample port to reduce crevice corrosion. 10, 15 or 25mm are the standard sizes for this hole. The insertion depth is 1.8mm, so the overlap is 1.2mm..

Description

The design of the **IPS-FC NG** places the Working Electrode (WE) and the Counter Electrode (CE) or a second Working Electrode in opposite position (applies especially to ECN investigations).

The sample to be analyzed is polarized in an electrolyte solution when an anodic, cathodic or sinusoidal potential is applied by means of an EIS measurement. The corrosion behaviour results in the form of corrosion current, noise events or impedance results.

The **IPS-FC NG** is particularly suitable for serial analysis. However, it is basically designed for flat or cylindrical samples of various sizes, in case the customer does not want to cut a sample to a specific size that can be used in a standard cell. A sample with a minimum size bigger than the contact area (up to about 500 x 500 mm and a thickness of 10mm) can be inserted at the WE-side of the cell and is measured via the hole in the lid of the cell. For samples with rough surface, the U-shape module offers a higher pressure on the sample. When using the L-shape module the size of the sample is only limited by one side.

One application of the **IPS-FC NG** is the measurement of coated samples under temperature variation. If a crevice corrosion despite of a Teflon seal appears, you can take a **port hole mask** that opens a smaller part of the sample and covers the crevice.

From the outer side, the sample will be pressed at a hole on the WE-side. Inside a conical hole is drilled, so if there are corrosion products, they will fall down to the bottom of the glass and do not shield the surface of the sample. Through a hole in the top of the WE-side, the Reference electrode will be placed close to the surface of the sample. Both plates are mounted with threaded rods, so they can be easily assembled or disassembled.

As the double walled glass is heatable an optional thermostat can be supplied as an extra.

Usage

- Measurement of OCP, hold- or scan polarization and Impedance
- Electrochemical Noise (ECM)
- Electrochemical Impedance Spectroscopy (EIS)
- Potentiostatic and Galvanostatic
- Flat Samples

Technical Details

Cell	
Volume	About 500 ml
Heatable	yes
Material	
Vessel	Double walled glass (heatable)
Body	Polypropylene
Mounting material	Stainless steel
Reference electrode	Ag/Ag/Cl (Kalomel)
Counter electrode	Platinized titanium rod, length 110 mm