

PAT-Cell-Gas-HT

Battery Test Cell for Heating the Cell Stack to 400°C and Analyzing the Produced Reaction Gases

The PAT-Cell-Gas-HT is an in-situ battery test cell specifically designed to simulate thermal runaway. It can heat the cell stack to temperatures of up to 400°C while simultaneously analyzing the reaction gases produced.

Temperature control is managed through EL-Software, allowing for easy script-controlled temperature changes and ramps.

The reaction gases generated are channeled from the cell base to the carrier gas system and mixed in via a bypass/Laval nozzle. This innovative setup ensures that the carrier gas does not come into contact with the cell stack, thereby preventing the cells from drying out. The carrier gas system connects to the cell using Swagelok quick-connect fittings.

An additional sealable septum port allows for sampling and injecting reactants into the cell base.

The PAT-Cell-Gas-HT utilizes a customized variant of the modular PAT-Core system, the PAT-HT-Core, for cell stack building. To endure the high temperatures, it uses ceramic and stainless steel components.

Key Features

- PAT-Cell design with heatable cell stack up to 400 °C
- Gas sample port and connection for carrier gas system via Swagelok quick couplings
- Optional gas pressure sensor, 0 to 30 bar abs.
- Temperature control via EL-Software with definable heating rates and ramps

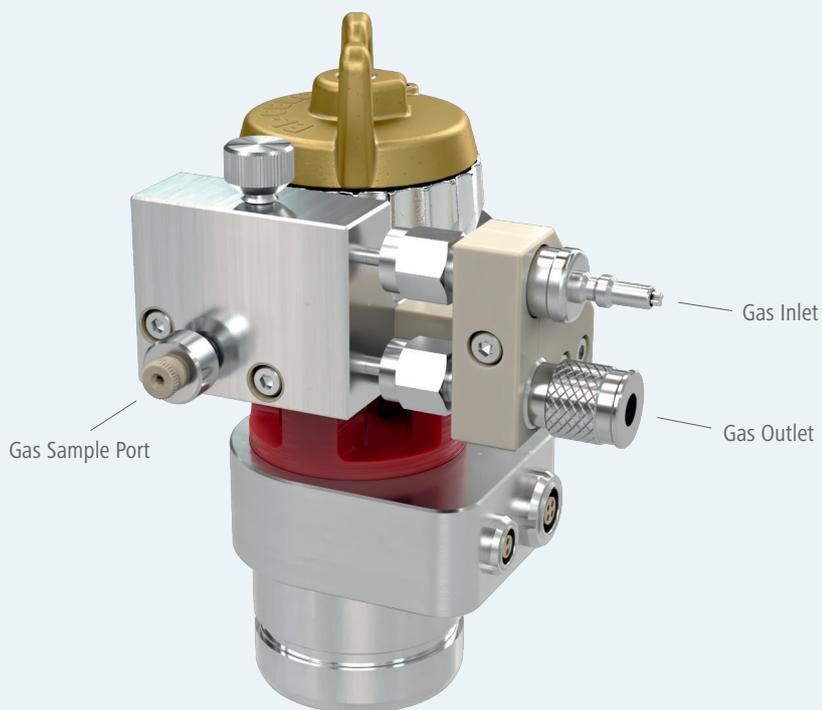
Use Cases:

- Simulate thermal runaway during the electrochemical cycle
- In-situ gas analysis in a flow-through setup
- Additional monitoring of gas pressure (optional) and temperature
- 2- and 3-electrode setup with PAT-HT-Core
- For aprotic electrolytes

Product website:



Gas Connections



The cell features a sample port and connections for a carrier gas flow. Reaction gases are injected into the carrier gas using a bypass system. This setup prevents electrolytic drag or drying out of the cell.

PAT-HT-Core Components for Cell Stack Building



PAT-HT-Core with ceramic insulation sleeves and stainless steel current collectors for use at high temperatures.

Sample Setup



Complete PAT-Cell-Gas-HT setup with Temp-Controller-1 and PAT-Tester-x-8 potentiostat.