SemeaTech Sensor Calibrators for Reliable HF/HCL Sensor Calibration and Bump Testing

Problems in HF and HCL Sensor Calibration

Sensors used to measure hydrogen fluoride (HF) and hydrogen chloride (HCL) require special care during calibration and functional test because both HF and HCl are reactive gases. Due to the feature of acidic and polar properties, they can either react with components of a gas delivery system regularly consisting of tubing, valves, regulators, etc. In other words, they can be easily adsorbed by the system. As a result, the calibration gas does not reach the sensor in the specified concentration during a calibration or test. This yields inaccurate reading due to lack of proper gas delivery.

Although using a surrogate calibration gas to calibrate HF sensor or HCL sensor presents several benefits that avoid the pre-conditioning of the gas delivery system, save time and reduce the cost of ownership, such as using NO2 as a surrogate calibration gas to calibrate an HF sensor, it is always not recommended to use any surrogate gas that is cross-sensitive on any electrochemical gas sensor. It is always most accurate to calibrate the sensor directly with the gas to be measured.

Warning! Using NO2 gas to calibrate HF sensor may reduce the sensitivity of the sensor output.

SemeaTech HF/HCL Sensor Calibrators

To streamline HF sensor and HCL sensor calibration and bump testing while improving accuracy and reliability, please use Semea HF/HCL Sensor Calibrators.

The Semea Sensor Calibrators simplify HF/HCL sensor maintenance by replacing cumbersome surrogate gas systems with a portable, self-contained solution. Its direct HF/HCL delivery ensures higher accuracy, reduces setup time, and enhances field usability.

Benefits of the Sensor Calibrator

1. **Direct HF/HCL Calibration:**
   - **HF or HCL gas** is in direct contact with the sensor to be measured, without the need to transport through the pipeline, eliminating the error caused by the adsorption of the pipeline.
   - Reliable, simple operation, convenient to use at the scene.
2. **Simplified Setup**:
   - Self-contained device with an equilibrium gas chamber—no external cylinders, regulators, or tubing required.
   - Reduce pre-conditioning steps.
3. **Time Efficiency**:
   - Fast initialization.
   - Ideal for frequent field bump tests or lab calibrations.

4. **Portability and Safety**:
    - Lightweight (220 g) and handheld—easy to transport and deploy.
    - Minimizes exposure to hazardous gases during setup.
5. **Cost Savings**:
    - Reduces consumable costs (e.g., HCl/NO_2 cylinders, Regulators, Teflon tubing).
    - Reusable up to **200 tests or 6 months** (whichever comes first).
6. **For technical support or purchasing:**
   Website: www.semeatech.com | Email: info_us@semeatech.com