Edgetech Instruments

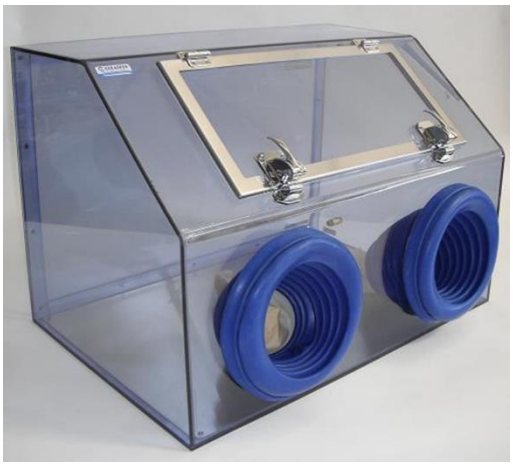
Aluminum Oxide Moisture Transmitter Application Note

Application: Glove Boxes

Application Description:

Glove boxes or isolation chambers provide a controlled and pure environment for a wide variety of applications. Inert gases are used in a glove box to blanket the containment in a neutral background environment. Examples of glove box applications include carrying out reactions with delicate or hazardous materials, sensitive micro-assembly of electronic devices, high purity welding, lithium battery manufacture, pharmaceutical manufacture, and semiconductor lithography. Typical blanketing gases are nitrogen, helium, and argon.

To ensure the blanketing gas has properly purged the environment, moisture sensors are installed within glove box environment, on the purge gas exhaust or in the supply side stream.



Why Moisture Measurement is desired/required:

The presence of moisture in the blanketing gas for a glove box or isolation chamber can cause serious contamination problems. For example, moisture or oxygen may change yields, enable side reactions with reactants or products, or affect the end product's surface finish or structural integrity.

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Typical Application Conditions/Parameters:

Moisture Level:

- From less than 1 PPMv to 10,000 PPMv
- Dew points from -80°C to +10°C (-112 °F to +50 °F)

Pressure Level:

- Slight vacuum to slight positive pressure

Temperature:

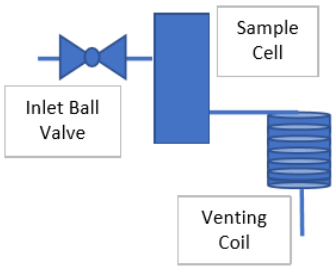
- Typically room ambient

Equipment Recommended:

Product name and/or model number: AcuDew Moisture Transmitter

Potential Sample Systems depending on the conditions of the instrument air line:

A. Insitu Installations: No Sample System
   a. The AcuDew can be mounted through the wall of the glove box. The procees connection on the AcuDew is a ¾”-16 UNF thread. This can be adapted to a ¾” NPT(M) thread or a KF25 flange.
B. Positive Pressure Process Line Installation: Typical Sample System:



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C. Vacuum Pressure Process Line Installation: Typical Sample System: