Sample System Design is Key to Ensuring a Reliable Moisture Measurement in Your Plant

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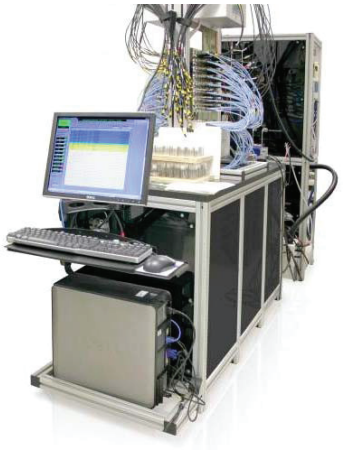
Published on June 21, 2016

https://www.linkedin.com/pulse/sample-system-design-key-ensuring-reliable-moisture-your-mckeogh?trk=prof-post

Of all the process control analytical measurements in the plant, moisture is one of the most difficult to get right. A major factor in determining the reliability of the measurement is the design of the sample conditioning system in which the analyzer is installed. This is further complicated by the fact that in many installations, the sample conditioning system may be supplied by a third party integrator, who may not be familiar with the analyzer sampling requirements, as stipulated by each analyzer manufacturer. The sample system allows for conditioning of the fluid being sampled in terms of pressure, flow and temperature control and also contaminant removal. It also facilitates maintenance on the analyzer without the need to shut down the process and generally extends its life.

Some good practices for moisture analyzer sample system design and installation are:

- Extract a sample from the middle third of the process pipe (pipe diameter allowing);
- Locate the sample system as close to the process sample point as possible;
- Ensure wetted materials of tubing and system components are 316SS;



Aluminum Oxide Moisture Probe Calibration System

- Eliminate any dead legs in the sample system which can be moisture traps, potentially causing slower response and falsely high readings;
- For moisture measurement in gases where liquid contaminant may be present, use a coalescing type filter with running bypass to continually sweep away any coalesced liquids;
- For moisture measurement in liquids where particulate contaminant may be present, use a particulate type filter;
- Minimize the amount of sample components between the sample point and analyzer, if components can be located downstream of analyzer, they should be;
- If the sample system is located outdoors, control the temperature in the cabinet, using cabinet coolers in hot climates and heaters in cooler ones.

Get the sample system design right and you are well on the way to a reliable measurement.

For more information on the Panametrics and General Eastern moisture product families and services offered by GE, visit https://www.gemeasurement.com/moisture-and-humidity-measurement.

Gerard McKeogh is the Global Sales Leader for the Gas & Moisture Products for GE Digital Solutions.