
Moisture sensor calibration: Does it really change?

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Most users of moisture analyzers would prefer to have equipment that does not require calibration. Calibration may require an instrument to be out of service for a period of time, is an additional operating expense, and requires an instrument technician to spend time servicing the analyzer. However, despite claims of “maintenance-free” or “calibration-free”, all process moisture analyzers eventually need to be calibrated. Why do the sensors used on moisture analyzers change in calibration?

Contact based sensors are exposed directly to the process fluid.

Contaminants in the process can deposit on the sensor, particularly if a well-designed sample system is not present. At a minimum, this may require the sensor to be cleaned or purged, and depending on the type of contaminant, it may necessitate a recalibration.

Changes in process conditions, such as temperature, pressure or composition, can impact an analyzer's calibration. Laser-based moisture analyzers are calibrated for a specific background gas composition range. If changes in the background gas composition

are significant enough, errors in the moisture reading can occur and necessitate a calibration of the analyzer. For all moisture sensing technologies, operation outside the temperature and pressure specifications can potentially cause damage to the sensor that may require calibration or even sensor replacement.

Since the operating process conditions do not remain the same over time and unexpected process upsets occur, users of moisture analyzers should anticipate the need to periodically calibrate their equipment. While some field checking is possible, moisture calibration is not simple and should be performed by the manufacturer or certified representative. It is recommended that users discuss calibration requirements of the equipment with the manufacturer during the specification stage of a project and consider the **service options** that the manufacturer may offer to optimize the analyzer's performance and overall life cycle management.

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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>.

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