

Calibrating Relative Humidity Probes using a Humidity Generator with a Cooled Mirror Reference

Application Background

For Meteorological offices, Standards Laboratories, large manufacturing plants and other businesses or institutions who own large quantities of RH probes, it is usually more cost effective to calibrate these in-house rather than sending them away to a calibration lab. This also provides the facility to error check probes at any time.

Calibration Technique

The Michell Optidew provides a transfer standard performance for calibrations of RH probes from 1 to 99 % RH and with an accuracy of ± 0.2 °C dew point. These measurements can be carried out within a climatic chamber or via a discrete sampling arrangement using a dew-point generator and manifold block. For lower cost calibrations we offer the HG-1 Humidity Calibrator. The HG-1 is totally self-contained within a bench top design allowing calibrations to be made in the field for up to 6 RH probes at any one time. Range 2 to 90 % RH (-30 to +20 °C dew point).



Michell DM Series RH Probes

Our premier cooled mirror dew-point hygrometer, the S8000 Integrale, is used by standards laboratories worldwide as a reference instrument. Supplied in a rack mounting housing the unit is fully self contained. The S8000 Integrale offers a measurement accuracy of ± 0.1 °C dew point from saturation to ppb levels. Michell Instruments can also provide fully automated, custom build calibration systems for precise measurements over a wide temperature and humidity range. Systems can comprise: compressed air supply, air dryer, dew-point generator, precision transfer standard hygrometer, manifold and/or temperature controlled chamber, rack mounting unit.

For the user of relative humidity sensors there is always a question over the calibration accuracy and stability of the instruments in use. OptiCal offers the opportunity to provide local calibration of such RH sensors, without the need to send them away to a traceable laboratory or incur the additional cost of contracted on-site calibration services. OptiCal will also provide calibrations that are directly traceable to International Standards over a wide relative humidity range at any set temperature from 10 to 50°C. OptiCal is a portable, fully self-contained humidity/temperature calibrator. The system comprises a humidity/temperature controlled chamber that can house



Opti-Cal Integrated Humidity Calibrator

up to six or more humidity sensors, depending on their physical dimensions. Temperature and humidity within the chamber are closed-loop controlled and continuously monitored by a precision cooled mirror reference hygrometer.

Reference Users

Deutsche Wetterdienst, DNMI (Norwegian Meteorological Institute), Hungarian Meteorological Service, KNMI (Royal Dutch Meteorological Institute), Meteorological Office Research Centre UK, National Weather Service Washington DC



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