

# Humidity & Temperature Calibration Products

Global Service and Support Offering  
with Accredited Calibration Labs



## Humidity and Temperature Calibration

With its Brands Michell Instruments and Rotronic, PST offers a comprehensive suite of humidity and temperature calibration systems and components. These range from full-function systems suitable for use in national metrology laboratories to transportable humidity generators for quick field verifications. They are all designed to calibrate probes from any manufacturer and can be used in combination with chilled mirror reference hygrometers to produce traceable humidity calibrations.



Automated humidity calibrations

Extra large chamber capacity



### HygroGen2-S – Humidity Calibrator

- Chamber volume: 2 litres; working volume 1.5 litres
- Humidity changes (5...95 %rh, 0.1 %rh stability): < 5 minutes
- Temperature changes (23...50 °C, 0.01 °C stability): < 5 minutes

### HygroGen2-XL – Large Capacity Humidity Calibrator

- Chamber volume: 20 litres; working volume 17 litres
- Humidity changes (5...95 %rh, 0.1 %rh stability): <15 minutes
- Temperature changes (23...50 °C, 0.01 °C stability): < 15 minutes
- Calibrate probes, data loggers, hand helds and chart recorders

#### Optional Features

- Autocal: Automated calibration, adjustment and certificate generation for HC2 and HCD range probes.
- Remote API: Allows users to integrate the HygroGen2 into their own or third party systems.



Integral chilled mirror reference, Self-contained and transportable

### OptiCal – Precision Relative Humidity and Temperature Calibrator

- Generate 10 to 90 %rh over +10 to +50 °C (+50 to +122 °F) temperature
- UKAS accredited calibration, as standard
- Humidity and temperature profile generation for unattended verification of sensors

### HygroCal100 Advanced – Humidity Validator

- Portable device with optional battery pack and hard carry case
- Intuitive UI makes simple automating probe verification
- Validate 7 probes simultaneously
- Automated validation procedures for complete hands-off probe verification



Portable and self-contained

### S904 – Relative Humidity and Temperature Calibrator

- Generate 10 to 90 %rh over +10 to +50 °C temperature
- Excellent chamber stability and uniformity
- Manual control or optional straightforward automated set point programming

## Humidity Standards

Rotronic's humidity standards are hermetically sealed ampoules of calibration salts, for inexpensive on-site calibrations. They are supplied with a Swiss Calibration Services (SCS) certificate, guaranteeing the traceability and accuracy.

- Simple and safe to use
- Unlimited lifetime
- Practical packs of 5 ampoules of the same humidity value (approx. 0.8 ml per ampoule)

### Humidity Values

0.5 %rh, 10 %rh, 11 %rh, 20 %rh, 35 %rh, 50 %rh, 60 %rh, 65 %rh, 75 %rh, 80 %rh, 95 %rh

## Calibration Devices

There is a suitable calibration device for every Rotronic sensor. These small, airtight containers enclose the humidity sensor exactly. The lower screw-on part is filled with the humidity standard material. After an approx. 60 min. settling period, the desired humidity value is reached and the device can now be adjusted to match the reference humidity value.



## Chilled Mirror Reference Hygrometers

Michell Instruments' chilled mirror reference hygrometers provide fundamental measurements of dew point with excellent long-term stability. They are all designed to operate as standalone devices but can also be used in combination with humidity generators to provide highly accurate humidity calibrations.

### Optidew 401 – Cost-effective Chilled Mirror Hygrometer

- New chilled mirror hybrid sensor gives fast dynamic response to changes in humidity
- Accurate to  $\pm 0.15$  °C dew-point,  $\pm 0.1$  °C temperature
- Wide measurement range from -40 to +120 °C dew-point

### S8000 and S8000 RS – High Precision Chilled Mirror Hygrometer

- Accuracy of  $\pm 0.1$  °C
- Precision measurement to -90 °C dew-point (100 ppb) with no need for additional cooling
- Sensor head optimised for fast response to low moisture levels
- Compact 19" x 4U package

### S8000 -100 – High Precision Chilled Mirror Hygrometer

- Accuracy of  $\pm 0.1$  °C ( $\pm 0.18$  °F)
- Precision measurement to -100 °C dew-point (13.8 ppb) with no need for additional cooling
- Sensor head optimised for fast response to low moisture levels
- Reproducibility of  $\pm 0.15$  °C ( $\pm 0.27$  °F) at -100 °C (-148 °F) frost point

### S8000 Remote – High Precision Chilled Mirror with Remote Sensor

- -40 to +120 °C dew-point range with  $\pm 0.1$  °C dew-point accuracy
- Small, compact design
- Easy integration with HygroGen2



# Dew-Point Calibration

## DCS-80, DCS-100 – Dew-Point Calibration System

- Complete dew-point calibration solution with optional compressor, dryer, dew-point generator, reference instrument and optional manifold
- Generated output responds quickly to a change of set point
- Simple operation through manual flow mixing or push-button switching of set points



# ISO17025

## General Requirements for the Competence of Testing and Calibration Laboratories

The ISO17025 chapter 6.3 discusses the facilities and environmental conditions and states that the environmental conditions (for example, temperature and relative humidity) should not adversely affect the validity of results. The chapter 6.4 is about the equipment required for measurements, including hardware, that must be calibrated and software. The required environmental conditions must be documented/defined and periodically reviewed. To ensure the facilities comply to the requirements the environmental conditions must be monitored/recorded. Calibrations and tests are not to be performed if the environmental conditions are outside of the allowable limits.

## Real-Time Monitoring

PST offer real-time monitoring solutions to ensure that accredited laboratories or any laboratory wanted to obtain accreditation can be compliant to the ISO17025 requirements.



# Process Sensing Technologies

Process Sensing Technologies (PST) provides an unmatched suite of instruments, analyzers, and sensors for precision measurements and monitoring in highly demanding end markets. These markets range from pharmaceuticals/life sciences, specialty gases, semiconductors, oil and gas, petrochemicals, and power to gas detection, food and beverage, and building automation, and more.

*Using our products, customers save millions of dollars each year through increased energy efficiency in their processes and reduced process disruptions.*

The quality of food, medicines, semi-conductors and thousands of manufactured goods depends on reliable measurements of critical parameters such as humidity, oxygen, CO, N<sub>2</sub>, H<sub>2</sub>, hydrocarbons, pressure or CO<sub>2</sub> during production, storage and transport. Our products directly improve the profitability of our customers and help them to stay compliant with stringent industry regulations. We own and manufacture the sensing technologies used in the majority of our products. This allows us to remain in a strong leadership position and pass on the benefits of our innovation to our customers.

