

Relative Humidity Measurement and Calibration

The widest range of humidity products from a pioneer of RH sensor development



The best in Relative Humidity technology to optimize your process

Whether you want to optimize the performance of your gas turbine, protect your product during storage or transport, control moisture content, optimize your HVAC system or any of hundreds of other applications, humidity measurement is critical to your process. If controlled environmental conditions are important to you we have the widest range of products and knowledge to meet your application needs.

As a Michell Instruments' customer, what will you get?

- Confidence in quality and reliability from a manufacturer that fully controls the total product development and manufacture
- Pioneering, continuous development and over 35 years of experience in RH measurement
- Reduced costs with technologies designed for easy installation and recalibration
- The right product for your needs with a wide choice of cost-effective standard products and customized solutions to choose from
- The peace of mind of an extensive service and sales network that can react to your needs in your timescales
- The confidence of supply from a company that works to recognized standards for quality and calibration – traceable to NPL and NIST Humidity Standards
- Whether an application is straight forward or complex, we offer a full selection of humidity measurement technologies from the sensor tile to a complete moisture calibration rig – we will make sure you have the right solution



Hygrosmart – the easy way to reduce your maintenance costs and downtime

Many of the transmitters we offer include interchangeable Hygrosmart technology. These modules really are plug and play and there is no easier way to maintain your products – there is no need to recalibrate, no maintenance and minimum downtime with these easy yet high accuracy modules and probes. The Hygrosmart probes are temperature resistant up to +200°C (+392°F).



RH and Temperature Transmitter Probes

Ideal for: Controlled Environments, Precision Manufacturing, Meteorological Applications and HVAC



- PCMini52**
- Excellent accuracy and linearity
 - Two analog outputs for temperature and RH, dew-point, absolute humidity or wet bulb temperature
 - Low power, fast settling time



- PC62 & 62V**
- Designed for high accuracy measurement
 - Analog or digital (RS232/485) outputs
 - Scalable temperature output on 62V
 - Calculated absolute humidity, dew-point or wet bulb temperature output available



- PCMini70 & PFMini72**
- Interchangeable Hygrosmart module
 - Designed for OEMs
 - Compact housing with miniaturized electronics
 - RH analog and temperature 3-wire Pt100 outputs



- PC72V**
- Designed for Meteorological applications
 - Excellent resolution
 - Optional weather shield available



- PC33 & 52**
- Interchangeable Designed for OEMs
 - Excellent price performance ratio
 - Configurable analog output (mA, V)
 - Active or passive temperature output



- PF211**
- Interchangeable Hygrosmart module
 - Designed for HVAC applications
 - Miniaturized electronics
 - No need for recalibration
 - RH analog and temperature 3-wire Pt100 outputs



Wall Mount RH and Temperature Transmitters

Ideal for: Controlled Environments, HVAC and Precision Manufacturing



WM33 & 52

- Excellent accuracy and stability
- Display option
- %RH, dew-point or absolute humidity analog (mA, V) and an analog/PRT temperature o/p
- Low cost or high accuracy variants
- Easy recalibration



WM281

- Interchangeable Hygrosmart module
- RS485 digital output
- Configurable analog outputs (mA, V) available



WM261

- High precision measurement
- Choice of analog output ranges (mA, V) and Pt100
- Configurable outputs available
- Custom linearization available



WM291

- Interchangeable Hygrosmart module
- RS485 digital output
- Configurable analog outputs (mA, V)
- Optional third output for dew-point, mix ratio, abs. humidity, specific enthalpy or frost point



Duct Mount RH and Temperature Transmitters

Ideal for: Controlled Environments and Precision Manufacturing



DT269

- Interchangeable Hygrosmart module
- Analog (mA, V) and Pt100 outputs (configurable on request)
- Custom linearization available



DT282

- Interchangeable Hygrosmart module
- Analog and digital (RS485) outputs
- Configurable analog outputs (mA, V)



DT722

- Rugged transmitter designed for process applications
- Accurate measurement in harsh environments
- Temperatures up to +150°C (+300°F)
- Stainless steel housing



DT284

- Interchangeable Hygrosmart probe
- Small 12mm (0.47") probe diameter
- Configurable analog outputs (mA, V)
- Digital (RS485) output
- Remote measurement element for high temperature applications



Wall Mount Transmitters with Remote Probes

Ideal for: High Temperature Applications and Precision Manufacturing



WR283

- Relative humidity and temperature transmitter
- RS485 digital output
- Configurable analog outputs (mA, V)



WR293

- Third output for dew-point, mix ratio, abs. humidity, specific enthalpy or frost point
- Configurable analog outputs (mA, V)
- RH and temperature transmitter
- Local LCD display
- RS485 digital output



WR285

- Up to 30 bar (400 psi) pressure
- Relative humidity transmitter
- RS485 digital output
- Configurable analog outputs (mA, V)



Dew-Point Transmitters

Ideal for: OEM Applications, Controlled Environments



SF52

- Dew-point or absolute humidity output (mA, V)
- Elevated pressure capability up to 20 bar (300 psi)
- Excellent accuracy and linearity
- Flush fitting disc for min. flow disturbance



Easidew Transmitter

- 2-wire loop powered connection
- Dew-point output
- Robust - excellent sensor protection
- Excellent accuracy and linearity
- Up to 450 bar (6500 psi)

H Series Capacitive Relative Humidity Sensors



H5000 & H6000

The operating principle of these capacitive relative humidity sensors is based on the hygroscopic properties of their polymer, which is used like a dielectric in a capacitor. The polymer quickly gets in equilibrium with its humid environment. The capacity value changes with humidity level.

Suitable for virtually any application. All types offer 0-100% RH. H5000 & H6000 have a temperature range of -30 to +200°C (-22 to +392°F) and H5100 & H6100 -30 to +100°C (-22 to +212°F). H6000 & H6100 have a Teflon coating and are ideal for corrosive atmospheres. H5000 & H5100 provide a fast response time of 4 seconds. All varieties have exceptional stability with <1% drift at +23°C (+73°F), 11% RH over a 12 month period.

- Capacitive thin film sensor
- Low hysteresis
- Fast response time
- Suitable for corrosive atmospheres
- Minimal short and long term



Why using RH products from Michell will help your business:

- Low operational costs with long term stability
- Our products are designed for minimal self-heating to ensure measurement precision. A change of just 1°C can typically affect RH reading by ±3%!

Relative Humidity	Temperature					
	10°C	20°C	30°C	40°C	50°C	60°C
10% RH	±0.7% RH	±0.6% RH	±0.6% RH	±0.6% RH	±0.5% RH	±0.5% RH
50% RH	±3.5% RH	±3.2% RH	±3.0% RH	±3.0% RH	±2.6% RH	±2.3% RH
90% RH	±6.3% RH	±5.7% RH	±5.7% RH	±5.4% RH	±4.6% RH	±4.1% RH

Effect of temperature change of 1°C at various levels of temperature and relative humidity. Plus/minus relative humidity figures are not symmetrical.

- We offer you the flexibility to configure output signals to best suit your needs
- A range of housings and enclosures designed for use even in harsh applications
- Temperature measurement up to +200°C (+392°F)
- Enhanced chemical resistance ensures longer usage even in contaminated areas
- Reduce the time and cost of external calibrations with our cost effective range of portable calibration solutions

The widest range of humidity products from a pioneer of RH sensor development

Calibration Solutions

Remove the need for costly and time-consuming external calibrations with our range of multi-sensor calibration solutions



- S503 Humidity Calibrator**
- Multi-sensor calibration with seven probe ports
 - Easy and portable
 - Optional independent reference hygrometer
 - Fast stabilization



- OptiCal Relative Humidity and Temperature Calibrator**
- Fully self-contained, bench-top, precision humidity/temperature calibrator
 - Humidity and temperature controlled chamber
 - Accommodates up to five or more sensors (depending on sizes)
 - Closed-loop control of temperature and humidity with chilled mirror reference hygrometer
 - Maximum stability and minimum gradient temperature – utilizing four-zone Peltier heat pump arrangement
 - Minimum maintenance



- S904 Relative Humidity and Temperature Calibrator**
- Easy, accurate and repeatable calibrations
 - Market-leading chamber stability
 - Optional integral data logging
 - Up to five probe ports

	Humidity			Temperature		
	Generator Range	Accuracy	Stability	Generator Range	Accuracy	Stability
S503	10-90%	Better than $\pm 0.5\%$ Stabilization time: <10mins	$\leq \pm 2\%$ RH (5-95% RH)		$\pm 0.3^\circ\text{C}$ ($\pm 0.54^\circ\text{F}$)	
S904	10-90%	$\leq \pm 1\%$ RH (10-70% RH) Control element: $\leq \pm 1.5\%$ RH (70-90% RH)	$\pm 0.2\%$ RH (20-80% RH)	+10 to +50°C (+50 to +122°F)	$\pm 0.1^\circ\text{C}$ ($\pm 0.02^\circ\text{F}$)	$\pm 0.1^\circ\text{C}$ ($\pm 0.02^\circ\text{F}$)
OptiCal	10-90%	$\leq \pm 1\%$ RH (10-70% RH) Control element: $\leq \pm 1.5\%$ RH (70-90% RH)	$\pm 0.2\%$ RH (20-80% RH)	+10 to +50°C (+50 to +122°F)	$\pm 0.1^\circ\text{C}$ ($\pm 0.02^\circ\text{F}$)	$\pm 0.1^\circ\text{C}$ ($\pm 0.02^\circ\text{F}$)



Accreditations

UKAS accredited laboratory

UKAS accreditation carries equal validity in any country which is a member of the European Accreditation (EA)

Our UKAS accreditation is also commonly recognized in the USA as the equivalent to NVLAP (National Voluntary Laboratory Accreditation Program) accreditation

Service, Support and Knowledge that you can rely on

Stretching across over 50 countries, our service and support teams are there to give you the help you need when and where you need it. Our priority is to keep your business running and we offer field support and exchange programs to minimize any down time that should occur. Our application engineers, subsidiaries and distributors are factory trained and we are proud to employ and work with some of the key experts in the field of Relative Humidity measurement.

Developing for the future

At Michell Instruments, we have continuous development programs and work closely with partners across industry and universities. The former companies of Rense Instruments and Coreci, pioneers in the development of RH instrumentation, are part of the Michell Instruments business.

You can be assured that you will have the support and knowledge of the global leaders in humidity measurement solutions when you choose Michell Instruments

When you choose a Relative Humidity product from Michell, we will:

- Ensure you have the right product and solution for your needs
 - Produce customized solutions if you need them
- Bring you long term stability to reduce your operational costs
- Reduce your external calibration and maintenance costs with the use of Hygrosmart technology
 - Deliver service and sales support when and where you need it

Michell Instruments – an international leader in high precision sensing

Other Product Range

Portable Instruments

Easy-to-operate portable instruments providing fast, accurate and stable measurement of dew-point, relative humidity and moisture concentration.

Unique in the market for giving repeatedly fast response to low dew-points.

Dew-Point Transmitters

The widest range of dew-point sensors and transmitters in the market for use in general purpose, harsh and hazardous applications. All sensors traceable to national standards.

Process Analyzers

Our range of analyzers is designed to provide reliable online measurement in a wide range of applications such as dedicated water and hydrocarbon dew-point determination in natural gas.

Calibration Instruments

Michell has a wide offering of calibration equipment for the verification of trace moisture, dew-point and relative humidity sensors including customized calibration solutions that meet your exact needs.

Oxygen Analyzers

The very latest technologies in oxygen measurement, designed to give years of reliable and accurate service in laboratory, process and flue gas applications.



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Michell Instruments adopts a continuous development program which sometimes necessitates specification changes without notice.
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