



# Dew-Point Transmitters and Instruments

Reliable moisture measurement for critical process control

# Moisture Measurement and Analysis

Michell Instruments' sensors provide accurate and reliable moisture measurement in gases and liquids



## 40 Years of Innovation in Moisture Instrumentation

For more than 4 decades, Michell hygrometers have been working to help its customers around the world keep their processes and systems working efficiently and safely through accurate moisture measurement.

Our position as global leaders in the design and manufacture of humidity instrumentation is based on our expertise in the basics of thermodynamic theory and practical experience in moisture measurement techniques. Michell Instruments' specialists and applications engineers are based around the world to provide support, and at the same time, gain a good understanding of customers' needs. This knowledge is used by our design engineers to create purpose-made, robust products.

Our manufacturing processes are optimized to meet high-volume 'just in time' contracts with major industrial OEM manufacturers, and thousands of hygrometers leave our factory every month to control moisture in some of the most demanding applications and locations around the world. Efficient and reliable, Michell sensors and instruments quietly do their job. We offer maintenance agreements for up to four years, where all work, including the regular calibration, is included (refer to page 8 for more information).

For technical and application support there are 10 global sales and service centers serving customers in Americas, Europe, Middle East and Asia. There is always a Michell subsidiary or distributor around — check [www.michell.com](http://www.michell.com) for your local partner.

### Ceramic and Polymer Sensing Technologies

The continuous improvement of the moisture sensing technologies utilized in our transmitters is at the heart of our business. Today, Michell offers transmitters for moisture detection from single figure parts per billion traces through to % volume levels, with class-leading ceramic and polymer moisture technologies.

The unique capabilities of our moisture technologies allows detection of water vapor content from parts per billion to high humidity.

- 0.1 ppb<sub>v</sub> to 24000 ppm<sub>v</sub> range
- Application-focused products
- Robust mechanical design for pressures up to 450 bar
- Fast response to step moisture events
- Low hysteresis
- High sensitivity to trace moisture events

### A Service You Can Rely On

Accurate moisture measurement and control is challenging and application specific. Michell offers a complete product and support package for all customer needs:

- Products with multiple process connections
- Flexible, customer-specific designs via our unique SPO system
- Global explosion proof and intrinsically safe IECEx, ATEX, cCSA<sub>US</sub>, FM approvals
- Regional/country pattern approval: GOST, UL, INMETRO, Indian, Japanese standards
- World Class ISO/IEC 17025 humidity calibration capability
- Service and calibration centers in 10 subsidiaries on 4 continents

# Moisture Measurement to Fit Your Application

Whatever your moisture challenge, we have the answer: from simple transmitters, to complete hygrometer sampling systems



Transmitters



On-Line Hygrometers



Hygrometer Sampling System

Michell offers a broad range of sensors with associated display and sampling systems for dew-point measurement applications, from trace moisture measurements, to compressed air quality ranges class 1 to 6 — meeting the needs of a broad range of industrial and process industries.

Our high capacity automated calibration system ensures short lead times and reliable deliveries for large orders.

## Typical Applications

### Industrial

- Air dryers — class 1 to 6
- Switchgear SF6 quench gas
- Medical dryers
- Membrane and desiccant dryers
- Plastic injection molding
- Refrigerant dryers

### Heavy Industrial

- Automotive
- Aerospace
- Hydrogen fuel cells
- Marine inert gas generation
- Glove boxes
- Rail systems

### Process

- Natural gas processing / transmission
- Hydrogen coolants
- LNG and LPG production
- Inert and bulk gases
- Hydrocarbon refinery processing

### Controlled Environment

- Industrial gas production and distribution
- Semiconductor fabrication
- Fiber optic production
- Electronic component manufacture
- Optical coating processes







# Product Guide

## Industrial Transmitters

Michell offers a family of reliable industrial dew-point transmitters providing accurate, stable measurement to cover any global dryer application.

### Easidew Transmitter

Simple to install and maintain, the Easidew Transmitter meets all industrial dryer requirements. The Easidew I.S. has global intrinsically safe certifications to ensure world-wide acceptance.



- Measurement range  $-100$  to  $+20^{\circ}\text{Cdp}$
- Dew-point or  $\text{ppm}_v$  moisture content output
- 2-wire loop powered connection
- Accuracy  $\pm 2^{\circ}\text{Cdp}$
- Traceable calibration certificate
- Power supply 12 to 28 V DC
- 450 bar process pressure capability
- Easidew I.S. has IECEx, cCSA<sub>US</sub>, FM and ATEX approval
- 5/8" UNF, G1/2" BSP, 3/4" UNF process connections
- Rugged 316 stainless steel IP66 construction

### SF52 Transmitter

A simple, cost effective sensor designed for use in harsh industrial dryer applications where reliability and toughness are required at an economical cost.



- Measurement range  $-40$  to  $+60^{\circ}\text{Cdp}$
- Dew-point output
- 3-wire loop powered or voltage output
- Accuracy  $\pm 2^{\circ}\text{Cdp}$
- Traceable calibration certificate
- Power supply 8 to 30 V DC
- G1/2" BSP and 1/2" NPT process connections
- Robust IP66 construction

# Product Guide

## Process Transmitters

Michell offers a family of durable process transmitters to meet any type of global process plant moisture measurement.



### Easidew PRO Intrinsically Safe Transmitter

The Easidew PRO I.S. is an intrinsically safe transmitter designed for moisture in gas and liquid applications.

- Measurement range  $-110$  to  $+20^{\circ}\text{Cdp}$
- Dew-point or  $\text{ppm}_v$  moisture content output
- Accuracy  $\pm 1^{\circ}\text{Cdp}$
- 450 bar process pressure compatibility
- Intrinsically safe IECEx,  $\text{cCSA}_{\text{US}}$ , FM, ATEX approval
- BS EN 10204 3.1 material certification



### Easidew PRO Explosion Proof Transmitter

An explosion proof moisture transmitter to measure dew-point and moisture content in gases and liquids, with no galvanic isolation requirements.

- Measurement range  $-110$  to  $+20^{\circ}\text{Cdp}$
- Dew-point or  $\text{ppm}_v$  moisture content output
- Accuracy  $\pm 1^{\circ}\text{Cdp}$
- 450 bar process pressure compatibility
- Explosion proof IECEx,  $\text{cCSA}_{\text{US}}$ , ATEX approval
- BS EN 10204 3.1 material certification



### Pura Trace Moisture Transmitter

A self-contained hygrometer designed specifically for the measurement of trace moisture content in high purity gases.

- Measurement range down to  $-120^{\circ}\text{Cdp}$
- Dew-point or  $\text{ppm}_v$  moisture content output
- Accuracy  $\pm 1^{\circ}\text{Cdp}$
- Analog and digital outputs
- Dual 1/4" VCR process connection
- Optional local display/alarm meter



# Product Guide

## On-Line Hygrometers

A combination of a dew-point transmitter with a display. Michell's on-line hygrometers are quickly installed to provide local on-line readings with a display and retransmitted control signal.

### Easidew Online Dew-Point Hygrometer

This panel or bench-top display combines with the Easidew Transmitter series offering digital and analog outputs, alarms and an easy to read display.



- Measurement range  $-100$  to  $+20^{\circ}\text{Cdp}$
- Accuracy  $\pm 2^{\circ}\text{Cdp}$
- Supply voltage 85 to 264 V AC
- RS232, mA outputs
- Sample block available to ensure optimal air flow for measurement

### Cermet II Advanced Online Hygrometer

An advanced industrial monitor plus digital output moisture transmitter providing a selection of output units and alarm settings.



- Measurement range  $-100$  to  $+20^{\circ}\text{Cdp}$
- Accuracy  $\pm 1^{\circ}\text{Cdp}$
- Manual or active pressure input compensation
- RS485, mA, voltage outputs
- Alternative moisture content scales
- Up to 4 relay outputs

### Pura Advanced Online Hygrometer

An advanced online display combined with a digital output dew-point transmitter to provide flexibility and high accuracy.



- Measurement range  $-120$  to  $-40^{\circ}\text{Cdp}$
- Accuracy  $\pm 1^{\circ}\text{Cdp}$
- Manual or active pressure input compensation
- RS485, mA, voltage outputs
- Alternative moisture content scales
- Up to 4 relay outputs



# Product Guide

## Hygrometer Sampling Systems

A combination of a dew-point measurement system with sample gas filtration and flow control supplied in a variety of formats from economical to higher performance application-specific samplers.

### Easidew Sampler

A low-cost, self-contained sampling system with filtration and flow control, to measure either pressure or atmospheric dew points.

- Universal configuration for atmospheric or line pressure dew-point measurements
- Integral particulate filter
- Metering valve for flow control
- Single block design for faster measurement response
- 10 barg max sample pressure (high pressure option to 210 barg available)



### Drycheck

A simple and efficient, self-contained dew-point hygrometer, with filtration and flow control, for measurement of dew point or moisture content.

- Integrated instrument and sampling system
- Simple installation
- Dew-point or moisture content
- Analog output, display and dual alarms
- IP65 (NEMA 4) enclosure



### ES20 Compact Sampling System

Designed to protect your moisture measurement in a wide variety of industrial applications at elevated pressures up to 20 barg, the ES20 is an economical high quality system with short lead time.

- Stainless steel tube and fittings
- Flexible filtration options
- 6mm or 1/4" tube fittings
- Stainless steel, GRP enclosures
- Optional displays



# Services Guide

Michell Instruments offers a comprehensive service and support structure behind the dew-point transmitters range:



## Service Exchange Program

Unique to Michell, this is the quickest and most efficient method of maintaining calibration and one that will avoid any instrument downtime. When calibration is due, Michell will send you a freshly calibrated sensor and then you simply return your old sensor to us within 21 days after making the exchange.



## Recalibration Program

Where calibration traceability is required, Michell offers an efficient moisture calibration service at our global service centers.



## Maintenance Agreement

Michell's maintenance agreement includes full application support, annual traceable calibration or sensor exchange, free software upgrades and all repairs (if required). Because sensors need regular recalibration, customers soon recoup the additional cost of the agreement, as well as benefiting from peace of mind.



## Customization Projects

Where a standard product doesn't quite meet the needs of an application, Michell's team of design engineers will work with you to develop a specific solution. From specialized sampling systems, to filters and connectors, Michell's 40 years of experience in moisture measurement enables us to find the best fit for specific moisture measurement needs.



## Other Product Ranges

Portable Instruments | Chilled Mirror Instruments | Process Analyzers

Calibration Instruments | Relative Humidity Instruments | Oxygen & Binary Gas Analyzers

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

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