

DryCheck

Self-Contained Dew-Point Instrument

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



Highlights

- Integrated instrument and sampling system
- Simple installation
- Wide measurement range
- Dew point or moisture content
- Analog output, display and dual alarms
- IP65 (NEMA 12) enclosure

Applications

- Compressed air dryers
- Plastic moulding
- Ozone generators
- Medical gases
- Pneumatics
- Breathing air
- Welding gases

DryCheck Self-Contained Dew-Point Instrument

Background

The DryCheck system was designed by Michell Instruments in response to demands from customers for an economic instrument package with good accuracy and stability, inclusive of a comprehensive sampling system, which could be easily installed for use in a number of dew-point measurement applications.

In air drying and many other applications a cost effective and reliable hygrometer that is quick and simple to install is vital to ensure that dew-point measurement can be made at the point of use.

Fast Response and Accurate Measurement

The DryCheck utilises the Michell Instruments Easidew Online to measure dew point in the range -100 to $+20^{\circ}\text{C}$ dew point, or moisture content in the range 0-3000 ppm. This well-proven instrument has Michell's advanced Ceramic Moisture Sensor at its heart, providing accurate and stable measurement. The calibration data for each sensor is stored within the transmitter's flash memory. This allows Michell Instruments to offer the unique sensor exchange scheme, keeping calibration costs and downtime to an absolute minimum.

Simple Installation

All components are housed in a rugged IP65 (NEMA 12) rated polycarbonate case. This can easily be wall mounted at a convenient point close to the gas sample.

A clear cover protects the display and the sample flowmeter. Gas connection (gas in and gas out) is provided using "quick connect" push-fittings suitable for use with 6 mm ($1/4$ " OD) Teflon tubing. Mains power input, and connection to the 4-20 mA analogue output, and the two user programmable voltage free relay contacts are all easily accessible behind the lower panel.

Integral Sampling System

The DryCheck sampling system includes a $0.3\ \mu\text{m}$ particulate filter element, a monolithic sampling block to house the Easidew Transmitter, and a valve and flowmeter for setting the sample flow. The filter element is easily replaceable to ensure that the sensor is protected. All components are rated to 1 MPa (10 barg) and the DryCheck can be configured for measurement of dew point at either system, or atmospheric pressure.

Display and Outputs

The DryCheck features an extremely clear 20 mm ($3/4$ " red LED display, which can be programmed to display dew point, in $^{\circ}\text{C}$ or $^{\circ}\text{F}$ and moisture content in ppm. The instrument also provides a 4-20 mA output and 2 off alarm relays. All these features are easily configurable by the user via the front panel of the display, making DryCheck one of the most versatile instruments on the market.



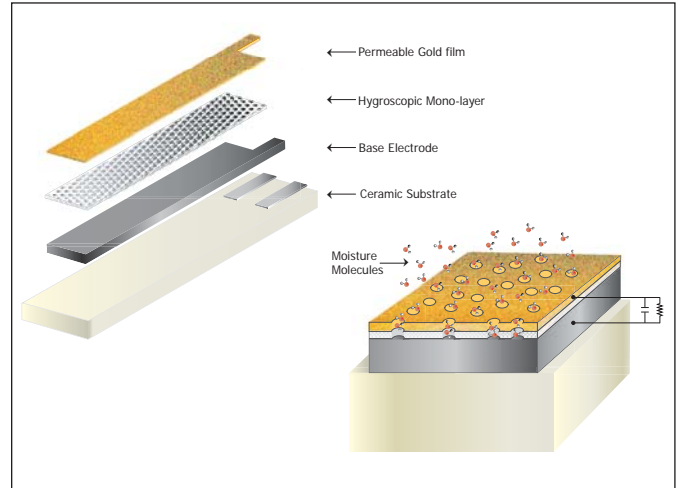
Technology

Ceramic Impedance Sensor

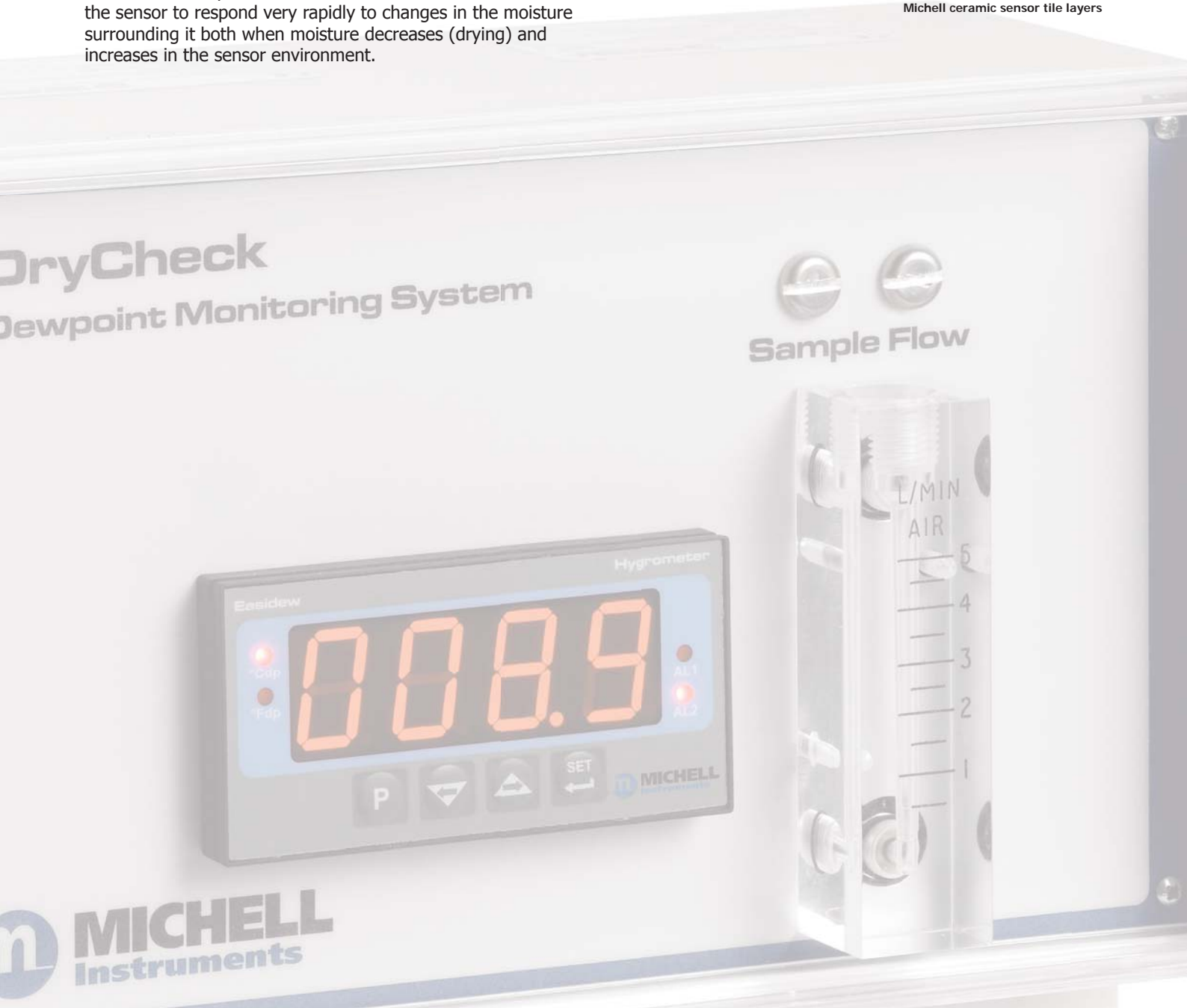
The DryCheck uses Impedance technology, based on Michell's advanced ceramic sensor. The operation of this sensor depends on the dielectric property of water molecules absorbing onto an active porous insulating layer sandwiched between two layers of conductive material deposited on a ceramic substrate.

Water has a very high dielectric compared to the dielectric of the active layer and the background of the carrier gas so it can be detected easily.

The active layer is very thin – less than one micron and the porous top conductor that allows water molecules to penetrate into the active layer is less than 0.1 micron thick. This allows the sensor to respond very rapidly to changes in the moisture surrounding it both when moisture decreases (drying) and increases in the sensor environment.



Michell ceramic sensor tile layers

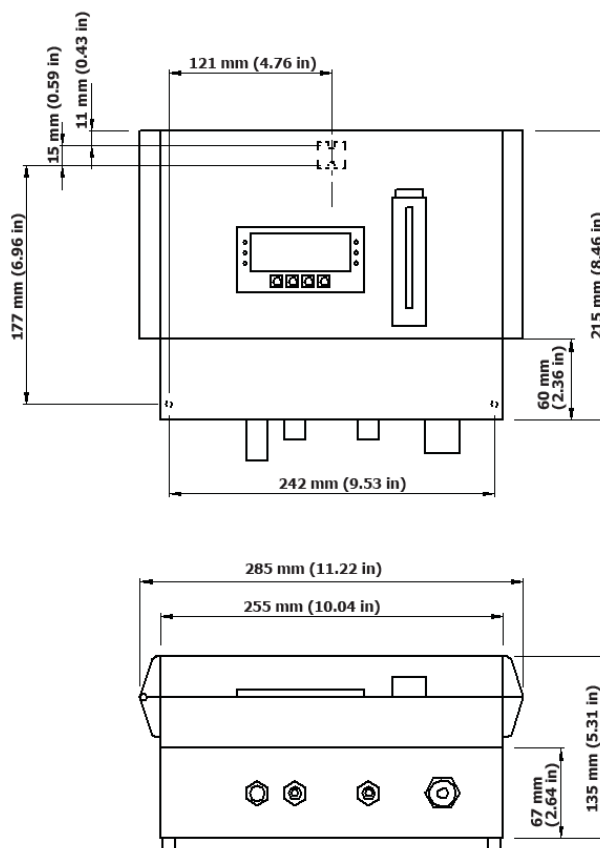


Technical Specifications

Measurement Range	-100 to +20°Cdp 3000 ppm _v (ppm _v output or non-standard dew point range must be specified at time of order)
Accuracy	±2°Cdp
Operating Temperature	-5 to +50°C
Storage Temperature	-40 to +75°C
Output	4-20 mA maximum load resistance 500 Ω
Alarm	2 volt free contacts 3 A @ 240 V
User Interface	Front panel configuration of alarm points
Display	20 mm (¾") red LED
Power Supply	85 to 265 VAC, 50/60 Hz
Ingress Protection	IP65 (NEMA 12)
Mains Cable	2m cable supplied
Gas Pressure	1 MPa (10 barg/145 psig) max (high pressure option available)
Sample Flow Rate	1-5 l/min
Filtration	99.5 % removal of 0.3 µm
Gas Connection	Quick Connect fittings for 6 mm OD Teflon pipe

For full specification, please see the Easidew Transmitter and Easidew Online datasheets.

Dimensions



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