

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
- Analogue output, display and dual alarms
- IP65 (NEMA 12) enclosure

Applications

- Compressed air dryers
- Plastic moulding
- Ozone generators
- Medical gases
- Pneumatics
- Breathing air
- Welding gases
- ... and many more

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 $+20^{\circ}\text{C}$ (-148 to $+68$) dew point, or moisture content in the range 0 - 3000 ppm. This well proven instrument has at its heart, Michell's advanced Ceramic Moisture Sensor, 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 micron 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 10 barg (14.5 psig) 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_v . 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.

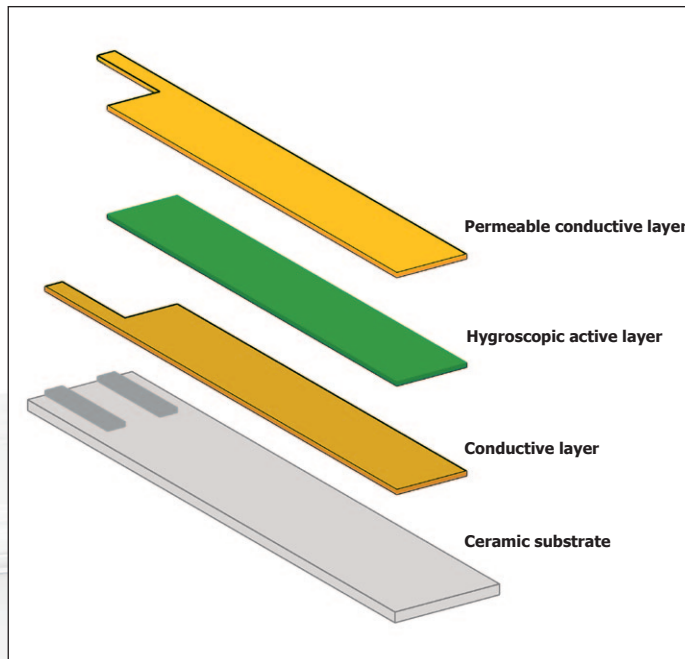


Technology

The DryCheck uses Impedence technology, based on Michell's ceramic sensor.

The Ceramic Sensor is constructed using state of the art thin and thick film techniques. Operation of the sensor depends upon the adsorption of water vapor onto a porous non-conducting "sandwich" between two conductive layers built on top of a base ceramic substrate. The active sensor layer is very thin - less than one micron (about 0.00004 inches) and the porous top conductor that allows transmission of water vapor into the sensor is even thinner. Therefore the sensor responds very rapidly to changes in applied moisture, both when being dried (on process start-up) and when called into action if there is moisture ingress into a process.

Despite this extreme sensitivity to changes in moisture content, the Michell Ceramic Moisture Sensor is incredibly rugged due to the nature of its construction. To protect the sensor further against contaminants and pipe swarf it is housed in a protective sintered stainless steel guard. All Michell Ceramic Moisture Sensors give <math><1^{\circ}\text{F}</math> dew point accuracy and excellent long-term reliability and stability in process applications.



Michell ceramic sensor tile layers

DryCheck Dewpoint Monitoring System



Sample Flow

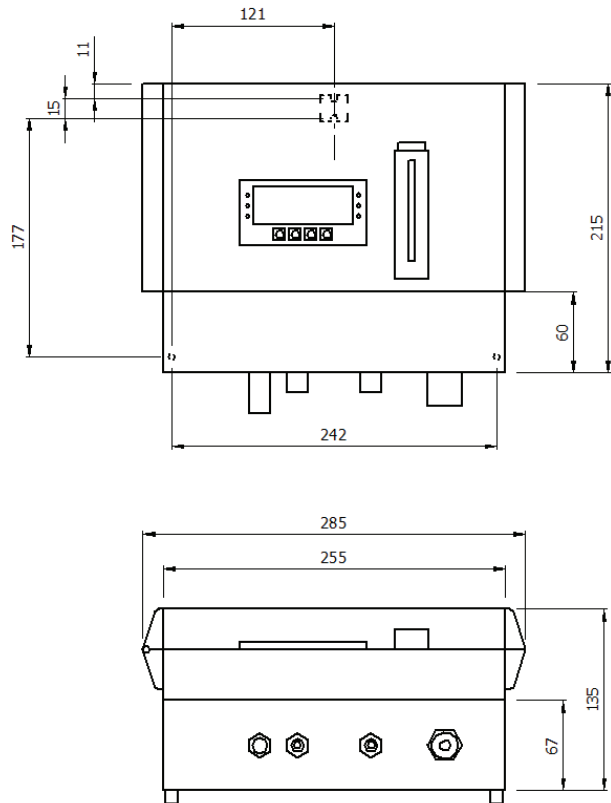


Technical Specifications

Measurement Range	-100 to +20°C dew point (-148 to +68°F) 3000 ppm _v (ppm _v output or non-standard dew point range must be specified at time of order)
Accuracy	±2°C dew point (±3.6°F)
Operating Temperature	-5 to +50°C (+23 to +122°F)
Storage Temperature	-40 to +75°C (-40 to +167°F)
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	2 m cable supplied (6.5 ft)
Gas Pressure	10 barg (145 psig) max (high pressure option available)
Sample Flow Rate	1-5 Litres /min (2.1 to 10.5 scfh)
Filtration	99.5 % removal of 0.3 micron
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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