



Optidew

High Temperature Sensor

From the Cooled Mirror Range

Dew-point measurement in product drying and elevated temperature process applications.



High Temperature Sensor for Optidew

Setting the Standard

The High Temperature Optidew Sensor has been developed to meet the rigorous demands of dew-point measurement in drying processes and other elevated temperature gas applications. The construction and design of the sensor allows it to provide accurate, repeatable and reliable measurements where previously cooled-mirror sensors have been unable to perform.

At ambient temperature of up to 115 °C, the sensor will operate continuously and automatically, tracking and measuring humidity changes within the equivalent range of <20 to 100% RH. Up to this temperature, the sensor is fully self-compensating for the effects of varying temperature. At higher temperatures, up to 130 °C, the sensor optics may be user set for fixed temperature operation and will then provide the same level of measurement and control accuracy whilst at that fixed ambient temperature.

Features

- Stainless steel gas wetted parts
- Suitable for food and pharmaceutical use
- Operates up to 130 °C temperature
- Dew point range equivalent to <20 to 100% RH
- Suitable for condensing conditions
- High pressure version optional (25 MPa)

Performance

At 100 °C ambient, the High Temperature Optidew Sensor has a measuring range down to +58 °C dew point. This wide dynamic range allows continuous measurement of the progress and end-point determination in process drying applications. System accuracy, in combination with either the Optidew Transmitter or Optidew Vision Hygrometer control units, is 0.2 °C dew point and, with the associated ambient temperature PRT giving an accuracy of 0.1 °C, typical RH accuracy of better than 2% of reading is achievable.

Construction

Careful consideration to materials of construction and an ingress protection rating of IP66 (NEMA 4X) allow the High Temperature Optidew Sensor to be used in the most demanding of installations where corrosion resistance and the ability to survive caustic wash-down or autoclave cleaning procedures are a real advantage. The whole sensor is hermetically sealed, so that no contaminant or moisture from the environment under test can damage the electronic components within. At the same time, access to the optics ports and mirror surface is easy, to allow periodic cleaning as and when required. The sensor is fitted as standard with a stainless steel mirror, giving the highest level of resistance against corrosion in demanding applications.



The Dew Point Specialists

Measurement Range Table

Sensor Temperature, °C	20	40	60	80	100	115
Lowest dew point, °C dp	-5	12	28	44	58	67

Note: lowest dewpoint measurable assumes that sensor is mounted on a suitable air-cooled heat sink. Consult Michell for further technical information

Options and Accessories

- Sintered stainless steel sensor guard, offering protection from particulate contamination
- HDPE sensor guard, for the highest level of protection from particulate contamination and condensation (maximum temperature 110 °C).

Note: If the high temperature Optidew Sensor is ordered as a replacement for a standard sensor, it is recommended that the sensor cable is also replaced for high temperature cable, type CBH. Please specify cable length with orders.

Technical Specifications

Accuracy	0.2 °C dew point
Response speed	1 °C per second
Operating temperature	-40 to +115 °C (temperature variation allowed) 115 to 130 °C (if sensor temperature fixed)
Cleaning temperature	150 °C maximum
Mirror	Solid stainless steel
Peltier	Two stage thermoelectric cooler
Sensor body	316L stainless steel, with anodised aluminium finned heat sink
Temp measurement	4 wire 100 W platinum resistance thermometer
Sampling flow rate	0.1 to 2 Nlmin ⁻¹ (in sampling block)
Max air velocity	10 msec ⁻¹ (direct insertion) 30 msec ⁻¹ (with sintered guard)
Pressure	2 MPa (25 MPa optional)
Ingress protection	IP 66 (NEMA 4X), IP 65 (NEMA 4X) for HP option

Dimensions

