

Optidew

Optical Dew-Point Transmitter

Fundamental cooled mirror technology plus a state-of-the-art digital dew-point transmitter, gives Optidew the combination of highest performance and economical cost of ownership



Features

- Precision process dew point, % rh and temperature measurement
- Measurement Range: <math><0.5</math> to 100 % rh from -40 to +90°C ambient
- 0.2°C dew point accuracy (0.15°C optional)
- Fundamental drift free dew point measurement
- Rugged, IP66 (NEMA 6) industrial housing
- High temperature sensor option to 130°C
- Optional local display



Applications

- Process drying - pharmaceutical, confectionery and many more industries
- Frost protection of turbine blades
- Fuel cell research
- Engine testing - high performance to commercial vehicle engines
- ... and many more

Setting the Standard

The Optidew high performance optical dew-point transmitter works on the proven, fundamental optical dew point measurement principle, giving unmatched and drift-free long-term performance. It offers a wide measurement range from the equivalent of <math><0.5</math> to 100 % rh at ambient temperatures from -40 to +90°C. Optidew provides two linear 4-20 mA outputs in addition to serial communications, allowing configuration and monitoring by a suitable computer or PLC system or via specific Optidew logging software. An adjustable volt-free contact alarm means that Optidew can be used for direct process control. An optional high definition alphanumeric display provides local indication of the measured humidity.

Rugged Design

Optidew is capable of withstanding most industrial conditions, whilst retaining the performance and sensitivity of a high-level reference hygrometer. Yet it is so easy to use. Simply connect the instrument, power up and Optidew is ready to operate. The sensor is designed to work hard - with a corrosion-resistant gold plated mirror and solid construction. Optidew's transmitter unit is IP66 (NEMA 6) protected and suitable for outdoor use.

Continuous Measurement

The power and sophistication of the Optidew sensor and its digital control loop electronics, means that there is no need to compromise measurement confidence by adopting a cyclic measurement method. Optidew locks on to the actual dew-point temperature of the gas being measured and stays there - continuously. This means you can be certain your process is always in control, irrespective of fluctuations in process temperature, pressure or humidity conditions.

Supreme Flexibility

Optidew can be mounted in a variety of ways to suit the application - direct in-process, flange mounted, tee mounted, or via an external sample line. Class leading depression coupled with cable length capability of up to 250 metres and a pressure rating up to 2 MPa (20 Barg) with an option to 25 MPa (250 Barg), makes almost any industrial application possible. Two sensor versions are available, with either single or two stage cooling. For extreme applications a high temperature sensor version is available to +130°C.

Sensor	One Stage	Two Stage
Lowest mirror temperature (air cooled heat sink at 21°C)	-34	-45
Lowest dew point measurable (air cooled heat sink at 21°C)	-30	-40
Lowest dew point measurable with no heat sink	-24	-29

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Optional local display



Industrial housing can be fitted with a local display

4 wire PRT

Related Products



Optidew Vision

Cermax

Fundamental dew point measurement

*Choice of dew-point sensors

*High temperature sensor optional

Measurement Reliability - DCC (Dynamic Contamination Correction)

To alleviate the problems of measurement accuracy due to contamination, Michell has engineered an innovative contamination compensation system for Optidew. Dynamic Contamination Correction (DCC) automatically eliminates any error that may be caused by mirror particulate contamination. DCC is a self-learning system that adapts itself to operating conditions, predicts and reacts to the real requirements for contamination correction to achieve optimum transmitter performance at all times. Although the DCC system is fully automatic, it can be user configured to accommodate your own process conditions. As further protection in extreme conditions, sintered stainless steel or porous membrane guard options are available. Either guard can also be used as a flow limiter in high velocity direct insertion applications.



Tablet Coating Machine



*High Temperature Sensor



Cermet II

Opti-Cal

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



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Technical Specifications

GENERAL	
Measurement range	1-stage -30 to +90°C dew point 2-stage -40 to +90°C dew point High temperature -20 to +130°C dew point
Measurement accuracy	±0.2°C dew point ±0.1°C temperature ±0.15°C dew point accuracy optional
Measurement units	°C, °F dew point; % rh; °C, °F temperature; gm ⁻³ ; gkg ⁻¹ ; a _w ; Δ (t - tdp)
Response speed	1°C sec ⁻¹ and settling time (dew point dependant)
Power supply	85 to 264 V, 47/440 Hz
DEW-POINT SENSOR	
Mirror	Gold plated copper high temp sensor - 316 stainless steel
Temperature measurement	4 wire 100 Ω platinum resistance thermometer 1/3 DIN class B
Sample flow rate	0.1 to 2 Nlmin ⁻¹ (in sampling block)
Max velocity	10 msec ⁻¹ (direct insertion) 30 msec ⁻¹ (with sintered guard)
Pressure	2 MPa (20 Barg) 25 MPa (250 Barg) optional
Ingress protection	IP66 (NEMA 4) IP65 (NEMA 12) 25 MPa (250 Barg) sensor
Cable length - remote	2 metres (250 metres max)
REMOTE PRT	
Temperature measurement	4 wire 100 Ω PRT 1/10 DIN class B
TRANSMITTER ELECTRONICS	
Resolution	0.1 for °C, °F and % rh 0.01 for gm ⁻³ and g/kg ⁻¹
Outputs:	Analogue Two channels 4-20 mA or 0-20 mA Digital RS-232 (RS-485 optional) Alarm Volt free contact, 2A @ 30 V dc
Status LEDs	Power on, DCC and alarm status
Operating temperature	-20 to +40°C ambient
Enclosure	304 stainless steel (DIN 1.4301)
Ingress protection	IP66 (NEMA 4)
Cable pack	Mains and RS-232 cables

OPTIONS

- Local display
- High accuracy dew-point sensor
- High temperature sensor
- Customised sampling systems

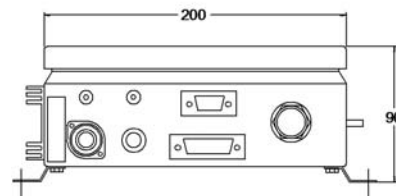
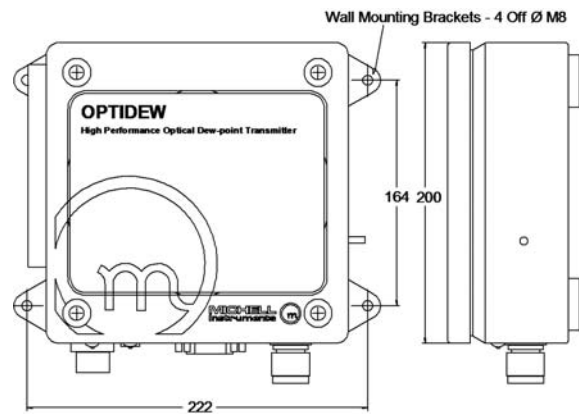
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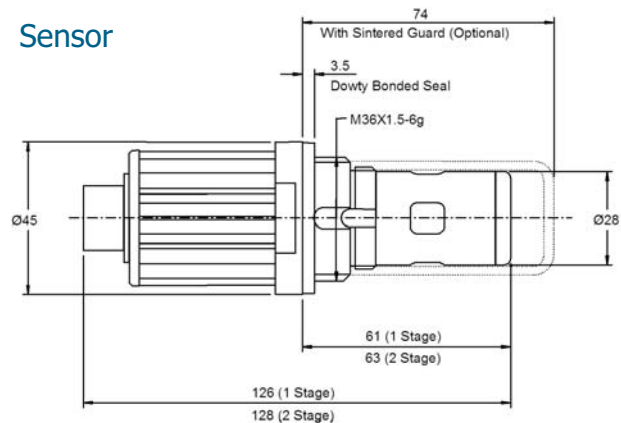
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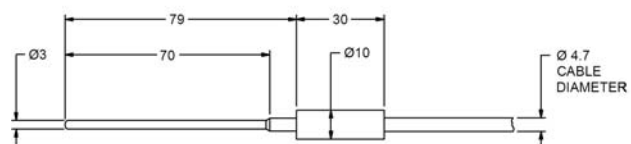
Dimensions



Sensor



Temperature Probe



Please note: The accuracy stated represents the typical variation between the instruments under test and a calibrated and corrected reference.

Please contact us for the latest version: Optidew: Ref: OPT-0707

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