



Dewmet

Cooled Mirror Dewpointmeter

The most accurate, stable and fast responding dew-point hygrometer, used as the benchmark by National Standards laboratories, is also perfect for critical process humidity measurement and control

- Fundamental measurement principle
- Absolute precision - drift free
- Accurate to 0.2 °C dew point
- -60 to +90 °C dew point range
- °C/°F dp, °C/°F temp, and % rh display
- Continuous measurement and control
- Totally waterproof sensor



Fundamental and continuous

The fundamental cooled mirror measurement principle of Dewmet provides high accuracy, long-term stability and ease of use. It offers unmatched and drift-free long-term performance across a wide measurement range with an accuracy of 0.2 °C dew point or better. What's more, Dewmet continuously measures the dew-point temperature by means of a sophisticated optical loop so that the process gas being measured is ALWAYS under control. Dewmet's dual display provides a continuous indication of ambient (or process) temperature and a switchable selection of either dew-point temperature or relative humidity. Analogue and digital outputs allow easy connection to external control or monitoring systems.

Sensor Options

Dewmet is available with either a single or two stage sensor. Both are totally waterproof, allowing the sensor to be used in saturating conditions. The single stage sensor has range capability to lower than -25 °C dew point from room temperature (equivalent to less than 2 % rh) whilst the two stage sensor can measure below -40 °C dew point with suitable passive heat dissipation (less than 0.5 % rh). Heat dissipated by the Dewmet sensor is extremely low, giving it a class leading range/power

dissipation ratio. This also makes Dewmet extremely quick, responding to changing environmental conditions at up to 1 °C dew point per second. Because it is fundamental, Dewmet exhibits an absolute response to a change in dew point, when compared with capacitive sensors that exhibit a slower, exponential response.

Supreme Flexibility

The Dewmet sensor 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. This makes Dewmet the ideal choice for the user who has multiple sample points or different applications on the same site. Class leading depression (up to 80 °C) coupled with cable length capability up to 250 m, and a pressure rating up to 30 MPa makes almost any industrial application possible.

Measurement Reliability

Contamination can compromise the accuracy of a cooled mirror hygrometer, so we have engineered Dewmet with the optimum solution - the Michell ABC (Automatic Balance Compensation) System. ABC automatically eliminates any error that may be caused by particulate contamination. ABC can be user-configured to accommodate the dirtiest processes or the cleanest laboratory environments. In extreme conditions an optional sintered



stainless steel or porous membrane guard can be used to prevent contamination build-up on the mirror surface. Either guard can also be used as a flow limiter in high velocity direct insertion applications.

Applications

Almost any process, or environment that requires accurate and reliable humidity measurement can utilise the full capabilities of Dewmet. It is a perfect partner for environmental test chambers, providing highly accurate and repeatable measurement of both the temperature and humidity. When calibrated either directly against a National Humidity Standard (NPL, NIST, NRLM, PTB, etc) or by an approved laboratory (UKAS, DKD or similar) providing traceability back to the Standard, Dewmet can be used for the traceable calibration of other hygrometers to an extremely high level of confidence. Dewmet is also ideal for blast

furnace applications or for environmental control in a semi-conductor or battery assembly room.

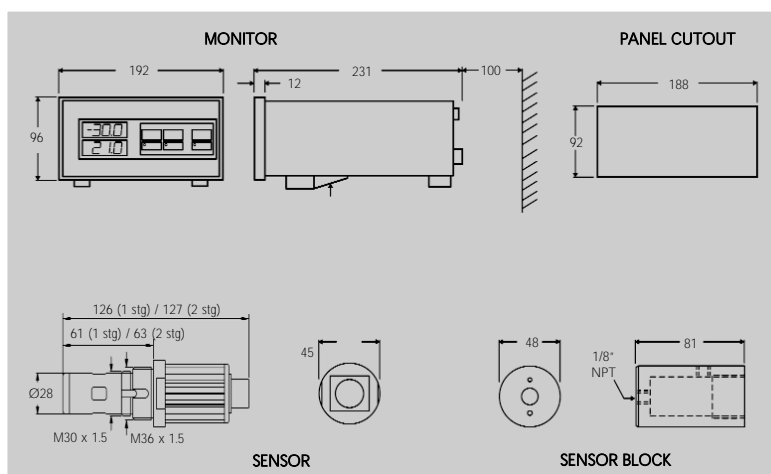
Dewmet SD

Dewmet SD has been especially designed for the user who only requires dew point measurement, but needs the high accuracy, repeatability and stability that cooled mirror technology offers. Analogue voltage and current outputs are provided as standard and front panel enunciators, with logic signals for integration into process control systems, provide instrument status indication including 'Clean optics' warning.

Technical Specifications

GENERAL	
Accuracy	±0.2 °C dew point; ±0.1 °C gas temperature
Response speed	1 °C s ⁻¹
Power supply	90 to 260 V; 50-60 Hz
MONITOR	
	Dewmet SD Dewmet TDH
No of digital displays	1 2
°C, °F dew point	Yes Yes
°C, °F gas temp	No Yes
% rh	No Yes
Resolution	0.1 °C dew point 0.1 °C dew point 0.1 °C gas temp & % rh
Outputs: analogue digital	10 mV/°C & 4-20 mA 10 mV/°C & 4-20 mA RS232
Operating temp	0 to +40 °C 0 to +40 °C
Gas temp sensor	No Yes

SENSOR	1 stage heat pump	2 stage heat pump
Dew point range	-50 to +90 °C	-60 to +90 °C
Depression @ 21 °C ambient	55 °C	66 °C
rh range	< 2 to 100 % non-condensing	< 0.5 to 100 %
Temp measurement	100 Ω platinum resistance thermometer	
Operating temp	-40 to +90 °C	
Sample flow rate	0.1 to 2 Nlmin ⁻¹ (in sampling block)	
Flow velocity	0 to 1 ms ⁻¹ (direct insertion)	
Pressure	30 MPa (max)	
Cable length	250 metres (max) (automatic cable compensated 2 to 50 metres)	
Environmental protection	Sealed for use in condensing environments	



Dimensions mm



0179



Q6284

