

dewSMART™

Model DS-1000

Single Channel On-Line Dewpoint Meter

### Features :-

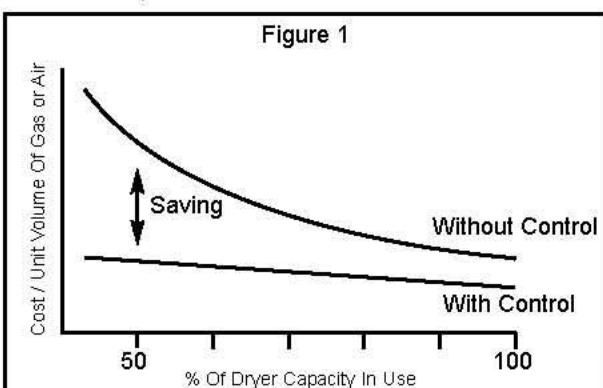
- Low Cost
- Rapid Response
- Accuracy  $\pm 2^{\circ}\text{C}$  Dewpoint
- Panel Mounting 1/8 Din Size
- IP65 Rated Front Panel
- Digital Indication In  $^{\circ}\text{C}$ ,  $^{\circ}\text{F}$  or ppm(v)
- Isolated 4-20mA Output
- Fully Interchangeable Sensors
- Range  $-80^{\circ}\text{C}$  to  $+20^{\circ}\text{C}$  Dewpoint
- User Friendly - Simple Operation
- High Resolution Measurement Circuitry
- Two Alarms (View / Adjust Setpoints From Front Panel)
- Calibration Traceable To National & International Standards



Alpha Moisture Systems Model DS1000 dewpoint hygrometer is an economically priced instrument package, designed for continuous analysis of air or gas and to monitor or control the regeneration of desiccant dryers.

Controlling the changeover cycle of a heated regeneration desiccant dryer, on demand rather than on time, can significantly reduce the running costs of the dryer. (See Fig 1)

This panel mounted instrument, with an IP65 rated front panel, gives a direct reading of dewpoint in either  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$  on a 4 digit L.E.D. display, with a range of  $-80^{\circ}\text{C}$  to  $+20^{\circ}\text{C}$  dewpoint. ( $-112^{\circ}\text{F}$  to  $+68^{\circ}\text{F}$  dewpoint) The DS1000 dewpoint hygrometer utilises the unique ultra high capacitance ADHS/1000 dewSMART™ sensor which ensures unrivalled accuracy, repeatability and long term reliability. The sensor can be installed up to 1000 metres from the instrument.



It can be shown that the potential savings increase as the dryer utilisation decreases. Even in the case of a dryer being used to 100% of its capacity, the savings made during normal operation and overnight or weekend shut-downs can be quite dramatic.

An isolated 4-20mA analogue output can be used in either active or passive mode with a maximum output load of  $1\text{K}\Omega$  (active).

Each of the two sets of voltage free changeover alarm contacts are rated at  $7\text{A}@240\text{VAC}$  and the alarm set points are viewed and adjusted from the front panel keypad.

The DS1000 Dewpoint Hygrometer System consists of the analyser, dewSMART™ ADHS/1000 sensor, sensor holder and 2 metres of sensor cable.

W I T H U S

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**Instrument**

**Model :** DS1000 Dewpoint Hygrometer  
**Mounting :** Panel mounting with IP65 front panel  
**Display :** 4 digit L.E.D. 14.2mm high characters.  
**Range :** -80°C to +20°C dewpoint ( -112 to +68°F dewpoint or 0 to 1000 ppm(v) Factory Set Options)  
**Resolution :** 0.1°C, 0.1°F dewpoint or 0.1 ppm(v)  
**Alarms :** Two separately adjustable, voltage free changeover relays. Contact Rating 7A @ 240 VAC / 7A @ 30VDC. Relays normally energised. Trip on rising dewpoint or power failure.  
**Output :** 4-20mA DC Active or Passive. Maximum Load 1KΩ (Active); [(V Supply-2)/20]KΩ (Passive) Output Isolation 500 VAC  
**Power Supply :** 90 to 250 VAC; 50/60 Hz. Consumption 6VA (max).

**Sensor**

**Model :** ADHS/1000 Aluminium Oxide, Ultra High Capacitance dewSMART™ sensor with IP65 connector.  
**Range :** -80°C to +20°C (or -112°F to +68°F) dewpoint.  
**Accuracy :** ± 2°C Dewpoint. All sensors supplied with a certificate documenting factory calibration against known moisture levels, traceable to National & International Humidity Standards.  
**Pressure :** Maximum sensor pressure 50 barg (optional high pressure version available). Supplied with 2m of sensor cable and all connectors. The system can be operated with up to 1 kilometre of sensor cable and longer than standard lengths can be supplied on request.

**Sensor Holder**

**Model :** ADSH; Stainless Steel with a choice of 1/8", 1/4" or 6mm OD stainless steel Swagelok tube fittings. Supplied complete with mounting bracket.

**System**

**Operating Temperature :** -10 to +50°C.  
**Operating Humidity :** 10 to 90% RH Non-condensing.  
**Storage Temperature :** -50 to +70°C.  
**Electromagnetic Capability(EMC) :** Immunity EN 50082-1 Emissions EN 50081-1  
**Electrical Safety :** EN 61010-1  
**Warranty :** 12 months from date of delivery against faulty materials or workmanship.

**Ordering Information**

**Model DS1000**

**Display Units**  
 °C Dewpoint.....C  
 °F Dewpoint.....F

**Tube Fittings**  
 1/8"OD.....8  
 1/4"OD.....4  
 6mmOD.....6

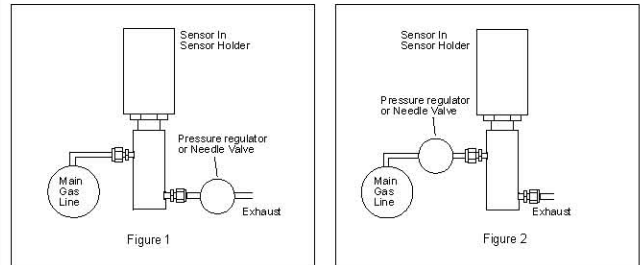
**Pressure**  
 Standard (50barg).....N  
 High (400barg).....H

Example : If your requirement is for °C Dewpoint, sensor holder with 1/4" OD tube fitting and operation at below 50 barg then please order as :  
**Model DS-1000-C-4-N**

**Corrosive Gases**

The Sensor should not be exposed to corrosive gases (or corrosive contaminants in the main gas sample) as they would chemically attack the sensor and render it useless. Examples of such gases are mercury (Hg), ammonia (NH<sub>3</sub>), chlorine (Cl<sub>2</sub>) and wet acid vapours i.e. acid vapours in gas with moisture content greater than 100ppm (v). Strong oxidising agents such as ozone (O<sub>3</sub>) should also be prevented from coming into contact with the sensor.

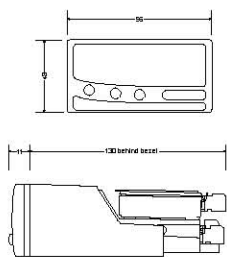
**Basic Installations**



As illustrated above, the sensor may be installed at line pressure (fig.1) or at atmospheric pressure (fig.2). We recommend installation at atmospheric pressure because the sensor is then protected from condensate.  
**Note:** Samples should be taken from the upper surface of the main line to prevent any risk of condensate reaching the sensor. Additional components may be required for specific applications - refer to *Accessories* and *Sampling System* specification sheets. Use stainless steel, nickel or copper piping wherever possible.

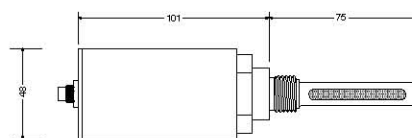
**Weights & Dimensions**

**Instrument**



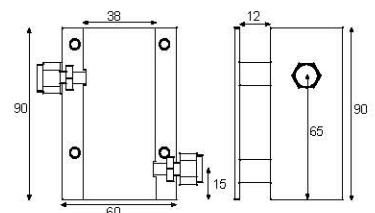
Panel Cutout : 92x45mm  
 Maximum Panel Thickness : 10mm  
 Weight : 350gms

**Sensor**



Allow a minimum of 60mm above the sensor body for plug and cable.  
 Weight : 480gms

**Sensor Holder**



Mounting Centres  
 4 holes 5/16 dia @ 46x55 centre  
 Weight 900gms  
 All dimensions in millimetres