

# Model DS1000

Single Channel On-line Instrument

## 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 Fig1)

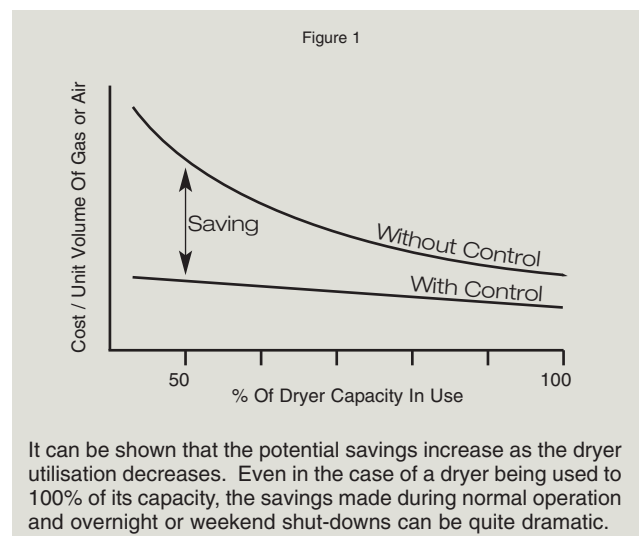
This panel mounted instrument, with an IP65 rated front panel, gives a direct reading of dewpoint in either  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$  on a 4 digit L.E.D. display, with a range of  $-80^{\circ}\text{C}$  to  $+20^{\circ}\text{C}$  dewpoint. ( $-112^{\circ}\text{F}$  to  $+68^{\circ}\text{F}$  dewpoint)

The DS1000 dewpoint hygrometer utilises the unique ultra high capacitance ADHS/1000 *dewSMART*<sup>™</sup> sensor which ensures unrivalled accuracy, repeatability and long term reliability. The sensor can be installed up to 1000 metres from the instrument.

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

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

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



# Specifications

## Model DS1000 - Single Channel On-line Instrument

### 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 *deuSMART™* 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 Sensor holder - 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 COMPATABILITY

Immunity - EN 50082-1

Emissions - EN 50081-1

#### ELECTRICAL SAFETY

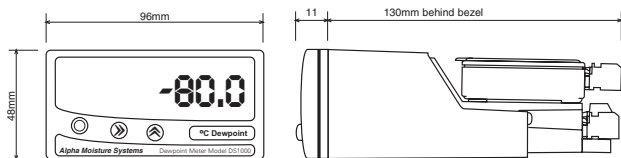
EN 61010-1

#### WARRANTY

12 months from date of delivery against faulty materials or workmanship.

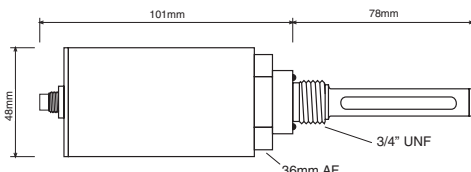
## Weights and Dimensions

### Instrument



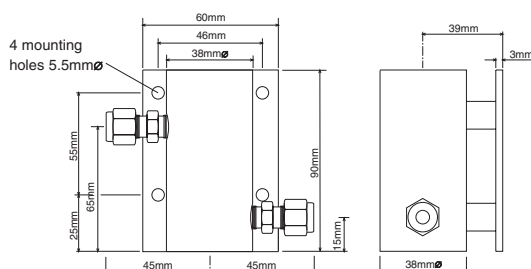
Panel cutout : 92mm x 45mm - Maximum panel thickness : 10mm  
Weight : 350g

### Sensor

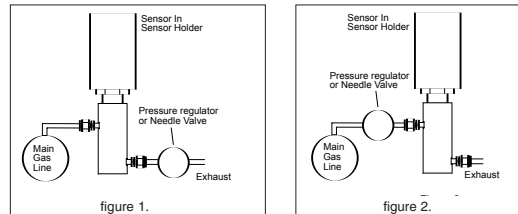


Allow a minimum of 60mm above the sensor body for plug and cable  
Weight: 480g

### Sensor holder



## Installation



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.**

## 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.

## Ordering Information

### Model DS1000 - [ ] [ ] [ ]

DISPLAY UNITS  
°C DEWPOINT C  
°F DEWPOINT F

#### FITTINGS

1/4" OD PIPE 4  
6mm OD PIPE 6  
1/8" OD PIPE 8

#### PRESSURE

STANDARD (50 barg) N  
HIGH (400 barg) 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 DS1000-C-4-N**