

# Model DS1000-ADSH Dewpoint Hygrometer

## Single Channel On-line Hygrometer

Alpha Moisture Systems Model DS1000-ADSH dewpoint hygrometer is an economically priced instrument package, designed for continuous analysis of air or gas, ideal for monitoring or controlling 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 Figure 1).

### Easily Installed - Fast Response - Stable - Reliable - Accurate.

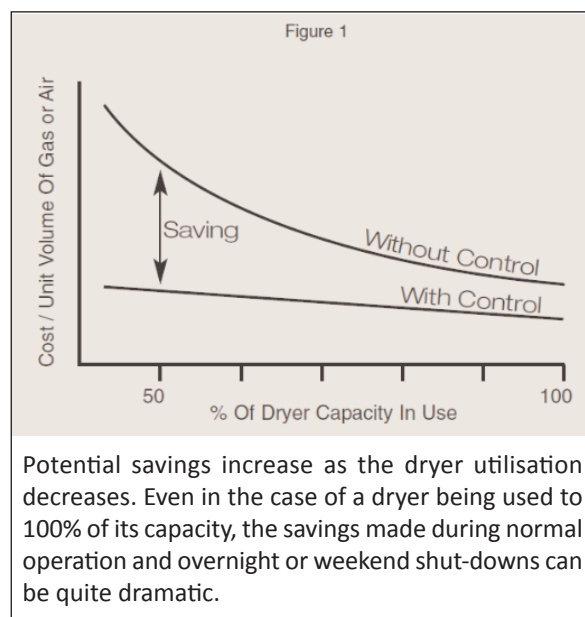
This panel mounted instrument, with an IP65 front panel, gives a direct reading of dewpoint in either °C, °F or ppm(v) on a 4 digit LED display, with ranges between -110°C to +20°C (-166°F to +68°F) dewpoint or equivalent in ppm(v).

#### Features

- Low Cost
- Rapid Response
- Accuracy  $\pm 2^{\circ}\text{C}$  Dewpoint
- Panel Mounting 1/8 Din Size
- IP65 Front Panel
- Digital Indication In °C, °F or ppm(v)
- Isolated 4-20mA Output
- Fully Interchangeable Sensors
- Ranges available between -110°C to +20°C Dewpoint
- User Friendly - Simple Operation
- High Resolution Measurement Circuitry
- Two Alarms (View / Adjust Setpoints From Front Panel)
- Calibration Traceable To National & International Standards



Measuring instrument  
conforms with  
BS EN 61326-1



The DS1000 dewpoint hygrometer utilises the unique ultra high capacitance ADHS **dewSMART™** 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 source (active) or Sync (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 display, ADHS **dewSMART™** sensor, sensor holder and 2 metres of sensor cable.

## Specifications

### Model DS1000 - Single Channel On-line HYGROMETER

#### INSTRUMENT

DS1000 Dewpoint Hygrometer

#### MOUNTING

Panel mounting with IP65 front panel

#### DISPLAY

4 digit L.E.D. 14.2mm high characters

#### ALARMS

Two separately adjustable, voltage free changeover relays. Contact Rating 7A @ 240 VAC / 7A @ 30VDC. Relays normally energised. Trip on rising or falling dewpoint, latching or non-latching.

#### OUTPUT

4-20mA DC Active or Passive.

Maximum Load

- 1K $\Omega$  (Active)
- [(V Supply-2)/20]K $\Omega$  (Passive)

Output Isolation 500 VAC

#### POWER SUPPLY

90 to 253 VAC; 50/60 Hz.

Consumption - 6VA (max)

#### SENSOR

ADSH Aluminium Oxide, Ultra High Capacitance dewSMART™ sensor with IP65 connector

#### DEWPOINT RANGE

Various ranges available between:

-110°C to +20°C (-166°F to +68°F) dewpoint.

Or, 0-1,000ppm(v). (°C, °F or ppm(v) are Factory Set Options)

#### RESOLUTION

0.1°C, 0.1°F dewpoint or 0.1 ppm(v)

#### 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

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 (EMC) DS1000

Complies with BS EN61326-1

Electrical Safety: BS EN61010-1

#### ELECTROMAGNETIC COMPATABILITY (EMC) ADSH Sensor

Complies with BS EN 61326-1

#### WARRANTY -

##### DS1000 Display/Controller

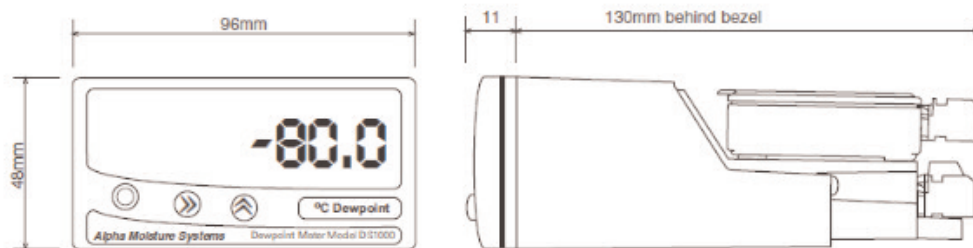
12 months from date of delivery against faulty materials or workmanship.

##### ADSH Sensor

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

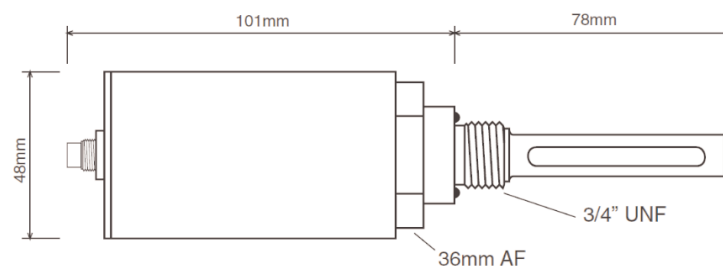
## Dimensions

### DS1000



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

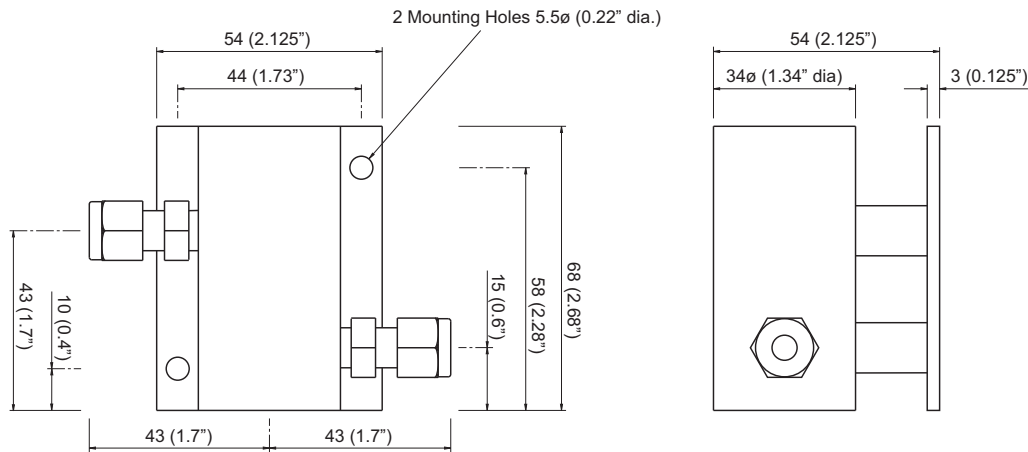
### ADSH SENSOR



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

## Dimensions

### Model SH-AMT Transmitter Holder - Flow Through Sample Cell



Note: The Assembly is shown with 1/4" OD tube fittings. The dimensions across the tube fittings will vary for all other size fittings.

### How to Order - Step 1 of 4

Select a Range Below

#### Model ADSH- [X]

-80°C to +20°C (-112°F to +68°F) dewpoint } resolution = 0.1°C / °F  
-110°C to +20°C (-166°F to +68°F) dewpoint }

0 to 1,000 ppm(v) - resolution = 0.1ppm

Other ranges are available for this transmitter - if there is a specific range requirement needed - please contact us.

Order Example:-  
Model ADSH -80°C to +20°C dewpoint.



### How to Order - Step 2 of 4

Select A Longer Cable - Optional

#### CAB040- [XX]

The ADSH Transmitter comes complete with **2 metres** of connecting cable as standard.

To order a longer length in metres, add number after this part number.

Example: CAB040-10 for 10 metres

Non-Standard cables available in 3, 4, 5, 10, 12, 15, 25m lengths.  
For longer lengths please call.

ADSH Standard Cable 2 Meters



Part No. CAB040

### How to Order - Step 3 of 4

Order a Display/Controller Below

#### Model DS1000



- Perfect for continuous online measurements
- Fast Response
- 90V – 253V AC or DC operation
- Single channel in-line hygrometer
- Panel protection to IP65 (NEMA4X)
- 2 independent alarms

### How to Order - Step 4 of 4

Select A Transmitter Holder

Comes complete with mounting plate.

#### ADSH + [X] [X]

**X = Choose INLET Pipe Fitting**  
0 = None 1/8" NPT Port  
4 = 1/4" - Pipe OD  
8 = 1/8" - Pipe OD  
6 = 6mm - Pipe OD

**X = Choose OUTLET Pipe Fitting**  
0 = None 1/8" NPT Port  
4 = 1/4" - Pipe OD  
8 = 1/8" - Pipe OD  
6 = 6mm - Pipe OD

Order Example:- For Transmitter Holder with 2 x 1/4 fittings Order ADSH-4-4



**Note:** The Sensor should not be exposed to Ammonia ( $\text{NH}_3$ ), Chlorine ( $\text{Cl}_2$ ), Hydrogen Chloride ( $\text{HCl}$ ), Mercury ( $\text{Hg}$ ) or strong oxidising agents such as Ozone. Less acidic gases such as Sulphur Dioxide ( $\text{SO}_2$ ) can be monitored if the moisture content is low, less than 100ppm(v). For acidic gases the EDM range of electrolytic hygrometers is available. See datasheets for more details.

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CERTIFICATE No. FM35600  
BS EN ISO 9001:2008



Institute of Measurement and Control  
Companion Company

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