Model DS1000-ADHS Dewpoint Hygrometer

Single Channel On-line Hygrometer

Alpha Moisture Systems Model DS1000-ADHS dewpoint hygrometer is an economically priced instrument package, designed for continuous analysis of air or gas, ideal for monitoring or controling the regeneration of desiccant dryers.
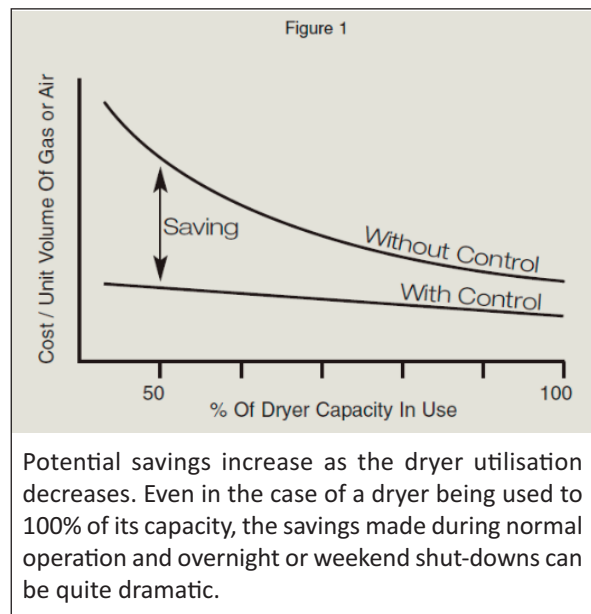
Controlling the changeover cycle of a heated regeneration desiccant dryer, on demand rather than on time, can significantly reduce the running costs of the dryer. **(See Figure 1).**

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 equivelent in ppm(v).

Features

- Low Cost
- Rapid Response
- Accuracy ± 2°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

Figure 1

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.

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 1KΩ (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
        - 1KΩ (Active)
        - [(V Supply-2)/20]KΩ (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°C to +70°C.

ELECTROMAGNETIC COMPATABILITY (EMC) DS1000
Complies with BS EN61326-1
Electrical Safety: BS EN61010-1

ELECTROMAGNETIC COMPATABILITY (EMC) ADHS Sensor
Complies with BS EN 61326-1

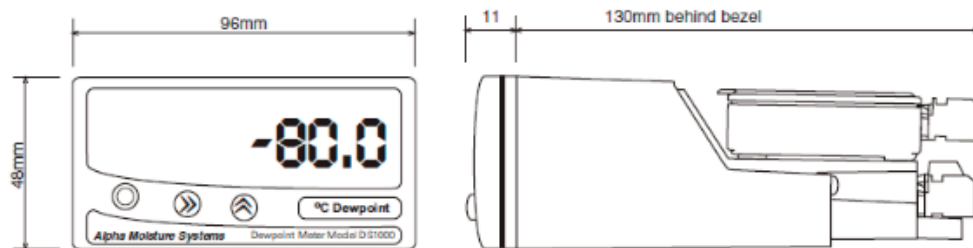**WARRANTY -**
DS1000 Display/Controller
12 months from date of delivery against faulty materials or workmanship.
ADHS Sensor
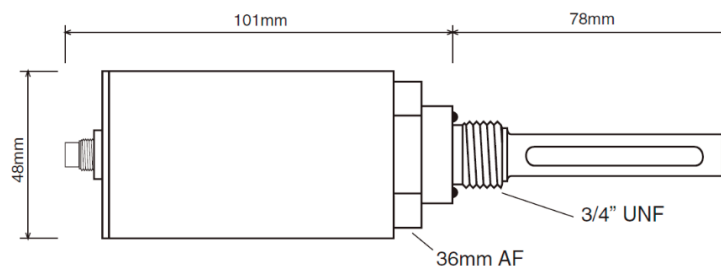24 months from date of delivery against faulty materials or workmanship.

Dimensions

DS1000

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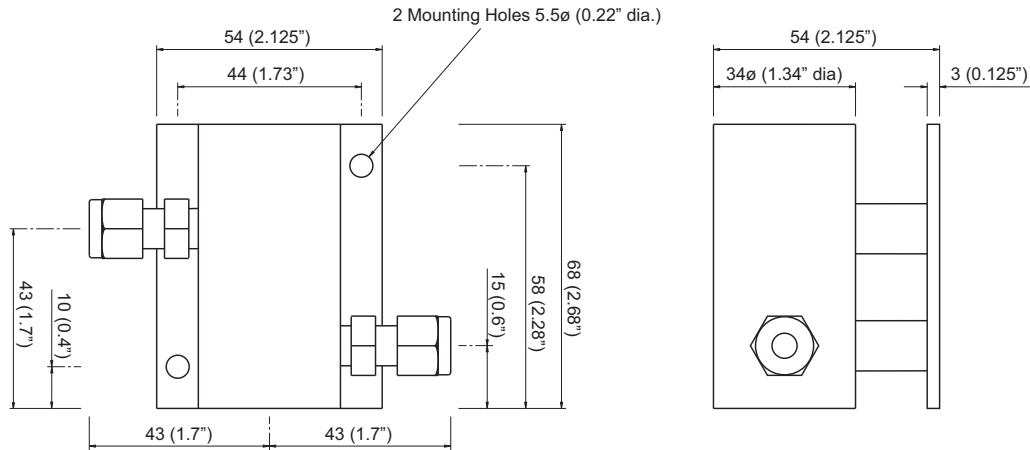
ADHS SENSOR

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

2 Mounting Holes 5.5ø (0.22" dia.)

54 (2.125")
44 (1.73")
43 (1.7")
10 (0.4")
43 (1.7")
43 (1.7")
15 (0.6")
58 (2.28")
68 (2.68")
54 (2.125")
34ø (1.34" dia)
3 (0.125")

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 ADHS- [X] Range

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

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 ADHS −80°C to +20°C dewpoint.

How to Order - Step 2 of 4
Select A Longer Cable - Optional

CAB040- [XX] Length

The ADHS 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.**

ADHS 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 compete with mounting plate.

ADSH + [X] [X] Pipe Fittings

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

Side View

Corrosive Gases: The Sensor should not be exposed to corrosive gases (or corrosive contaminants in the gas sample) as these can chemically attack the sensor, impairing calibration accuracy and/or damaging it beyond economic repair. Examples of such gases are mercury (Hg), ammonia (NH$_3$), chlorine (Cl$_2$) etc. Strong oxidising agents such as ozone (O$_3$) should also be prevented from coming into contact with the sensor.