

# Model DS1200-AMT

## Single Channel Dew Point Hygrometer

Ranges available between  $-120^{\circ}\text{C}$  to  $+20^{\circ}\text{C}$  ( $-166^{\circ}\text{F}$  to  $+68^{\circ}\text{F}$ ) dewpoint

User friendly solution for continuous on-line dewpoint measurement in dry process gases and dry compressed air, offering powerful functionality and simple interface through advanced digital technology.

**Fast Response - Stable - Reliable -  
Accurate - Easy to Install.**

Model DS1200 from Alpha Moisture Systems is a single channel on-line hygrometer designed to measure dewpoint in process gases and dry compressed air. The panel mounted  $\frac{1}{8}$  DIN dewpoint meter, providing panel protection to IP65 (NEMA4X), combines with the Model AMT range of ultra high capacitance sensors for accurate trace moisture measurement.



### FEATURES

- User Friendly & Advanced Functionality
- Factory set in either  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$  Dewpoint, ppm(v), ppb(v),  $\text{g}/\text{m}^3$  or lbs/MMSCF
- 22V – 253V AC or DC Operation
- Linear 4-20mA Retransmission Signal
- 2 Independent, Fully Programmable Alarm Relays
- “AUTOCAL” CALIBRATION FEATURE
- Fast Response
- Long Term Stability
- IP66 / NEMA4 Weatherproof Protection
- Calibration traceable to National & International Standards

Combination of advanced digital technology of the display electronics and the transmitter, makes this the system of choice for a wide range of applications where precise indication, control and monitoring is critical.

Model DS1200-AMT system can be factory configured to read in  $^{\circ}\text{C}$  dewpoint,  $^{\circ}\text{F}$  dewpoint, ppm(v), ppb(v),  $\text{g}/\text{m}^3$  or lbs/MMSCF. The measured value is displayed on a large 4 digit, 13.8mm high, fourteen segment LED display. **Model DS1200-AMT Dewpoint Hygrometer** is fully configured to the customer's specifications.

The instrument offers two fully programmable alarm relays, which can be independently set across the full operating range. An optically isolated analogue signal, linear with the measured unit is also available (to interface with any external device).

**Model DS1200-AMT** can be supplied with any one of a range of dewpoint transmitters, which have all been specially manufactured to provide long term stability, so ensuring a long and trouble free service life.

The long lasting sensing element offers excellent sensitivity, repeatability and response speed - especially on dry down. Integrated electronics in each transmitter allow calibration data to be stored within its memory, making transmitters completely field interchangeable.

Each transmitter is calibrated to provide overall system accuracy of better than  $\pm 2^{\circ}\text{C}$  dewpoint and supplied with a certificate traceable to international humidity standards.

**Model DS1200-AMT** also incorporates the invaluable “AUTOCAL” feature for easy field verification of the system response, without recourse to any additional equipment. Accidental or unauthorised operation is prevented by a simple initiation routine.

The system allows the display unit to be sited in excess of 1000m from the transmitter, connected by a simple twisted pair cable.

## Specifications

### MODEL DS1200-AMT Dewpoint Hygrometer

#### DS1200 DISPLAY INDICATOR SPECIFICATIONS

**ENCLOSURE:** 1/8 DIN panel mounting ABS case

**DISPLAY:** 4 digit, 14 segment LED indicator. Red characters 13.8mm high. Factory set to display in °C, °F, ppm(v), ppb(v), g/m<sup>3</sup> or lbs/MMSCF

**SUPPLY VOLTAGE:** Universal 22Vac - 253Vac 50/60Hz & 20Vdc - 300Vdc 150mA to 15mA

**POWER CONSUMPTION:** 3.5W Maximum

**OUTPUT SIGNAL:** Linear 4 to 20mA, fully isolated. Maximum load 800Ω / 16Vdc

**ISOLATION:** Voltage Test / Operation - 2.3kVac / 250Vac

**ALARM RELAYS:** 2 independent fully programmable switched contacts. Rated 2A @ 250Vac / 1A @ 24Vdc.

**ANNUNCIATORS:** AL1 & AL2 LED's on front panel indicating status of each alarm

#### ELECTROMAGNETIC COMPATIBILITY (EMC):

Complies with BS EN 61326-1

**WEATHERPROOF CLASSIFICATION:** Front panel only - IP65 (NEMA 4X).

**WEIGHT:** 230 grams

#### TRANSMITTER & GENERAL SPECIFICATIONS

**SENSOR TYPE:** Model AMT Dewpoint Transmitter

**SENSING ELEMENT:** Ultra High Capacitance - Aluminium Oxide Type

**RANGES:** See Step 1 below.

**AUTOCAL:** Field calibration / Span check facility. Activated and operated via two button switches on the Transmitter body. Locked in normal operating mode to avoid tamper.

**TRANSMITTER ENCLOSURE:** 316 Stainless steel body with size C, DIN EN 175301 connector.

**SENSOR PROTECTION:** 316 Sintered stainless steel filter - 50 micron  
**OPERATING PRESSURE:** From 1kPa (0.01 barA) to Maximum 35,000kPa ( 350 barA)

**SAMPLE FLOW RATE:** Flow independent but ideally 2 to 5 standard litres per minute. Max: 25 litres/min

**WEATHERPROOF CLASSIFICATION:** IP66 / NEMA4X when Connector mated to Transmitter.

**MECHANICAL CONNECTION:** 3/4" UNF (16tpi) with integral Viton "O" ring seal.

**WEIGHT:** Transmitter and connector - 175grams

**CABLE:** Supplied with 2m length standard two core cable. Nominal diameter 3.4mm, 92ohms/km at 20°C

#### ELECTROMAGNETIC COMPATIBILITY (EMC):

Complies to BS EN 61326-1

**TEMPERATURE COEFFICIENT:** Transmitter temperature compensated for operating range.

**REPEATABILITY:** Better than ±0.3°C dewpoint

**FACTORY CALIBRATION:** Supplied with Certificate of Calibration traceable to NPL / NIST

**ACCURACY:** ± 2°C dewpoint (NPL / NIST traceable for range -90°C to +20°C)

**OPERATING TEMPERATURE:** -20°C to +60°C

**STORAGE TEMPERATURE:** -20°C to +70°C

**OPERATING HUMIDITY (External):** Maximum - 95% RH Non-condensing

**WARM UP TIME:** 10 seconds

**MECHANICAL WARRANTY:** 24 months in case of faulty workmanship and defective parts.

**CALIBRATION WARRANTY:** 12 months (not valid if transmitter is subject to corrosives or mis-use)

### How to Order - Step 1 of 3

Select from a Standard Range Below

Model DS1200-AMT + [xxxx]

Code	Range	Unit	Resolution
RDC:	-80°C to -20°C	dewpoint	resolution 0.1°C / °F
SRC:	-110°C to -20°C	dewpoint	
GYC:	-80°C to 0°C	dewpoint	
PLC:	-100°C to 0°C	dewpoint	
SDC:	-100°C to +20°C	dewpoint	
SSRC:	-120°C to -20°C	dewpoint	
LDC:	-120°C to +20°C	dewpoint	
SHDC:	-65°C to 0°C	dewpoint	
HDC:	-65°C to +20°C	dewpoint	
RDF:	-112°F to -4°F	dewpoint	
SRF:	-116°F to -4°F	dewpoint	
GYF:	-112°F to +32°F	dewpoint	
PLF:	-148°F to +32°F	dewpoint	
SDF:	-148°F to +68°F	dewpoint	
SSRF:	-184°F to +68°F	dewpoint	
LDF:	-85°F to +68°F	dewpoint	
SHDF:	-85°F to +32°F	dewpoint	
HDF:	-85°F to +68°F	dewpoint	

GYP:	1 to 6000	ppm(v)	resolution = 2ppm
SP:	1 to 1000	ppm(v)	resolution = 1ppm
MP:	0.1 to 100.0	ppm(v)	resolution = 0.1ppm
LP:	0.01 to 10.00	ppm(v)	resolution = 0.01ppm

PB: 1 to 1000 ppb(v) resolution = 1ppb

HG: 0.01 to 10.00 g/m<sup>3</sup> resolution = 0.01g/m<sup>3</sup>  
 LG: 0.001 to 1.000 g/m<sup>3</sup> resolution = 0.001g/m<sup>3</sup>

LLB: 0.1 to 10.0 lbs/MMSCF resolution = 0.01 lbs/MMSCF  
 SLB: 0.1 to 25.0 lbs/MMSCF resolution = 0.01 lbs/MMSCF  
 HLB: 0.1 to 50.0 lbs/MMSCF resolution = 0.01 lbs/MMSCF  
 VHLB: 0.1 to 300.0 lbs/MMSCF resolution = 0.1 lbs/MMSCF

NOTE: ppm, ppb, g/m<sup>3</sup> & lbs/MMSCF ranges are stated at atmospheric pressure. Model AMT Transmitter can be configured to provide corresponding ranges for operation at other constant pressure. This must be stated at time of order.

Order Example:- Dewpoint Transmitter Model AMT-GYC = -80°C to 0°C dp  
 Model DS1200-AMT COMES COMPLETE WITH A STANDARD 2 METRE CONNECTING CABLE.

### How to Order - Step 2 of 3

Select A Longer Cable Below

CAB069-AMT + [XX]

Your AMT 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: CAB069-AMT-10 for 10 metres

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

#### AMT Standard Cable 2 Meters



Part No. CAB069-AMT

### How to Order - Step 3 of 3

Select A Transmitter Holder

Comes complete with mounting plate. High Grade Stainless Steel Pipe Fittings

SH-AMT + [X] [X]

X = Choose INLET Pipe Fitting  
 0 = None (Ports = Female 1/8" NPT)  
 4 = 1/4" - Pipe OD  
 8 = 1/8" - Pipe OD  
 6 = 6mm - Pipe OD

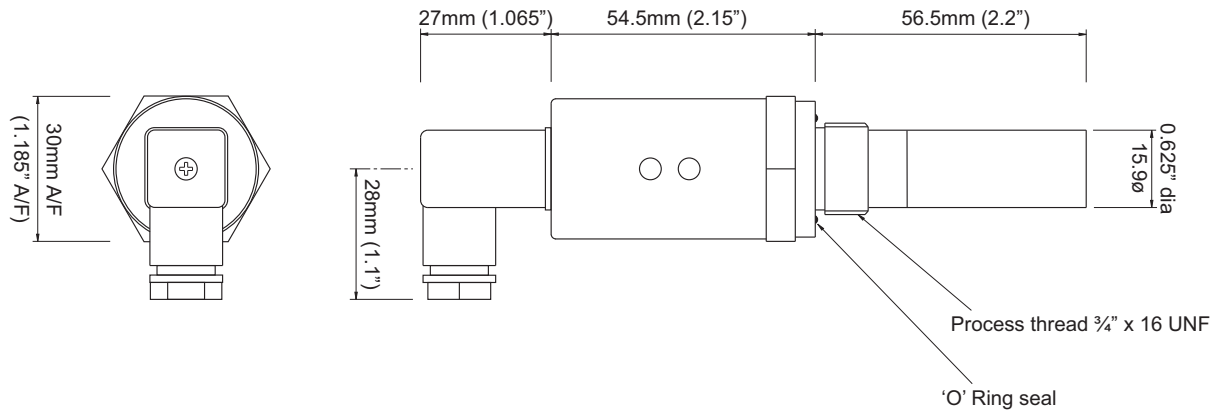
X = Choose OUTLET Pipe Fitting  
 0 = None (Ports = Female 1/8" NPT)  
 4 = 1/4" - Pipe OD  
 8 = 1/8" - Pipe OD  
 6 = 6mm - Pipe OD

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



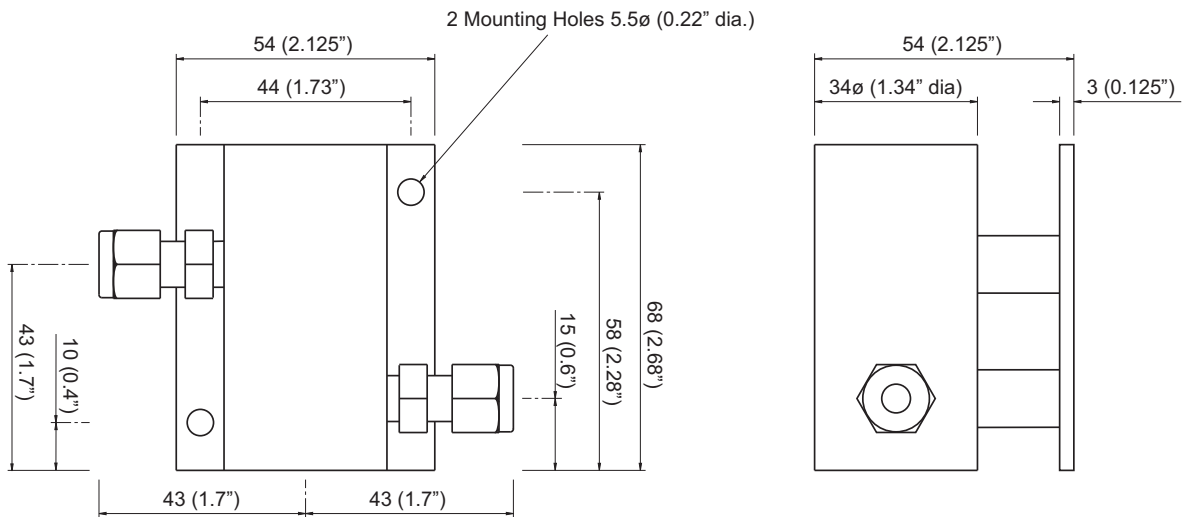
## Dimensions

### Model AMT Dewpoint Transmitter



### Model SH-AMT Transmitter Holder

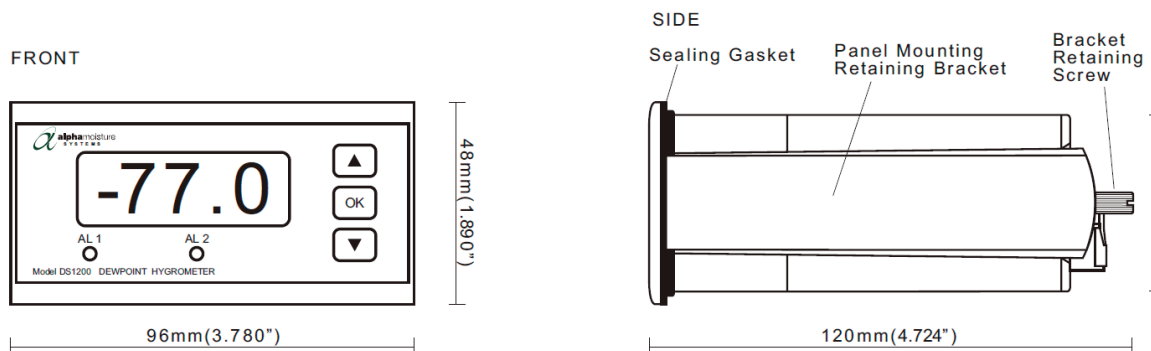
#### Flow Through Sample Cell



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

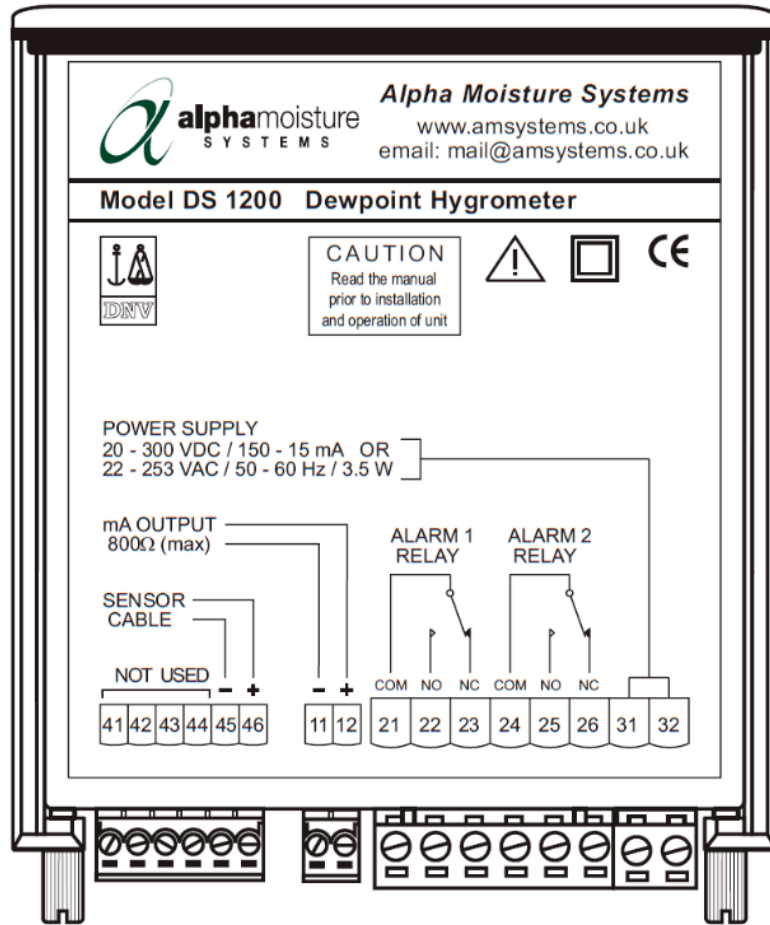
### Model DS1200 Display

#### Stable, Accurate and Reliable Alarmed Monitor



## Application Wiring Diagrams

### Model DS1200 Display Connection Details



**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<sub>3</sub>), chlorine (Cl<sub>2</sub>) etc. Strong oxidising agents such as ozone (O<sub>3</sub>) should also be prevented from coming into contact with the sensor.

## Distributor Information

Alpha Moisture Systems Limited.  
 Registered Office: Alpha House,  
 96 City Road, Bradford, BD8 8ES. UK.



Registered in England and Wales No. 3902302  
 VAT Registration No. GB607207563  
 WEEE Producer Registration No. WEEE/EA0067TX

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**Tel** +44 (0) 1274 733100

**Email** info@amsystems.co.uk

**Website** www.amsystems.co.uk