

# Model ADHT-Ex

**Intrinsically Safe 4-20mA Dewpoint Transmitter.**

**Ranges available between -110°C to +20°C (-166°F to +68°F) dewpoint**

The Alpha Moisture Systems Model ADHT-Ex is a 3 wire, 4-20 mA, 24V powered dewpoint transmitter. The unit is fully self contained in a robust stainless steel casing with weatherproof protection to IP65, making it ideal for use in heavy industrial environments.

Designed with the operator in mind, Model ADHT-Ex is extremely easy to use and the digital dewSMART™ technology ensures accurate and reliable readings with little or no maintenance.

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



**CE**  
Measuring instrument conforms with BS EN 61326-1 **Ex**

Model ADHT-Ex is certified intrinsically safe to **Ex** II IG Ex ia IIC T6 Ga (Ta = - 40°C to +60°C) for use in hazardous areas using a signal isolator PR5104BB2A (recommended) for 100 to 240VAC (24VDC to special order). See illustration below.

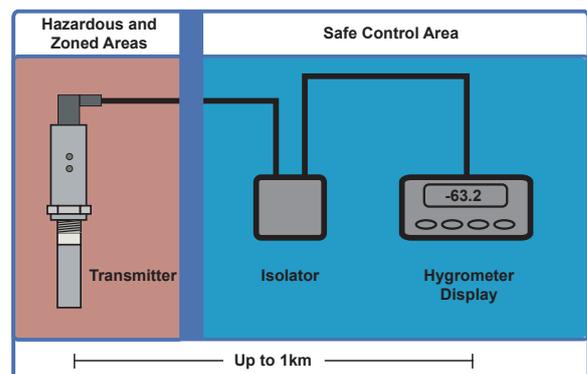
Various ranges are available covering an overall range from -110°C to +20°C dewpoint. The Model ADHT-Ex derives its power directly from the signal isolator and it is configured to give a linear 4-20mA signal for the chosen range.

## FEATURES

- 3 Wire, 4-20mA, 24V Dewpoint Transmitter
- Intrinsically Safe: **Ex** II IG Ex ia IIC T6 Ga (Ta = - 40°C to +60°C)
- Overall Range -110°C to +20°C Dewpoint
- Accuracy ± 2°C Dewpoint (or equivalent)
- Calibrated in °C, °F or ppm(v)
- Polarity Protected Input
- Weatherproof Rating - IP65
- Open / Short Circuit Detection
- Built-in Temperature Compensation
- High Resolution Measurement Circuitry
- Calibration Traceable to National and International Standards

The 4-20mA output signal can be transmitted remotely to either DCS, SCADA system or any other suitable equipment with an input impedance of less than 600W.

**Model ADHT-Ex** is supplied ready for use, with a certificate of calibration traceable to National and International Humidity standards, instruction manual and 2 metres of connecting cable.



## Specifications

### MODEL ADHT-Ex Dewpoint Transmitter

#### Sensor

#### MODEL

ADHT-Ex Aluminium Oxide, Ultra High Capacitance *dewSMART™* sensor with IP65 connector.

#### RANGE

Overall Range -110°C to +20°C dewpoint or 0.01 to 23000ppm.  
(Other engineering units available)

#### ACCURACY

± 2°C Dewpoint (3 Sigma RSS)

#### OPERATING TEMPERATURE RANGE

-20°C to +60°C

#### STORAGE TEMPERATURE

-20°C to +70°C

#### TEMPERATURE COEFFICIENT

Temperature compensated for operating range.

#### RESPONSE TIME

Wet to Dry : -20°C to -60°C - less than 60 secs.

Dry to Wet : -110°C to -20°C - less than 20 secs

#### SAMPLE FLOW RANGE

Flow independent but ideally 2 to 5 sl/min

#### CALIBRATION

Supplied calibrated with traceability to NPL.

(NPL traceability for range -95°C to +20°C)

#### RECOMMENDED RECALIBRATION PERIOD

1 Year

#### TRANSMITTER TYPE

3 Wire Type Transmitter

#### OUTPUT SIGNAL

4 to 20mA Linear suitable for external equipment with a maximum input impedance of 600 W (@ 24V) (Dependant on isolator selection)

#### MAXIMUM SAFE AREA CABLE LENGTH

1000m

#### MAXIMUM HAZARDOUS AREA CABLE LENGTH

200m Dependant on cable parameters and hazardous area classification

#### CABLE TERMINATIONS

IP65 rated connector at the sensor and other end terminated with bootlace ferrules.

#### ELECTROMAGNETIC COMPATIBILITY (EMC)

Complies with BS EN 61326-1

#### INTRINSIC SAFETY CERTIFICATION STANDARDS

EN 60079-0 / EN 60079-11 / EN 60079-26 / BS EN 61326-1.



II IG Ex ia IIC T6 Ga. (Ta = -40°C to +60°C)

For full safety description please request the above certificate.

#### WARRANTY

2 years for faulty workmanship and defective parts.

### How to Order - Step 1 of 5

Select a Range Below

## Model ADHT-Ex- [X]

<b>SILVER</b>	-110°C to -20°C (-166°F to -4°F) dewpoint	} resolution = 0.1°C / °F
<b>RED</b>	-80°C to -20°C (-112°F to -4°F) dewpoint	
<b>GREY</b>	-80°C to 0°C (-112°F to +32°F) dewpoint	
<b>BLUE</b>	-80°C to +20°C (-112°F to +68°F) dewpoint	
<b>PURPLE</b>	-110°C to +20°C (-166°F to +32°F) dewpoint	
<b>YELLOW</b>	-60°C to 0°C (-76°F to +32°F) dewpoint	
<b>GOLD</b>	-50°C to +20°C (-58°F to +32°F) dewpoint	
<b>GREEN</b>	-30°C to +20°C (-22°F to +32°F) dewpoint	

<b>1 to 1000 ppm(v)</b>	resolution = 1ppm
<b>0.1 to 100.0 ppm(v)</b>	resolution = 0.1ppm
<b>0.01 to 10.00 ppm(v)</b>	resolution = 0.01ppm

<b>0.001 to 17.5 g/m3</b>	resolution = 0.001g/m <sup>3</sup>
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<b>0.1 to 300.0 lbs/MMSCF</b>	resolution = 0.1 lbs/MMSCF
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Range

[X]



### How to Order - Step 2 of 5

Select A Longer Cable Below

## CAB041 + [XX]

Your ADHT-Ex 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: CAB041-ADHT-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.

#### ADHT-Ex Standard Cable 2 Metres



Part No. CAB041

Length

[XX]

### How to Order - Step 3 of 5

Order a Display Below

## Model DS1000



- Perfect for continuous online measurements
- Fast Response
- 22V – 253V AC or DC operation
- Single channel in-line hygrometer
- Panel protection to IP65 (NEMA4X)
- 2 independent alarms
- User Friendly - Simple Operation
- Isolated 4-20mA Output
- Digital Indication In °C, °F or ppm(v)

For more details please see data sheet DS1000.

### How to Order - Step 4 of 5

Select a Transmitter Holder Comes complete with mounting plate.

2 grades available: 303 or 316 Stainless Steel

## ADSH-AMT 303 + [X] [X] ADSH-AMT 316 + [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 303 grade with 2 x 1/4 fittings Order ADSH-AMT 303 - 4 - 4

Pipe Fittings

[X] [X]



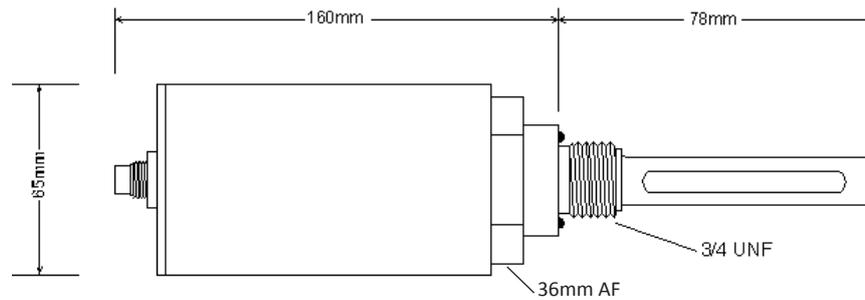
**How to Order - Step 5 of 5**

Order an Isolator for the safe area

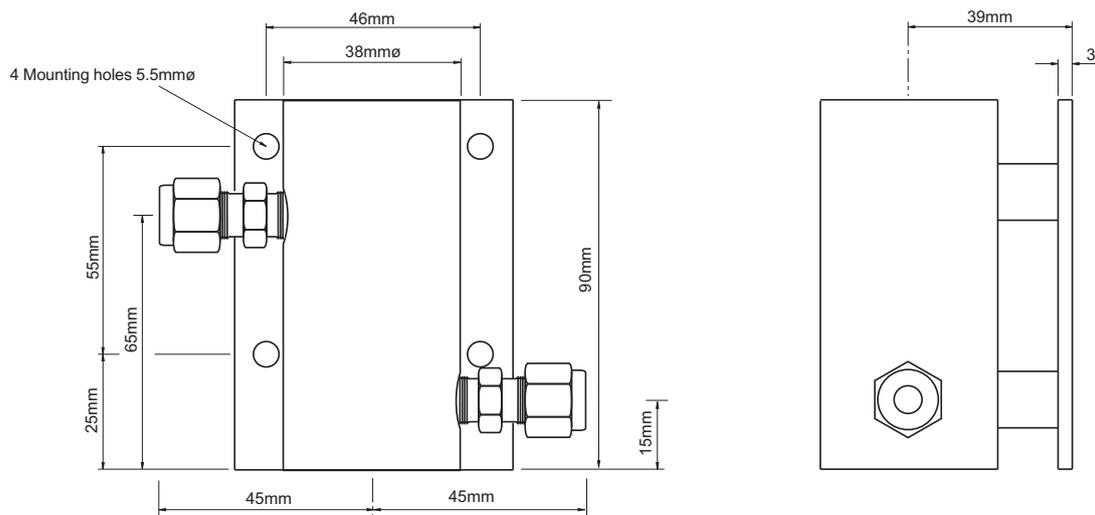
Part No. PR5104BB2A - Single Channel



See Page 4 for wiring diagrams

**Dimensions****Model ADHT-Ex Dewpoint Transmitter - 4-20mA Loop Powered Transmitter**

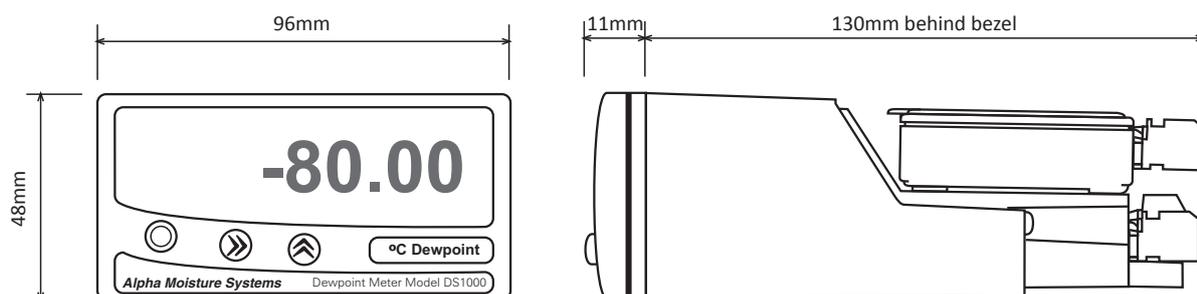
Allow a minimum of 60mm above the sensor body for plug and cable. Weight: 0.83kg Packed weight: 3.5kg

**Model ADHT-Ex 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.  
Weight: 800g Packed Weight: 1Kg

**Model DS1000 Display**

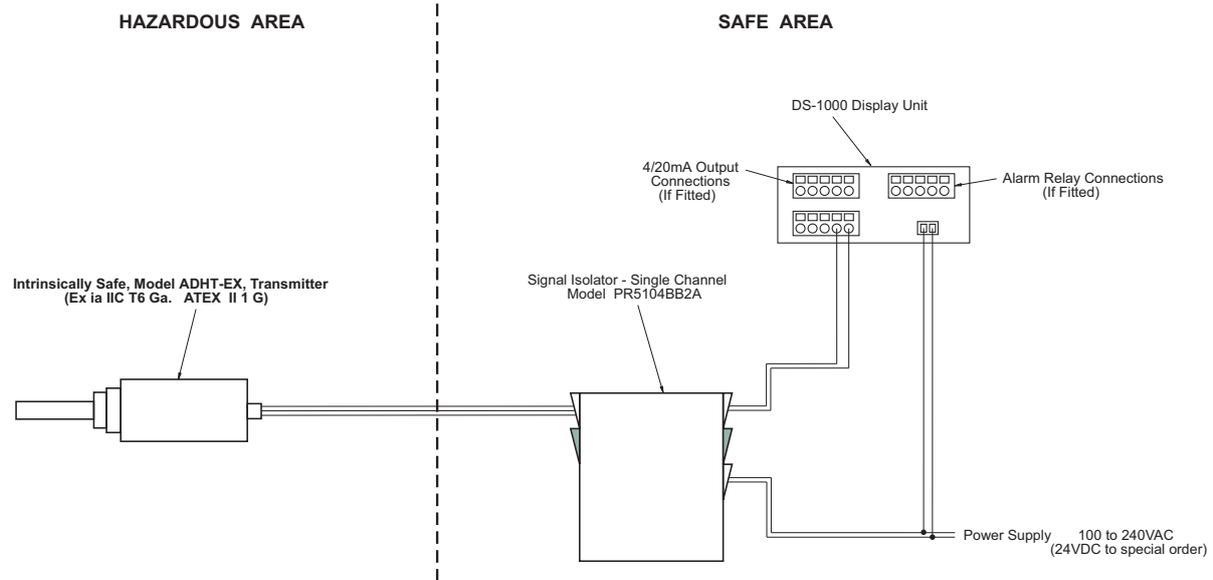
Stable, Accurate and Reliable Alarmed Controller/Display



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

## Installation

### Model ADHT-Ex Dewpoint Transmitter - 4-20mA Loop Powered Transmitter



**Note:** Samples should be taken from the upper surface of the main line to prevent any risk of condensate reaching the sensor. Use stainless steel, nickel or copper piping wherever possible. Additional components may be required for specific applications - Contact your local distributor or Alpha Moisture Systems Ltd for more information.

## Corrosive Gases

The sensor should not be exposed to ammonia ( $\text{NH}_3$ ), mercury (Hg), carbon monoxide (CO) or acid gases, such as chlorine (Cl) and hydrogen chloride (HCl), as they chemically attack the sensor and destroy it. Strong oxidising agents, such as ozone ( $\text{O}_3$ ) should also be prevented from coming into contact with the sensor. For more information please contact us below. Thank you.

## Distributor Information

For more information on our ATEX Certified Ex product range please contact us on +44 (0) 1274 733 100 or Email: [info@amsystems.co.uk](mailto:info@amsystems.co.uk)

Product specification may be subject to change, without prior notice, as part of our ongoing product development programme.

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CERTIFICATE No. FM35600  
BS EN ISO 9001:2008



**Institute of Measurement and Control**  
Companion Company

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