

AMT-Ex

Intrinsically Safe 4-20 mA Dewpoint Transmitter



Features and Benefits

- ▶ Certified Intrinsically Safe to IECEx, ATEX for use in hazardous areas and with potentially explosive atmospheres using specified Signal Isolator in the safe area
- ▶ Ultra-high capacitance aluminium oxide sensor delivers unsurpassed sensitivity, speed of response, accuracy, repeatability, stability, and long service life
- ▶ Unique AutoCal span correction feature
- ▶ Various dewpoint ranges available -110 °C to 20 °C
- ▶ Compact 3 Wire 4-20 mA Intrinsically Safe Dewpoint Transmitter
- ▶ Accuracy ± 2 °C dewpoint
- ▶ IP66 / NEMA 4 Weatherproof Protection
- ▶ Optional Sensor Holder/Sample Cell for optimum sampling conditions
- ▶ Supplied with a calibration certificate traceable to National and International Humidity standards



DS4000 Based Hygrometer



DS1200 Based Hygrometer



AMT-Ex in Transmitter Holder

Our AMT-Ex Intrinsically Safe Online Dewpoint Transmitter is used for continuous measurement of trace moisture measurement in process gases or dry compressed air. **AMT-Ex** dewpoint transmitter can also be factory configured to output a linear 4-20 mA signal for other moisture units e.g. ppm(V), ppm(W), g/m³ and lb/MMSCF etc.

The long lasting sensing element offers excellent sensitivity, repeatability and speed of response. Each unit is supplied with a Certificate of Calibration, traceable to International Humidity Standards.

AMT-Ex is ATEX certified Intrinsically Safe for hazardous area use when installed with the appropriate isolator and display in the safe area. See Illustrations on pages 2, 3 & 4.

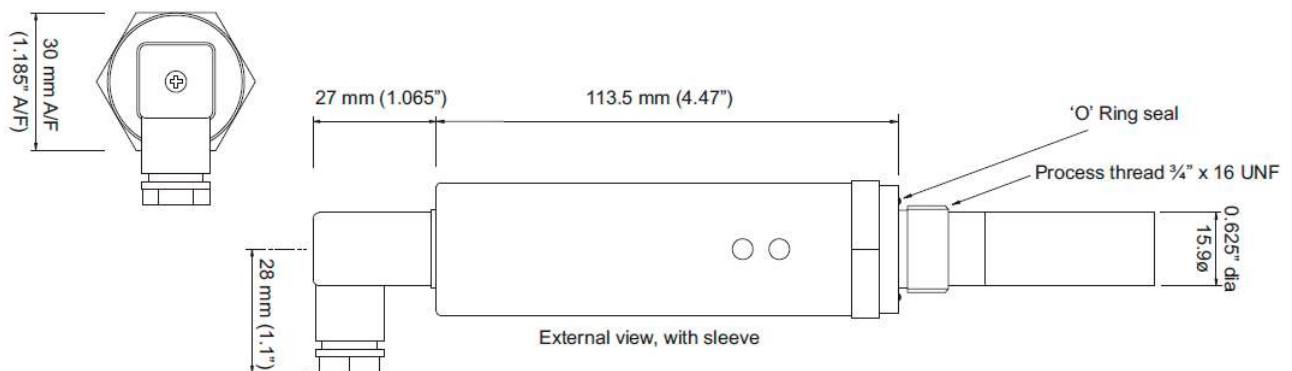
This online dew point transmitter also incorporates an Automatic Calibration (AutoCal) feature that allows the user to carry out a field calibration / span check which is operated by two small button switches built within the transmitter enclosure and can withstand 35,000 kPa (350 bar) maximum pressure. By employing a low resistance cable, the AMT-Ex dewpoint transmitter can be located in excess of 1000 metres from the safe area control room.

AMT-Ex Dewpoint Transmitter Technical Data

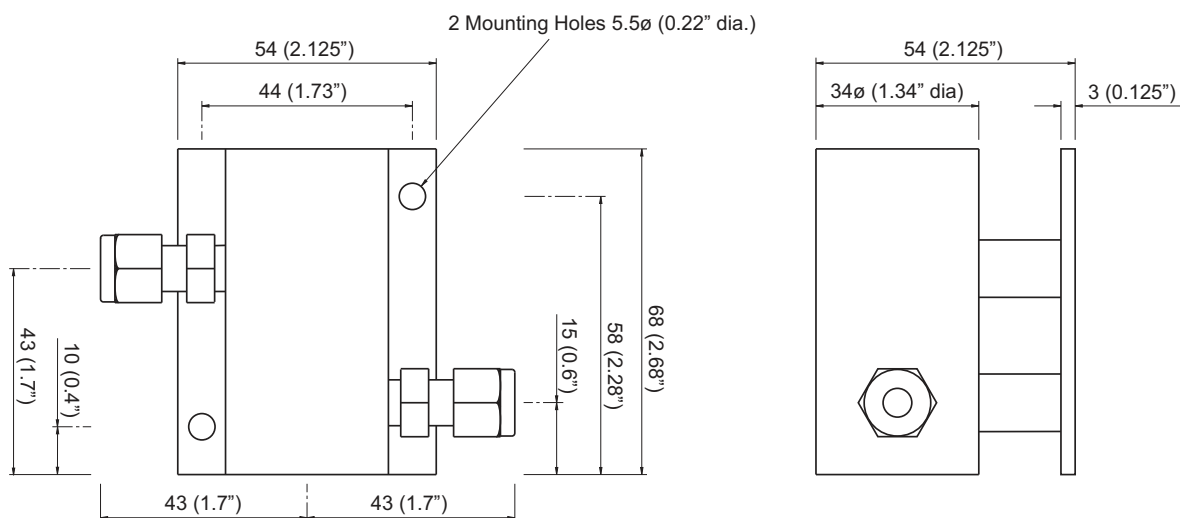
Transmitter Type	3 Wire 4-20 mA Intrinsically Safe Dewpoint Transmitter
Sensing Element	Ultra-High Capacitance – Aluminium Oxide Type
Output Signal	Linear 4-20 mA with selectable engineering units and fault indication
Power Supply	12-28 Vdc Reverse Polarity Protected
Dewpoint Ranges	See Page 5 - How to Order
Intrinsic Safety Certification	IECEx BAS07.0080 BASEEFA 07ATEX0234 BAS21UKEX0805
Standards	EN 60079-0:2018 EN 60079-11:2012
ATEX, UKCA and IECEx Markings	Ex II 1GD Ex ia IIC T4Ga Exia IIIC T200 135 °CDA (-20 °C ≤ Ta ≤ +60 °C)
Electromagnetic Compatibility (EMC)	Complies with BS EN IEC 61326-1
Accuracy	± 2 °C dewpoint (UK National Physical Laboratory traceable for range -90 °C to 20 °C)
Repeatability	Better than ± 0.3 °C dewpoint
Operating Temperature (Ambient and Process)	-20 °C to 60 °C
Operating Pressure (Process)	From 1 kPa (0.01 bara) to Maximum 35,000 kPa (350 bara)
Operating Humidity (Ambient)	Maximum 95 %RH Non-condensing
Storage Temperature	-20 °C to 70 °C

Field Calibration	AutoCal span check and correction are performed using two buttons on the Transmitter body. Locked in normal operating mode to avoid tamper. We recommend AutoCal is repeated every 2-3 months
Factory Calibration	Supplied with a calibration certificate traceable to National and International Humidity standards. We recommend annual laboratory calibration
Sample Flow Rate	Flow independent but ideally 2 to 5 litres per minute. Max: 25 litres/min
Cable Terminations	IP66 / NEMA 4X rated, size C, DIN EN 175301 connector at the Transmitter and other end terminated with bootlace ferrules
Cable	Supplied with 2 m IS (blue) standard cable. Nominal diameter 4.5 mm, 92 ohms/km at 20 °C
Mechanical Connection	3/4" UNF (16 tpi) with integral Viton "O" ring seal
Isolation	Sensing Element connected to the 4-20 mA loop but isolated from Transmitter body
Transmitter Body	316 Stainless Steel
Sensor Protection	316 Sintered Stainless Steel Filter – 50 micron
Probe Material (Wetted Parts)	316 Stainless Steel
Ingress Protection	IP66 / NEMA 4X when Connector coupled to Transmitter
Manufacturer's Warranty	12 months in case of defective parts or faulty workmanship

Dimensions



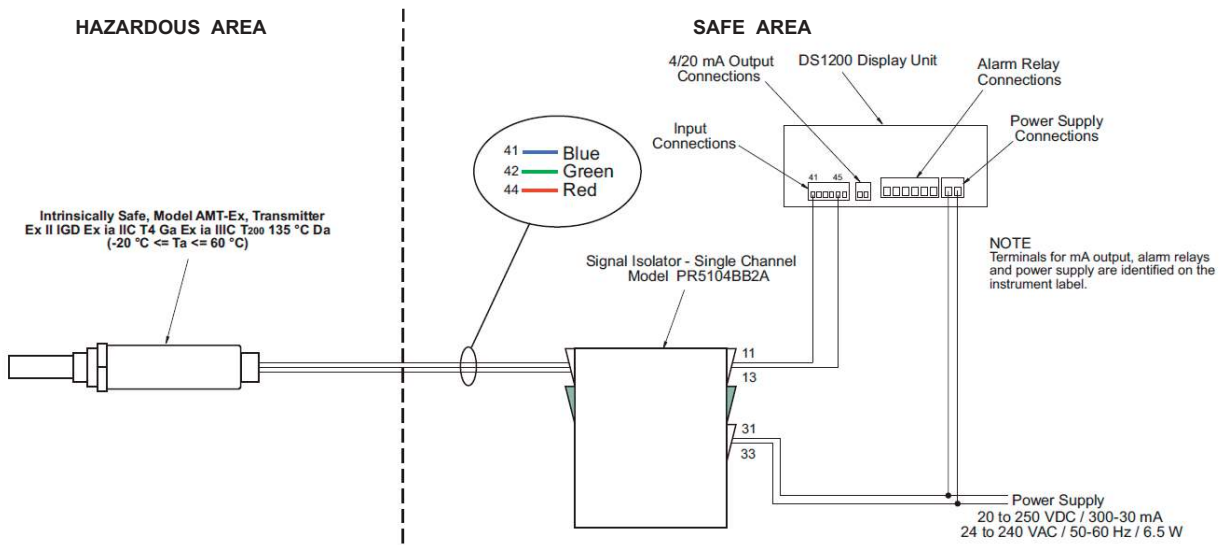
Transmitter Holder - Flow Through Sample Cell



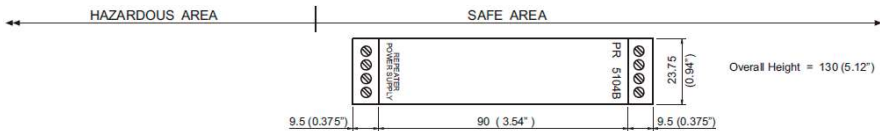
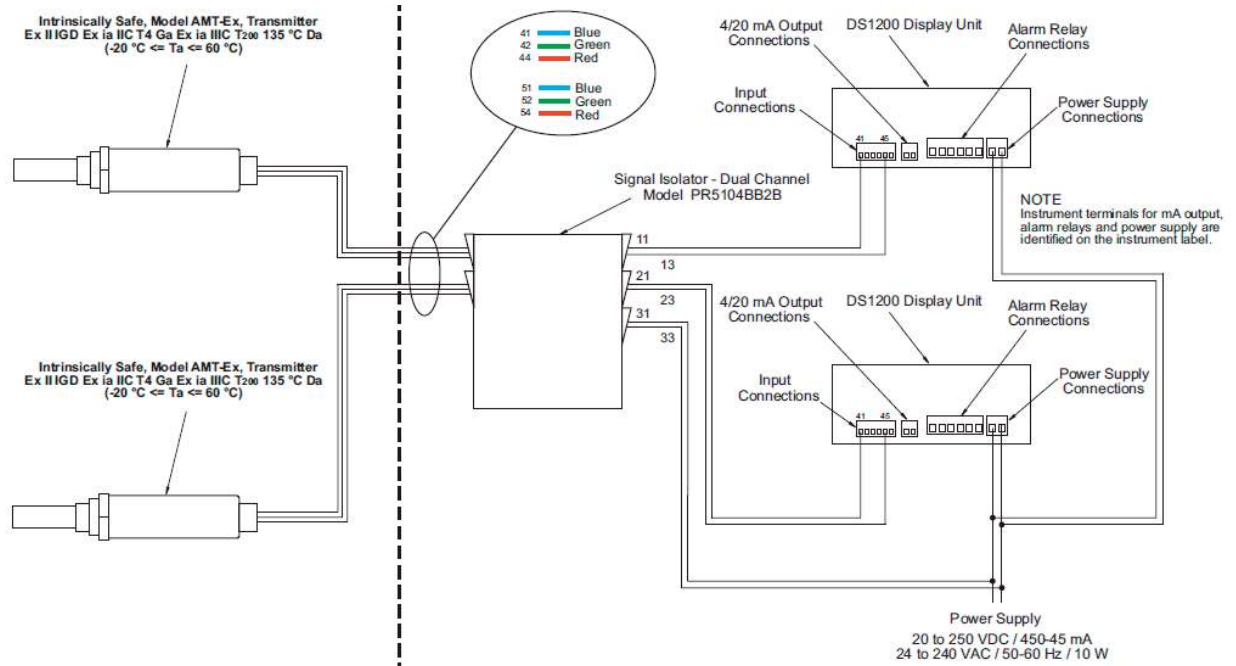
Note: The Assembly is shown with 1/4" OD tube fittings. The dimensions across the tube fittings will vary for all other size fittings.

Application Wiring Diagram Examples Using DS1200 Display

AMT-Ex Dewpoint Transmitter Using PR5104BB2A Single Channel Isolator with DS1200 Display



AMT-Ex Dewpoint Transmitter Using PR5104BB2B Dual Channel Isolator and DS1200 Display



AMT-Ex Transmitter Cable Connection (Channel 1)

Terminal 41 = mA - (BLUE)
Terminal 42 = mA + (GREEN)
Terminal 44 = Supply + (RED)

AMT-Ex Transmitter Cable Connection (Channel 2, If Applicable)

Terminal 51 = mA - (BLUE)
Terminal 52 = mA + (GREEN)
Terminal 54 = Supply + (RED)

Channel 1 Output
Terminal 11 = mA - Terminal 13 = mA+

Channel 2 Output (If Applicable)
Terminal 21 = mA - Terminal 23 = mA+

Power Supply. Terminals 31 and 33.
20 to 270 VDC OR 22 to 250 VAC, 50/60 Hz.
Maximum Power Consumption = 3 W

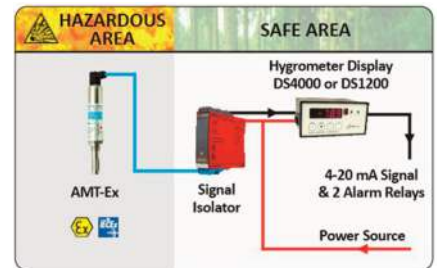
APPROVALS.

ATEX II (1) GD
[EEx ia] IIC
Applicable in Zones 0, 1 or 2

NOTES

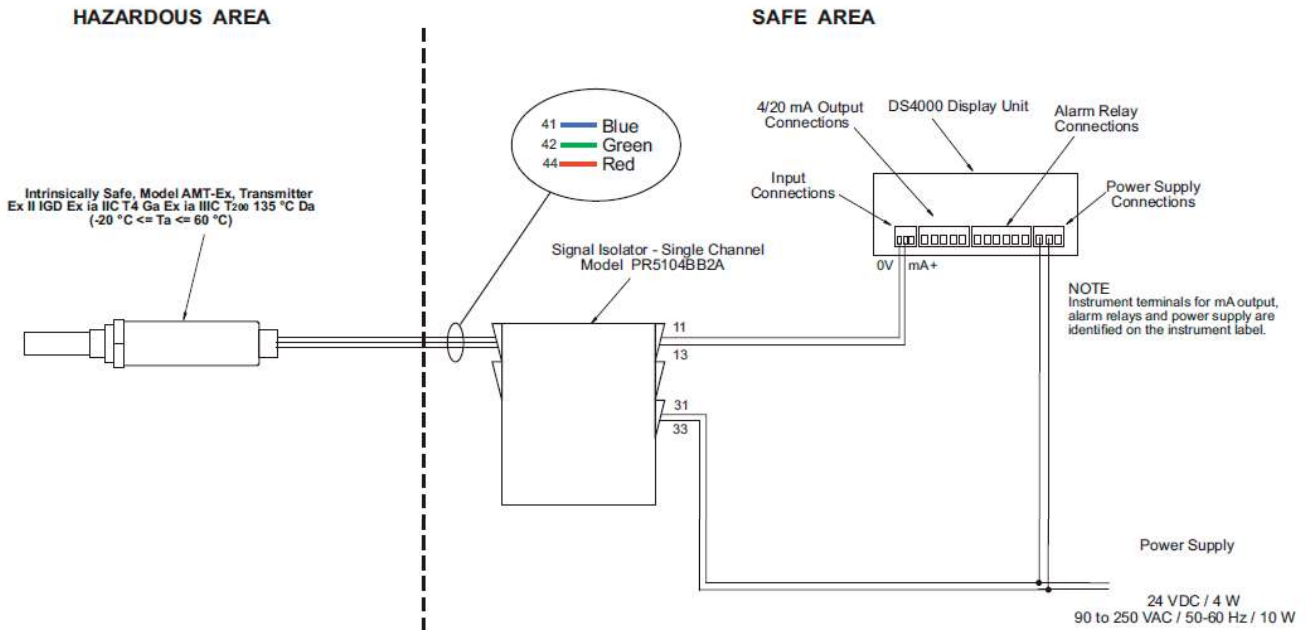
Model PR5104BB2A is a single channel unit
Model PR5104BB2B is a dual channel unit

35mm (1.375") DIN (Top Hat) Rail Mounting

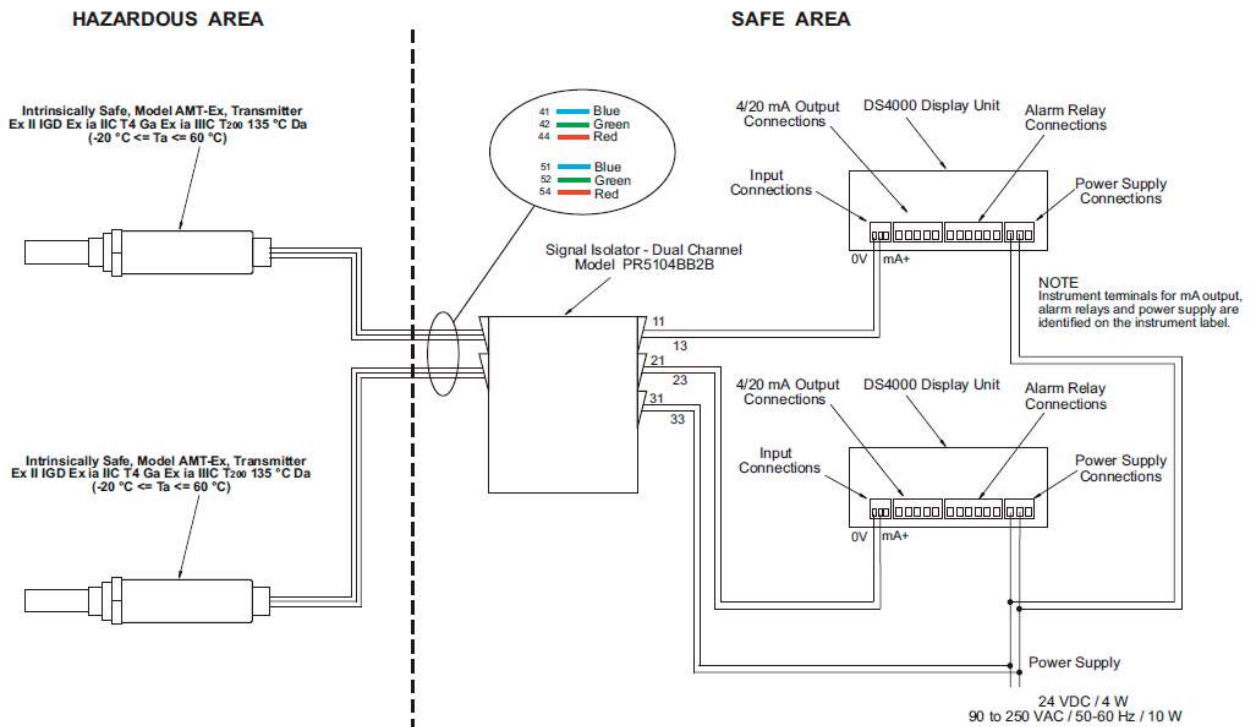


Application Wiring Diagram Examples Using DS4000 Display

AMT-Ex Dewpoint Transmitter Using PR5104BB2A Single Channel Isolator with DS4000 Display



AMT-Ex Dewpoint Transmitter Using PR5104BB2B Dual Channel Isolator and DS4000 Display



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 (NH₃), chlorine (Cl₂) etc. Strong oxidising agents such as ozone (O₃) should also be prevented from coming into contact with the sensor.

How to order

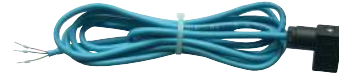
1 Transmitter Range: AMT-Ex - [XX]

Range/Unit -	Dewpoint	
-120 °C to +20 °C (-184 °F to +68 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		LD
-110 °C to -20 °C (-166 °F to -4 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		SR
-100 °C to 0 °C (-148 °F to +32 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		PL
-100 °C to +20 °C (-148 °F to +68 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		SD
-80 °C to -20 °C (-112 °F to -4 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		RD
-80 °C to 0 °C (-112 °F to +32 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		GY
-65 °C to +20 °C (-85 °F to +68 °F) $R = 0.1 \text{ } ^\circ\text{C}/^\circ\text{F}$		HD
ppm(V)		
1 to 1000	$R = 1 \text{ ppm}$	SP
0.1 to 100.0	$R = 0.1 \text{ ppm}$	MP
0.01 to 10.00	$R = 0.01 \text{ ppm}$	LP
ppb(V)		
1 to 1000	$R = 1 \text{ ppb}$	PB
g/m³		
0.01 to 10.00	$R = 0.01 \text{ g/m}^3$	HG
0.001 to 1.000	$R = 0.001 \text{ g/m}^3$	LG
lbs/MMSCF		
0.1 to 100.0	$R = 0.1 \text{ lbs/MMSCF}$	LB
<i>R = Resolution</i>		

NOTE: ppm, ppb, g/m³ & lbs/MMSCF ranges are stated at atmospheric pressure. AMT-Ex Transmitter can be configured to provide corresponding ranges for operation at other constant pressure. This must be stated at time of order.

2 Cable: CAB110-AMT-Ex + [XX]^{Length}

The AMT-Ex Transmitter comes complete with 2 metres of connecting cable and connector plug as standard.



For a longer cable length with connecting plug, simply enter the required length after the part number above:

Example: CAB110-AMT-Ex-[10] for 10 metres.
Longer cables are charged at per meter increments up to 1000 metres.

4 Isolator:



- Located in the Safe Area only

Part No. PR5104BB2A

- Single Channel

Part No. PR5104BB2B

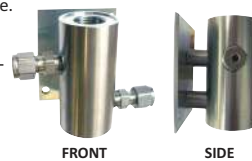
- Dual Channel

See pages 3 and 4 for wiring diagrams when installing DS4000 or DS1200 displays, for DS1500 Display contact us.

3 Transmitter Holder with Fittings SH-AMT + [X][X]

Comes complete with mounting plate.

FITTINGS —



INLET Pipe Fitting

No Fittings	0
1/4" - Pipe OD	4
1/8" - Pipe OD	8
6 mm - Pipe OD	6

OUTLET Pipe Fitting

No Fittings	0
1/4" - Pipe OD	4
1/8" - Pipe OD	8
6 mm - Pipe OD	6

NOTE: No Fittings Needed = Ports are 1/8" NPT Female

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

5 Displays:



DS4000

Advanced Display with more functions and features



DS1200

Standard Display

- For Safe Area only unless installed in an Exd Enclosure
- These displays are perfect for continuous on-line measurements with the AMT-Ex Dewpoint Transmitter
- Fast Response
- Single channel on-line hygrometer
- 2 independent alarms
- 4-20 mA re-transmission



DS1500

Standard Display

- With MODBUS/RTU Comms
- 4 independent alarms
- Contact us for more details

For full specifications see DS4000, DS1200 or DS1500 datasheets available on our website: amsystems.co.uk

Related Products

Natural Gas
Sampling
Systems



TEG
Sampling
Systems



EXD
Flameproof
Systems



1722 AMT-Ex pd050124-Iss-12

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



Product specification may be subject to change.

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

© Alpha Moisture Systems Ltd.

Tel +44 (0) 1274 733100

Email info@amsystems.co.uk

Website amsystems.co.uk