

# Model DS1200-AMT-Ex

**Intrinsically Safe 4-20mA ATEX Certified Dewpoint Hygrometer**  
**Ranges available between -120°C to +20°C (-166°F to +68°F) dewpoint**

**Model DS1200-AMT-Ex Dewpoint Hygrometer** has been designed specifically for continuous measurement of moisture in dry process gases in Hazardous Areas.

**Fast Response - Stable - Reliable -**

**Accurate - Easy to Install**

The **Model DS1200-AMT-Ex** incorporates a 3 wire 4-20mA powered transmitter. With excellent sensitivity, repeatability and response speed, this Ex Hygrometer has proven to be the popular choice for hazardous area dewpoint measurements.



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

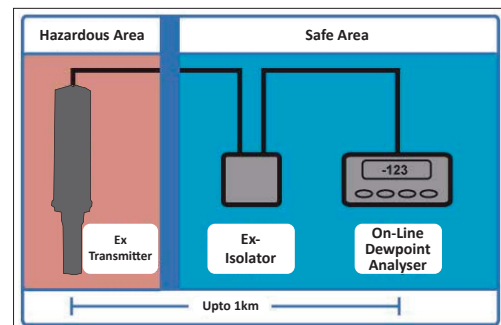
## FEATURES

- User Friendly & Advanced Functionality
- Powerful up to date software
- DISPLAY in °C Dewpoint & °F Dewpoint, ppm(v), ppb(v), g/m<sup>3</sup> 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 to National & International Standards

**Model DS1200-AMT-Ex** is ATEX certified and provides an Intrinsically Safe Dewpoint Transmitter for hazardous area use when installed with the appropriate isolator. See Illustration also ordering information.

The transmitter also incorporates an Automatic Calibration (AUTOCAL) feature, which allows the user to carry out a field calibration / span check. The **AUTOCAL feature** is operated by two small button switches built within the transmitter enclosure. To avoid tamper, the switches are locked in normal use and can only be activated by following a special routine.

The integral RISC microprocessor circuitry of the **Model DS1200-AMT-Ex** transmitter allows high resolution with advanced self diagnostics for fault conditions. It also enables periodic re-calibration of the moisture sensor, storing calibration data within the fully self contained unit.



For Ex environment wiring guide and examples please see page 4.

The mechanics of the **Model DS1200-AMT-Ex** transmitter have been designed to cope with extreme environmental conditions. The rugged stainless steel construction offers protection to IP66 (NEMA4X), with the transmitter electrical connections made via a secure industrial connector.

**Model DS1200-AMT-Ex** transmitter can withstand up to 35,000 kPa (350bar) maximum pressure and by employing a low resistance cable, the transmitter can be located at significant distances, in excess of 1000 metres, from the control room.

The **Model DS1200-AMT-Ex** transmitter is supplied with a Certificate of Calibration, an instruction manual and standard 2m connecting cable.

## Specifications

### MODEL AMT-Ex Dewpoint Transmitter only

**TRANSMITTER TYPE:** 3 Wire, 4-20mA Loop Powered Transmitter  
**OUTPUT SIGNAL:** 4 to 20mA Linear  
**OPERATING VOLTAGE:** 12-28V dc. Reverse polarity protected.  
**SENSING ELEMENT:** Ultra High Capacitance - Aluminium Oxide Type  
**RANGES:** See How to Order Step 1 Below  
**INTRINSIC SAFETY CERTIFICATION STANDARDS:**  
 EN 60079-0 EN 60079-11



**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.  
**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)  
**TEMPERATURE COEFFICIENT:** Temperature compensated for operating range.  
**REPEATABILITY:** Better than ±0.3°C dewpoint  
**OPERATING TEMPERATURE:** -20°C to +60°C  
**STORAGE TEMPERATURE:** -20°C to +70°C  
**OPERATING PRESSURE:** From 1kPa (0.01 barA) to Maximum 35,000kPa (350 barA)  
**OPERATING HUMIDITY (External):** Maximum - 95% RH Non-condensing  
**SAMPLE FLOW RATE:** Flow independent but ideally 2 to 5 litres per minute. Max: 25 litres/min.  
**CABLE TERMINATIONS:** IP66 (NEMA4X) rated, size C, DIN EN 175301 connector at the Transmitter and other end terminated with bootlace ferrules.  
**CABLE:** Supplied with 2m IS (blue) standard cable. Nominal diameter 3.4mm, 92ohms/km at 20°C  
**ELECTROMAGNETIC COMPATIBILITY (EMC):**  
 Complies with BS EN 61326-1  
**WARM UP TIME:** 10 seconds  
**FAULT CONDITIONS:**  
**Open Circuit :** Output drives to 20.50mA  
**Short Circuit :** Output drives to 20.75mA  
**System Error:** Output drives to 21.00mA  
**ISOLATION:** Sensing Element connected to the 4-20mA loop but isolated from Transmitter body.  
**TRANSMITTER ENCLOSURE:** 316 Stainless steel body with size C, DIN EN 175301 connector.  
**SENSOR PROTECTION:** 316 Sintered stainless steel filter - 50 micron  
**PROBE MATERIAL (WETTED PARTS):** 316 Stainless Steel  
**WEATHERPROOF CLASSIFICATION:** IP66 / NEMA4X when Connector mated to Transmitter.  
**MECHANICAL CONNECTION:** 3/4" UNF (16tpi) with integral Viton "O" ring seal.

**MECHANICAL WARRANTY:** 24 months in case of faulty workmanship and defective parts.  
**CALIBRATION WARRANTY:** 12 months.

### MODEL DS1200 Display only

#### 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  
**MAX VOLTAGE:** 250 VRMS  
**MAX CURRENT:** 2A /AC  
**MAX AC POWER:** 500VA  
**MAX CURRENT AT 24 VDC:** 1A  
**POWER CONSUMPTION:** 3.5W Maximum  
**OUTPUT SIGNAL:** Linear 4 to 20mA, fully isolated. Maximum load 800Ω / 16Vdc  
**PROGRAMMABLE SIGNAL RANGES:** 0...20 or 4...20mADC (Factory set)  
**ISOLATION:** Voltage Test / Operation - 2.3kVac / 250Vac  
**CURRENT OUTPUT-LOAD (max):** 20mA / 800Ω / 16VDC  
**LOAD STABILITY:** ≤ 0.01% of span / 100 Ω  
**RELAY-RELAY FUNCTION:** setpoint  
**HYSTERISIS:** 1% of range  
**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  
**UL, STANDARD OF SAFETY:** Certified to UL508  
**WEATHERPROOF CLASSIFICATION:** Front panel only - IP65 (NEMA 4X).  
**TEMPERATURE OPERATING RANGE:** -20°C to +60°C  
**DISPLAY RESPONSE TIME (0-90%, 100 to 10%):** 0.4s.  
**WIRE SIZE, PIN 45 & 46 (max):** 1 x 1.5mm<sup>2</sup> stranded wire  
**WIRE SIZE, OTHERS (max):** 1 x 2.5mm<sup>2</sup> stranded wire  
**RELATIVE HUMIDITY:** < 95% RH  
**ERROR DETECTION:** Cable loop break  
**DIMENSIONS (HxWxD):** 48 x 96 x 120mm  
**CUT OUT DIMENSIONS:** 44.5 x 91.5mm  
**WEIGHT:** 230 grams

### How to Order - Step 1 of 4

Select a range below

### Model AMT-Ex [X]

<b>SDX(F):</b> -100°C to +20°C (-148°F to +68°F) dewpoint	} resolution = 0.1°C / °F
<b>LDX(F):</b> -120°C to +20°C (-184°F to +68°F) dewpoint	
<b>HDX(F):</b> -65°C to +20°C (-85°F to +68°F) dewpoint	
<b>SILVER</b> -110°C to -20°C (-166°F to -4°F) dewpoint	
<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> -100°C to 0°C (-148°F to +32°F) dewpoint	
<b>SPX:</b> 1 to 1000 ppm(v) - - - - - resolution = 1ppm	
<b>MPX:</b> 0.1 to 100.0 ppm(v) - - - resolution = 0.1ppm	
<b>LPX:</b> 0.01 to 10.00 ppm(v) - resolution = 0.01ppm	
<b>PBX:</b> 1 to 1000 ppb(v) - - - - - resolution = 1ppb	
<b>HGX:</b> 0.01 to 10.00 g/m <sup>3</sup> - resolution = 0.01g/m <sup>3</sup>	
<b>LGX:</b> 0.001 to 1.000 g/m <sup>3</sup> -resolution = 0.001g/m <sup>3</sup>	
<b>LBX:</b> 0.1 to 100 lb/MMSCF	

Order Example:- Dewpoint Transmitter Model DS1200-AMT-SDC(F) = -100°C to +20°C dp Model DS1200-AMT COMES COMPLETE WITH A STANDARD 2 METRE CONNECTING CABLE.



### How to Order - Step 2 of 4

Select a longer cable below

### CAB110-AMT-Ex + [XX]

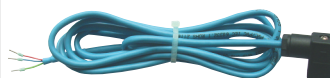
Your AMT-Ex Transmitter comes complete with 2 metres of connecting cable as standard.

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

Example: CAB110-AMT-Ex-10 for 10m

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

AMT-Ex Standard Cable 2 Meters



Part No. CAB110-AMT-Ex

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

For more details on any of our Ex products please visit our new website [www.amsystems.co.uk](http://www.amsystems.co.uk)

### How to Order - Step 3 of 4

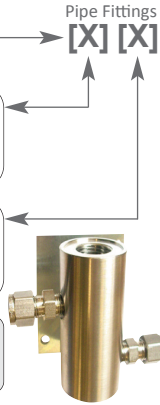
Select a transmitter holder below  
Comes complete with mounting plate.  
2 grades available: 303 or 316 Stainless Steel

**ADSH-AMT 303 +**  
**ADSH-AMT 316 +**

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



### RELATED PRODUCTS

#### Basic Sample System



**Model SS-B**  
Built for multiple applications

#### Made to Order Sample Systems



Ideal Gases  
Natural Gas  
Aggressive Gases

#### Large Range of Accessories



High quality components that are built to last. See our website for more.

### How to Order - Step 4 of 4

Order an Isolator for the safe area

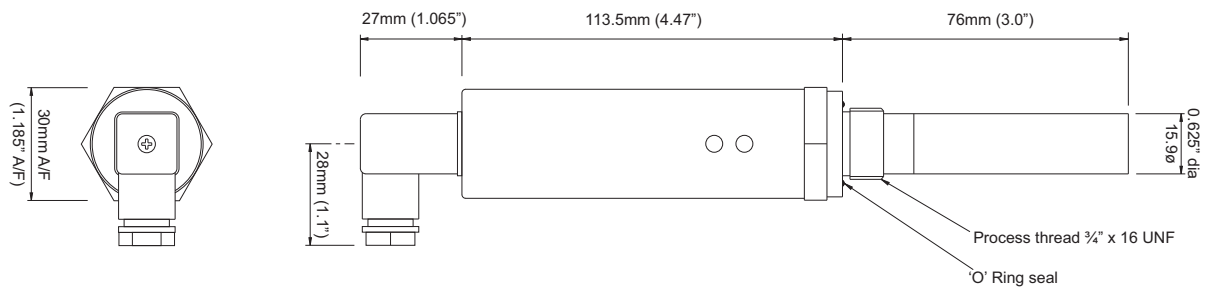
Part No. PR5104BB2A - Single Channel  
Part No. PR5104BB2B - Dual Channel



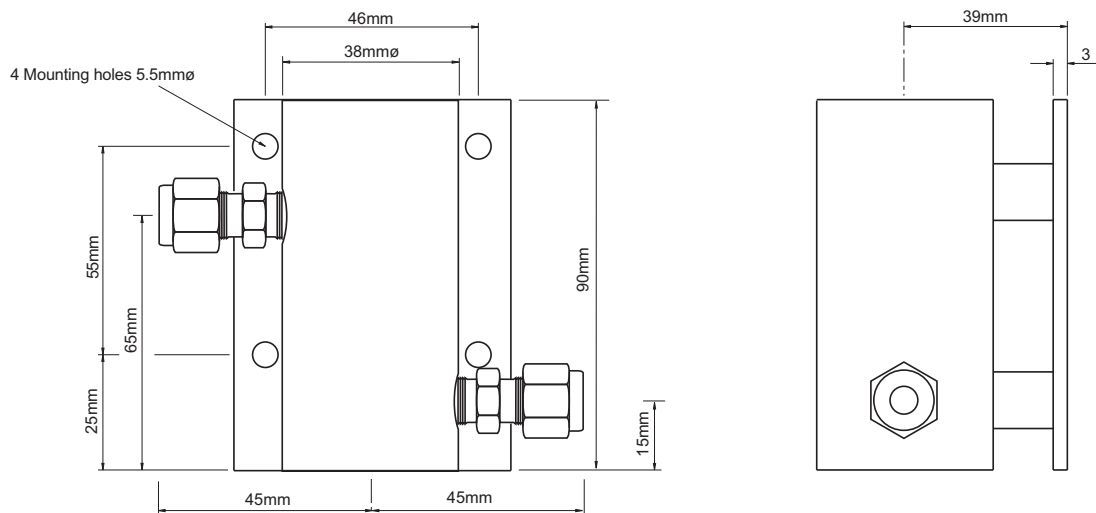
See Page 4 for wiring diagrams

### Dimensions

#### Model AMT-Ex Dewpoint Transmitter



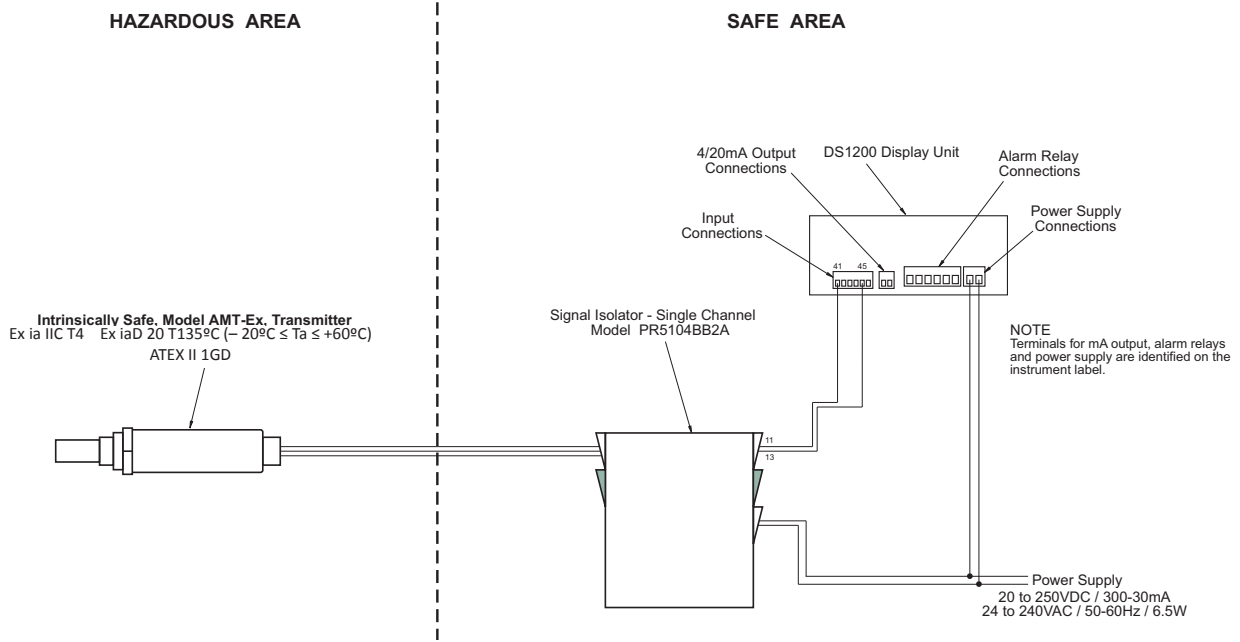
#### Model ADSH-AMT-Ex Transmitter Holder Flow Through Sample Cell



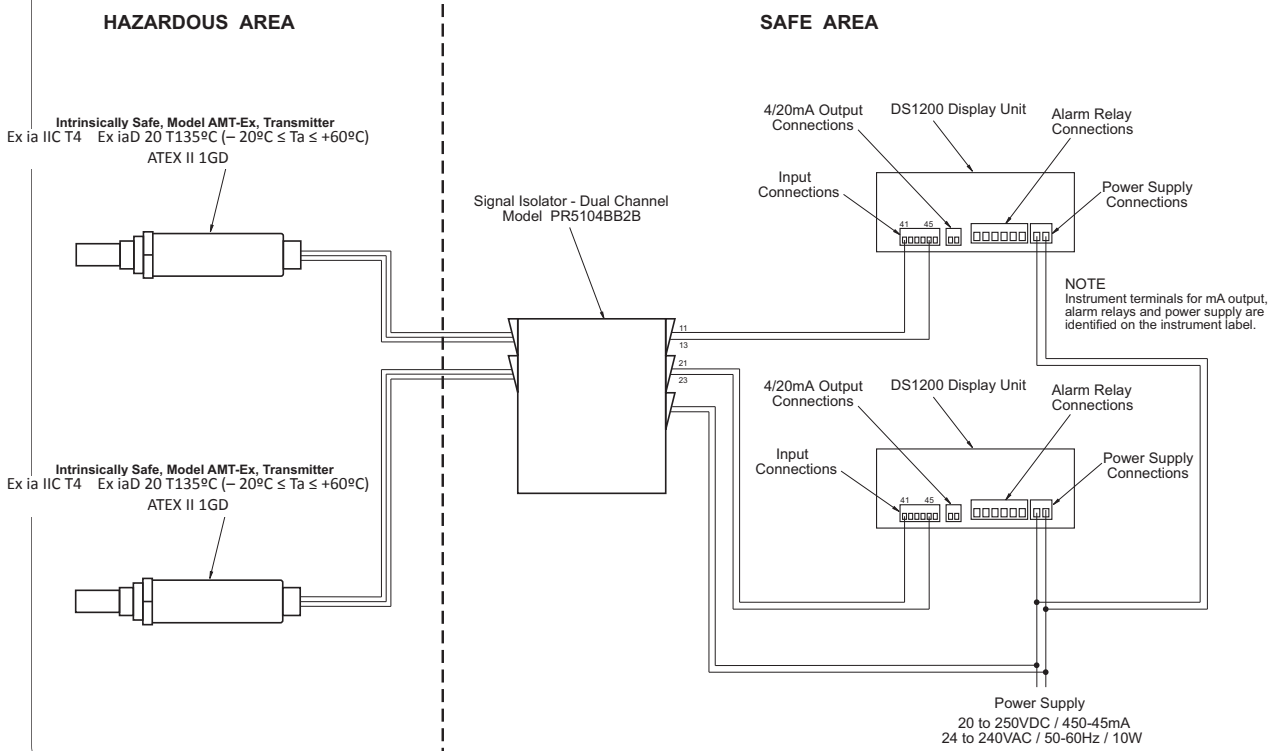
Note: The Assembly is shown with 1/4@ OD tube fittings. The dimensions across the tube fittings will vary for all other size fittings.

## Application Wiring Diagrams

### Model AMT-Ex Dewpoint Transmitter Using PR5104BB2A Single Isolator and Model DS1200 Display



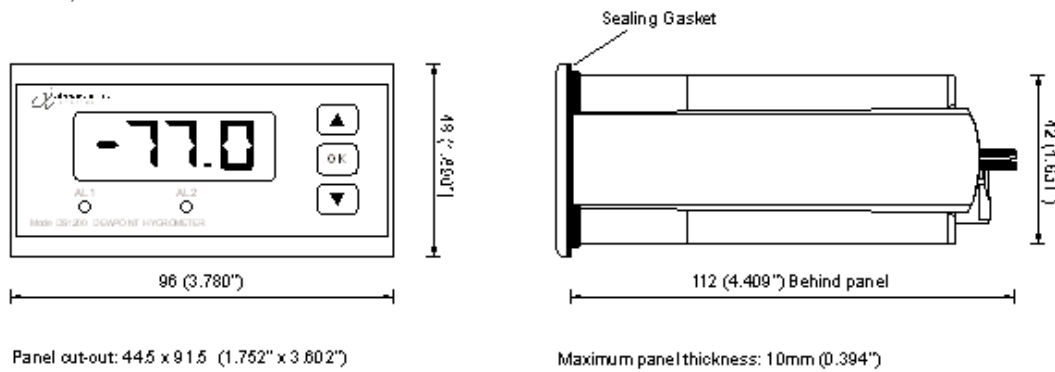
### Model AMT-Ex Dewpoint Transmitter Using PR5104BB2B Dual Isolator and Model DS1200 Display



## Application Wiring Diagrams

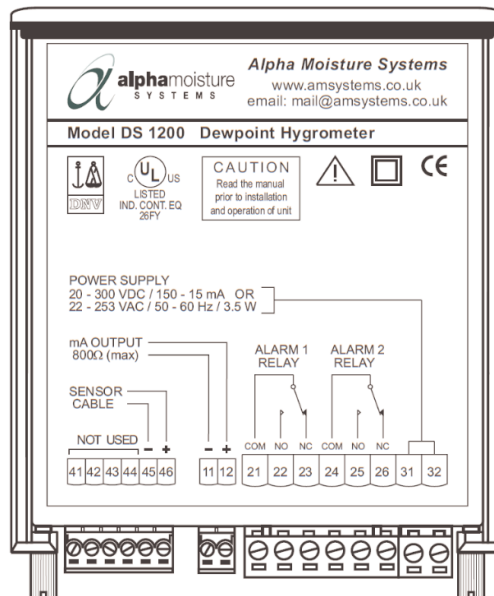
### Model DS1200 Display

Stable, Accurate and Reliable Alarmed Monitor



## Application Wiring Diagrams

### Model DS1200 Display Connection Details



**Note:** The Model AMT is not suitable for Ammonia ( $\text{NH}_3$ ), Chlorine ( $\text{Cl}$ ) - (See Model EDM data sheets) and Hydrogen Chloride ( $\text{HCl}$ ).  $\text{SF}_6$  can be monitored with no effect to the sensor element. Sulphur Dioxide ( $\text{SO}_2$ ) can be monitored if the moisture content is low, less than 100ppm(v).

## Distributor Information

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

2145 Model DS1200-AMT-Ex pd220416-iss-3



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Registered in England and Wales No. 3902302 - VAT Registration No. GB 607 2075 63 - WEEE Producer Registration No. WEEE/EA0067TX  
© Alpha Moisture Systems Ltd.

Tel	+44 (0) 1274 733100
Fax	+44 (0) 1274 733200
Email	info@amsystems.co.uk
Website	www.amsystems.co.uk