

# Model AMT-Ex

## Intrinsically Safe 4-20mA Dewpoint Transmitter


**Model AMT-Ex Dew-point Transmitter** is a 3-wire 4-20mA transmitter, used for continuous measurement of humidity in dry process gases or dry compressed air. The **Model AMT-Ex** transmitter can also be factory configured to output a linear 4-20mA signal for any other moisture unit e.g. ppm(v), ppm(w), g/m<sup>3</sup> and lb/MMSCF etc.

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

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.

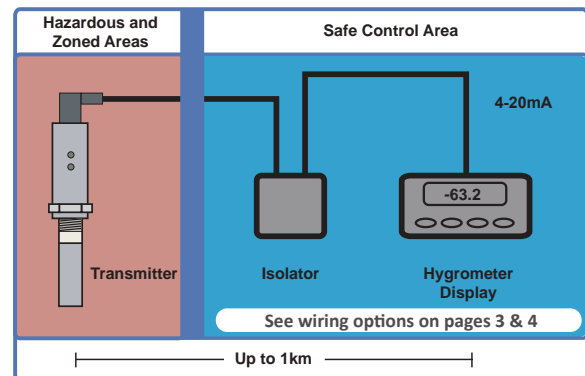


### FEATURES

- 3 Wire Intrinsically Safe Dewpoint Transmitter
-  II 1GD Ex ia IIC T4 Ex iaD 20 T135°C (-20°C ≤ Ta ≤ +60°C)
- Overall Range: -120°C to +20°C Dewpoint
- Accuracy ± 2°C Dewpoint
- INTEGRATED AUTOMATIC CALIBRATION
- Can be configured for Linear 4-20mA signal in: °C & °F Dewpoint, ppm(v), g/m<sup>3</sup>, lb/MMSCF
- Fault Diagnostics
- Long Term Stability
- Fast Response time
- IP66 / NEMA4X Protection

**Model AMT-Ex** is ATEX certified and provides an Intrinsically Safe Dew Point Transmitter for hazardous area use when installed with the appropriate isolator. See Illustration opposite and additional information on pages 2 and 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. The **AUTOCAL feature** is operated by two small button switches built within the transmitter enclosure.



The integral RISC microprocessor circuitry of the **Model 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. The mechanics of the **Model 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 AMT-Ex** transmitter can withstand 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 AMT-Ex** transmitter is supplied with a Certificate of Calibration, an instruction manual and 2m connecting cable.

Dew-point Sampling Systems available - see [www.amsystems.co.uk](http://www.amsystems.co.uk) for more details.

## Specifications

### MODEL AMT-Ex Dewpoint Transmitter

**TRANSMITTER TYPE:** 3 Wire, 4-20mA Loop Powered Transmitter  
**OUTPUT SIGNAL:** 4 to 20mA Linear with selectable engineering units  
**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 60079-0:2009 EN 60079-11:2012 EN 61241-11:2012  
**Ex Certification:** ATEX and IECEx Markings: IECEx BAS 07.0080  
 Ex II 1GD Ex ia IIC T4 Ex iaD 20 T135°C (-20°C ≤ Ta ≤ +60°C).

**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)

**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):**

**Immunity:** Complies with EN 61000-6-1:2007

**Emissions:** Complies with EN 61000-6-3:2006

**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.

## How to Order - Step 1 of 5

Select a Range Below

### Model AMT-Ex + [XX]

**SR:** -110°C to -20°C (-166°F to -4°F) dewpoint  
**PL:** -100°C to 0°C (-148°F to +32°F) dewpoint  
**RD:** -80°C to -20°C (-112°F to -4°F) dewpoint  
**GY:** -80°C to 0°C (-112°F to +32°F) dewpoint

resolution = 0.1°C / °F

**SD:** -100°C to +20°C (-148°F to +68°F) dewpoint  
**LD:** -120°C to +20°C (-184°F to +68°F) dewpoint  
**HD:** -65°C to +20°C (-85°F to +68°F) dewpoint

resolution = 0.1°C / °F

**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/m3 ---- resolution = 0.01g/m3

**LG:** 0.001 to 1.000 g/m3 ---- resolution = 0.001g/m3

**LB:** 0.1 to 100.0 lbs/MMSCF - resolution = 0.1 lbs/MMSCF

NOTE: ppm, ppb, g/m3 & lbs/MMSCF 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.

Order Example:- Dewpoint Transmitter Model AMT-Ex-SD = -100°C to +20°C dp  
 Model AMT-Ex COMES COMPLETE WITH A STANDARD 2 METRE CONNECTING CABLE.

Range



## How to Order - Step 2 of 5

Select a Longer Cable Below

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

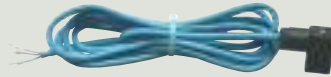
Your AMT-Ex Transmitter comes complete with 2 metres of connecting cable as standard.

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

Length

## How to Order - Step 3 of 5

Order a Display Below (optional)

### Model DS1200



For more details please see data sheet DS1200.

- Perfect for continuous in-line measurements
- Fast Response
- 22V – 253VAC 50/60Hz or 20 to 300V DC operation
- Single channel in-line hygrometer
- Panel protection to IP65 (NEMA4X)
- 2 independent alarms
- 4-20mA re-transmission

## How to Order - Step 4 of 4

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



## How to Order - Step 5 of 5

Order an Isolator for the safe area

Part No. PR5104BB2A - Single Channel

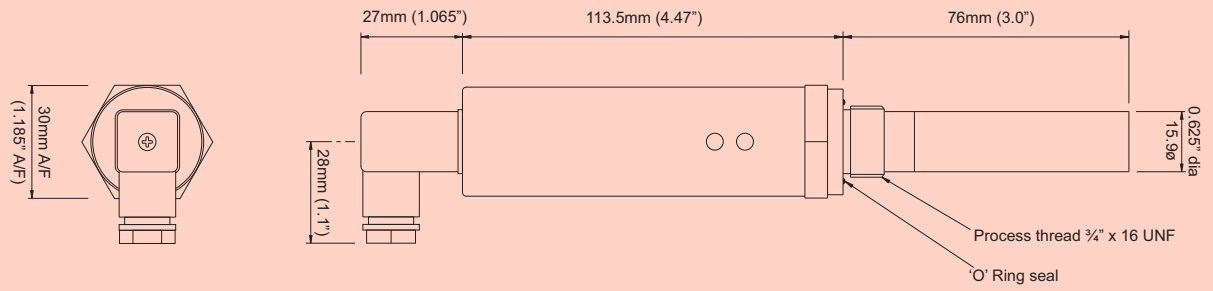
Part No. PR5104BB2B - Dual Channel



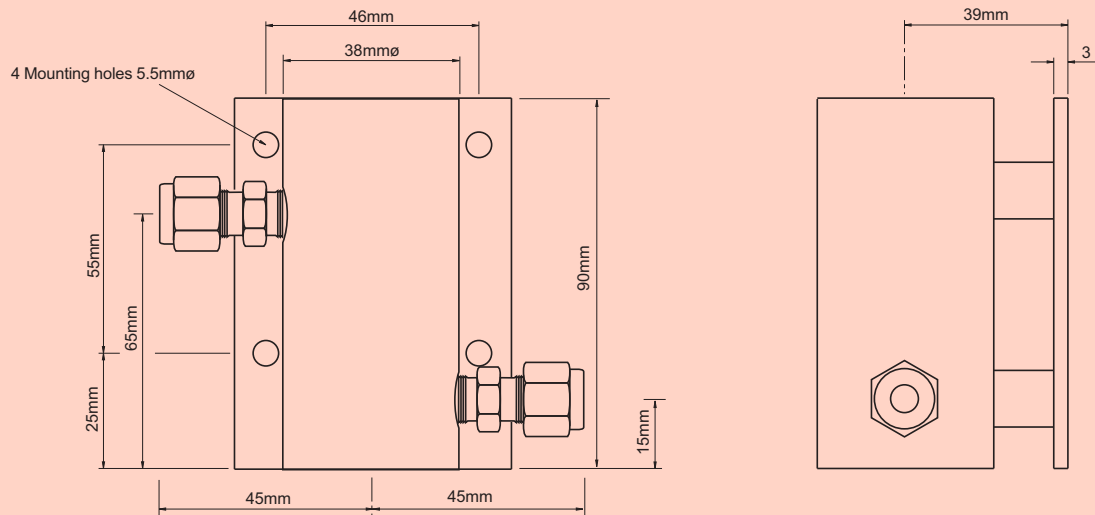
See Page 4 for wiring diagrams

## Dimensions

### Model AMT-Ex Dewpoint Transmitter



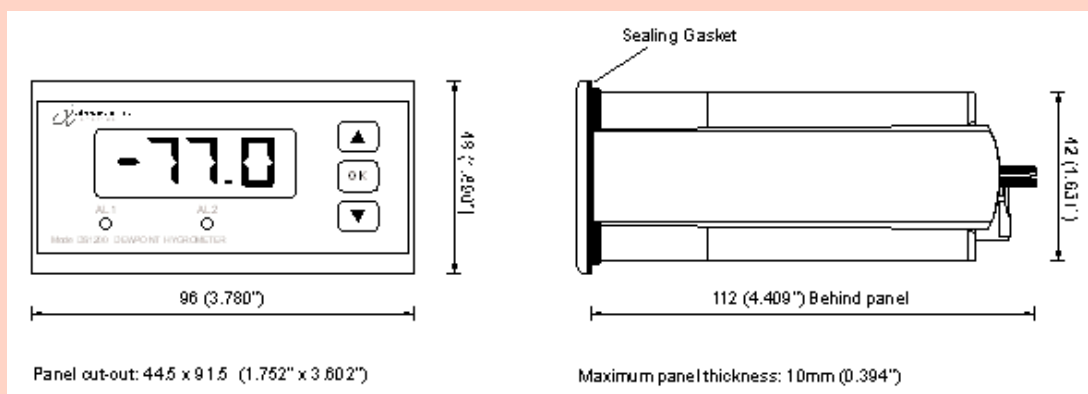
### Model ADSH-AMT Transmitter Holder Flow Through Sample Cell



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

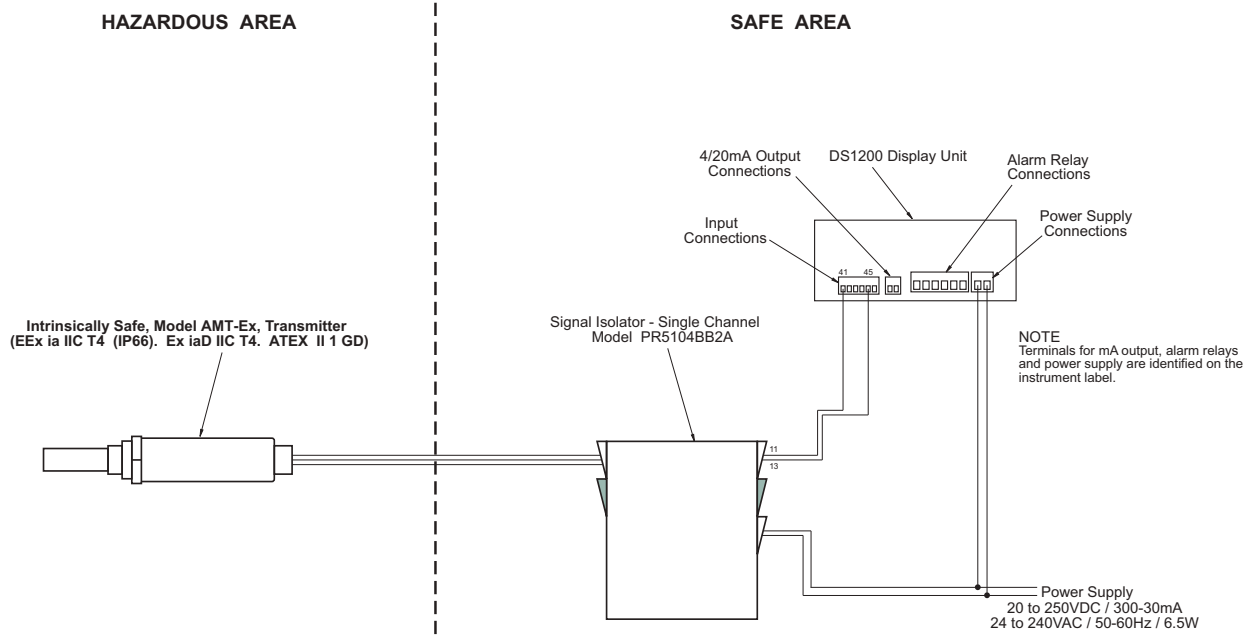
### Model DS1200 Display

Stable, Accurate and Reliable Alarmed Monitor

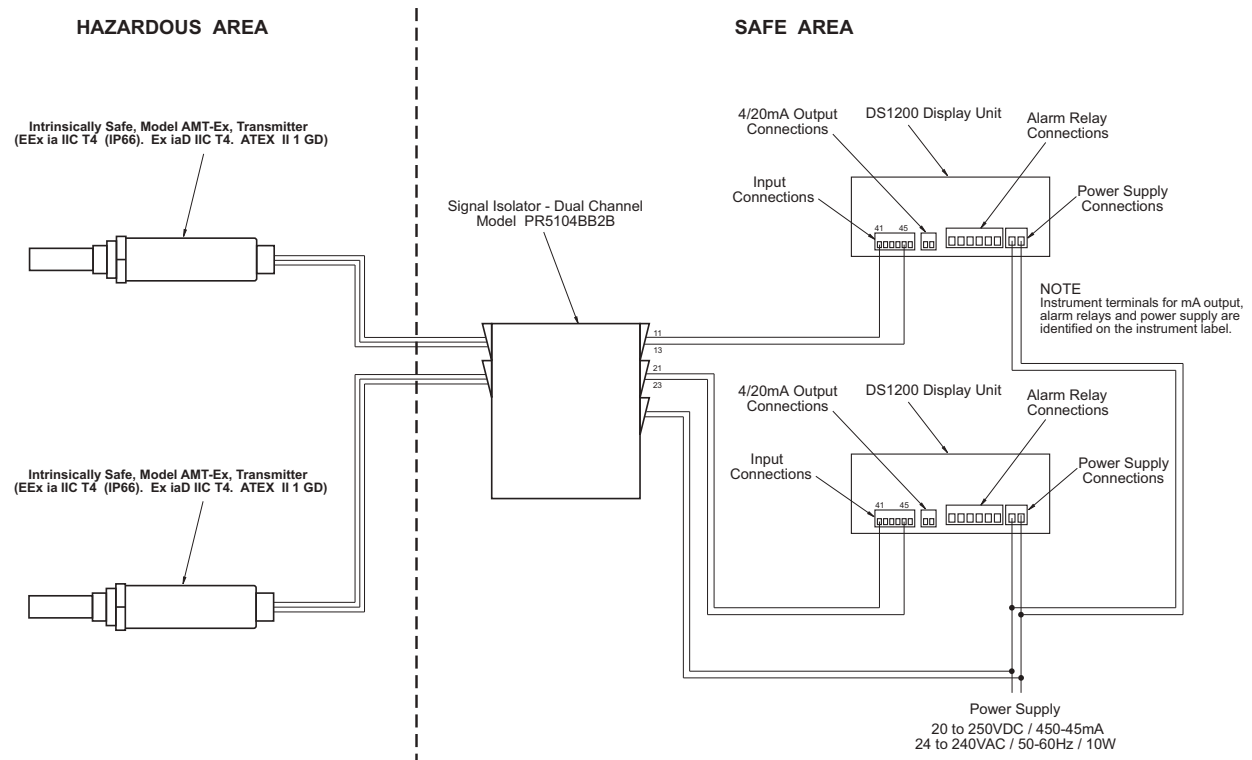


## Application Wiring Diagrams

### Model 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



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

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.

1722 Model AMT-Ex pd 150714 -Iss-3x



CERTIFICATE No. FM35600  
BS EN ISO 9001:2008



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