

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/m³ 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.



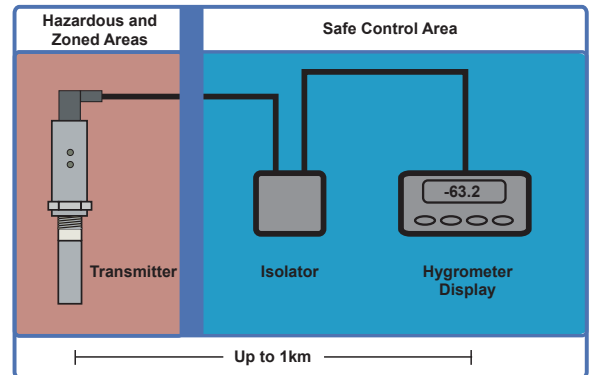
Measuring instrument
conforms with
BS EN 61326-1

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: --184°F to +68°F Dewpoint
- Accuracy ±3.6°F (±2°C) Dewpoint
- INTEGRATED AUTOMATIC CALIBRATION
- Can be configured for Linear 4-20mA signal in: °F & °C Dewpoint, ppm(v), g/m³, lb/MMSCF
- Fault Diagnostics
- Long Term Stability
- Fast Response time
- NEMA4X (IP66) 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 NEMA4X (IP66), with the transmitter electrical connections made via a secure industrial connector.

Model AMT-Ex transmitter can withstand 5076PSI (350bar) maximum pressure and by employing a low resistance cable, the transmitter can be located at significant distances in excess of 0.62mile (1000 metres) from the control room.

The **Model AMT-Ex** transmitter is supplied with a Certificate of Calibration, an instruction manual and 6.6ft (2m) connecting cable.

Dew-point Sampling Systems are also available - see 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 60079-0:2006 EN 60079-11:2007 EN 61241-11:2005

CE 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: ±3.6°F (±2°C) dewpoint (NPL/NIST traceable for range -130°F to +68°F)

REPEATABILITY: Better than ±0.36°F (±0.2°C) dewpoint

OPERATING TEMPERATURE: -4°F to +140°F (-20°C to +60°C)

STORAGE TEMPERATURE: -4°F to +158°F (-20°C to +70°C)

OPERATING PRESSURE: From 0.15PSI (0.01 barA) to Maximum 5076PSI (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 6.6ft (2m) IS (blue) standard cable. Nominal diameter 3.4mm, 92ohms/km at 68°F (20°C).

ELECTROMAGNETIC COMPATIBILITY (EMC):

Complies 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

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: NEMA4X (IP66) 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: -166°F to -4°F (-110°C to -20°C) dewpoint } resolution = 0.1°C / °F
 PL: -148°F to +32°F (-100°C to 0°C) dewpoint }
 RD: -112°F to -4°F (-80°C to -20°C) dewpoint }
 GY: -112°F to +32°F (-80°C to 0°C) dewpoint }

SD: -148°F to +68°F (-100°C to +20°C) dewpoint } resolution = 0.1°C / °F
 LD: -184°F to +68°F (-120°C to +20°C) dewpoint }
 HD: -85°F to +68°F (-65°C to +20°C) dewpoint }

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 = -148°F to +68°F dp
 Model AMT-Ex COMES COMPLETE WITH A STANDARD 6.6ft CONNECTING CABLE.

Range



How to Order - Step 2 of 5

Select a longer cable below

CAB110-AMT-Ex + [XX]

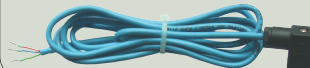
Your AMT-Ex Transmitter comes complete with 6.6ft (2 metres) of connecting cable as standard.

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 6.6ft (2 Meters)



Part No.
CAB110-AMT-Ex

Length

How to Order - Step 3 of 5

Order a Display Below (optional)



Model 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 NEMA4X (IP65)
- 2 independent alarms
- 4-20mA re-transmission

For more details please see data sheet DS1200.

How to Order - Step 4 of 4

Select a Transmitter Holder

Comes complete with mounting plate.

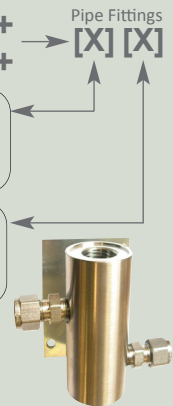
2 grades available: 303 or 316 Stainless Steel

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

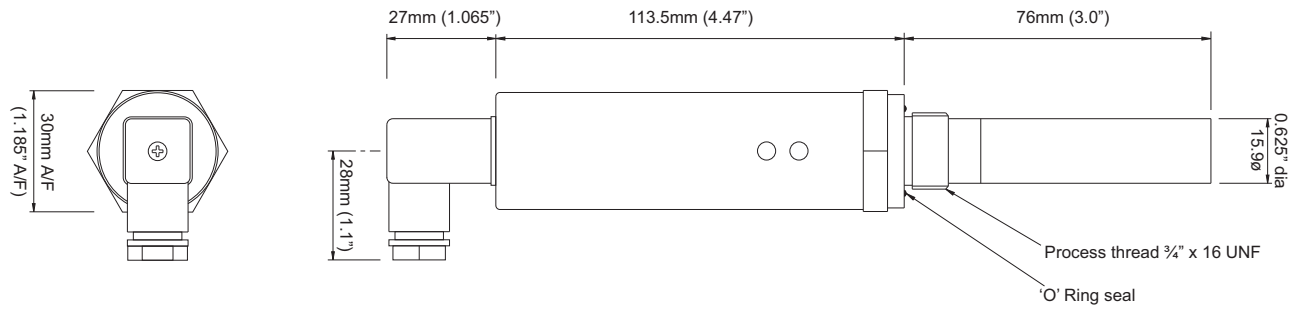
Part No. PR5104BB2B - Dual Channel



See Page 4 for wiring diagrams

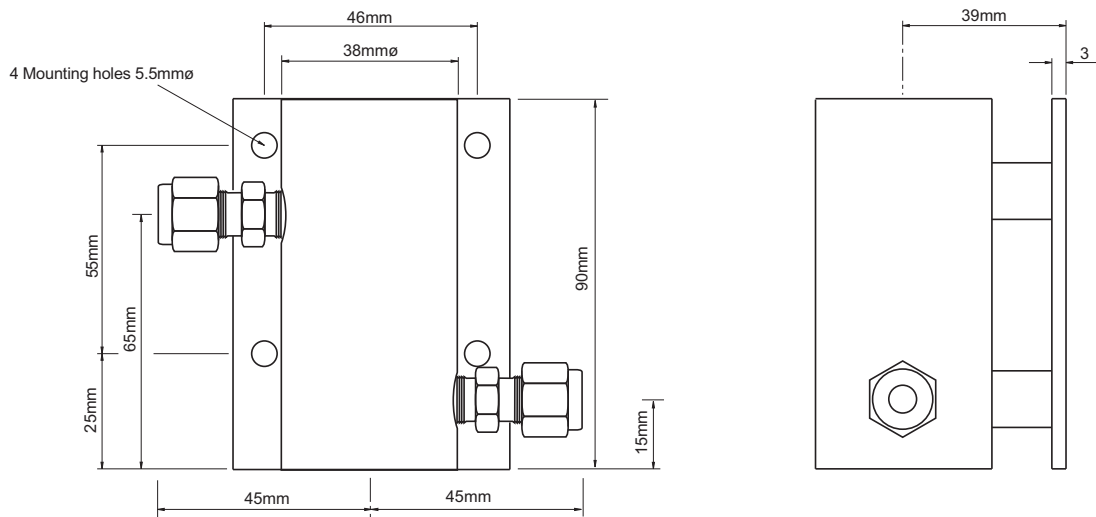
Dimensions

Model AMT-Ex Dewpoint Transmitter



Model ADSH-AMT Transmitter Holder

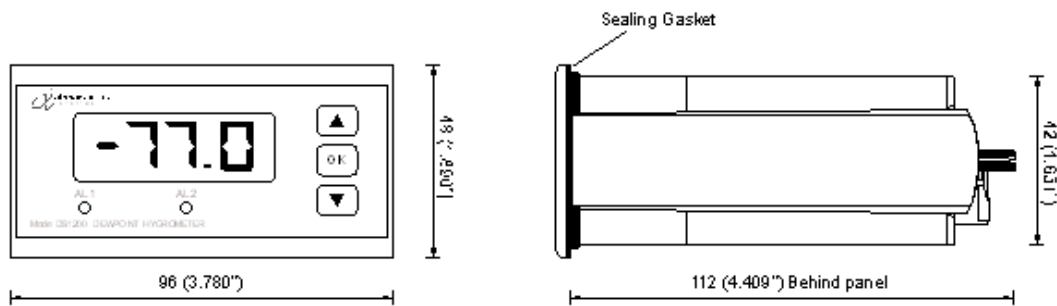
Flow Through Sample Cell



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

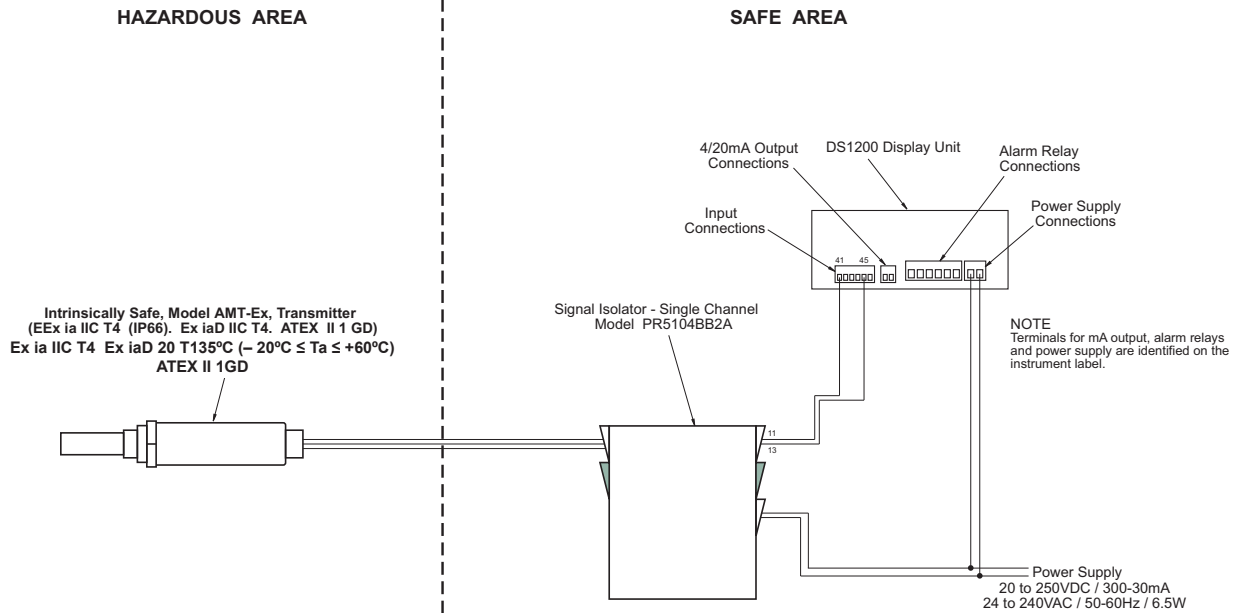


Panel out-out: 44.5 x 91.5 (1.752" x 3.602")

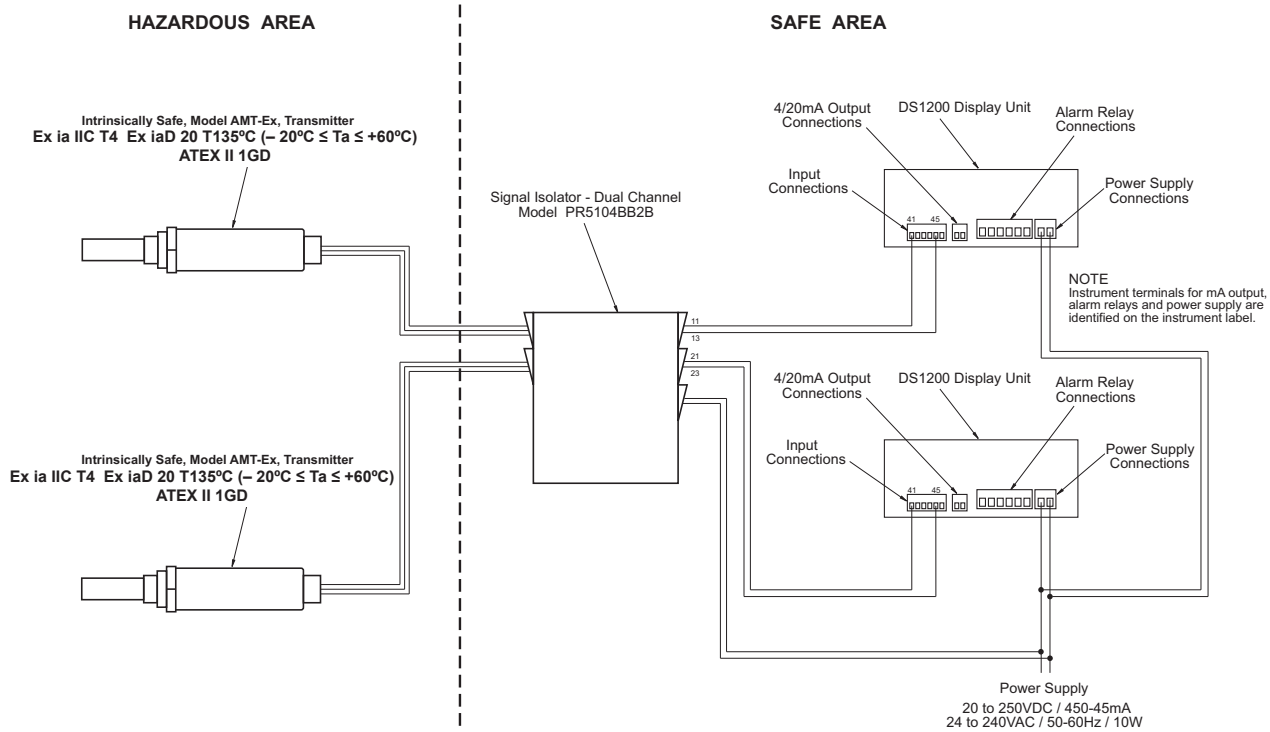
Maximum panel thickness: 10mm (0.394")

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 (NH_3), Chlorine (Cl_2) - and Hydrogen Chloride (HCl). See Model EDM data sheets for products. Sulphur Dioxide (SO_2) can be monitored if the moisture content is low, less than 100ppm(v). SF_6 can be monitored with no effect to the sensor element.

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

2143 Model AMT-Ex pd240417-Iss3



CERTIFICATE No. FM35600
BS EN ISO 9001:2008



Institute of Measurement and Control
Companion Company

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Instrumentation Solutions For The Process Industry

Northvale, NJ 07647 DeltaInstrument.com Phone (201) 768-7200