

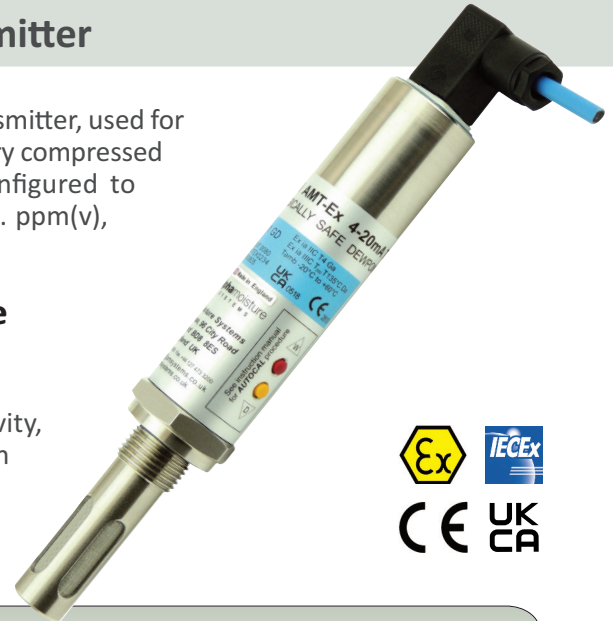
AMT-Ex

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.

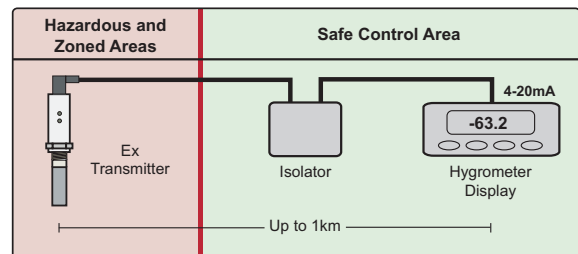


FEATURES

- 3 Wire Intrinsically Safe Dewpoint Transmitter
-  Ex II 1GD Ex ia IIC T4 Ga Ex ia IIIC T200 135°C DA (-20°C ≤ Ta ≤ +60°C)
- Overall Range: -120°C to +20°C (-184°F to +68°F) Dewpoint
- Accuracy ± 2°C Dewpoint
- INTEGRATED AUTOMATIC CALIBRATION
- Can be configured for Linear 4-20mA signal in: °C & °F Dewpoint, ppm(v), g/m³, 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.

Made to order Dewpoint Sampling Systems manufactured to exact requirements are available from Alpha Moisture Systems - Go to 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:
 IECEx BAS07.0080 BASEEFA 07ATEX0234 BAS21UKEX0805
STANDARDS: EN 60079-0:2018 EN 60079-11:2012
ATEX , UKKA and IECEx Markings:

 Ex II 1GD Ex ia IIC T4 Ga Exia IIIC T₂₀₀ 135°C DA (-20°C ≤ T_a ≤ +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):

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

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 } resolution = 0.1°C / °F
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 }

SD: -100°C to +20°C (-148°F to +68°F) dewpoint } resolution = 0.1°C / °F
LD: -120°C to +20°C (-184°F to +68°F) dewpoint }
HD: -65°C to +20°C (-85°F to +68°F) 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 = -100°C to +20°C dp
 Model AMT-Ex COMES COMPLETE WITH A STANDARD 2 METRE CONNECTING CABLE.



How to Order - Step 2 of 5

Select a Longer Cable Below

CAB110-AMT-Ex + [XX]

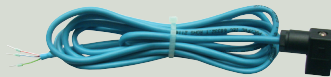
Your AMT-Ex Transmitter comes complete with 2 metres of connecting cable as standard.

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

How to Order - Step 3 of 5

Choose from 2 displays below (optional)



See datasheets DS1200 & DS4000 for full details



DS1200 Standard Display

- Both displays are perfect for continuous on-line measurements with the AMT-Ex Dewpoint Transmitter
- Fast Response
- Single channel on-line hygrometer
- Panel protection to IP65 (NEMA4X)
- 2 independent alarms
- 4-20mA re-transmission

DS4000 Advanced Display with more functions and features

How to Order - Step 4 of 5

Select a Transmitter Holder

Comes complete with mounting plate.

SH-AMT + Pipe Fittings [X] [X]

X = Choose INLET Pipe Fitting
 0 = No Fittings
 4 = 1/4" - Pipe OD
 8 = 1/8" - Pipe OD
 6 = 6mm - Pipe OD

X = Choose OUTLET Pipe Fitting
 0 = No Fittings
 4 = 1/4" - Pipe OD
 8 = 1/8" - Pipe OD
 6 = 6mm - Pipe OD

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

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



How to Order - Step 5 of 5

Order an Isolator for the safe area

Part No. PR5104BB2A - Single Channel

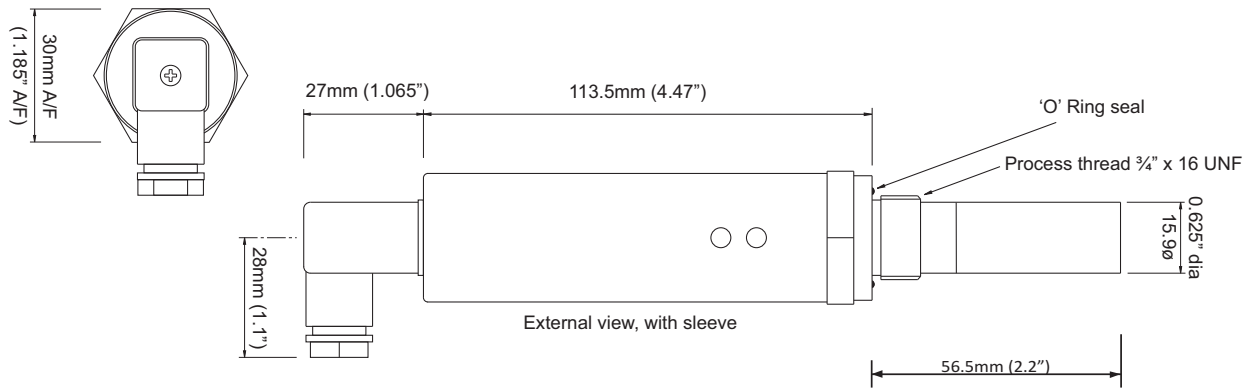
Part No. PR5104BB2B - Dual Channel



See Page 4 for wiring diagrams

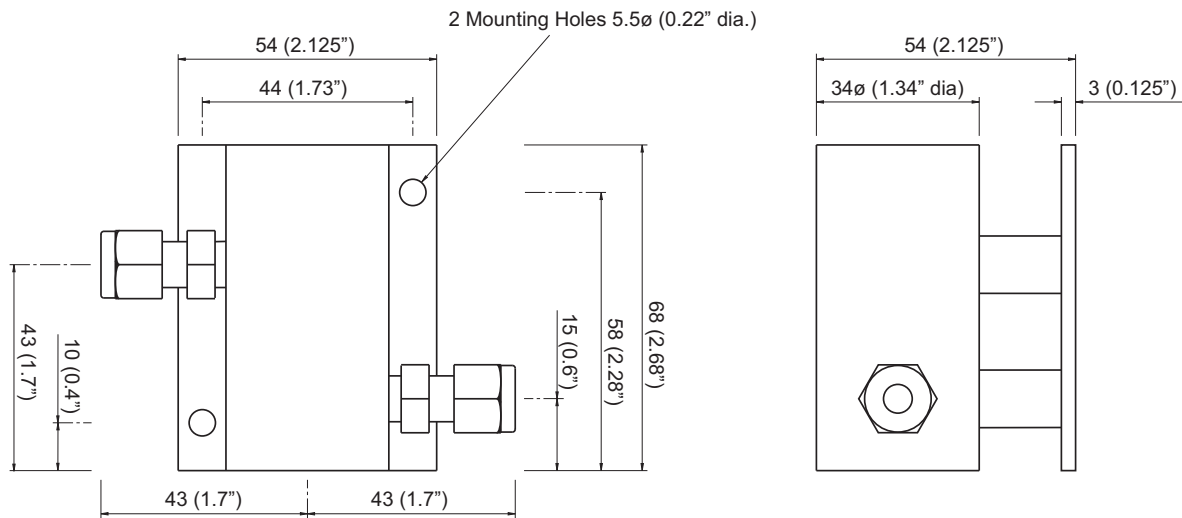
Dimensions

Model AMT-Ex Dewpoint Transmitter



Model SH-AMT Transmitter Holder

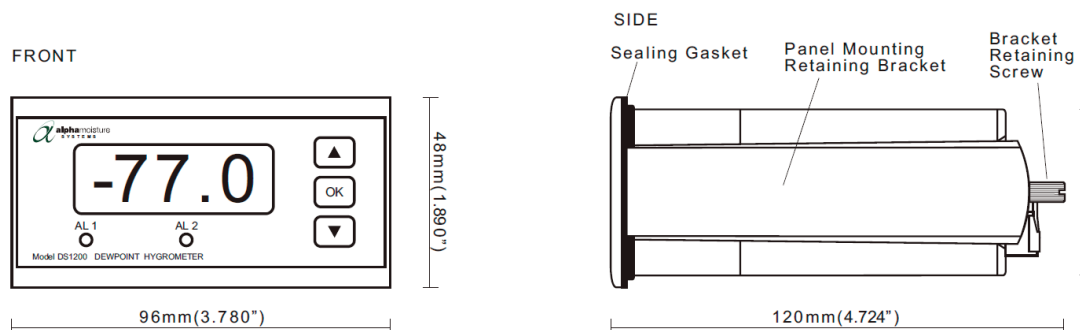
Flow Through Sample Cell



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

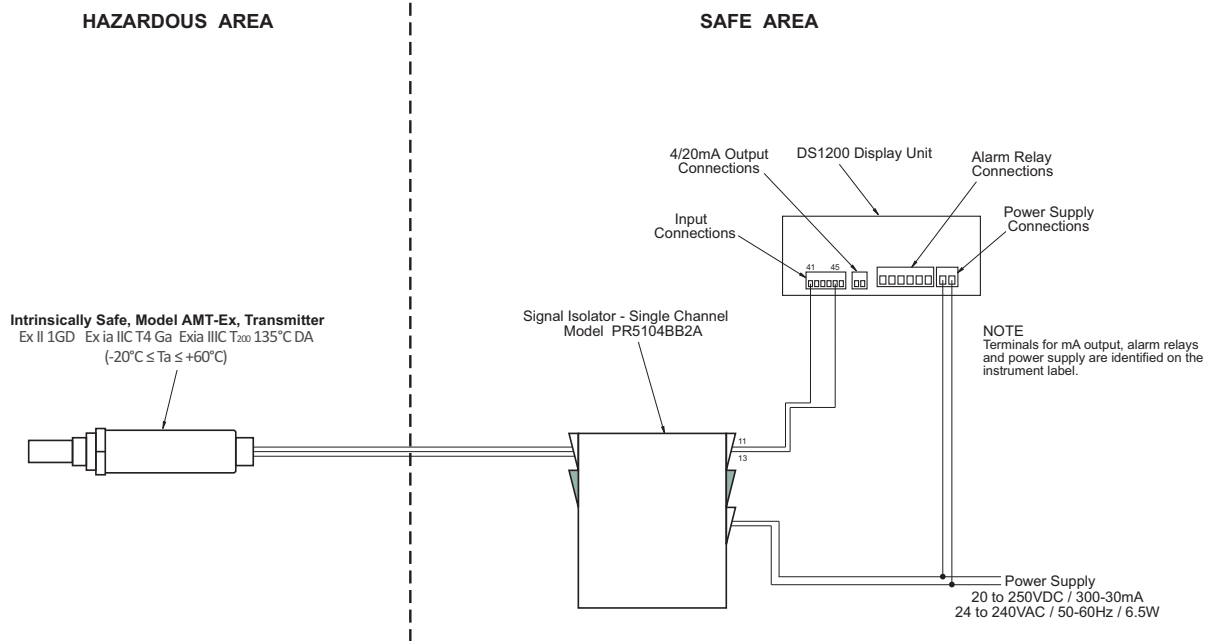
Model DS1200 Display

Stable, Accurate and Reliable Alarmed Monitor

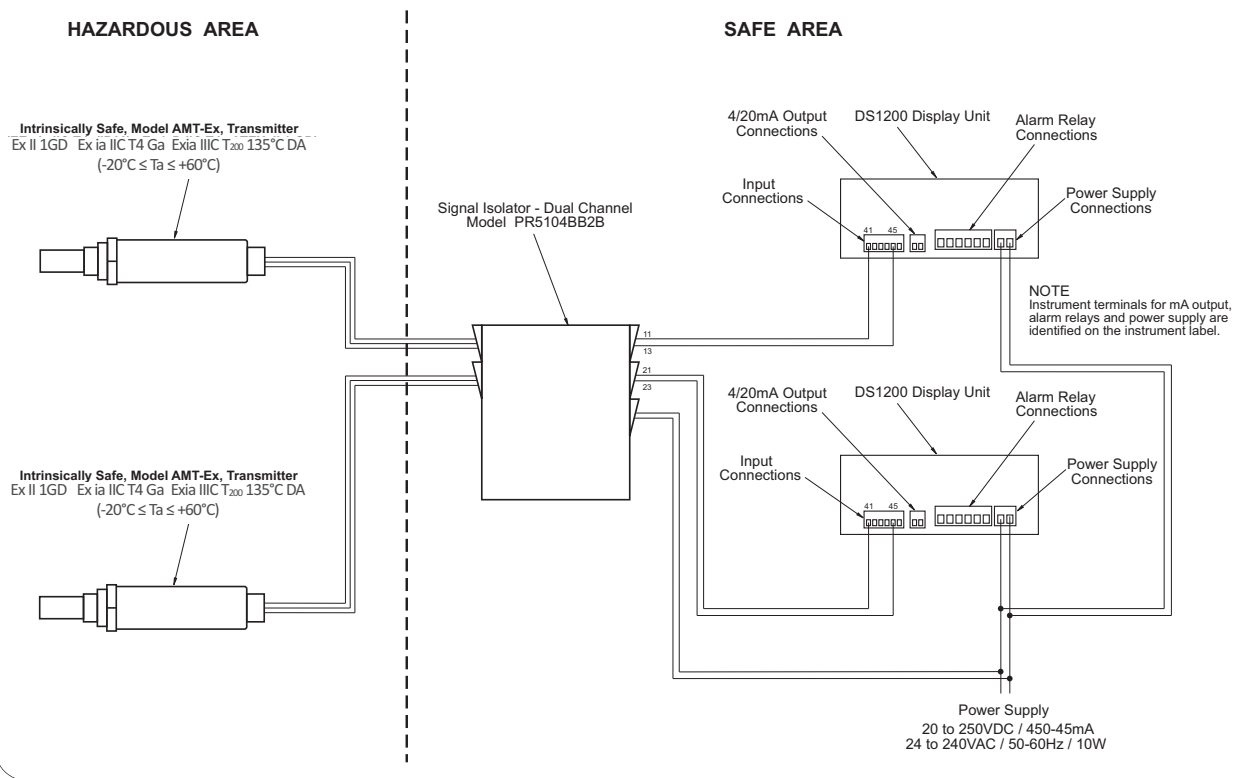


Application Wiring Diagram Examples for DS1200

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



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

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

1722 Model AMT-Ex pd020222 -Iss-8

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