

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

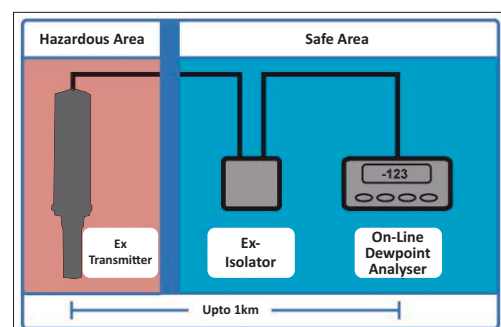
FEATURES

- User Friendly & Advanced Functionality
- Powerful up to date software
- DISPLAY in °C Dewpoint & °F Dewpoint, ppm(v), ppb(v), g/m3 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 60079-0:2012 EN 60079-11:2012



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: $\pm 2^{\circ}\text{C}$ dewpoint (NPL/NIST traceable for range -90°C to $+20^{\circ}\text{C}$)
TEMPERATURE COEFFICIENT: Temperature compensated for operating range.
REPEATABILITY: Better than $\pm 0.3^{\circ}\text{C}$ dewpoint
OPERATING TEMPERATURE: -20°C to $+60^{\circ}\text{C}$
STORAGE TEMPERATURE: -20°C to $+70^{\circ}\text{C}$
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 $^{\circ}\text{C}$, $^{\circ}\text{F}$, ppm(v), ppb(v), g/m³ 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 800 Ω / 16Vdc
PROGRAMMABLE SIGNAL RANGES: 0...20 or 4...20mADC (Factory set)
ISOLATION: Voltage Test / Operation - 2.3kVac / 250Vac
CURRENT OUTPUT-LOAD (max): 20mA / 800 Ω / 16VDC
LOAD STABILITY: $\leq 0.01\%$ of span / 100 Ω
RELAY-
RELAY FUNCTION: setpoint
HYSTERESIS: 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
WEATHERPROOF CLASSIFICATION: Front panel only - IP65 (NEMA 4X).
TEMPERATURE OPERATING RANGE: -20°C to $+60^{\circ}\text{C}$
DISPLAY RESPONSE TIME (0-90%, 100 to 10%): 0.4s.
WIRE SIZE, PIN 45 & 46 (max): 1 x 1.5mm² stranded wire
WIRE SIZE, OTHERS (max): 1 x 2.5mm² 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]

SDX(F):	-100°C to $+20^{\circ}\text{C}$ (-148°F to $+68^{\circ}\text{F}$) dewpoint	} resolution = $0.1^{\circ}\text{C} / ^{\circ}\text{F}$
LDX(F):	-120°C to $+20^{\circ}\text{C}$ (-184°F to $+68^{\circ}\text{F}$) dewpoint	
HDX(F):	-65°C to $+20^{\circ}\text{C}$ (-85°F to $+68^{\circ}\text{F}$) dewpoint	
SILVER	-110°C to -20°C (-166°F to -4°F) dewpoint	
RED	-80°C to -20°C (-112°F to -4°F) dewpoint	
GREY	-80°C to 0°C (-112°F to $+32^{\circ}\text{F}$) dewpoint	
BLUE	-80°C to $+20^{\circ}\text{C}$ (-112°F to $+68^{\circ}\text{F}$) dewpoint	
PURPLE	-100°C to 0°C (-148°F to $+32^{\circ}\text{F}$) dewpoint	
SPX:	1 to 1000 ppm(v) - - - - - resolution = 1ppm	
MPX:	0.1 to 100.0 ppm(v) - - - resolution = 0.1ppm	
LPX:	0.01 to 10.00 ppm(v) - resolution = 0.01ppm	
PBX:	1 to 1000 ppb(v) - - - - - resolution = 1ppb	
HGX:	0.01 to 10.00 g/m ³ - resolution = 0.01g/m ³	
LGX:	0.001 to 1.000 g/m ³ -resolution = 0.001g/m ³	
LBX:	0.1 to 100 lb/MMSCF	

Order Example:- Dewpoint Transmitter Model DS1200-AMT-SDC(F) = -100°C to $+20^{\circ}\text{C}$ 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/m³ 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

How to Order - Step 3 of 4**Select A Transmitter Holder**

Comes complete with mounting plate.

SH-AMT-Ex + [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
 with 2 x 1/4 fittings Order SH-AMT-Ex-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.

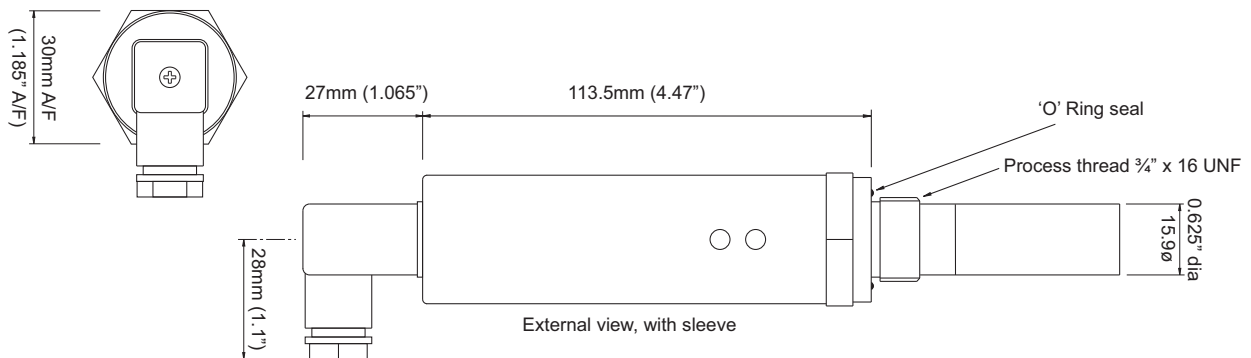
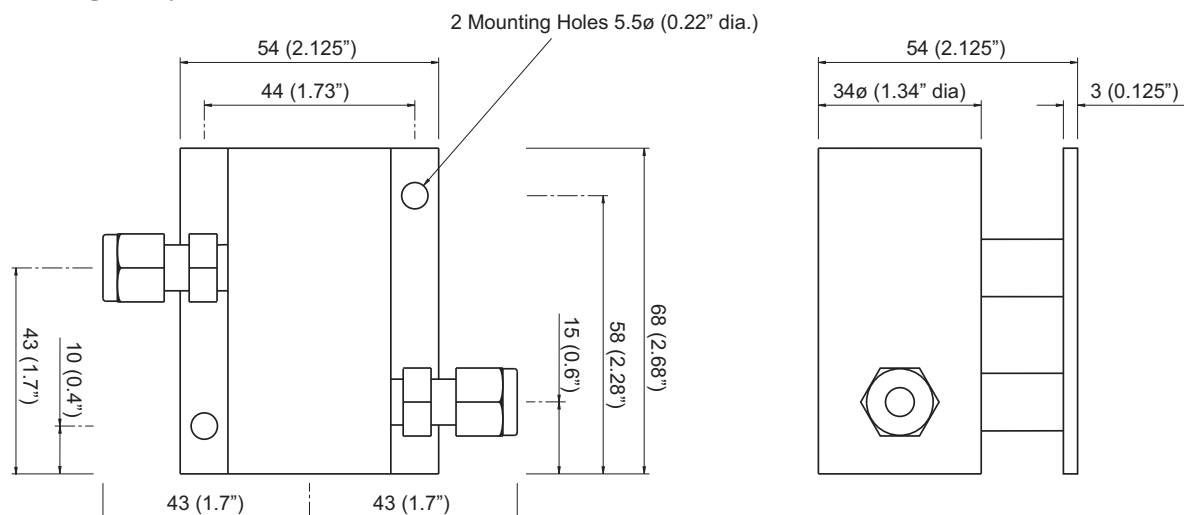
How to Order - Step 4 of 4**Order an Isolator for the safe area**

Part No. PR5104BB2A - Single Channel

Part No. PR5104BB2B - Dual Channel



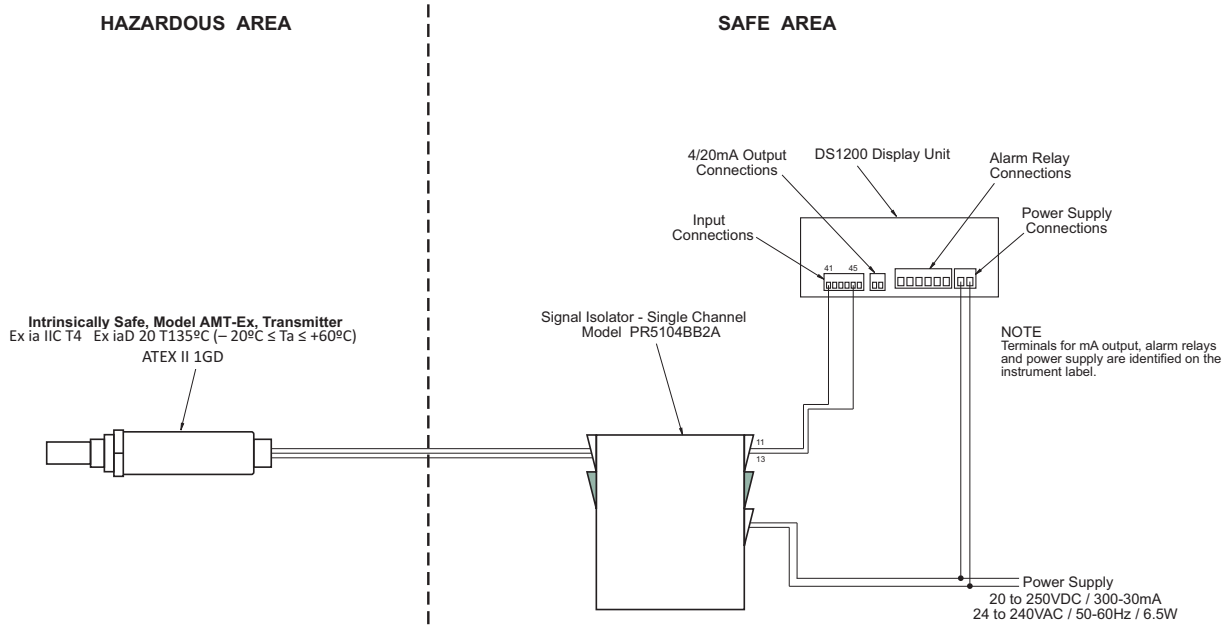
See Page 4 for wiring diagrams

Dimensions**Model AMT-Ex Dewpoint Transmitter****Model SH-AMT-Ex Transmitter Holder****Flow Through Sample Cell**

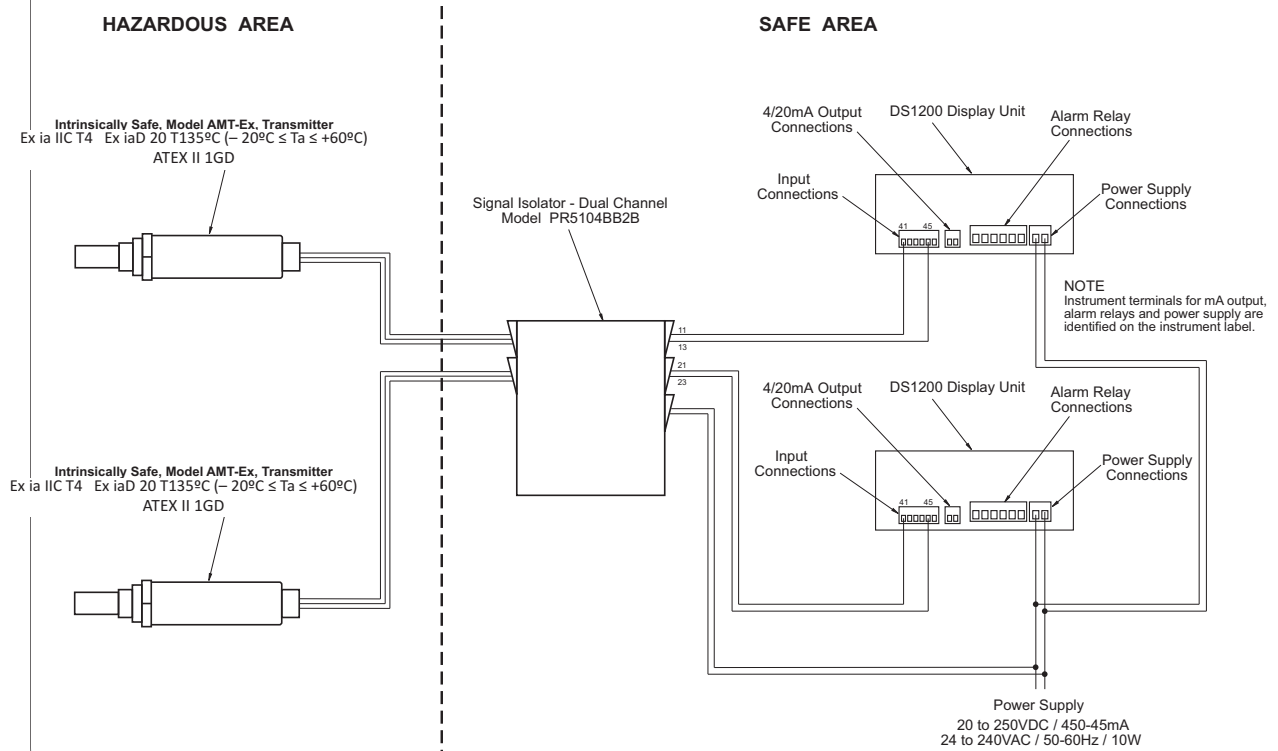
Note: The Assembly is shown with 1/4" OD tube fittings. The dimensions across the tube fittings will vary for all other size fittings.

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

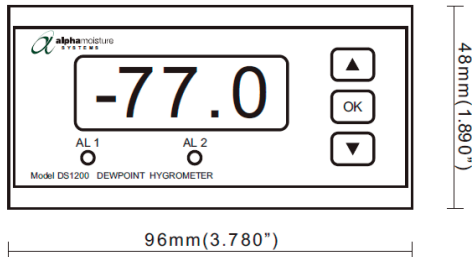


Application Wiring Diagrams

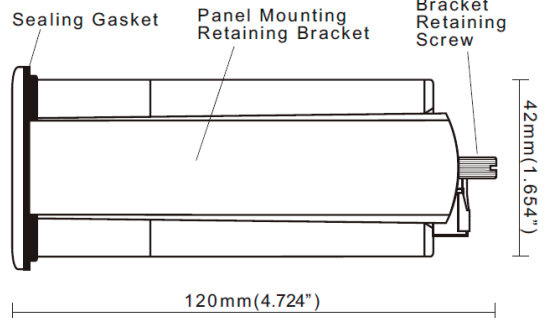
Model DS1200 Display

Stable, Accurate and Reliable Alarmed Monitor

FRONT

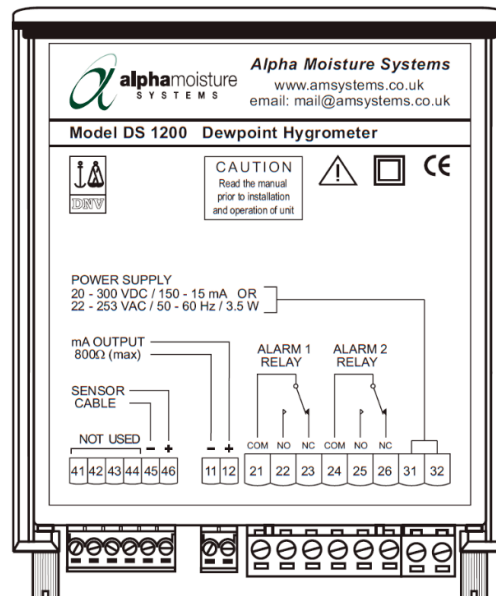


SIDE



Application Wiring Diagrams

Model DS1200 Display Connection Details



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.

Distributor Information

1881 Model DS1200-AMT-Ex pd180619-Iss-6

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Product specification may be subject to change.