

AMT-Ex

Intrinsically Safe 4-20 mA Dewpoint Transmitter



Features and Benefits

- 💧 Certified Intrinsically Safe to IECEx, ATEX for use in hazardous areas and with potentially explosive atmospheres using specified Signal Isolator in the safe area
- 💧 Ultra-high capacitance aluminium oxide sensor delivers unsurpassed sensitivity, speed of response, accuracy, repeatability, stability, and long service life
- 💧 Unique AutoCal span correction feature
- 💧 Various dewpoint ranges available -110 °C to 20 °C
- 💧 Compact 3 Wire 4-20 mA Intrinsically Safe Dewpoint Transmitter
- 💧 Accuracy ± 2 °C dewpoint
- 💧 IP66 / NEMA 4 Weatherproof Protection
- 💧 Optional Sensor Holder/Sample Cell for optimum sampling conditions
- 💧 Supplied with a calibration certificate traceable to National and International Humidity standards



DS4000 Based Hygrometer



DS1200 Based Hygrometer



AMT-Ex in Transmitter Holder

Our AMT-Ex Intrinsically Safe Online Dewpoint Transmitter is used for continuous measurement of trace moisture measurement in process gases or dry compressed air. **AMT-Ex** dewpoint transmitter can also be factory configured to output a linear 4-20 mA signal for other moisture units e.g. ppm(V), ppm(W), g/m³ and lb/MMSCF etc.

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.

AMT-Ex is ATEX certified Intrinsically Safe for hazardous area use when installed with the appropriate isolator and display in the safe area. See Illustrations on pages 2, 3 & 4.

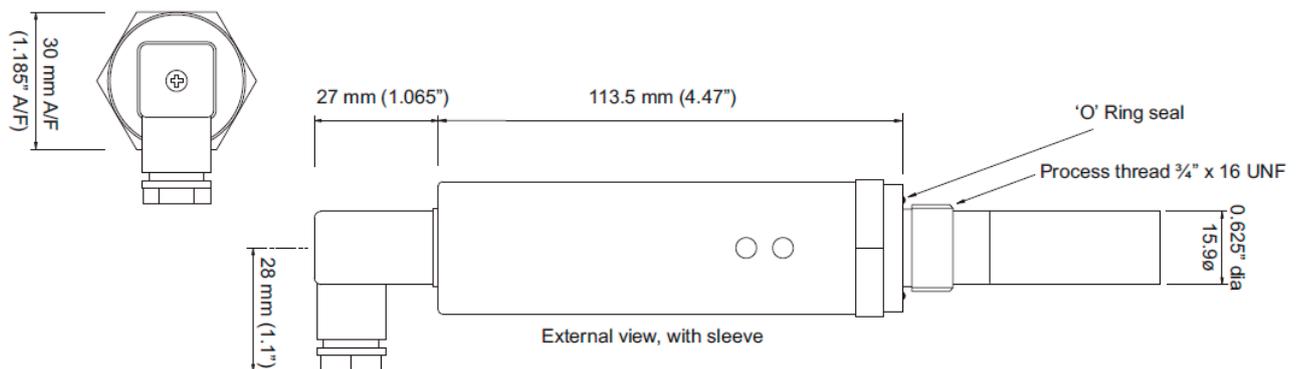
This online dew point transmitter also incorporates an Automatic Calibration (AutoCal) feature that allows the user to carry out a field calibration / span check which is operated by two small button switches built within the transmitter enclosure and can withstand 35,000 kPa (350 bar) maximum pressure. By employing a low resistance cable, the AMT-Ex dewpoint transmitter can be located in excess of 1000 metres from the safe area control room.

AMT-Ex Dewpoint Transmitter Technical Data

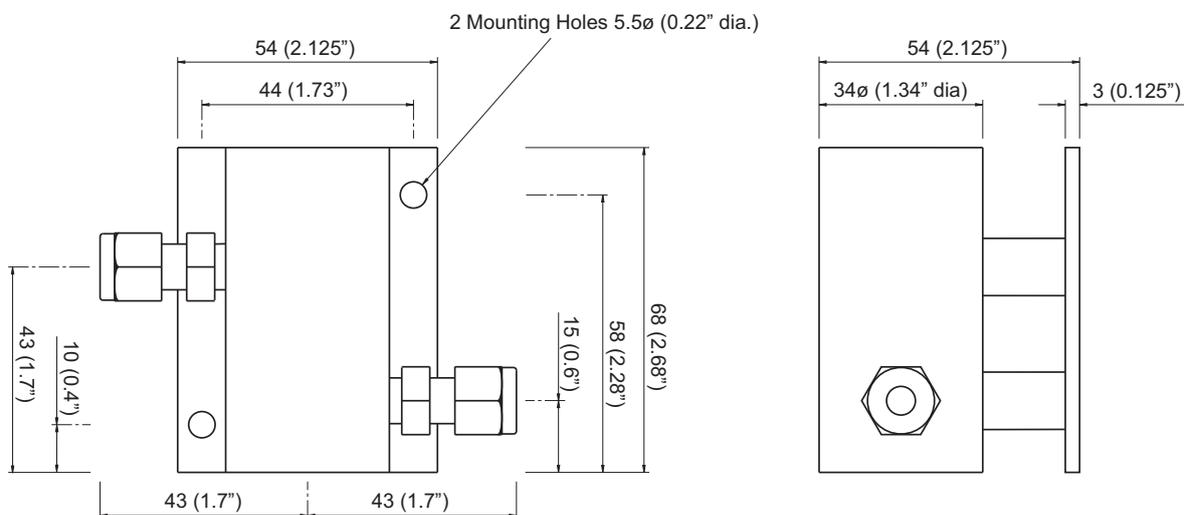
Transmitter Type	3 Wire 4-20 mA Intrinsically Safe Dewpoint Transmitter
Sensing Element	Ultra-High Capacitance – Aluminium Oxide Type
Output Signal	Linear 4-20 mA with selectable engineering units and fault indication
Power Supply	12-28 Vdc Reverse Polarity Protected
Dewpoint Ranges	See Page 5 - How to Order
Intrinsic Safety Certification	IECEx BAS07.0080 BASEEFA 07ATEX0234 BAS21UKEX0805
Standards	EN 60079-0:2018 EN 60079-11:2012
ATEX, UKCA and IECEx Markings	Ex II 1GD Ex ia IIC T4Ga Exia IIIC T200 135 °CDA (-20 °C ≤ Ta ≤ +60 °C)
Electromagnetic Compatibility (EMC)	Complies with BS EN IEC 61326-1
Accuracy	± 2 °C dewpoint (UK National Physical Laboratory traceable for range -90 °C to 20 °C)
Repeatability	Better than ± 0.3 °C dewpoint
Operating Temperature (Ambient and Process)	-20 °C to 60 °C
Operating Pressure (Process)	From 1 kPa (0.01 bara) to Maximum 35,000 kPa (350 bara)
Operating Humidity (Ambient)	Maximum 95 %RH Non-condensing
Storage Temperature	-20 °C to 70 °C

Field Calibration	AutoCal span check and correction are performed using two buttons on the Transmitter body. Locked in normal operating mode to avoid tamper. We recommend AutoCal is repeated every 2-3 months
Factory Calibration	Supplied with a calibration certificate traceable to National and International Humidity standards. We recommend annual laboratory calibration
Sample Flow Rate	Flow independent but ideally 2 to 5 litres per minute. Max: 25 litres/min
Cable Terminations	IP66 / NEMA 4X rated, size C, DIN EN 175301 connector at the Transmitter and other end terminated with bootlace ferrules
Cable	Supplied with 2 m IS (blue) standard cable. Nominal diameter 4.5 mm, 92 ohms/km at 20 °C
Mechanical Connection	3/4" UNF (16 tpi) with integral Viton "O" ring seal
Isolation	Sensing Element connected to the 4-20 mA loop but isolated from Transmitter body
Transmitter Body	316 Stainless Steel
Sensor Protection	316 Sintered Stainless Steel Filter – 50 micron
Probe Material (Wetted Parts)	316 Stainless Steel
Ingress Protection	IP66 / NEMA 4X when Connector coupled to Transmitter
Manufacturer's Warranty	12 months in case of defective parts or faulty workmanship

Dimensions



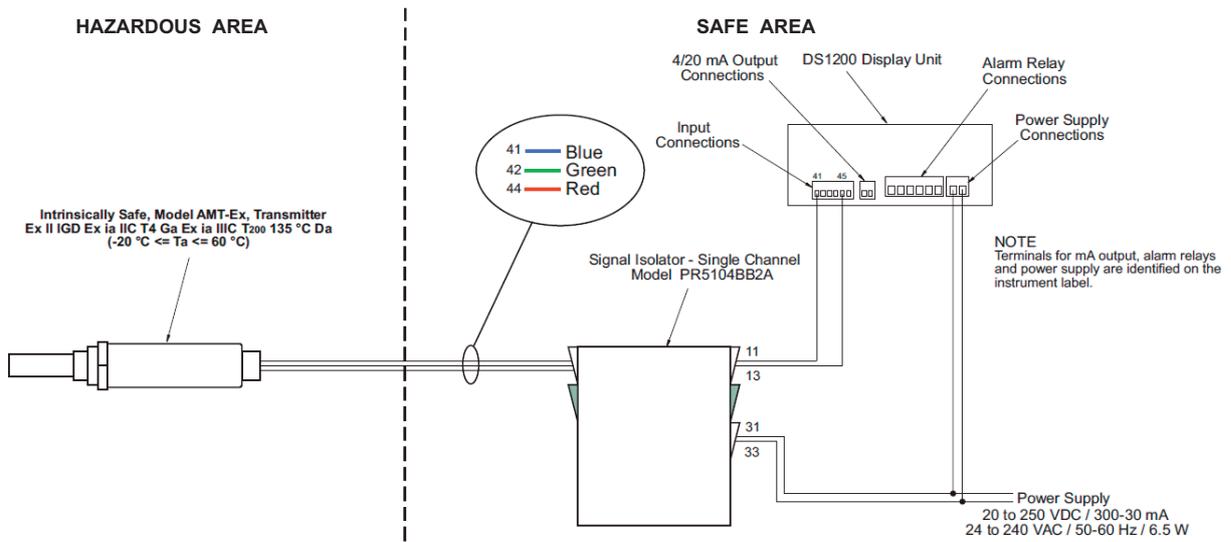
Transmitter Holder - Flow Through Sample Cell



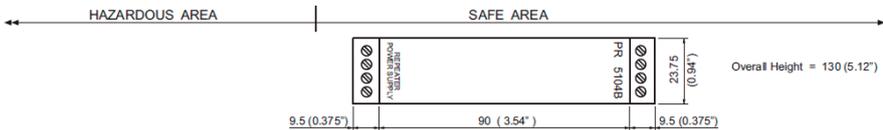
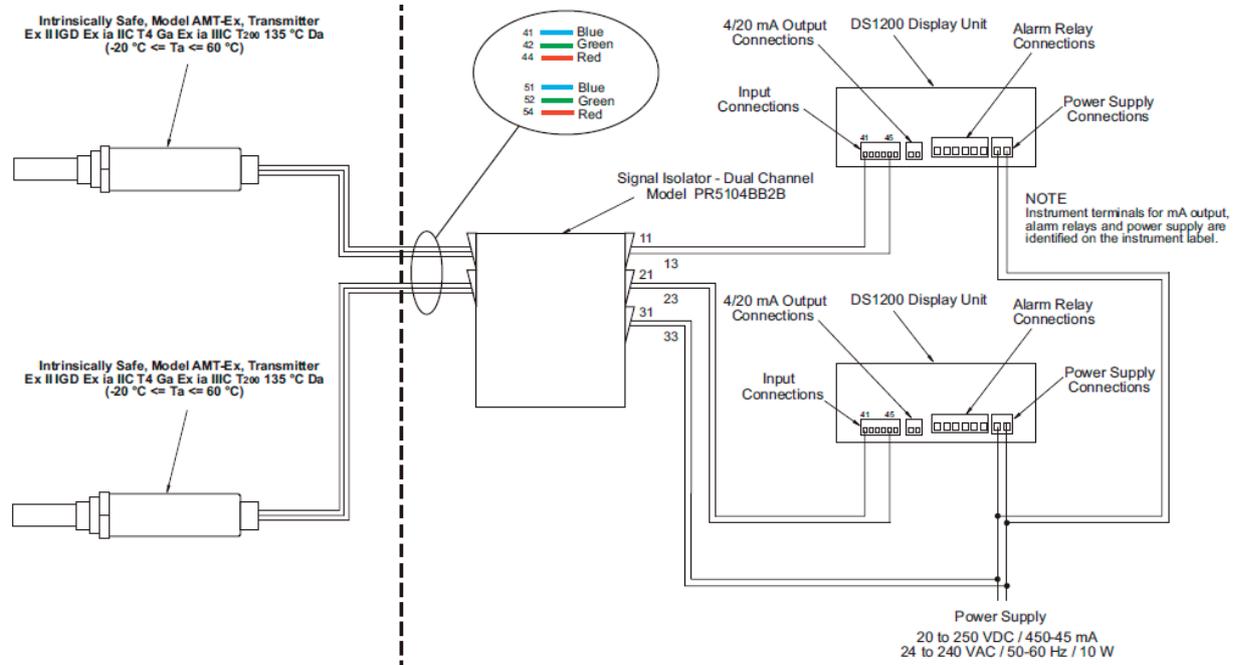
Note: The Assembly is shown with 1/4" OD tube fittings. The dimensions across the tube fittings will vary for all other size fittings.

Application Wiring Diagram Examples Using DS1200 Display

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



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



AMT-Ex Transmitter Cable Connection (Channel 1)

Terminal 41 = mA - (BLUE)
Terminal 42 = mA + (GREEN)
Terminal 44 = Supply + (RED)

AMT-Ex Transmitter Cable Connection (Channel 2, If Applicable)

Terminal 51 = mA - (BLUE)
Terminal 52 = mA + (GREEN)
Terminal 54 = Supply + (RED)

Channel 1 Output
Terminal 11 = mA - Terminal 13 = mA+

Channel 2 Output (If Applicable)
Terminal 21 = mA - Terminal 23 = mA+

Power Supply. Terminals 31 and 33.
20 to 270 VDC OR 22 to 250 VAC, 50/60 Hz.
Maximum Power Consumption = 3 W

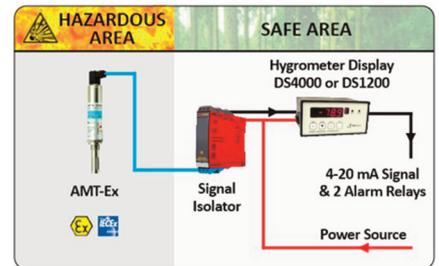
APPROVALS.

ATEX II (1) GD
[EEx ia] IIC
Applicable in Zones 0, 1 or 2

NOTES

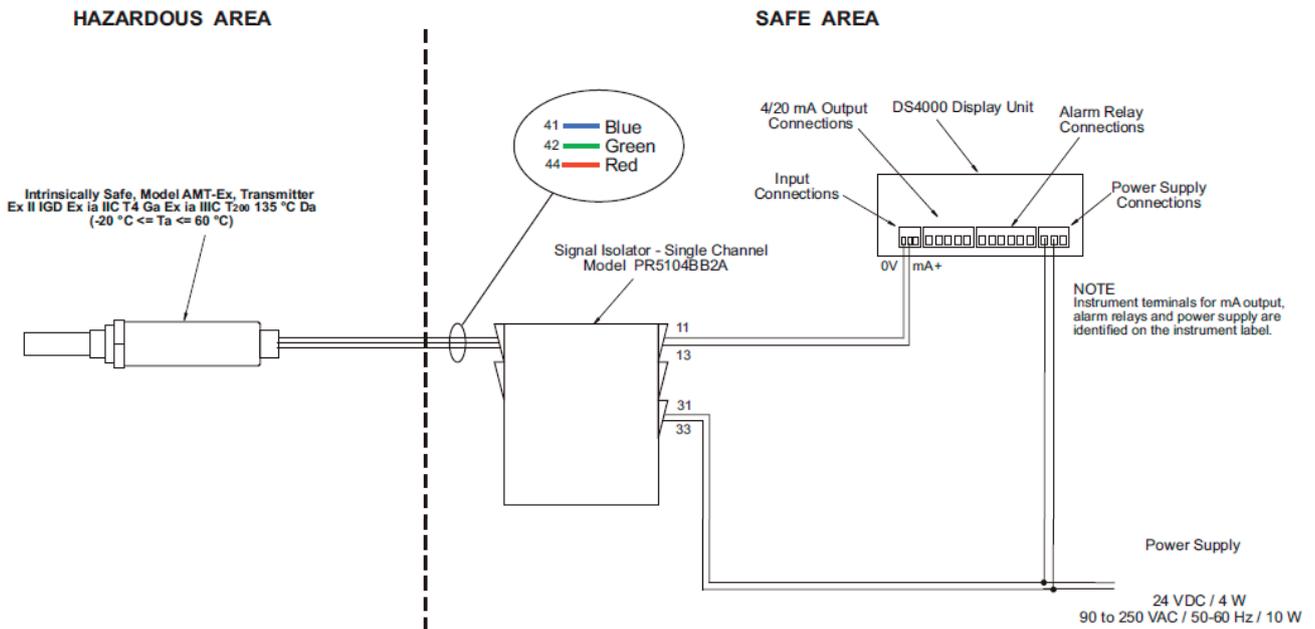
Model PR5104BB2A is a single channel unit
Model PR5104BB2B is a dual channel unit

35mm (1.375") DIN (Top Hat) Rail Mounting

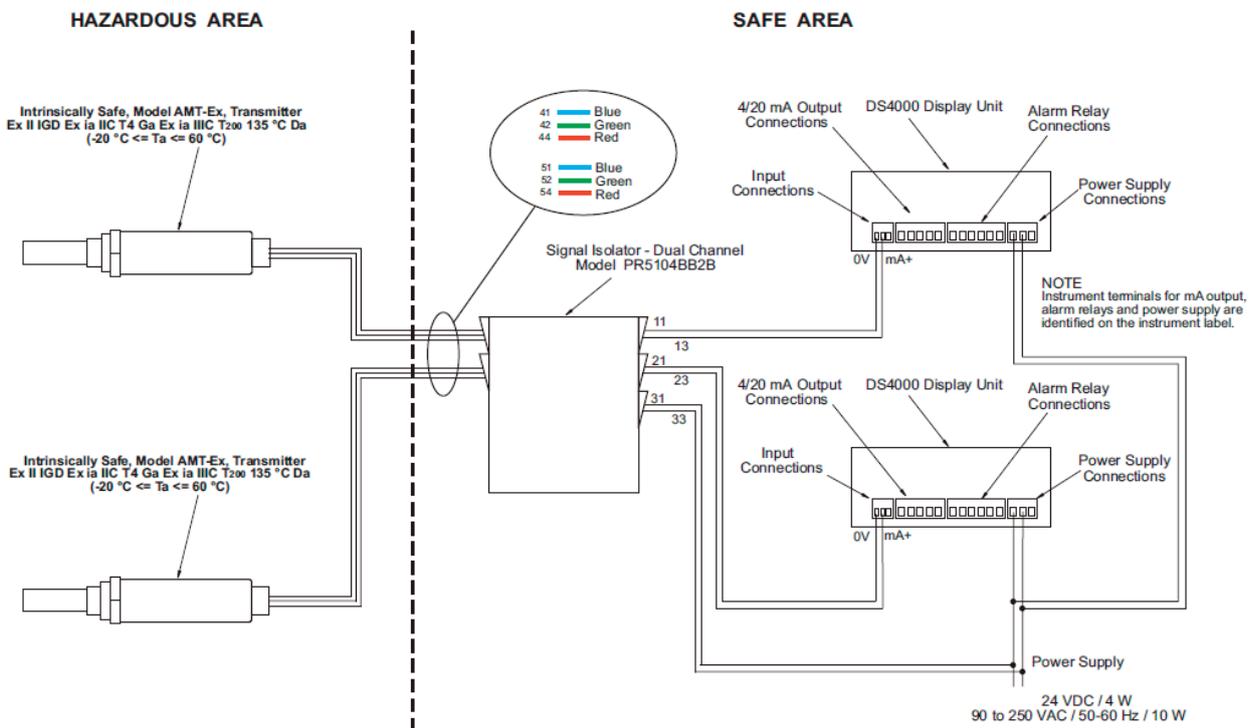


Application Wiring Diagram Examples Using DS4000 Display

AMT-Ex Dewpoint Transmitter Using PR5104BB2A Single Channel Isolator with DS4000 Display



AMT-Ex Dewpoint Transmitter Using PR5104BB2B Dual Channel Isolator and DS4000 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.

How to order

1 Transmitter Range: AMT-Ex - [XX]

Range/Unit -	Dewpoint	
-120 °C to +20 °C (-184 °F to +68 °F) $R = 0.1 \text{ °C/°F}$		LD
-110 °C to -20 °C (-166 °F to -4 °F) $R = 0.1 \text{ °C/°F}$		SR
-100 °C to 0 °C (-148 °F to +32 °F) $R = 0.1 \text{ °C/°F}$		PL
-100 °C to +20 °C (-148 °F to +68 °F) $R = 0.1 \text{ °C/°F}$		SD
-80 °C to -20 °C (-112 °F to -4 °F) $R = 0.1 \text{ °C/°F}$		RD
-80 °C to 0 °C (-112 °F to +32 °F) $R = 0.1 \text{ °C/°F}$		GY
-65 °C to +20 °C (-85 °F to +68 °F) $R = 0.1 \text{ °C/°F}$		HD
ppm(V)		
1 to 1000	$R = 1 \text{ ppm}$	SP
0.1 to 100.0	$R = 0.1 \text{ ppm}$	MP
0.01 to 10.00	$R = 0.01 \text{ ppm}$	LP
ppb(V)		
1 to 1000	$R = 1 \text{ ppb}$	PB
g/m³		
0.01 to 10.00	$R = 0.01 \text{ g/m}^3$	HG
0.001 to 1.000	$R = 0.001 \text{ g/m}^3$	LG
lbs/MMSCF		
0.1 to 100.0	$R = 0.1 \text{ lbs/MMSCF}$	LB
R = Resolution		

NOTE: ppm, ppb, g/m³ & lbs/MMSCF ranges are stated at atmospheric pressure. AMT-Ex Transmitter can be configured to provide corresponding ranges for operation at other constant pressure. This must be stated at time of order.

2 Cable: CAB110-AMT-Ex + [XX]^{Length}

The AMT-Ex Transmitter comes complete with 2 metres of connecting cable and connector plug as standard.



For a longer cable length with connecting plug, simply enter the required length after the part number above:

Example: CAB110-AMT-Ex-[10] for 10 metres.
Longer cables are charged at per meter increments up to 1000 metres.

4 Isolator:



- Located in the Safe Area only

Part No. PR5104BB2A

- Single Channel

Part No. PR5104BB2B

- Dual Channel

See pages 3 and 4 for wiring diagrams when installing DS4000 or DS1200 displays, for DS1500 Display contact us.

3 Transmitter Holder with Fittings SH-AMT + [X][X]

Comes complete with mounting plate.

FITTINGS —



INLET Pipe Fitting

No Fittings	0
1/4" - Pipe OD	4
1/8" - Pipe OD	8
6 mm - Pipe OD	6

OUTLET Pipe Fitting

No Fittings	0
1/4" - Pipe OD	4
1/8" - Pipe OD	8
6 mm - Pipe OD	6

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

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

5 Displays:



DS4000

Advanced Display with more functions and features



DS1200

Standard Display

- For Safe Area only unless installed in an Exd Enclosure
- These displays are perfect for continuous on-line measurements with the AMT-Ex Dewpoint Transmitter
- Fast Response
- Single channel on-line hygrometer
- 2 independent alarms
- 4-20 mA re-transmission



DS1500

Standard Display

- With MODBUS/RTU Comms
- 4 independent alarms
- Contact us for more details

For full specifications see DS4000, DS1200 or DS1500 datasheets available on our website: amsystems.co.uk

Related Products

Natural Gas
Sampling
Systems



TEG
Sampling
Systems



EXD
Flameproof
Systems



1722 AMT-Ex pd050124-Iss-12

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Product specification may be subject to change.

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VAT Registration No. GB607207563
WEEE Producer Registration No. WEEE/EA0067TX

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