Application Datasheet - Hydrogen

Measuring Trace Moisture (*dewpoint*) in Hydrogen

Measuring Trace Moisture in Hydrogen Gas: The Alpha Moisture Systems AMT-Ex Dewpoint Transmitter.

In various industrial processes, the precise measurement of moisture content is of paramount importance to ensure product quality, safety, and operational efficiency. This holds particularly true in applications involving hydrogen gas, where even trace amounts of moisture can lead to corrosion, degradation, and compromised performance. Addressing this critical need, the **Alpha Moisture Systems AMT-Ex Dewpoint Transmitter** is a cutting-edge solution, utilizing advanced ultra high capacitance technology to deliver accurate and reliable results in hydrogen gas applications.

The Importance of Moisture Measurement in Hydrogen Gas Applications

Hydrogen gas is a versatile and clean-burning fuel source that is used across diverse industries, from petrochemicals to power generation. However, the presence of moisture, even in minute quantities, can have detrimental effects on both performance and equipment integrity.
Corrosion of pipelines, valves, and other components, as well as reduced process efficiency can occur when excessive moisture is present. To mitigate these risks and ensure optimal process performance, the measurement of moisture levels is critical.

Introducing the Alpha Moisture Systems AMT-Ex Dewpoint Transmitter

At the forefront of moisture measurement technology, the **Alpha Moisture Systems AMT-Ex Dewpoint Transmitter** is widely used specifically for hydrogen gas applications. This transmitter employs ultra high capacitance technology, which is known for its exceptional sensitivity and precision in detecting moisture content.

Precision in Hydrogen Gas Applications

One of the challenges in measuring moisture in hydrogen gas is the extremely low levels of moisture that need to be detected. The **AMT-Ex Dewpoint Transmitter** excels in this aspect by utilizing the ultra high capacitance technology. The transmitter's sensor can detect ppb levels of moisture, and any changes in moisture level by utilising the high capacitance of the sensor. The measurement is then translated into an accurate dewpoint reading, reflecting the moisture content in the gas.

DS4000 Advanced Hygrometer Display

AMT-Ex Dewpoint Transmitter

DS1200 Standard Hygrometer Display

Benefits and Applications

The benefits of using the **AMT-Ex Dewpoint Transmitter** extend beyond accuracy when used with an appropriate sample system, ensuring consistent performance even in demanding industrial environments. The transmitter's ability to provide real-time data means operators can take corrective actions if moisture levels exceed permissible limits. This not only safeguards equipment but also contributes to cost savings by preventing downtime and maintenance expenses.

The applications of the **AMT-Ex Dewpoint Transmitter** span various industries where hydrogen gas is a critical component. These include hydrogen fuel cells, electronics, electricity, heat treatment processes, and petrochemical refining, among others.

In each of these applications, maintaining moisture levels within stringent tolerances is essential for the reliability and efficiency of operations.

Conclusion

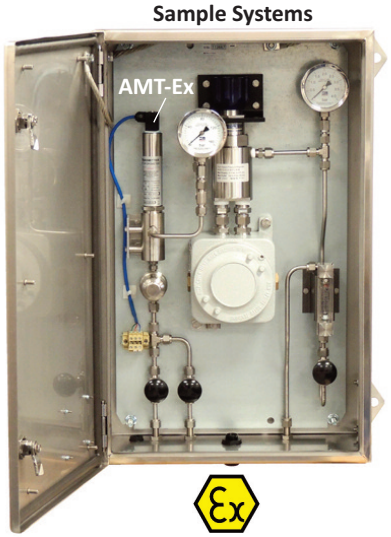
The **Alpha Moisture Systems AMT-Ex Dewpoint Transmitter** is a proven and reliable solution for measuring trace moisture in hydrogen gas applications. Through the utilization of ultra high capacitance technology, this transmitter achieves unmatched accuracy and sensitivity, ensuring that even the smallest amounts of moisture do not compromise the integrity of processes and equipment.

In industries where moisture control is critical, the **AMT-Ex Dewpoint Transmitter** is widely used, facilitating enhanced product quality, safety, and operational excellence.

For more information on what we offer for the Ex environment and application visit our website: **amsystems.co.uk** or call our expert technical team on **+44 (0)1274 733 100** or email us to **info@amsystems.co.uk**

DS4000-Exd Flameproof Enclosures for Ex hazardous Areas and Zones

Made to Order Hydrogen Ex Sample Systems



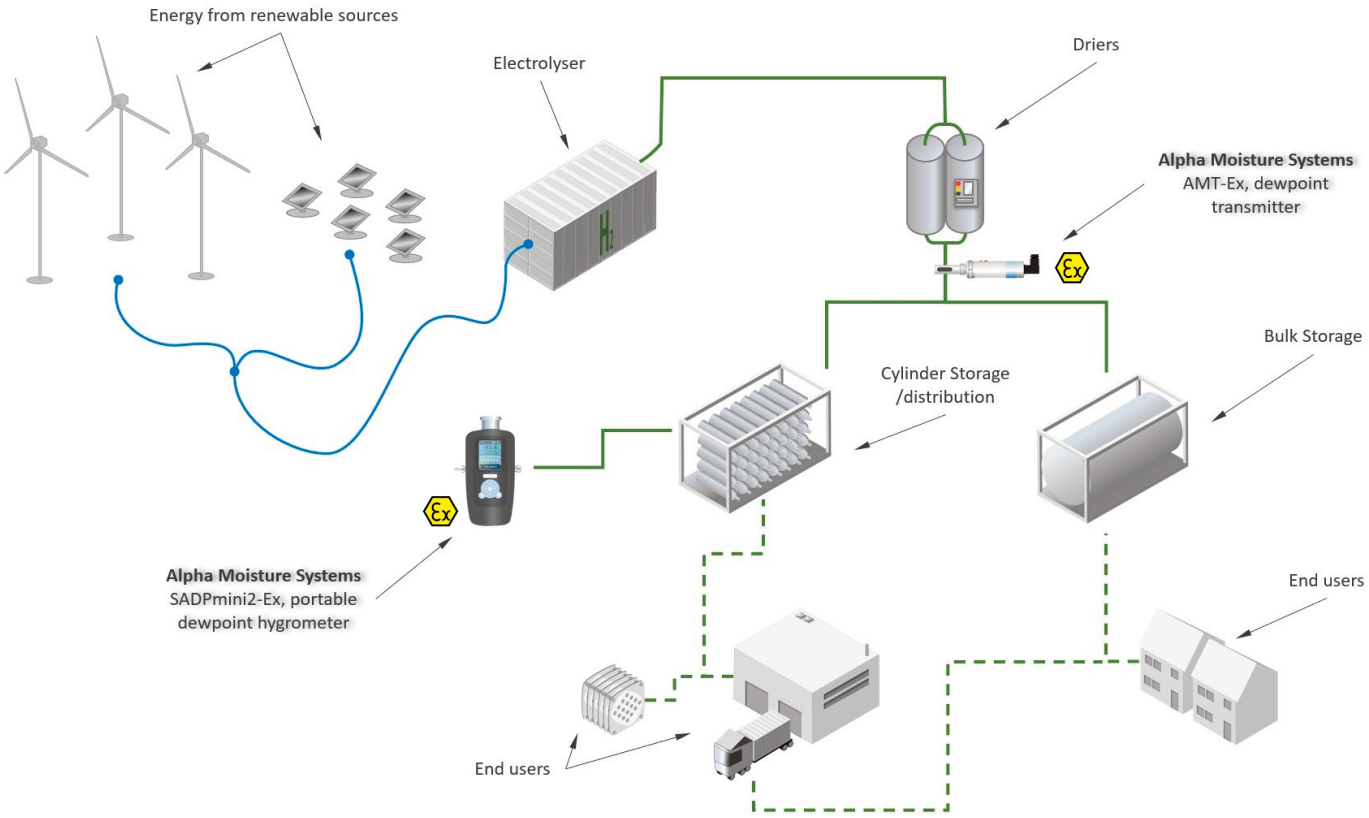
- Incorporates ATEX certified electrically heated pressure regulators for control of sample
- Inlet pressure up to 210 barg
- Sensor operates at inlet or atmospheric pressure
- Process and auxiliary inlet with manual selector valves
- Sample inlet and outlet pressure indication

The **Hydrogen Ex Sample System** is designed to present a sample of Hydrogen to the **AMT-Ex Dewpoint Transmitter**.

The system includes particle filtering, pressure control and flow control to condition the sample for presentation to the moisture sensor, which is incorporated within the system.

For more technical specifications, please contact us.

Hydrogen Application Illustration Example



Alpha Moisture Systems' have over 30 years experience in the design and manufacture of Dewpoint Sampling Systems from standard to complex.
We offer a "design and make to order service" for Hydrogen applications.

Contact our Technical Sales Team for more information and expert advice, or visit our website: amsystems.co.uk

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