

Intrinsically Safe Moisture Blending System



In response to the needs of areas where intrinsically safe equipment is utilized, this newly developed moisture blending system can predictably blend precise amounts of moisture with a dry gas without the use of electricity. The system works by allowing the user to select the desired range of moisture, detecting the moisture content of the room by comparing the built-in water bath temperature to a reference chart that correlates it to the moisture content, and then generating moisture in various ranges through the use of multiple permeation tubes.

TOOLING AND INSTRUMENTATION

Features

- Uses no electricity
- Allows the user to select a range of moisture
- Allows the user to determine the precise amount of moisture generated
- Can be used in any field location

Benefits

- Compact, low cost, low energy
- All solid state detection
- Versatile design for a wide-range of applications (hand-held, high resolution, bulk counter, imaging)
- High intrinsic gamma/neutron discrimination

Applications

- Field-calibration in explosion areas
- Moisture source for kinetic studies
- Blending condensable liquids and gasses
- Drug delivery system for medications, similar to asthma inhalers

- Humidity control of living spaces such as homes, offices, or operation rooms in hospitals

Patents & Awards

- U.S. Patent No. 8,262,280 B1

Inventors

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Technology Readiness Level (1–9)



A prototype has been built, but the device has not yet been deployed in an operational environment.

Partnering Opportunities

Y-12 is seeking an industry partner to fully commercialize this technology.

If you would like more information, please contact the Office of Technology Commercialization and Partnerships:
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