Environics®

Product Data
Series 3000
Computerized MAP Gas Mixing and Delivery System

More and more food packaging companies are recognizing the need for very precise and accurate Modified Atmosphere Packaging (MAP) or Equilibrium Modified Atmosphere Packaging (EMAP) to preserve the shelf life and/or appearance of their packed food. At Environics, we know the consistency and accuracy of your gas blend is essential to guarantee the desired quality in the end products.

Our Series 3000 Gas Mixing and Delivery system provides for precise mixing of MAP gases for your specific needs. Whether you are reducing the oxygen levels with nitrogen, carbon dioxide, carbon monoxide or a variety of gases, the high accuracy and consistency of our mixers makes them the units of choice for all of your needs.

Accuracy: Our gas mixing technology is based on very precise control of thermal mass flow controllers (EFC202). Normally, thermal mass flow controllers offer an accuracy +/- 1% of full-scale flow. However, when combined with

Environics computerization and calibration, this accuracy specification is improved to +/- 1% of setpoint. The Full-scale error vs. Setpoint error document shows the 10x improvement in accuracy of a thermal mass flow controller when using Environics controlling technology.

Consistency: Our systems have a repeatability of +/-0.05% of full scale.

Both accuracy and consistency are dependent on total flow rate.

Flexibility: Environics' systems automatically blend and dilute gases to generate precise gas mixes. The Environics® Series 3000 Gas Delivery/Blending system offers on-site gas blending of 100% pure bulk gases and is configured to provide a solution to using costly premixed cylinders of gas.

Although two and three gas mixtures are most common, gas mixtures of more constituents can be produced. The primary benefits of the system are cost savings in using pure gases versus premixed cylinders as well as the accuracy and repeatability of the mixture.

Whether you use a variety of different gas blends or a single blend, the component concentration can be independently varied in response to your commands. Customization of our systems is always possible.

Price Savings: By using pure gases in place of expensive pre-mixed blends, your system will help pay for itself.

Gas Conservation: The Series 3000 provides a controllable positive pressure to meet the requirements of a process downstream. The mixer can be configured to provide gas to a ballast tank, turning off and on as the pressure rises and falls in the tank. This is useful for gas conservation, when the demand for gas is sporadic or intermittent in use.

Optional Alarms: An optional visual and/or audible alarm can be installed onto the top of the instrument to alert the operator of specific fault conditions. An example of a visual alarm is seen in the above picture of a custom

system. We encourage you to consider adding these alarms for all systems, and specifically when using carbon monoxide. A condition that would trigger an alarm is if the interpreted concentration from the optional flow meters falls outside a user adjustable tolerance.

Custom Systems: We have thousands of systems in the field and have developed an extensive library of applications and solutions to meet our customers' needs. Optional features, including remote operation, alarms or a gas humidifier are available. Contact us for more information.

PRODUCT FEATURES AND BENEFITS

- Color touch screen and PLC combined.
- Standard Ethernet connection comes standard on all S3000.
- Included software utility allows you to remotely monitor and operate the instrument over an Ethernet connection.
- Flow standard is accurate up to 1% of reading
- Repeatability up to +/- .05% of full-scale.
- Options include remote operation, alarms, a gas humidifier and an oxygen compatible construction.
- Precision mass flow controllers (MFC) are used to control the flow rate of each gas for blending. Each MFC is calibrated at 11 points on a primary flow standard traceable to NIST and linearly interpolated; ultimately providing a precision blend of gases.
- Optional precision mass flow meters (MFM) can be installed to provides an independent check on the MFC performance
- Manufactured in a NEMA 4 wall mount enclosure, with internal electrically grounded aluminum panels for support and a clear polycarbonate door to protect the controls. Optional enclosures are available.
- Fitting connections and tubing are 316 stainless steel.
- In-line static mixer to ensure a homogenous mix of gases.
- An optional visual and/or audible alarm can be installed onto the top of the instrument to alert the operator of specific fault conditions.

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