

The Environics® Model 4100 is a computerized multi-component gas mixing system that automatically provides mixed gas, on demand, from gas sources that are 100% by volume. The 4100 provides a Tri-Gas blend for modified atmosphere packaging (MAP); case-ready meat packaging of beef and pork. The system can also be used to provide a shielding gas mixture for various welding applications. Once activated, the system will provide an accurate mixture of gas to an external reserve tank and control the pressure in that tank. The reserve tank must be pressure regulated for the application pressure downstream. This allows the model 4100 to satisfy multiple MAP machines or welders, dependent upon the application.

The model 4100 is based on the Environics' Series 4000. The series 4000 line of instruments is primarily used to produce precision gas mixtures for calibrating gas analytical equipment.

The standard configuration for Tri-Gas MAP applications provides a flow rate at 1000 LPM (2100 CFH) of a mixture containing .4% carbon monoxide, 35% carbon dioxide and 64.6% nitrogen. The total flow rate of the system can be configured for any flow rate below 1000 LPM. The ratio of the mixed gases can be changed by the user as the system is running.

The on demand flow of the system is controlled by a pressure switch, which monitors the pressure in a reserve tank downstream of the 4100. The system fills the reserve tank to a high pressure setting and turns it off at a low pressure setting. This reserve tank can be provided by Environics, but is usually installed by the end user or contractor used for plumbing the gas lines to the system. Four front panel mounted lamps are installed to alarm for low pressure conditions. These alarm conditions will stop all flow by shutting off all internal gas valves. Three pressure switches monitor the input gas pressures and the fourth monitors the pressure in the reserve tank downstream of the 4100. In addition to the illuminated alarms, a common 24 VDC alarm signal is provided to interface with external equipment.

The model 4100 blending is initiated by a desktop PC or laptop computer containing application software written by Environics. The user interface is a Microsoft® Windows application that communicates with the Environics system via an RS232 serial interface. Once the instrument is activated via the laptop or pc, the computer can be disconnected from the model 4100.

The Series 4100 consists of a single chassis supporting three thermal mass flow controllers (MFC) and supplemental controls.

PRODUCT FEATURES AND BENEFITS

- Automatic gas blending system with minimum user interface.
- Reduces gas consumption
- Eliminates premixed cylinders / tube trailers.
- Alarms for low pressure conditions.
- Automated flow control through pressure sensing.
- Simultaneously mixes up to three gases at user set concentrations.

