# DEGASSING

## for Liquid Chromatography and Precision Analyzers

### Why Is Degassing Required ?

#### Liquid Chromatography

All liquids contain dissolved gases which are readily absorbed from the air. In solvents for liquid chromatography, dissolved gases reduce pump flow rate stability, detector baseline stability, and increase detector noise. In low pressure gradient formation, dissolved air often outgasses, causing malfunctions of the pump and associated valves. Precision constant-pressure pumping is very difficult to achieve with liquids rich in dissolved gases. Additionally, as sample volumes continue to decrease, and detection sensitivities continue to increase, the gas components present in liquid eluents and samples have become recognized as a factor influencing analytical results. Dissolved gases affect refractive index, fluorescence, electrochemical, and ultraviolet detectors, producing spurious analytical results.

#### Precision Analyzers

In analyzers which require precise control of fluid flow rates, such as clinical diagnostic analyzers, dissolved gases in reagents, water, and other liquids reduce the accuracy and precision of the analyzer. Typically, the performance of the pump cannot be optimized unless the fluids being pumped are thoroughly degassed.

### How Does Degassing Work ?

The degassing unit is conveniently placed in-line between the solvent/liquid reservoir and the inlet of the pump. The action of the pump draws the liquid from the reservoir through the degassing unit. Liquid is drawn through the degassing unit by means of specially formulated fluororesin membranous tubing encased in a vacuum chamber. The fluororesin tubing is permeable to the small dissolved gasses but impermeable to water and other liquids; hence, gases are drawn through the tubing by the vacuum and removed from the liquid, producing a thoroughly degassed liquid at the exit of the degassing unit which then enters the pump inlet. The efficiency of the degassing is directly related to the length of fluororesin tubing encased in the vacuum chamber and inversely related to the liquid flow rate. Maximum degassing is achieved by passing a liquid through several channels of a multi-channel degassing unit, in series, at relatively low flow rates. For most applications, however, a single pass through a single channel provides sufficient degassing.


2-, 3-, and 4-channel stand-alone models