



EXCELLENCE IN PROCESS ANALYTICS

Dissolved oxygen, carbon dioxide, and nitrogen measurement in beverage packages

- Easy to use - just place a shaken bottle or can on the platform and pierce, no special operator skills needed
- All measurements - liquid and headspace O₂, CO₂, and N₂ - made simultaneously, from the same package
- Fast and accurate - proven Orbisphere sensor technology performs complete package analysis in minutes
- Windows® program displays and charts all statistical information on a PC
- Up to 100 different products can be specified for precise measurements that account for a variety of package sizes and fill volumes

Application description

The beverage industry and brewers in particular, have a pressing need to know the total package O₂, CO₂, and N₂ concentrations, and the fill levels of their final products. Up to now, in order to make this total analysis you had to settle for liquid or headspace measurements, but not both.

The Orbisphere Package Analyzer lets you take a freshly filled package and measure all parameters - liquid and headspace O₂, CO₂, and N₂ - simultaneously. The system incorporates a variety of thermal conductivity, electrochemical, and pressure sensor technologies into a seamless, automated package analysis, performed in less than two minutes.

The CO₂ content of a carbonated beverage is important to a bottling plant for several reasons. First, it is partly responsible for determining the taste and odor of the beverage, and hence, for the satisfaction derived by the consumer. Second, it plays no small role in the appearance of the beverage once poured into a glass. And, finally, as one of the essential ingredients of the product, it must be controlled within narrow limits in order to satisfy specifications laid down by regulatory and franchising organizations.

The Package Analyzer offers a means of accurately and rapidly determining the content of CO₂, as well as other gases (N₂ and O₂), present in packaged beverages. None of the gases interferes with the determination of the content of any of the others.

The Package Analyzer measures the product after it has been filled into its sales container (normally bottles or cans). It relies on being able to withdraw the product from the container so that the gas/liquid balance is not disturbed during sampling. The advantage of this measurement is that it shows how well the complete production process, including the filling machine, is performing.

The system analyzes the gas content of both the liquid and the headspace, at the same time. The sampling device is very easy to use and provides a consistent, undisturbed sample for the analyzer.

The Orbisphere Package Analyzer uses a Windows®-based PC application as an integral part of its system. Product beverage measurements are made with the analyzer, and an RS-232 communications link connects the analyzer with the PC.

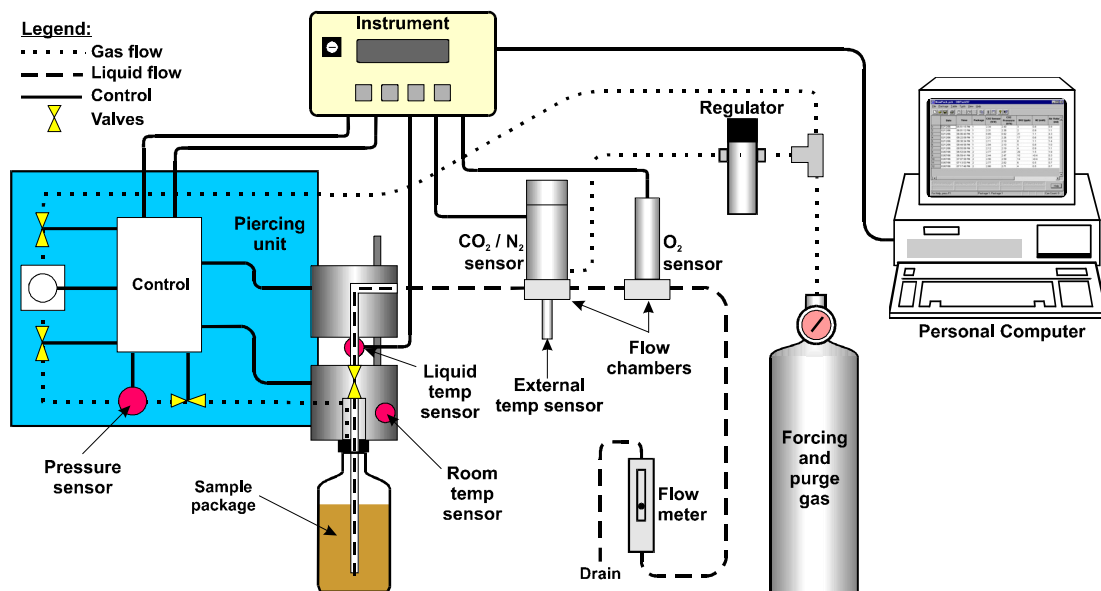
Installation recommendations

The sampling and analysis of the beverage is performed using a finished product of the bottling process, without disruption of that process.

The Orbisphere package sampling system can handle packages with volumes of 100ml up to 3 liters.

The Package Analyzer PC software is typically installed at the factory on a supplied personal computer, running on Windows® 98 and later.

Installation diagram



Recommended systems components

Model	Description
3625/x110	CO ₂ /N ₂ and O ₂ indicating instrument, with RS-232 computer interface
29976	Beverage package piercer
29089	Pressure regulator and filter
A1100-S00	Electro-Chemical oxygen sensor, Stainless Steel, Maximum pressure 100 bar, with Smart capability
31460 or 31560	CO ₂ sensor, thermal conductivity, with nitrogen purge, including protection cap, with external temperature sensor socket N ₂ sensor, thermal conductivity, with carbon dioxide purge, including protection cap, with external temperature sensor socket
32816	Reciprocating shaker (280 cycles per second)
32903	Personal computer, pre-configured for use with Package Analyzer
32683	Windows [®] software for Package Analyzer