

application bulletin

APPLICATION:

- Trace Oxygen measurement in Carbon Dioxide in breweries and distilleries

TAI SOLUTION:

Model 3000TA Trace Oxygen Analyzer

Process Information

Fermentation of sugars and carbohydrates using yeasts produces alcohol and large quantities of CO₂. Fermentation vessels are thusly only one-half to one-third filled, and can be designed to allow the collection of the CO₂ produced, which can be stored and reintroduced during the bottling process.

Air must first be displaced from the fermenter before CO₂ can be collected in a pure state, and the correct degree of air displacement (100 ppm O₂) is best determined by oxygen analysis.

When the CO₂ has been recovered, it is scrubbed of unwanted gases (i.e., SO₂), deodorized, and compressed for storage. The stored CO₂ is later used to blanket the beer transportation lines.

By maintaining an elevated CO₂ pressure, the carbonate still present in the beer is stabilized prior to canning/bottling and oxygen contamination of the beer is reduced.

Problem

Oxygen levels must be monitored accurately at the CO₂ recovery stage, the CO₂ storage stage, and again at the CO₂ reintroduction stage to ensure acceptable O₂ levels (generally less than 100 ppm).

Solution

The Model 3000TA is ideally suited for this application. Using an A-2C or Insta-Trace CO₂ sensor, it accurately measures less than 100 ppm O₂ in a CO₂ environment. Using the alarm contacts to control diverter valves and shut-offs, the 3000TA provides convenience and reliability. In addition, the brewer saves money otherwise lost by buying CO₂.