



Fermentation Gas Analyser CG515

- Analysis of permanent gases, hydrocarbons, esters, aldehydes, sulphur components, etc.
- Various sampling options
- Only 1 ml sample required
- Analysis in seconds



Get ready for tomorrow's analytics

Analysis of fermentation gases

The analysis of fermentation gases is crucial in biotechnology, microbiology, and environmental science, offering insights into the efficiency and nature of microbial processes. Fermentation produces gases like carbon dioxide, methane, hydrogen, and volatile organic compounds, whose composition and volume reveal the health and activity of microbial cultures and the completeness of substrate conversion. In industrial applications, gas analysis optimises biofuel, pharmaceutical, and food production processes, while in environmental science, it aids in understanding carbon cycling and greenhouse gas emissions. Gas analysis using gas chromatography enables better control and optimisation of fermentation processes, and allows a wide range of components to be analysed.

Principle of operation

Diagram 1 illustrates the operating principle of the permanent gas analyser. The analyser is configured with two analysis channels, operating in parallel. Each channel consists of a gas sampling valve (GSV), a capillary column, and a TCD (thermal conductivity detector). On channel 1, hydrogen, oxygen/argon, nitrogen, methane and carbon monoxide are analysed using a molecular sieve (Molsieve) column. A backflush option is implemented to prevent higher-boiling components from entering the separation column (Figure 2). Channel 2 is configured for the analysis of permanent gases, light hydrocarbons, sulphur components, and other components of interest (Figure 3). The columns can be easily replaced by the user, depending on the required separation.

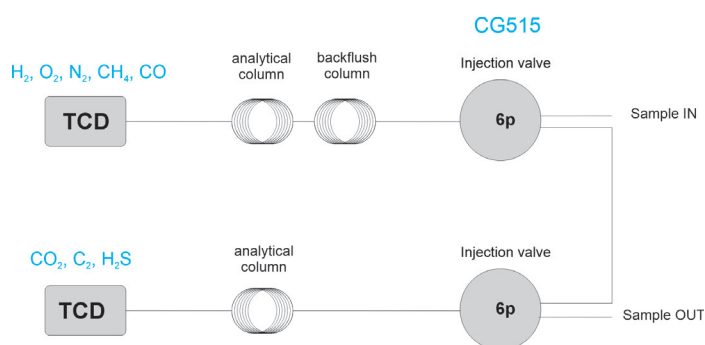


Figure 1 Diagram fermentation gas analyser

Specification

- GAS CompactGC^{4.0} with two diaphragm valves (rotary valves optional), 3 capillary columns, backflush option and dual TCD
- Runtime 90 seconds
- Minimum detectability: 10 ppm (depending on sample loop volume and separation)
- Repeatability: < 1 %

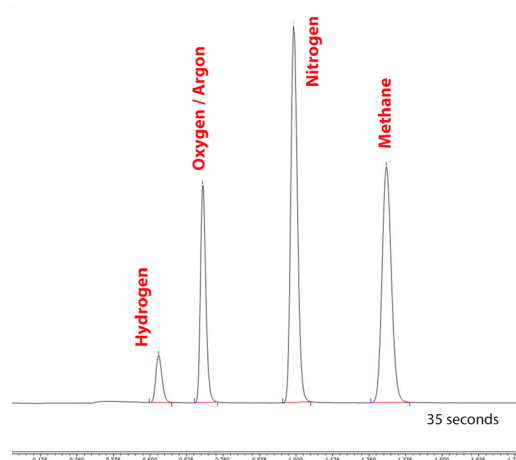


Figure 2 Chromatogram fermentation gas analyser (Molsieve column)

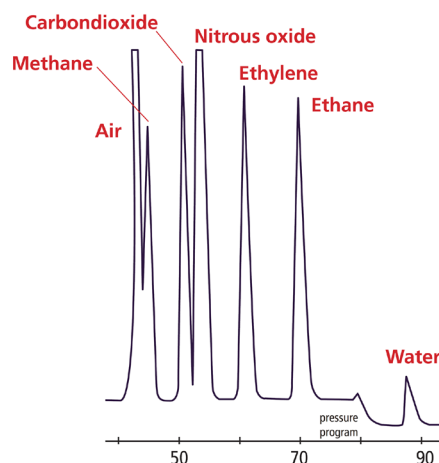


Figure 3 Chromatogram fermentation gas analyser (Hayesep column)

Ordering information CG515 - ABCDE

For the selection of options ABCDE (e.g. valve type and passivation, pump and vacuum sampling, rotameter and sample connections, pressure and moisture sensors, hydrogen sensor for safety shut-off, power plug type and more), [see the options table in the order guide](#).

About GAS

Global Analyser Solutions provides GC & GC-MS solutions for Energy, Refinery, Chemical and Environmental markets. Our analysers address a broad spectrum of measuring requirements with high precision and reliability. Please reach out for more information on our website. www.gassite.com