



Global
Analyser
Solutions



Permanent gas analyser CG200



- Robust analyser with high uptime
- Reliable diaphragm valves
- Modular detectors
- ASTM D1946, D2504, D2505

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CG200v1

Permanent gas analyser

The GAS permanent gas analyser (PGA) is the customised solution for analysing permanent gases, C₂ isomers and H₂S in various gas matrices. The analyser complies with ASTM D1946, D2504 and D2505.

Principle of operation

Diagram 1 illustrates the principle of the permanent gas analyser. Hydrogen (H₂), oxygen (O₂), nitrogen (N₂), methane (CH₄), and carbon monoxide (CO) are analysed on the Molsieve column, while carbon dioxide (CO₂), ethylene, ethane, acetylene, and hydrogen sulphide (H₂S) are analysed on the second column (Hayesep). Carbonyl sulphide (COS) can also be measured. The first Hayesep column is used to backflush propane and higher-boiling components to vent. The detector used is a Thermal Conductivity Detector (TCD).

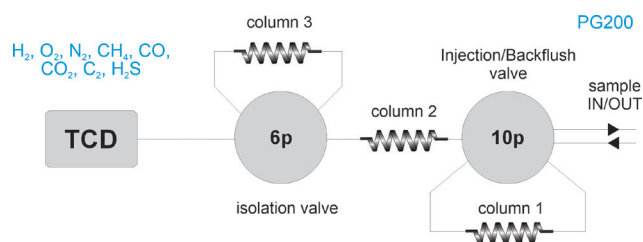


Figure 1 Diagram permanent gas analyser

Results

Figure 2 and 3 show the chromatogram and statistical data of six consecutive runs.

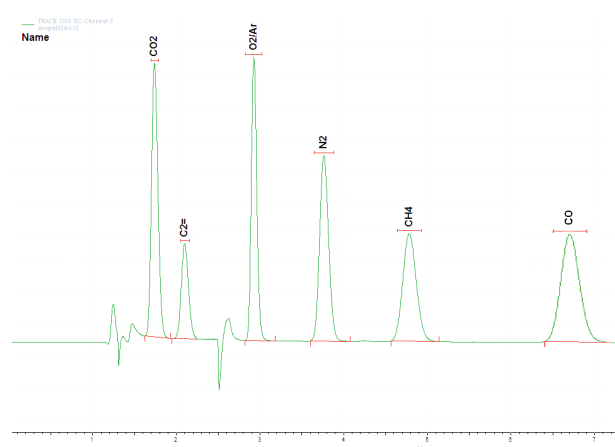


Figure 2 Chromatogram PGA. Concentration level: 1% v/v

Specification

- Thermo Trace GC1600 with two diaphragm gas switching valves (rotary valves are optional) and TCD (Thermal Conductivity Detector)
- 3 packed columns
- Runtime: 7 minutes
- Minimum detectability: 25 ppm (depending on sample loop volume and separation)
- Repeatability: <1 %

| | CO2 Area | O2/Ar Area | N2 Area | CH4 Area |
|----------|----------|------------|---------|----------|
| | 940359 | 828079 | 884555 | 779277 |
| | 939330 | 828601 | 885834 | 775493 |
| | 935071 | 827641 | 881940 | 772190 |
| | 941345 | 831751 | 886659 | 778352 |
| | 936345 | 829598 | 882438 | 776315 |
| | 933830 | 827408 | 884447 | 772634 |
| Min: | 933830 | 827408 | 881940 | 772190 |
| Max: | 941345 | 831751 | 886659 | 779277 |
| Mean: | 937713 | 828846 | 884312 | 775710 |
| Std Dev: | 3057 | 1623 | 1846 | 2897 |
| %RSD: | 0.33 | 0.20 | 0.21 | 0.37 |

Figure 3 Excellent repeatability (1 % (v/v) concentration level)

| Ordering information | CG20X - ABCDE | | | |
|----------------------|---------------|------------|------------|------------|
| code X | 0 | 1 | 2 | 3 |
| GC model, power | 1600, 230V | 1610, 230V | 1600, 115V | 1610, 115V |

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