



Permanent gas analyser

PG200



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

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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).

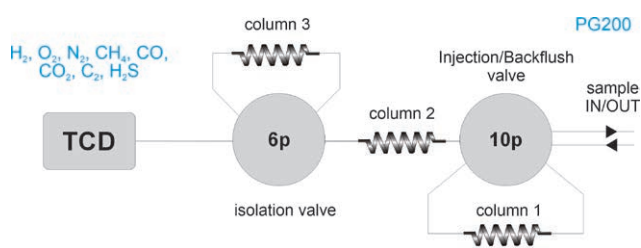


Figure 1 Diagram permanent gas analyser



Figure 2 Permanent gas analyser on Thermo Trace GC1600

Specification

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

Results

Figure 3 and 4 show the chromatogram and statistical data of six consecutive runs.

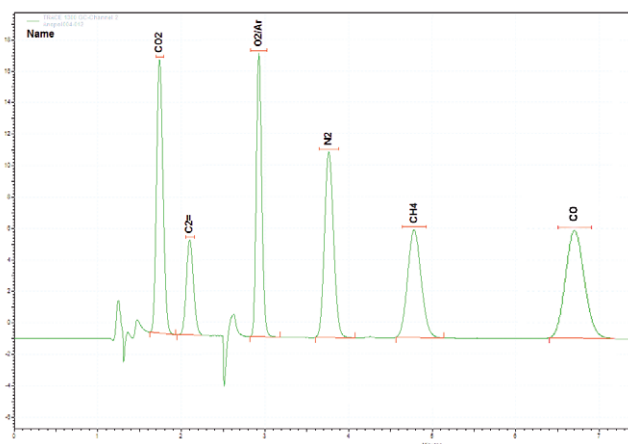


Figure 3 Chromatogram PGA. Concentration level: 1% v/v

	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 4 Excellent repeatability (1 % (v/v) concentration level)

Ordering information	PG20X - ABCDE			
code X	0	1	2	3
GC model, power	1600, 230V	1610, 230V	1600, 115V	1610, 115V

For selecting 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