GLOBAL™ ANALYSER SOLUTIONS G·A·S

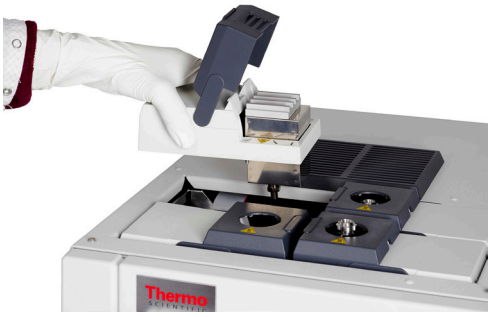
Fast Refinery Gas Analyser

- Robust and cost effective
- Broad sample range: gaseous and liquefied gas
- Very low operational costs
- Optional analysis channel: low sulphur, oxygenates, etc.
- ASTM D1946, D2163, D2504, D2505, D2598, D3588, D7833
  EN ISO 7941, EN 15984, DIN 51666,
  IP 405, UOP 539, GOST 31371

AN 205WA0119J

GAS offers custom configured GC analysers for many application fields since 40 years. GAS analysers are designed to meet many standardised methods from GPA, ASTM, UOP, ISO, EN and others. The efficient configurations are based on proven GC technology, resulting in robust instruments with an optimal return on investment.

The GAS Fast Refinery Gas Analyser offers accurate analysis of refinery gas streams and assures optimum control. The composition is reported in only 5 minutes. An optional 4th analysis channel is available for analysis of low sulphur, high purity or additional hydrocarbon composition, with a very cost effective analyser as a result!



InstantConnect detector technology offers high uptime and high flexibility

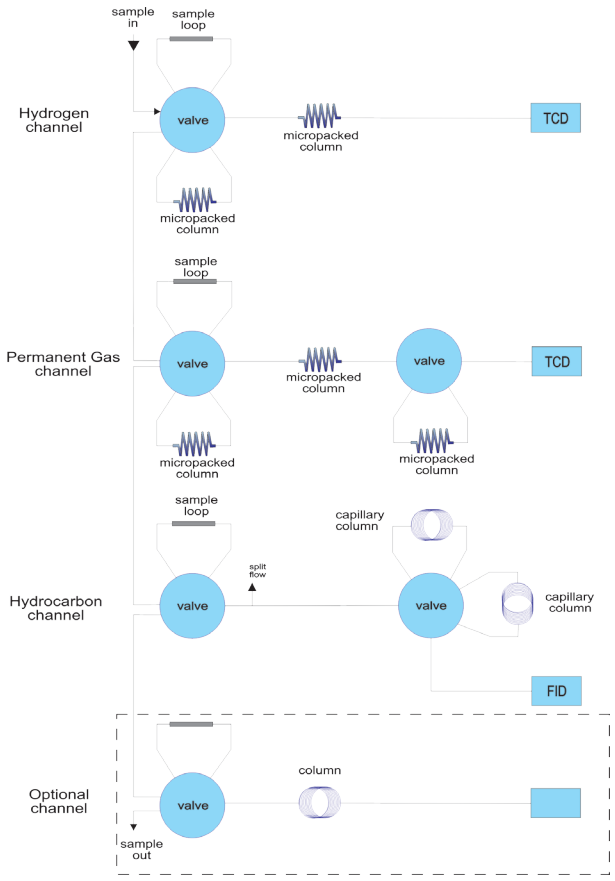
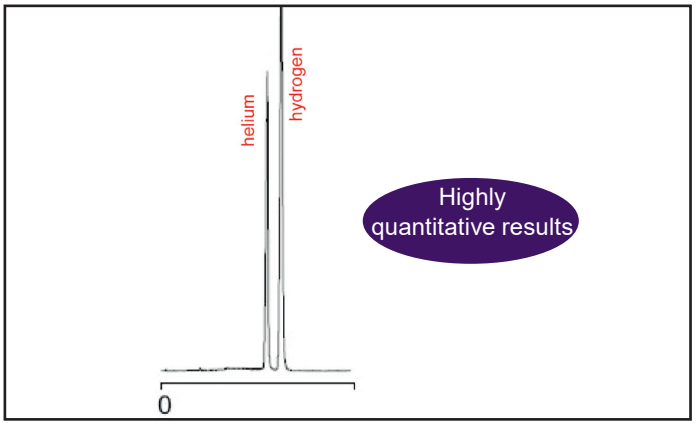


Diagram Fast RGA

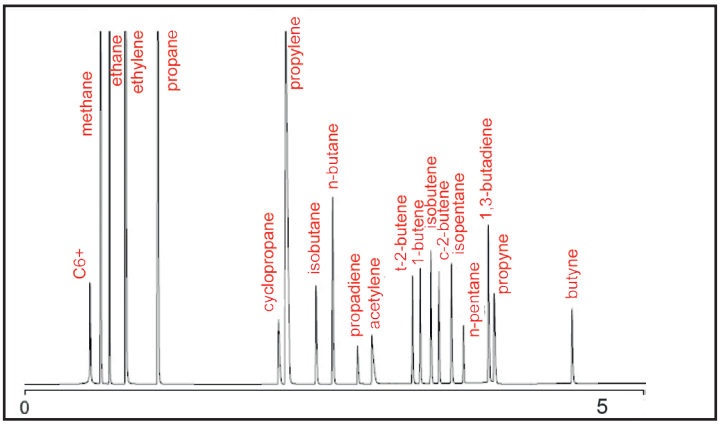
Fast Refinery Gas Analysis in 5 minutes

The GAS Refinery Gas Analyser measures all components of interest in only 5 minutes (7 minutes in case of H_2S). Three independent channels are used for the analysis of permanent gases, hydrogen and hydrocarbons. Micropacked columns offer low carrier gas consumption, and are mounted in the valve oven for isothermal operation, while capillary columns are used in the temperature programmed oven for fast and detailed hydrocarbon analysis. Sulfinert tubing guarantees optimal analysis of sulphur components. Diaphragm valves and InstantConnect detector technology result in a robust and flexible instrument with >99% uptime.

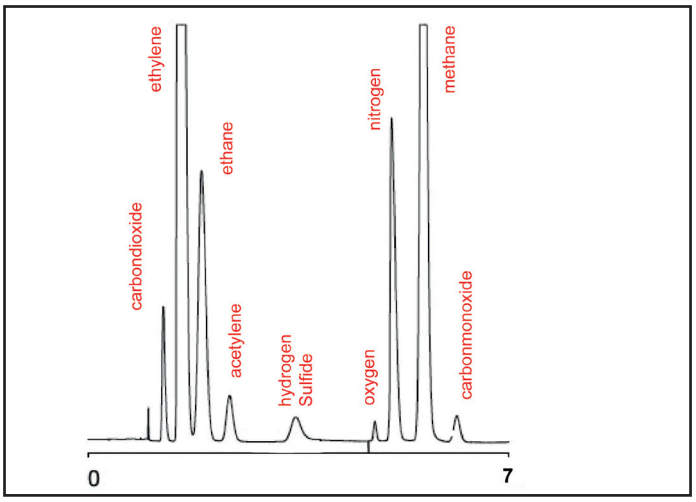
An optional channel can be added, for instance for oxygenated components using FID, low level sulphur components using (P)FPD or ppb level permanent gases using PDD. See diagram 'Fast RGA'.



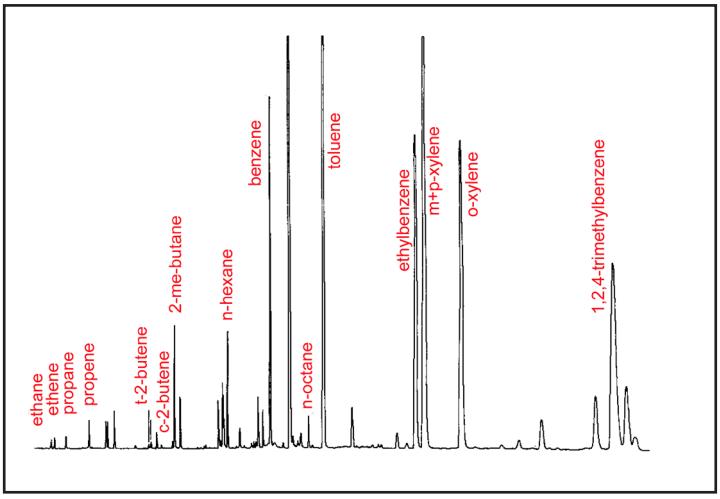
Channel 1: helium / hydrogen on TCD (N_2 carrier gas)



Channel 3: C1-C6 hydrocarbons on FID (He or H_2 carrier gas)

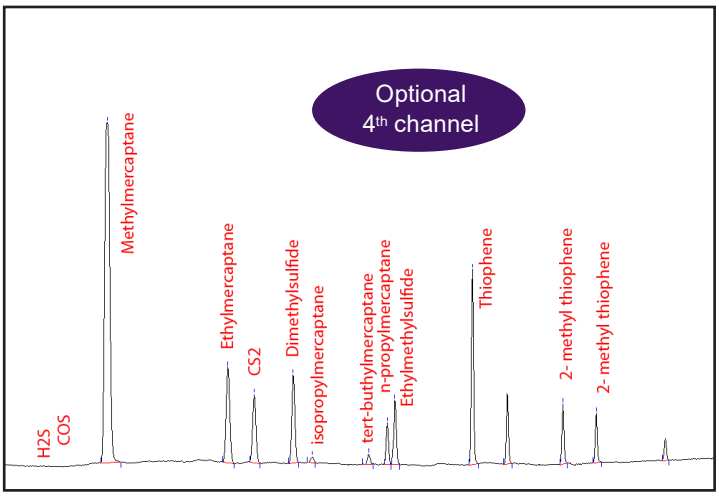


Channel 2: permanent gases on TCD (He or Ar carrier gas)



Extended HC analysis on FID, C1-C20
(emission gas sample; He or H_2 carrier gas)

Versatile instrument with large, highly accessible auxiliary oven and InstantConnect injector / detector modules



Example of 4th analysis channel: Low level sulphur using PFPD, 2-5 ppm level.
LOD: 25 ppb

Cost effective: 4th channel option

An optional 4th analysis channel is available for adding other methods to the same instrument, like analysis of sulphur components, oxygenates or trace permanent gases. In this way a very cost effective and space saving instrument is offered.

Other options:

- Vaporiser facility for gaseous injection of LPG samples
- Sample Securitiser for liquid injection of LPG samples (requires LSV)
- Stop flow valve for excellent repeatability in case of sample pressure fluctuation
- Capillary column on channel 2 for Ar/O2 separation
- Automatic result compensation for barometric pressure variation (requires Chromeleon)

Specifications

Standard methods:	ASTM D1946, D2163, D2504, D2505, D2598, D3588, D7833, EN ISO 7941, EN 15984, DIN 51666, IP 405, UOP 539, GOST 31371
Configuration:	Three channel instrument using 2 TCDs and 1 FID, based on Thermo Trace 1300 GC. Auxiliary valve/column oven for multi-dimensional separations, using micropacked and capillary columns. Injection: gas sampling valves with fixed sample loops.
Optional:	- 4th independent channel (with 4th detector) for additional analysis methods (low sulfur, high purity, extended HC, LPG, etc.). - Stop flow valve for gas injection at ambient pressure (improved repeatability), or back-pressure regulator for injection at constant pressure - High temperature valves (up to 250 °C) - Additional isothermal oven for permanent gas channels in case of high temperature auxiliary oven. - Liquid sampling valve (LSV) and Sample Securitiser for liquid LPG injection - Vaporiser for injection of LPG in gaseous phase - Capillary column on channel 2 (permanent gases) for Argon/Oxygen separation - Automatic result compensation for barometric pressure variation (requires Chromeleon)
Sample tubing:	Sulfinert® tubing for inert sample path (H_2S analysis).
Analytes:	C_1-C_6 hydrocarbons, C_6+, He, H_2, O_2, N_2, CH_4, CO, CO_2, H_2S, C_7, C_8, C_9, BTEX.
Application range:	Atmospheric overhead, Ethylene, FCC overhead, Fuel gas, Recycle gas, Desulphuriser gas, LPG, Propane, Butane, Butadiene, Propylene.
Sample requirements:	The sample must be offered to the analyser as a gas. Optional vaporiser facility available for LPG samples. Sample Securitiser available for liquid injection of LPG samples with LSV (liquid sampling valve) at HC channel.
Analysis Time:	5 minutes; including H_2S: 7 minutes.
Minimum Detectability:	Better than 0.005% for all individual components.
Dynamic Range:	4 decades for all components on TCD; 7 decades on FID.
Repeatability:	Better than 1% RSD at 1% concentration level for all analytes specified, measured over 20 consecutive runs.
Data systems:	Chromeleon, OpenLab, EZChrom.
Calculations:	Customised calculation modules available for several parameters like density, calorific value, Wobbe index, etc.

RGA with additional low sulphur channel (FPD) and Sample Securitiser for LPG injection.
LOD sulphur components:
FPD: sub ppm
PFPD: low ppb

GLOBAL™ ANALYSER SOLUTIONS G·A·S MADE IN HOLLAND

GAS is an Interscience company