



Greenhouse gas analyser using headspace sampling EV210



- Air, water and soil samples
- LOD N₂O < 20 ppb
- Automated injection by headspace autosampler
- Highest uptime, robust

Get ready for tomorrow's analytics

Greenhouse gas analyser - using headspace sampling

Burning of fossil fuels (like coal, oil and natural gas), agriculture and land clearing contribute to increasing levels of greenhouse gases, which affects Earth's temperature. GAS offers the greenhouse gas analyser for measuring ppb/ppm to % levels of CO₂, CH₄, N₂O and SF₆.

Principle of operation

Figure 1 shows a schematic of the greenhouse gas analyser. Samples (e.g. soil or organic material) are collected in headspace vials and injected automatically using a Triplus 500 headspace autosampler. After injection, water is backflushed through the upper valve, while the lower valve directs CH₄/CO₂ to the methaniser-FID (see chromatogram in Figure 3) and N₂O/SF₆ to the Electron Capture Detector (ECD; see Figure 2). The methaniser converts CO₂ to methane, enabling sub-ppm detection by the FID. Optionally, a Thermal Conductivity Detector (TCD) can be installed in series for the measurement of high CO₂ concentrations. The limit of detection for N₂O on the ECD depends on the make-up gas used (see specifications).

Specification

- Thermo Trace GC1600 with two 6-port diaphragm gas switching valves, micropacked columns (Hayesep), ECD, Methaniser/FID, Triplus 500 HS autosampler. Optional: TCD
- Minimum detectability:
 - CH₄: < 50 ppb
 - CO₂: < 100 ppb
 - N₂O: < 20 ppb using Ar/CH₄ as ECD make-up gas;
< 100 ppb using N₂ as ECD make-up gas
 - SF₆: sub-ppt range
- Repeatability: < 1% RSD (n=10)
- Runtime: 5 minutes

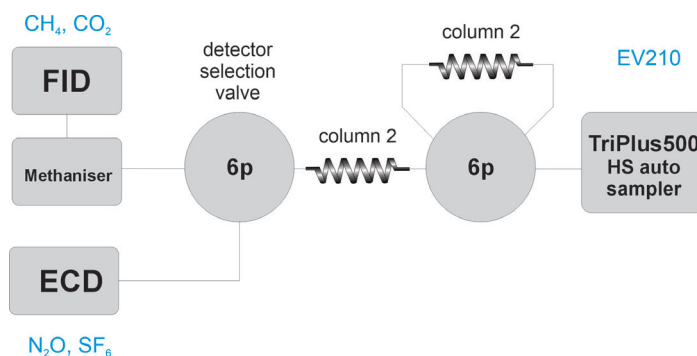


Figure 1 Diagram greenhouse gas analyser

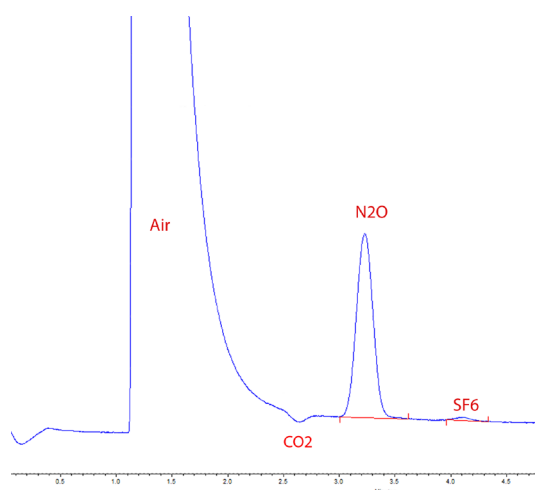


Figure 2 Chromatogram ECD

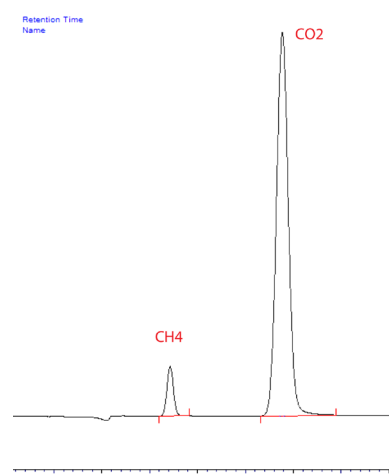


Figure 3 Chromatogram FID/methaniser

Ordering information EV21X - 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

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