



# Heated FID Volatil Organic Compounds Analyzer **Graphite52M**



**QAL 1**  
**EN 14181**



3 different versions to meet your analytical requirements:

**GRAPHITE 52M-S:** Total THC monitoring

**GRAPHITE 52M-D:** Total THC, NmHC and CH<sub>4</sub> simultaneous monitoring

**GRAPHITE 52M-W:** Total THC monitoring on 2 independent lines



Example: engine testbench with EGAS turnkey system



Example: combustion process control using transportable Graphite 52M analyzer

## EXCLUSIVE FEATURES:

- MCERTs and TÜV certified
- Complies with EN 12619 & 13 526 standards (with He/H<sub>2</sub> fuel)
- Fitted with FID for continuous and simultaneous measurement of Total Hydrocarbons (THC), Non-methanic Hydrocarbons (NmHC) and Methane (CH<sub>4</sub>) in compliance with EN 12619
- Up to 191°C heated detector for HC measurement
- Fast response time, designed to measure wet and corrosive sample
- Graphic Liquid Crystal Display (LCD)
- Interactive menu driven software with enhanced speed display
- Real time calibration graph
- User adjustable response time and averaging time
- High efficiency long-life catalyst
- Built-in storage of 2 months 1/4 h average data (up to 1 year with the optional memory extension)
- Internal zero and burner air scrubber
- Communication by AK protocol (RS232 / RJ45)
- Ethernet connection for remote maintenance and troubleshooting
- Easy access to all components
- Also available as portable analyzer

## APPLICATIONS:

- Engine exhaust gas monitoring
- Standard Reference Method for Emission monitoring
- Combustion and process control in all fields of application
- Laboratories and Research Centers



# Heated FID Volatil Organic Compounds Analyzer **GRAPHITE 52M**

## TECHNICAL SPECIFICATIONS:

- Ranges: 0-10/100/1 000/10 000 ppm or optionally 0-30/300/3 000/30 000
- Accuracy: < 1% of reading between 15% and 100% of Full Scale (F.S.)
- Noise: < 0.5% of F.S.
- Response time:
  - < 1.5 sec. (THC)
  - < 3.5 sec. (CH<sub>4</sub>)
- Lower detectable limit: 0.05 ppm on the 10 ppm range
- Span drift: <1% / 24 h
- Zero drift: < 1% / 24h
- Linearity: <1% for a concentration between 10% and 100% of the full scale's range
- Heated block temperature: up to 191°C
- Sample flow rate: 0.7 to 2 l/min at 20 psi
- Capillary block temperature: heated up to 180°C
- Converter efficiency rate: > 99%
- Housing: Standard 19" – 4U rack
- Dimensions: 483 x 470 x 177 mm (L x W x H)  
19 x 17.3 x 5.3 inches (L x W x H)
- Weight: 22 kg / 48 lbs
- Operating temperature: +5 to +45 °C
- Power supply: 230 VAC, 50 Hz or 115 VAC, 60 Hz
- Power consumption: 500 VA during start up
- Communication: RS 232 & TCP/IP, AK protocol
- Ethernet port

## UTILITIES:

- Span gas: C<sub>3</sub>H<sub>8</sub> or CH<sub>4</sub>
- Burner supply: H<sub>2</sub>/He (H<sub>2</sub> only upon request)
- Comburant: dry air

## OPTIONS AND ACCESSORIES:

- External dilution system for high concentrations up to 100 000 ppm
- Internal zero and burner air scrubber
- External air compressor / generator
- Memory extension
- Temperature regulated heated line with SS 2µm built-in filter (up to 5m)
- ESTEL electronic board (1 or 2) with :
  - 4 independent analog inputs
  - 4 independent analog outputs
  - 4 remote control inputs
  - 6 dry contacts outputs
- SOREL electronic board with :
  - 4 dry contacts outputs
  - 4 dry contacts inputs
- Special version without LCD screen for integration in engine gas cabinet

## OPERATING PRINCIPLE:

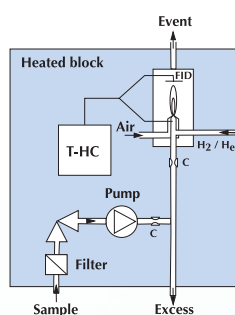
The gas to be analyzed is sampled with a heated pump then led to the burner supplied with a H<sub>2</sub>/He mixture and air, filtered and purified through an internal generator. The separation of the hydrocarbon molecules at high temperature in the cone of the flame provides a ionizing current, the strength of which is directly proportional to the number of atoms of carbons of the analyzed mixture.

This signal is electronically processed to obtain an accurate measurement of the THC concentration.

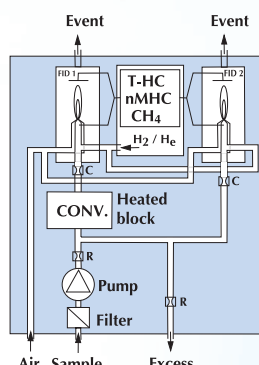
## DESCRIPTION:

All elements in contact with the sample located upstream the detector are heated among which the pump, the ionization detector, filters, tubes and capillaries. The geometry of the burner has been designed to obtain an output signal linear whatever the concentration measured for any measurement scale.

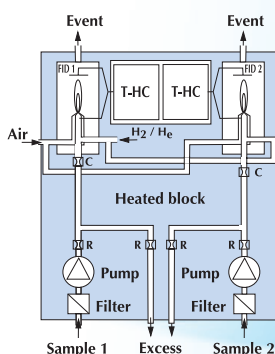
The design of the burner is the «jet» effect type that eliminates the cross sensitivity due to oxygen.



**GRAPHITE 52M-S:** Equipped with one burner placed in a heated block, the GRAPHITE 52M-S allows continuous and accurate Total HC monitoring.



**GRAPHITE 52M-D:** Equipped with two burners and a catalyst, it allows the automatic or manual simultaneous measurement of Total HC and CH<sub>4</sub>. The GRAPHITE 52M-D is ideally suitable to follow transient phenomena during which simultaneous evolution of non methane hydrocarbons and methane.



**GRAPHITE 52M-W:** Equipped with 2 burners (one for THC measurement and the other for the CH<sub>4</sub>) allows real-time simultaneous pre and post catalyst monitoring. This version is especially adapted for the measurement on 2 different processes using one single analyzer or for checking the efficiency of a treatment process (upstream/downstream).

Typical specifications subject to changes without prior notice.

6852-EN/US-D - nDex - 12/11