Heated FID Hydrocarbons (THC/NmHC/CH_4) Analyzer

Graphite 52M

2 different versions to meet your analytical requirements:

- **GRAPHITE 52M-S:** Total HC monitoring (HCT)
- **GRAPHITE 52M-D:** Total HC, NmVOC and CH_4 simultaneous monitoring

Integration example in motors gas analysis bay

Application example: control processes or combustion gases in all domains

Compliance with IED 2010 applications
MCERTs certified to EN15267-3
QAL1 as defined by EN14181
TÜV certified to EN15267-3
U.S. EPA CFR 40-1065 Compliant

mCERTS QAL 1 EN 14181 TÜVRheinland

The Graphite52M is one of the sole hydrocarbons analyzers offering QAL1 certification according to EN 14181 & EN15267-3, and to be also available in a transportable version.

TECHNICAL FEATURES:

- Utilizes Flame Ionization Detection (FID), the most sensitive and widely used technology for the measurement of:
  - Total hydrocarbons (THC)
  - Non-methanic Hydrocarbons (NmHC)
  - Methane (CH_4)
- Complies with EN 12619 & EN 13 526 standards for emissions monitoring and CFR 40-1065 (US EPA) for automotive emission testing of hydrocarbons
- Up to 191°C heated detector for high concentration HC measurement
- Fuel used: mixture of H2 & He or pure H2 (optional)
- Fast response time, perfectly suited for wet and corrosive sample measurements
- High accuracy, sensitivity and stability
- User adjustable response time and averaging time
- Real time calibration graph
- High efficiency long-life catalyst
- Built-in memory for data storage
- Internal zero and air scrubber burner
- Graphic LCD Display with interactive menu driven software and enhanced speed display
- AK protocol communication (RS232 / RJ45)
- Built-in Ethernet TCP/IP connection, USB port for remote control and serial interface RS 232

MAIN APPLICATIONS:

- Compliance & process monitoring
- Engine exhaust gas & automotive emission testing
- Stack Monitoring
- Monitoring effluent of volatile organic compound (VOC) reduction equipment for: Environmental compliance • Efficiency control of incinerators (Thermal or catalytic) • Scrubbers • Carbon absorbers • Monitoring of catalytic converters • Combustion and diesel engine efficiency • Other abatement equipment

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 ppm
- 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_4)
- 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 / 115 VAC, 60Hz
- Power consumption: 500 VA during start up
- Communication: RS 232 & TCP/IP, AK protocol
- Ethernet port

UTILITIES:

- Span gas: C_3H_8 or CH_4
- Burner supply: H_2/He (H_2 only on request)
- Comburant: dry air

OPTIONS AND ACCESSORIES:

- External dilution system for high concentrations up to 100 000 ppm
- Internal zero air catalyst converter
- 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

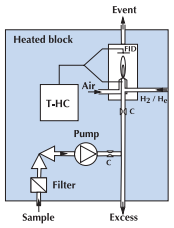
OPERATING PRINCIPLE:

The gas to be analyzed is sampled with a heated pump then led to the burner supplied with a H_2/He mixture and air oxidizer. 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.

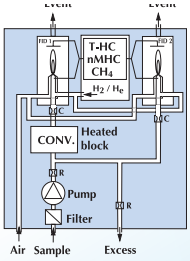
This signal is electronically processed to obtain an accurate measurement of the THC concentration.

All elements in contact with the sample located upstream the detector (pump, ionization detector, filters, tubes and capillaries, etc.) are heated to provide repeatable, reliable performance in the analysis of a wide variety of hydrocarbon concentrations. The geometry of the burner has been specially designed to obtain a linear output signal 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 CH4. The GRAPHITE 52M-D is ideally suitable to follow transient phenomena during which simultaneous evolution of non methane hydrocarbons and methane.

Organic compounds	UBA specifications	MCERTs Specification	Results
Aliphatic hydrocarbons	0,94 - 1,03	0,90 - 1,10	fulfilled
Aromatic hydrocarbons	0,80 - 0,92	0,80 - 1,10	fulfilled
Aliphatic alcohols	0,73 - 0,94	0,70 - 1,00	fulfilled
Esthers and Ketones	0,70 - 0,93	0,70 - 1,00	fulfilled
Organic acids	0,93	0,50 - 1,00	fulfilled

Response factor

Distributed by:

GRAPHITE52M - EN_PSO - InDes -11/16

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