600 SERIES

MHFID HEATED

Total Hydrocarbon Analyzer

APPLICATIONS

- EPA Method 25A Compliance Monitoring
- Stack Gases (CEM / MACT / Process)
- VOC Abatement/Scrubber Efficiency
- Fermentation Monitoring
- Vehicle Emissions—Diesel
- Carbon Bed Breakthrough Detection
- Personnel Safety

OPTIONS

- Internal Zero/Span/Sample Valves
- Internal Heated Sample Pump
- 19 Inch Rack Mount Slides
- Alternative Burner Fuels
- Low Sample, Pressure and/or Flow
- Overflow Calibration via Probe

FEATURES

- Measures THC From ppm to Percent Levels
- Four User Definable Ranges from 0-30 ppm to 3% as Methane
- Fast Response Time
- Auto Ranging / Auto Calibration
- Analog Outputs—User Scaleable
- Communications: RS232, TCP/IP, Modbus
- Temperature Stabilized Detector
- CE Mark and ETL Listed—Conforms to UL STD 61010-1, Certified to CAN/CSA C22.2 STD 61010.1
- Remote Monitoring and Control
- Electronic Flow Control
- Automatic Fuel/Air Shut-off
- Flame Ignition - Local, Remote or Automatic
- Digital I/O

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600 SERIES
Hydrocarbon Analyzer

MHFID

DESCRIPTION

The California Analytical Instruments' Model 600 MHFID Analyzer is designed to continuously measure the total concentration of hydrocarbons or methane within a gaseous sample. The analyzer exhibits superior sensitivity and response time. The gaseous sample can be exhaust gases from an internal combustion engine, a combustion process or VOC abatement systems. The instrument can measure THC or CH_4 in the ppm or percent levels. All internal components are maintained at the oven set temperature preventing condensation. Options for Internal Heated Sample Pump and Methane Only measurements are available.

METHOD OF OPERATION

The California Analytical Instruments' Model 600 Hydrocarbon Analyzer utilizes the principle of Flame Ionization Detection (FID) to determine the total hydrocarbons within a gaseous sample. The MHFID analyzer has a heated oven (191°C) which contains a burner and an optional heated pump. The small flame of the burner is elevated and sustained by the regulated flows of air and either pure hydrogen or a 40/60 mixture of hydrogen and (helium or nitrogen). The split ring detector contains 2 electrodes. One electrode is negatively polarized using a precision power supply and the other electrode, known as the "collector" is connected to a high impedance, low noise electronic amplifier. The two electrodes establish an electrostatic field. When a gaseous sample is introduced to the burner, it is ionized in the flame and the electrostatic field causes the charged particles (ions) to migrate to their respective electrodes. The migration creates a small current between the electrodes. This current is measured by the precision electrometer amplifier and is directly proportional to the hydrocarbon concentration of the sample.

METHANE / NON-METHANE HYDROCARBON FEATURE

The Methane Only feature provides for measuring METHANE ONLY or TOTAL HYDROCARBONS and calculates, displays and outputs the sample's NMHC content. The Non-Methane Cutter's catalyst efficiency is greater than 98% for Ethane and heavier hydrocarbons with less than 10% loss of Methane.

SPECIFICATIONS

Detector: Flame Ionization Detection
THC Ranges: Four User Definable ranges from 0-30 to 30,000 ppm as Methane
(Contact Factory for Ranges Lower Than 30 ppm)
Response Time: 90% Full Scale in 1.5 Seconds
Resolution Detection Limit: 10 ppb Carbon
Repeatability: Better than 0.5% of Full Scale
Linearity: Better than 1% of Full Scale
Noise: Less than 1% of Full Scale
Zero & Span Drift: Less than 1% of Full Scale per 24 Hours
Zero & Span Adjustment: Via front panel, TCP/IP or RS-232
O_2 Effect: Less than 3% with H_2 / He Fuel
CH_4 Effect: Less than 1.15 Propane
Flow Control: Electronic Proportional Pressure Controller
Sample Flow Rate: Typically 2.0 LPM
(Consult factory for other flow rates)
Fuel Requirements: 40% H_2 60% He (120CC/min) or 100% H_2 (60cc/min) Specify at time of order
Fuel Inlet Pressure: 25 psig
Air Requirements: Less than 1ppm Carbon purified or Synthetic air (220cc/min for H2/He; 300 cc/min for H2)
Air Inlet Pressure: 25 psig
Fuel & Air Control: Electronic Proportional Pressure Controller
Readout: As ppm CH_4 or C_3H_8
Analog Ouputs: Voltage or Current
Communications: RS232, TCP/IP and Modbus
Discrete Alarms: General Fault/ TTL Logic (Ground True)
Calibration Failure/ TTL Logic (Ground True)
High Concentration (2 each)/ TTL Logic (Ground True)
Diagnostics: Oven Temperature, Burner Temperature, Cutter Temperature, Sample/Fuel/Air Pressures, Flow Rates And EPC Control Voltages
Keypad Displays: Factory Settings, TCP/IP Address, Passwords (4), Scalable Analog Output Voltages, Full Scale Range Select, Auto Cal Times
Special Features: Calculated NMHC, Auto Ranging, Auto Calibration (adjustable through internal clock)
Ignition: Local, Remote or Automatic
Display: 3" x 5" Back lit LCD
Sample Temperature: Up to 191°C, Non-condensing (HFID) 50°C, Non-condensing (FID)
Oven Temperature: 200°C HFID
Ambient Temperature: 5 to 40°C
Ambient Humidity: Less than 90% RH (Non-condensing)
Warm-Up Time: 1 Hour (Typical)
Fittings: 1/4 Inch Tube
Power Requirements: 115/230 (±10%) VAC; 50/60 Hz, 750 Watts max.
Dimensions: 5¼ H x 19 W x 23 D (Inches)
Weight: 50 lbs.

Specifications subject to change without notice.

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