

Heated Methane / NonMethane / Total Hydrocarbon Analyzer (NMHC) Model-200



The VIG Industries, Inc. Model-200 is a microprocessor based, oven heated methane / nonmethane / total hydrocarbon gas analyzer designed for high accuracy, sensitivity and stability. The Model-200 uses two independent flame ionization detectors (FIDs), one to measure total hydrocarbons and the second coupled with a GC Column for the separation of the methane and nonmethane components. A sample is fed to the analyzer via an internal heated pump to the first FID for a real time total hydrocarbon reading. A portion of the sample is trapped and pushed through a column to separate the methane component and then to the second FID. Any remaining sample in the column is back flushed through the column to obtain the nonmethane component. All components that come in contact with the sample through analysis are maintained in a temperature-controlled oven to prevent condensation, and to provide repeatable, reliable performance in the analysis of a wide variety of hydrocarbon concentrations in gaseous mixtures or in ambient air.

Features

- Easy to use software
- Automatic start-up/ignition
- Heated sample pump heads
- Two stage sample filter with exchangeable sintered stainless steel elements
- PTFE isolated detectors (FIDs)
- Automatic fuel shut-off system
- Automatic flame-out indicators
- Adjustable alarm and oven settings
- Precision 1% of full scale

Options

- 4-20mA output - no extra charge
- Zero and calibration solenoids with software
- RS-232 interface
- Internal combustion air supply

Related Available Equipment

- Zero air generator (Reduces bottles)
- Hydrogen generator (Reduces bottles)
- Heated sample lines and controllers
- Strip chart recorders and data loggers
- NEMA rated enclosures

Applications

- Compliance Monitoring - U.S. E.P.A. Method 18 and Method 25A
- Process Monitoring - Continuous monitoring and alarm or control of: process gas streams utilizing organic solvents, crude oil, and other chemicals containing hydrocarbons.
- Efficiency Monitoring - Monitoring effluent of volatile organic compound (VOC) reduction equipment for environmental compliance, efficiency control of incinerators (Thermal or catalytic), scrubbers, carbon absorbers, and other abatement equipment, monitoring of catalytic converters, combustion and diesel engine efficiency.
- Safety Monitoring - Lower explosive limit (LEL) monitoring and/or control of ovens/dryers, fugitive emissions monitoring, personnel work area monitoring, leak detection of process equipment or solvent storage areas.
- Stack Monitoring



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Standard Specifications

Measuring Method - 2 Oven Heated, Flame Ionization Detectors (FIDs)

Separation Method - GC Column

Measurement Range/Standard Ranges - (4 Ranges per amplifier, 2 amplifiers per analyzer, 1 amplifier for total and 1 amplifier for methane and nonmethane)

- 0-10, 0-100, 0-1000, 0-10000ppm (Lower detection limit 0.01ppm) or
- 0-100, 0-1000, 0-10000, 0-100000ppm (Lower detection limit 0.1ppm)
- Other ranges available upon request

Zero & Span Noise - Less than 0.2% of full scale

Zero & Span Drift - +/- 1% full scale per 24 hours

Linearity - Within 1% of full scale through all ranges

Repeatability - Within 1% of full scale through all ranges

Stability - Within 1% of full scale through all ranges

Oxygen Synergism - Within 1% of full scale within selected range

Response Time

- Total - Within 5 seconds to 90% of final reading (Continuous real time reading)
- Methane - Approximately 40 seconds, updated every 3 minutes
- Nonmethane - Approximately 70 seconds, updated every 3 minutes

Ambient Temperature - From 50°F to 120°F

Flow Rate - 4 Liters/Minute (Standard) or 10 Liters/Minute (Upon request)

Physical Dimensions - 19" Wide Front Panel, 16.75" Wide Chassis, 24" Deep Chassis, 27" Deep with fittings and handles, 9" High

Weight - 55 lbs to 65 lbs depending on options

Oven operating temperature - 275°F (Adjustable from 200°F to 300°F)

Safety - Flame-Out indicator lamp, flame-out alarm contacts on back panel, fuel shut-off, calibration and zero solenoid shut-off

Voltage Outputs - One of the following voltage outputs

- 0-10VDC (Standard), 0-1VDC or 0-5VDC (Optional - no extra charge)

Current Outputs - 4-20mA, Sourcing (Optional - no extra charge)

Flame-Out Alarms - Normally open, low current relay contacts (Close on alarm, latching)

Concentration Alarms - Normally open, low current relay contacts (Close on alarm, latching)

Ignition - Automatic (Can be set to manual by operator from front panel)

Glow Plugs - Main and spare glow plugs installed (Selectable by switch on back panel)

Warm-up Time

- Usable in approximately 45 minutes
- Stable in approximately 2 hours

Display - Graphic, backlit, 240W x 64H pixels, high contrast, wide viewing angle

Operation Requirements

Fuel - UHP Hydrogen @ 18psi incoming pressure

Combustion Air - Oil/Water/Hydrocarbon free instrument air @ 18psi incoming pressure

Zero Calibration Gas - UHP zero grade air or nitrogen @ 9psi incoming pressure

Span Calibration Gas - Known concentration of operator selected hydrocarbons balanced in either air or nitrogen @ 9psi incoming pressure (VIG recommends using a mixture of methane and propane balanced in air to save calibration time)

Carrier Gas - UHP nitrogen @ 30psi incoming pressure

Compressed Air - Oil/Water free air @ 50psi incoming pressure for column switching valve

Power Requirements - 115VAC @ 60Hz @ 720Watts or optional 220VAC @ 50Hz



Warranty

All instruments sold by VIG Industries, Inc. are warranted for a period of one (1) year from date of purchase against defects in materials and workmanship. The seller warrants that the product supplied conforms to the specifications assigned thereto. There is no other warranty either expressed or implied. Seller liability is limited specifically to the cost or assigned value of the items sold. Service contracts are available after the warranty expires.