

Methane & Non-Methane Analyzer, Model 55i

Utilizing Flame Ionization for detection of CH₄ & NMHC



Key Features

- Adjustable Ranges
- Real Time correction of THC Readings
- Automatic flame sensing and ignition
- Automatic calibration and span check
- 70 second analysis
- In-line particulate filter

The Model 55i is a back-flush gas chromatography (GC) system designed for automated measurement of methane and non-methane hydrocarbons. Unlike instruments that measure only methane and total hydrocarbons, the back-flush GC method used by the Model 55i provides a direct measurement of non-methane concentrations. This allows accurate and precise measurement of low levels of non-methane hydrocarbons (NMHC), even in the presence of methane at much higher concentrations.

The proprietary column design is unaffected by the oxygen content of the sample, provides complete recovery of low volatility compounds and achieves absolute separation of methane from all C₂ compounds.

To start an analysis cycle, a known volume of air is collected into the sample loop. Transported then to an eight port valve, located in the 150°C - 200°C detector oven, the sample is injected into a flowing stream of carrier gas to the separation column.

Based on the specific chemical and physical properties of a low molecular weight and high volatility, methane moves at the highest velocity and emerges from the column first. Carried back to the detector over the sample is then measured by the flame ionization detector.

The valve then returns to the original position resulting in the back-flush of the non-methane hydrocarbons to the FID. While NMHCs are being measured, the next sample is simultaneously collected into the sample loop.

This state-of-the-art iSeries gas analyzer also features:

- Ethernet port
- Flash memory for increased data storage
- Ethernet connectivity for remote access
- Off-site measurement downloads
- Easily programmable short-cut keys
- A large interface screen

To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific air quality products.

Product Specifications

| | |
|------------------------------|--|
| Preset Ranges | 0 -5, 50, 500 ppm, or 0 - 10, 100, 1000 ppm, or 0 - 20, 200, 2000 ppm, or 0 - 50, 500, 5000 ppm Group selectable at time of order |
| Zero Noise | 0.025 ppm RMS (300 second averaging time) |
| Minimum Detectable | 0.050 ppm CH ₄ - 0.050 NMHC As Propane (300 second averaging time) |
| Zero Drift | Auto-zero each cycle |
| Span Drift (24 hr) | < 2% Span Value (without Auto Calibration) |
| Response Time (90%) | ~ 70 seconds |
| Precision | 2.0% of reading or 50 ppb (whichever is larger) |
| Linearity | +/-2.0% of span (at concentrations of 10% to 100% of span) |
| Sample Flow Rate | 0.5 lpm, minimum |
| Makeup Air Flow Rate | 275 ccm to 350 ccm Hydrocarbon free air |
| Fuel Flow Rate | 25 ccm to 50ccm Hydrogen or ~100-150ccm H ₂ /He Mixture |
| Carrier Gas Flow Rate | 35 ccm to 70 ccm Nitrogen |
| Operating Temperature | +15°C to +35°C |
| Power Requirements | 100 vac, 115 vac, 220-240 vac +/-10%, 50/60Hz, 420W |
| Size and Weight | 16.75"(W) x 8.62"(H) x 23"(D), 60 lbs. (17.7 kg) |
| Outputs | Selectable Voltage, RS232/RS485, TCP/IP, 10 Status Relays, and Power Fail Indication 0-20 or 4-20 mA Isolated Current Output (optional) |
| Inputs | 16 Digital Inputs (standard), 8 0-10vdc Analog Inputs (optional) |

Ordering Information

Model 55i CH₄-NMHC Analyzer

Choose from the following configurations/options to customize your own Model 55i

1. Voltage Options:

A = 120 VAC 50/60 Hz (standard)
B = 220 VAC 50/60 Hz
J = 100 VAC 50/60 Hz

2. Concentration Ranges:

1 = Trace Range (5-50-500 Methane \ 5-50-500 Non-Methane)
2 = Low Range (10-100-1000 Methane \ 10-100-1000 Non-Methane)
3 = Mid Range (20-200-2000 Methane \ 20-200-2000 Non-Methane)
4 = High Range (50-500-5000 Methane \ 50-500-5000 Non-Methane)

3. Pump Option:

P = Pump
N = No pump

4. Fuel Type:

H = 100% Hydrogen (standard)
M = Mixed Fuel (40/60 Hydrogen/Helium)

5. Optional I/O:

A = None (standard)
C = 0-20, 4-20mA current output - 6 channel, 0-10v analog input - 8 channel

6. Mounting Hardware:

A = Bench mounting (standard)
B = Ears & handles, EIA
C = Ears & handles, retrofit

Your order code is: 55i _ _ _ _ _

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This product is manufactured in a plant whose quality management system is ISO 9001 certified.

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