

Model 55i Methane & Non-Methane Analyzer

Utilizes flame ionization for the detection of CH₄ and NMHC gas analyzer

The Thermo Scientific™ Model 55i Methane & Non-Methane Analyzer is a back-flush gas chromatography (GC) system is designed for automated measurement of methane and non-methane hydrocarbons.

Features

- Adjustable ranges
- Real time correction of THC readings
- Automatic flame sensing and ignition
- Automatic calibration and span check
- In-line particulate filter

Introduction

Unlike instruments that measure only methane and total hydrocarbons, the backflush GC method used by the Thermo Scientific Model 55i Analyzer provides a direct measurement of nonmethane 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 of the Model 55i analyzer 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 oven, 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.



Thermo Scientific™ Model 55i
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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 (24 hour)	Auto-zero each cycle
Span drift (24 hour)	< 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 cm ³ to 350 cm ³ hydrocarbon free air
Fuel flow rate	25 cm ³ to 50 cm ³ Hydrogen or ~100-150cm ³ H ₂ /He mixture
Carrier gas flow rate	35 cm ³ to 70 cm ³ 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 (standard). 0-20 or 4-20 mA isolated current output (optional)
Inputs	16 digital inputs (standard), 8 0-10Vdc analog inputs (optional)

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 products.

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Ordering information

Model 55i Methane and Non-Methane Analyzer

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

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 channels,
0-10v analog input – 8 channel

6. Mounting hardware

A = Bench mounting and ears/handles, EIA

Your Order Code: Model 55i –

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