

Thermo Environmental Instruments

MODEL 55C

Direct Methane, Non-Methane Analyzer

Thermo Environmental Instruments' *Model 55C*, Direct Methane, Non-Methane Hydrocarbon Analyzer, joins TEI's line of hydrocarbon detection instrumentation. Offering a unique blend of proven technology with innovative hardware and software design, the *Model 55C* possesses unsurpassed sensitivity, repeatability and specificity.

Direct measurement always produces the most precise result. That's why Thermo Environmental Instruments' *Model 55C* Methane, Non-Methane hydrocarbon Analyzer is designed to provide a direct measurement of both methane and non-methane HYDROCARBON (NMHCs). Unlike instruments that use scrubbers or catalysts to measure only methane and total hydrocarbons, the *Model 55C* back-flushed gas chromatography system allows reliable measurements of NMHCs at sub-ppm concentrations, even in the presence of much higher concentrations of methane. In addition, the *Model 55C's* proprietary column design can achieve complete separation of methane from all C2 compounds, is unaffected by the oxygen content of the sample, and provides complete recovery of low volatility compounds that competing instruments may miss.

Added to the accurate reporting is an easy to read, intelligently designed display that allows the operator to monitor instrument status and current concentration readings at a glance. The high visibility vacuum fluorescent display indicates the current ppm reading, the sample injection time, the instrument operation mode and various status messages so you always know exactly what you are getting for results.

Thermo's menu-driven software, which enhances all of our products, makes it simple to establish operating parameters and to control calibration and measurements. The menu is easy to access using the front panel controls, or by the optional RS-232 communications system and PC based software. The *Model 55C* also provides analog status and control lines for use with an external data system and it may be configured for continuous, fully automated, stand-alone operation.



THERMO 55C PERFORMANCE SPECIFICATIONS

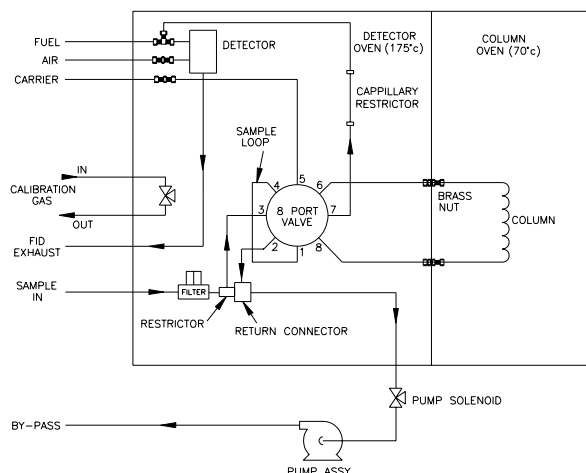
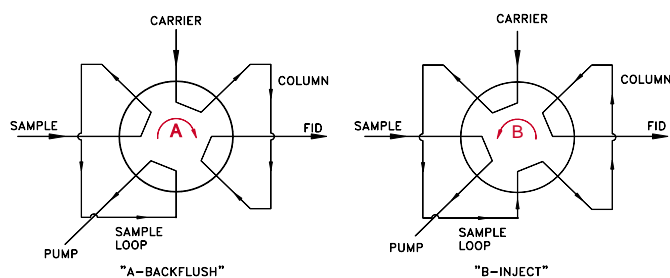
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|------------------------|--|
| Lower Detectable Limit | 20 ppb methane 50 ppb NMHC as propane |
| Ranges | 0 - 20, 200, and 2000 ppm* |
| Accuracy | 2% of span |
| Precision | 2% of measured value |
| Span Drift (24 hour) | 3% of current range |
| Analysis Time | 70 seconds or less |
| Sample Flow Rate | 500 ml per minute minimum |
| Oven Temperature | 150 - 200°C detector oven, 65°C column oven |
| Power Requirements | 90 - 110 VAC, 105 - 125 VAC 210 - 250 VAC, 500 Watts |
| Size and Weight | 16.75" (W) x 8.62" (H) x 23" (D) 50 lbs |
| Output | Methane, NMHC, Total Hydrocarbon, and FID signal, User-selectable conc. ranges 0-10V, 5V, 1V or 0.1 (standard) 4-20mA (optional), RS-231 (optional) |

*other ranges optional

55C UNIQUE FEATURES

- Direct Methane, Non-methane Measurement (Non-Subtractive)
- Complete Separation of Methane from all C₂ compounds
- Measurement from C1 through C12 (minimum)
- Detector and Sampling System Heated to 150°C or more
- Internal Pump (500 cc/min)
- RS-232/PC software (optional)
- Independently controlled column oven temperature
- Automatic Calibration
- Automatic Span Check
- Flame out sensor and automatic re-ignition
- TEI "C" series compatibility
- Analog outputs for CH₄, NMHC, THC and detector signal
- Analog voltage outputs user selectable for 10, 5, 1 or 0.1V.
- Independent adjustment of measurement and recorder output range
- In-line particulate filter
- Internal calibration solenoid
- No catalysts to wear out or be poisoned
- No requirements for cryogenic materials

Model 55C - FLOW DIAGRAM



To start an analysis cycle, a known volume of air is collected in the sample loop as shown in step A-Backflush. The eight port valve, which is located in a 150-200°C detector oven, is then rotated to the position shown in step B-Inject. This injects the sample into a flowing stream of carrier gas.

The sample is carried to the separation column located in a separate oven kept at 65°C. As the sample is carried through the column, various hydrocarbons move at different velocities, based on their chemical and

physical properties. Due to its low molecular weight and high volatility, methane is carried back to the detector oven and measured by the FED.

The valve is then returned to the original position shown in step A-Backflush. This action reverse the direction of gas flow through the column, and "back-flushes" the non-methane hydrocarbons to the FID for measurement. While NMHCs are being measured, the next sample is simultaneously collected in the sample loop.

For Price and Delivery Information, Contact:

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