Envent
Knowledge by Analysis

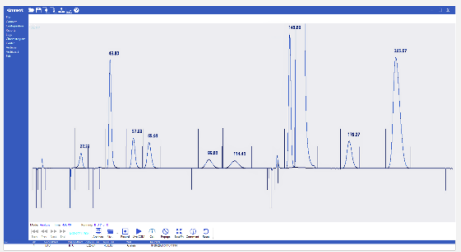
Envent Model 131S

BTU Gas Chromatograph

Compliant with EPA Renewable Fuel Standards & ASTM D7164-21

The Model 131S Natural Gas Chromatograph (GC) is a simple approach to energy measurement, created and designed for the custody transfer metering of Natural Gas as well as many other BTU applications. Envent provides a Natural Gas platform that is efficiently manufactured to ensure industry leading delivery, while providing a GC that allows for ease of serviceability.

131S BTU Configuration


Envent **G**as **C**hromatograph **S**oftware (GCS)

Features

- Standard: 4-minute C6+ repeatability +/- .25 BTU / 1,000 SCF
- Optional: 2-minute Fast BTU C6+ repeatability +/- .5 BTU / 1,000 SCF
- Optional: 5-minute BTU C9+ repeatability +/- .5 BTU / 1,000 SCF (heated sample system enclosure required)
- High performance GC columns packed in our Envent GC Lab
- Reduced carrier usage due to efficient column design

Field-Serviceability

- Easy access Electronics Enclosure with single board technology
- Easy access GC Detector/Column Oven for easy GC valve diaphragm replacement and column change
- Typical downtime for diaphragm and column change: approx. 30 minutes
- No modules to maintain or un-planned downtime due to non-serviceability and high cost of competitor's module technology
- Returns ownership to the measurement technician rather than the GC manufacturer

Standard Configuration

- One custody-transfer stream and one auto-calibration stream (up to 3 additional custody streams)
- Atmospheric reference valve for repeatable, precise sample injections
- Sample conditioning instrumentation mounted on a common plate

Electronics

- Non-incendive electronic circuit design approved for Class I Division 1 electrical areas
- Includes all CPU, Memory, and I/O functions on a single board that operates together with the Envent Gas Chromatograph software
- Low-cost, simplified electronic troubleshooting approach

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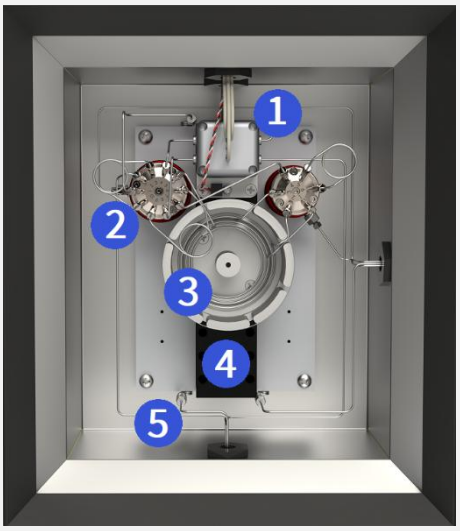
Easily Accessible GC Oven



1. Thermal Conductivity Detector
2. GC Valve
3. Column Dish
4. GC Oven Heater
5. Sample Pre-Heat Coils

Measurement Ranges

Methane	65 to 100 mol%
Ethane	0 to 20 mol%
Propane	0 to 10 mol%
N-Butane	0 to 5 mol%
Iso-Butane	0 to 5 mol%
N-Pentane	0 to 1 mol%
Iso-Pentane	0 to 1 mol%
Neo-Pentane	0 to 1 mol%
Hexane+	0 to 1 mol%
Nitrogen	0 to 20 mol%
Carbon Dioxide	0 to 20 mol%

Specifications

Environmental Temperature	-20° to 60°C (-4° to 140°F) Quoted per application
Dimensions	Standard Configuration: 48” H x 24” W x 9” D (122cm H x 61cm W x 23 cm D)
Mounting	Wall mount or floor mount
Enclosure	NEMA 4X
Electrical Classification	Class I, Division 1, Groups B, C, D
Power	120 +/- 10% VAC 50/60 Hz Standard 240 +/- 10% VAC 50/60 Hz Available
Power Consumption	Start up: 100 watts (does not include sample system electronics) Steady State: 60 - 80 watts nominal
Oven	Airless Heat Sink
GC Valves	Six-port and ten-port diaphragm chromatograph valves Thermal Conductivity Detector (TCD) Single or Dual TCD Capabilities (2-min application)
Stream Valves	Double Block and Bleed
Repeatability	**C6+ 4-minute Controlled Temperature** ±0.25 BTU / 1,000 SCF (±0.025%) at ambient **C6+ 2-minute Controlled Temperature** ±0.5 BTU / 1,000 SCF (±0.05%) at ambient
Carrier Gas	UHP Helium (99.999%) or UHP Hydrogen (99.999%)
Actuation Gas	Helium, Nitrogen, Instrument Air (GC Valves/Stream Valves Regulated to 65 psig)
Detector	Thermal Conductivity Detector: Single or Dual TCD capabilities Single TCD (4-minute C6+) Dual TCD (2-minute C6+ Fast BTU Option)
Peak Gating	Auto-Slope detection
Streams	Up to 4 Custody streams (plus auto-calibration stream)
Input/Output	2 analog outputs 4 dry contact relay outputs 4 digital inputs 4 solenoid outputs
Communications	SIM 2251 Modbus mapping User Modbus mapping 1 RS-232 serial communication ports (Modbus capable) 2 RS-485 serial communication ports (Modbus capable) 1 Ethernet communication port RJ-45 (Modbus capable)
Measurement Calculations	Latest GPA 2145, GPA 2172, AGA 8, and ISO 6976 calculations Compliant with EPA Renewable Fuel Standards & ASTM D7164-21

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