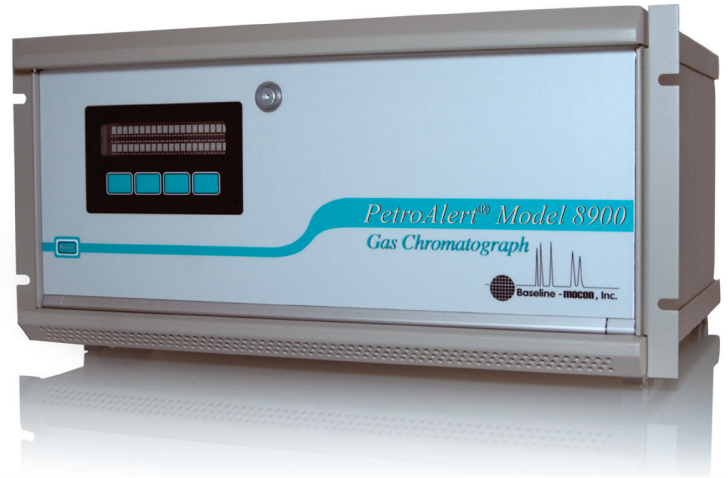


Baseline®- MOCON®, Inc.

# PetroAlert® Model 8900

## Gas Chromatograph



### Analyzer

The PetroAlert® Model 8900 Gas Chromatograph combines the selectivity of gas chromatography with the sensitivity, broad dynamic range, and hydrocarbon selectivity of a flame ionization detector (FID) providing fast analysis of C1-C5 hydrocarbons required in Mud Logging for oil and gas exploration.

The Series 8900 is a multi-purpose gas chromatograph designed to continuously monitor single or multiple gas components in a wide range of applications. The analyzer is microprocessor based and contains powerful embedded firmware. This makes it an online instrument with GC technology that is virtually transparent to the end user.

The 8900's automatic calibration is ideal for unattended operation. It can be set up on a bench-top or rack-mounted, and its compact size makes it transportable. There are a variety of industry standard outputs, such as network (LAN), RS232, multiple 4-20 mA or 0-20 mA, and multiple relays for alarm, diagnostics or user specified timed events.

The application is configured at the factory before delivery with the SkyChrom™ software from Baseline®. The computer can be disconnected and the analyzer will operate independently. When connected to SkyChrom™, data can be collected in a universal text format with a user definable data export utility for reports. Chromatograms can be stored continuously or based on events such as alarms.

### Application

- Analysis of C1-C5 Hydrocarbons (Methane, Ethane, Propane, Butanes, and Pentanes) including Propylene

### Features

- Detection limit of <10ppm as Methane
- Fast analysis <60 seconds
- Continuous unattended operation, operates with or without a computer
- Automatic baseline adjustment for long-term stability
- Local and remote calibration
- Automatic FID ignition
- Automatic Hydrogen & Combustion Air shutoff for maximum safety
- Analog output ranges are user selectable
- Concentration and diagnostic alarm relays
- Outputs include digital, user definable analog and user definable logic
- PC based SkyChrom™ software stores multiple analytical methods
- Onboard short-term data storage



CERTIFIED ISO 9001:2000

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# PetroAlert® Model 8900

## Gas Chromatograph

### Specifications

#### Sampling:

Single point analyzer for pre-filtered ( $\leq 0.1$  microns), non-condensing samples

**Valves:** Standard: (1) 10-Port valve (additional valves optional)

**Columns:** Packed

**Calibration:** Automatic or Manual using a dedicated standard

**Detector:** Single FID

**Accuracy:** +/- 5% Full-scale

**Linear Range:** 0 - 100% as Methane

**MDQ:** <10ppm Methane

**Oven Temperature:** 65°C

#### Output:

**Analog** - Standard: (1) 0-20 mA or 4-20 mA loop power supplied, isolated.

**Digital** - Standard: RS-232 output, LAN (Local Area Network)

**Relays:** Standard: (5) programmable (latched/not, NE/NNE, NO/NC) as contact closure (1A @ 30Vdc).

**Physical Dimensions:** 17.41" (44.2cm) W x 9.36" (23.8cm) H x 14.83" (37.7cm) D

**Nominal weight:** 30 lb (13.64 kg).

**Configuration:** Bench-top or rack-mount (19" panel)

**Display:** Digital vacuum fluorescent, 20 characters x 2 lines

**Power:** 90-260 VAC, @ 50-60 Hz (as specified)

#### Operating Conditions

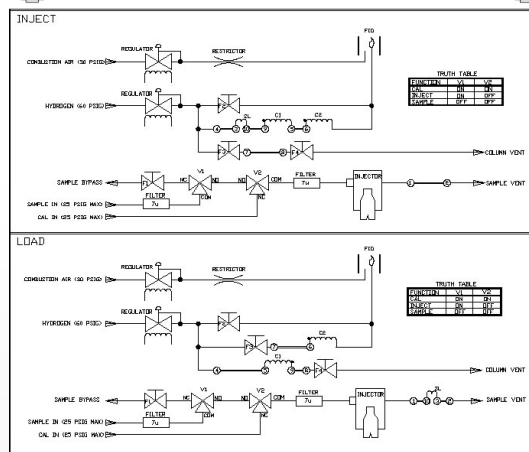
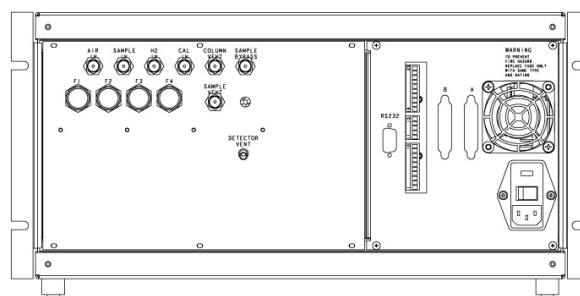
Temperature: 32-104 °F (0-40 °C)

Humidity: 0-95%, non-condensing

**Gas Connections:** 1/4" (6.35mm) or 1/8" (3.175mm) O.D. tube fitting connectors or consult Baseline®

**Support Gas:** Combustion air (HC free air), Carrier gas-UHP H<sub>2</sub>, Fuel - UHP H<sub>2</sub>

**Enclosures:** General purpose, wallmount, X-purged or Z-purged



### Options & Accessories

#### Samplers:

Built-in or external sample pump

Injection port (on sample loop)

8950 Multipoint Sampler (4/8/16 pt) w/ up to 16 analog outputs & 32 relays

#### Outputs

Analog output board - up to 20 additional programmable 4-20 mA outputs

Voltage outputs - 0-1 V, 0-5 V or 0-10 V (others on request)

Relay board - up to 32 additional programmable relays

**Inputs:** Optional digital input board for 3 contact closure inputs. Supports start analysis, start calibration, and analyze calibration gas as sample.

**Software:** SkyChrom™ external integration, GC setup and data acquisition software for PC

**Gas Generators:** Zero air or Hydrogen

**Calibration Methods:** Gas cylinder, response factors

**D023.1**

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# PetroAlert™ 8900GC Application Note

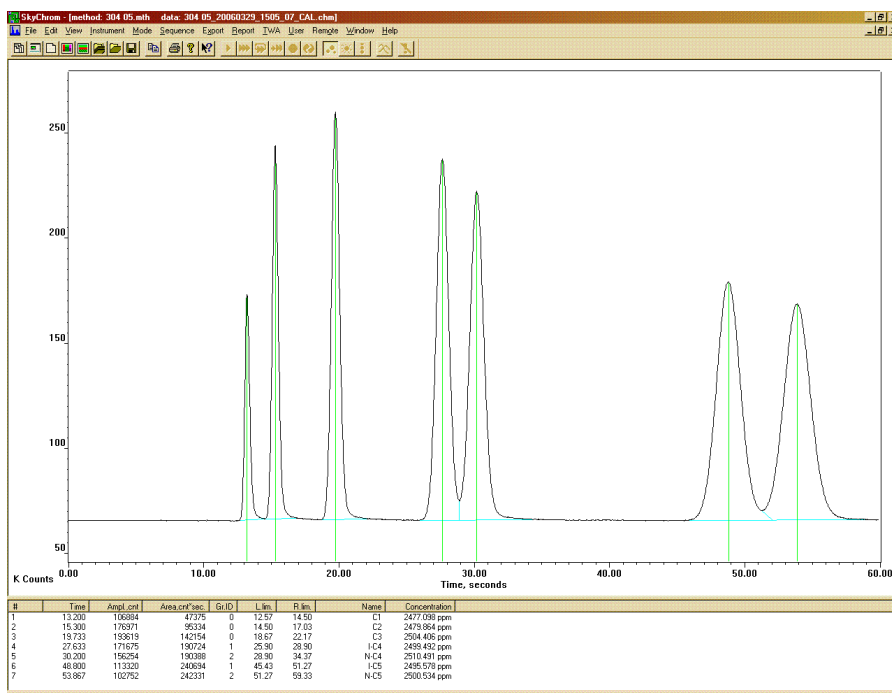
## C1 - C5 Hydrocarbons



### Application

The PetroAlert Model 8900 combines the selectivity of gas chromatography with the sensitivity, broad dynamic range, and hydrocarbon selectivity of a flame ionization detector (FID) providing fast analysis of C1-C5 hydrocarbons required in Mud Logging for Oil & Gas exploration.

The PetroAlert Model 8900 uses a dual column configuration with timed backflush to vent which is used to strip off moisture and C6+ hydrocarbons. A pre-cut column is used in series with the analytical column. At sample injection a fixed sample volume is carried to the pre-cut column. Backflush of the pre-cut column is timed from sample injection so that only C1-C5 hydrocarbons are eluted from the pre-cut column to the analytical column. C6+ hydrocarbons on the pre-cut column are then vented. C1-C5 hydrocarbons are separated on the analytical column and elute to the flame ionization detector (FID) for analysis.



### Analysis

- Analysis Time: <60 seconds
- Detector: FID
- Column: Packed
- Oven Temperature: 60 °C, Nominal

### Features

- Analysis of C1-C5 Hydrocarbons including Propylene for Gas Referencing
- Automatic baseline adjustment for long-term stability
- Automatic FID ignition
- Automatic calibration to a known standard
- Automatic Hydrogen & Combustion Air shutoff for maximum safety
- Electronic support gas regulation
- Analog output ranges are user selectable
- Options for multipoint sampling
- RS-232 and optional LAN

# PetroAlert™ 8900GC Application Note

## C1 - C5 Hydrocarbons



### Specifications

**Lower Detection Limit:** 10ppm as Methane

**Accuracy:**  $\pm 5\%$  (relative) within dynamic range.

**Precision:** 2% of Measured Value

**Carrier:** Hydrogen, 32cc/min typical

**Fuel:** Hydrogen, 8cc/min typical

**Combustion Air:** Air, 200cc/min typical

#### Output:

**Analog:** (1) 0-20ma or 4-20ma loop power supplied, isolated. Selectable for: gas concentration, unintegrated detector signal. Options for up to 20 additional programmable 0-20ma, 4-20ma or voltage outputs: 0-1V, 0-5V, or 0-10V.

**Digital:** RS-232, optional Local Area Network

**Relays:** (5) User programmable relays for concentration and diagnostic alarms (1A @ 30Vdc). Options for up to 32 additional relays available.

**Inputs:** Optional digital input board for 3 contact closure inputs. Supports start analysis, start calibration, and analyze calibration gas sample.

This application note is an only an example based on customer or market specifications. These parameters are variable and therefore do not reflect all of the versatility and options of Series 8900 GC. Please contact Baseline regarding your specific application

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