

# Series 9000 TCA

## Total Carbon Analyzer



## Analyzer

The Baseline® Series 9000 TCA is a specialized member of the extraordinary Series 9000 family of gas analyzers. The Series 9000 is the candidate of choice whenever accurate, reliable total hydrocarbon and total carbon analysis is required. The Series 9000 analyzer provides unparalleled flexibility and offers continuous, fully automated gas analysis over a broad range of concentrations.

The Series 9000 TCA has a dynamic range from less than 0.1 ppm to 100 ppm, it's designed to measure total hydrocarbon content and provide a combined carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) reading. The analyzer has a generous complement of analog, digital and logic output capabilities.

The analyzer is based on a flame ionization detector (FID) and a reduction catalyst that is switched in and out of a portion of the sample stream. Total hydrocarbons are measured first, and then the catalyst switches in. The catalyst converts the CO & CO<sub>2</sub> to methane and leaves the hydrocarbons unchanged for a total carbon measurement. The total hydrocarbon value is then automatically subtracted from the total carbon concentration to determine the combined CO/CO<sub>2</sub> reading

The Series 9000 TCA can be configured with internal components for single or multipoint analysis of non-condensing gas samples. The automatic calibration feature enhances the long-term analytical stability of the instrument.

## Applications

The Series 9000 TCA is designed to continuously monitor total hydrocarbons and trace levels of CO/CO<sub>2</sub> in order to provide a total carbon reading.

This specialized analyzer is configured for the detection of hydrocarbon and CO/CO<sub>2</sub> impurities in pure and ultrapure inert gases such as argon, helium, hydrogen, and nitrogen. Samples must be free of oxygen.

## Features

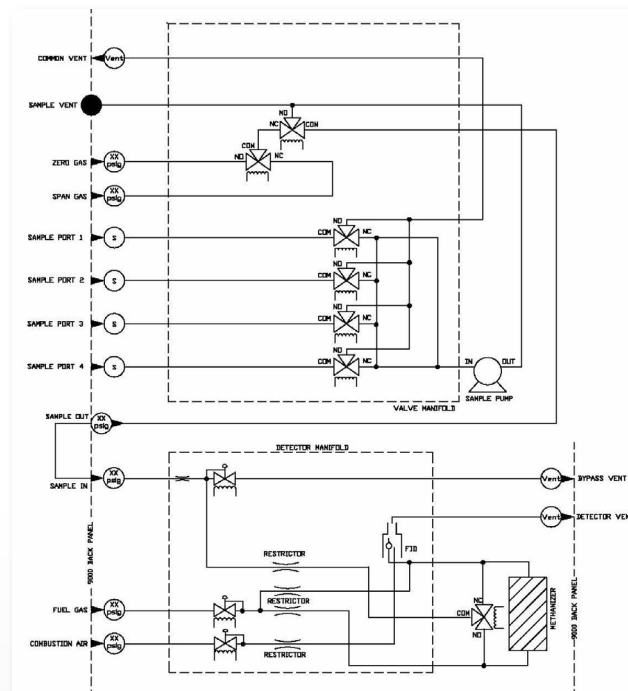
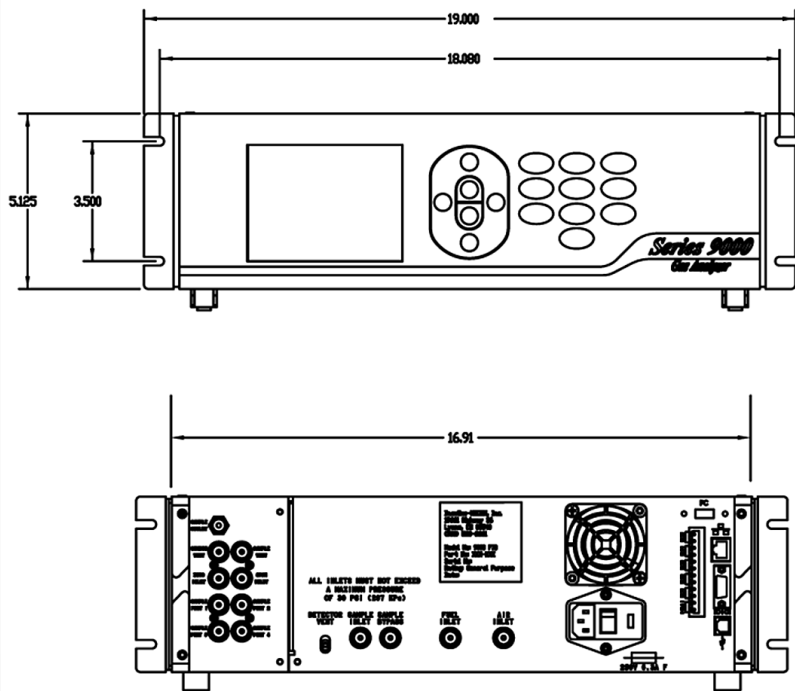
- Flame ionization detector.
- 3U case, 19" (48.3cm) rack mountable.
- Hydrocarbon detection from sub-ppm to 100 ppm levels.
- Automatic calibration at user-defined intervals.
- Internal, multipoint sampling option.
- **FlowGuard** electronic control of fuel, air and sample.
- Electronic back-pressure regulator with sample bypass system ensures fast response.
- Discrete, multilevel concentration & fault alarms.
- Analog output ranges programmable from 1ppm – 100% full scale.
- Programmable relays for concentration alarms, events and diagnostics.
- Automatic FID ignition, with automatic shut-off of sample, fuel and combustion air.
- Remote operation via RS-232 and Ethernet.
- Graphical display and easy to use menu system.
- Optional 9000 Keeper software to monitor and control the instrument remotely.



CERTIFIED ISO 9001:2000

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### Analytical

**Detector:** Flame ionization detector (FID).

**Methanizer:** Converts low levels of CO and CO<sub>2</sub> to methane.

**Range:** User definable based upon calibration within: 0 - 100 ppm (Methane).

**MDQ:** 0.1 ppm (100 ppb).

**Repeatability:** +/- 1% Full-scale response.

**Drift:** Zero: +/- 1% Full-scale over 24 hours

**Response Time:** T90 < 30 sec.

**Alarms:** Multilevel concentration and fault alarms that result in audible and visual alarms. Alarms may also be mapped to relays to control external equipment.

**Sampling:** Internal single or multipoint modules for pre-filtered (<0.1 microns), non-condensing samples, with or without sample pump.

**Calibration:** Programmable automatic or manual calibration.

**Support Gas:** Hydrogen 40 cc/min, Air 200 cc/min. (typical). Hydrocarbon content must be less than 1 ppm. Fuel blend options available, consult Baseline®

### Physical

**Dimensions:** 19.00" (48.3cm) W x 14.25" (36.2cm) D x 5.25" (13.3cm) H.

**Weight:** < 20 lb (9.07kg).

**Configuration:** Bench-top or rack-mount 19" (48.3cm) panel.

**Connections:** 1/4" (6.35mm) tube fitting connectors.

**Operating Temperature:** 32 - 104 °F (0 - 40 °C).

**Operating Humidity:** 0 - 95% (non-condensing).

### Electrical

**Power:** 90 - 230 VAC, 50/60Hz, 3A.

**Display:** 3.4" (8.6cm) x 4.5" (11.4cm) graphical display.

**Relay Outputs:** 5 programmable form A relays rated to 3A @ 230V AC (optional additional 9 relay output board).

**Analog Outputs:** 1 programmable 0-20mA or 4-20mA isolated output (optional additional 3 analog output board).

**Digital Outputs:** RS-232, Ethernet.

**D019.4**

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