

## EC9830T

### TRACE CARBON MONOXIDE ANALYSER

The Ecotech Model EC9830T Carbon Monoxide (CO) Analyser incorporates Gas Filter Correlation (GFC) technology with infra red photometric detection.

The analysers sensitivity has been increased with the number of passes increased from 20 to 28. Detection of sub-ambient levels of CO is made challenging due to interference by H<sub>2</sub>O and CO<sub>2</sub>. The use of GFC technology minimises this interference and enables the instrument to measure CO in ambient air in the range of 0- 20,000 ppb.

CO background (trace) measurements in ambient air are usually made in the range of 350-500 ppb (levels that represent the range of global CO mixing ratios in the unpolluted atmosphere).

### STANDARDS

- U.S. EPA approved (Automated Reference Method RFCA-0992-088).

### FEATURES



- Sample gas concentration measurements are automatically corrected for temperature and pressure changes and can be displayed in units of ppb, ppm,  $\mu\text{g}/\text{m}^3$  or  $\text{mg}/\text{m}^3$ .
- Fast response and high signal to noise ratio is achieved through the use of a low noise IR detector.
- A polynomial Calibration curve is used to ensure that a linear signal output is achieved over two wide concentration ranges: 0-5000 ppb and 5000- 20,000 ppb.
- Water is removed from the sample gas through the use of an optional permeation dryer. The dryer reduces sample gas dew point to  $-30^\circ\text{C}$  thereby reducing water interference to  $<2\text{ppb}$  in the sample.
- Auto-zero routine allows the analyser to periodically check and correct for background illumination thereby virtually eliminating zero drift, which can be recorded for diagnostic purposes.
- High sensitivity is achieved by the use of a 6m path length cell.
- Kalman digital filter continuously provides the best compromise between response time and noise reduction.
- Operating temperature range is  $20^\circ\text{C}$  -  $30^\circ\text{C}$  with stability of  $\pm 5^\circ\text{C}$ . If the internal temperature of the instrument changes by more than  $\pm 4^\circ\text{C}$  then an automatic background is undertaken.

## SPECIFICATIONS

### Ranges display:

Auto ranging 0-20 ppm.

### Data display:

Large Graphic LCD display, with unit selection mg/m<sup>3</sup>, µg/m<sup>3</sup>, ppm, ppb, ppt.

### Analogue out:

Auto-ranging between two user specified full-scale values with menu selectable offset of 0%, 5% or 10%.

### Noise:

<12ppb RMS with Kalman or 300 sec filter active.

### Lower detectable limit:

20 ppb with with Kalman or 300 sec filter active.

**Linearity:** < 1 % full scale

**Precision:** 20 ppb or 0.1 % of reading which ever is greater

**Zero drift:** Temperature dependence, 0.1 % per °C changes.

24 hours; less than 50 ppb

7 days: less than 100 ppb

**Span drift:** Temperature dependence, 0.05 % per °C changes.

24 hours less than 0.5 % of reading

30 days less than 1.0 % of reading

### Temperature/Pressure compensation:

Temperature/Pressure compensation with selectable reference temperature of 0, 20, 25 °C at 101.3 kPa.

**Flow rate:** 1.00 SLPM (Std.), 2.00 LPM optional. Optional external sample pump required.

### Temperature range:

Operating temperature 20 °C- 30 °C, may be operated 15 °C – 35 °C.

### Analogue outputs:

The 50 pin I/O PCA allows for jumper selectable voltage outputs of 100 mV, 1V, 5 V, 10 V with menu selectable zero offset of 0, 5 % or 10 % or menu selectable current output 0-20 mA, 2-20 mA, 4-20 mA.

### Digital:

DB50 with 8 x digital inputs, 8 x digital outputs (discrete status, user controls) and analogue output.

## Communications

### Communication ports:

Rear panel multi-drop RS232 port shared between analysers for data, status and control. Plus USB interface and optional Ethernet connection to a TCP/IP network via an RJ45 connector.

### Data logging

Supports internal data logging capability with storage up to 175 days of 5 minute data stored in flash ROM.

### Data storage selection:

Instantaneous data selectable period from: 1,3,5,10,30, or 60 minute intervals. Average data selectable period from: 1,3,5,10,15,30 minutes, 1,4,8,12, or 24 hours.

### Power:

99-132 VAC, 198-264 VAC 47-63 HZ.

### Dimensions/weight:

43.2 cm x 17.8 cm x 64.8 cm (w x h x d), weight 20.9 kg.

## OPTIONS

- Permeation dryer for removal of H<sub>2</sub>O
- Rack mount kit assembly (19")
- External sample pump 115V 60 Hz
- External sample pump 220V 50/60 Hz
- PCA 50 pin I/O
- Ethernet connection to a TCP/IP network via an RJ45 connector

### For your local certified distributor visit:

[www.ecotech.com/distributors](http://www.ecotech.com/distributors)

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