

Dual Cell Microvolume Thermal Conductivity Detector

- Stand-alone unit
- Optimized for capillary chromatography
- Thermal stability to $\pm 0.02^\circ\text{C}$
- Dual filaments capable of independent or referenced (differential) operation



The Valco Microvolume Thermal Conductivity Detector (TCD) is useful in a wide variety of capillary and packed column applications. Constant filament temperature control provides a linear dynamic range permitting measurement of a wide range of concentrations without the need for multiple standards or sample dilution.

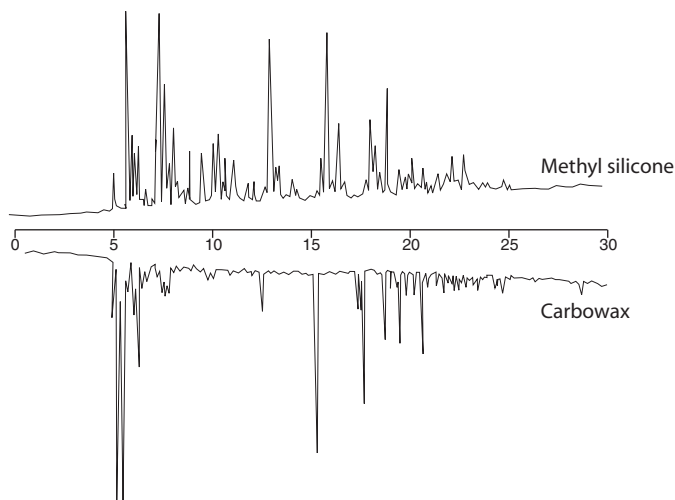
Since the detector is non-destructive of the sample and contributes virtually no band spreading, it can be used in series with other detectors without affecting the performance characteristics of either.

Description

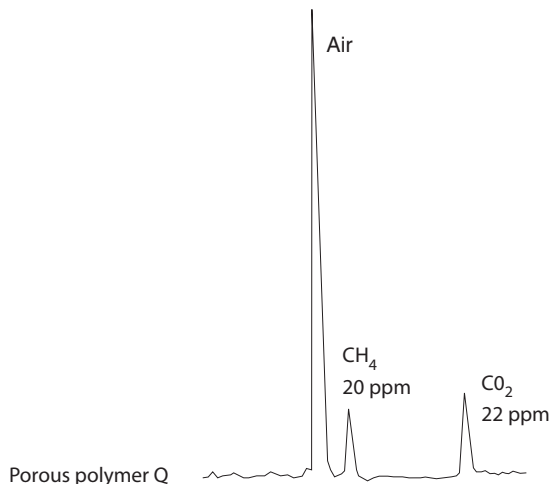
The detector consists of the cell housing and the electronics controller. The cell design permits mounting in virtually any orientation with no effect on performance. It can be installed easily on virtually any gas chromatograph, comprising a stand-alone unit requiring nothing else for operation but carrier gas flow.

Each of the two cell chambers is independent of the other, except for block temperature. Filaments can be replaced individually. Front panel controls set the temperature for the cell and for each filament. Since each detector cell can be operated separately or simultaneously, two analyses can be run using a single Valco TCD.

To insure compatibility with any system, two outputs are provided: 0-1 mV full scale attenuated output for recorders, and 0-10 V full scale unattenuated output for integrators and data acquisition systems.



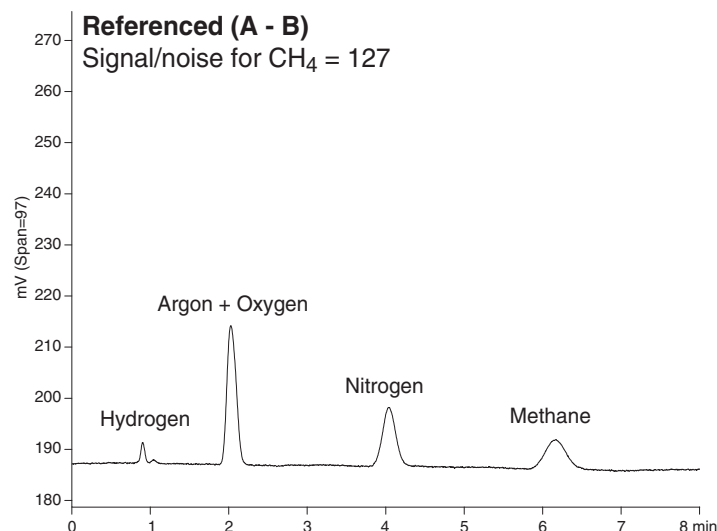
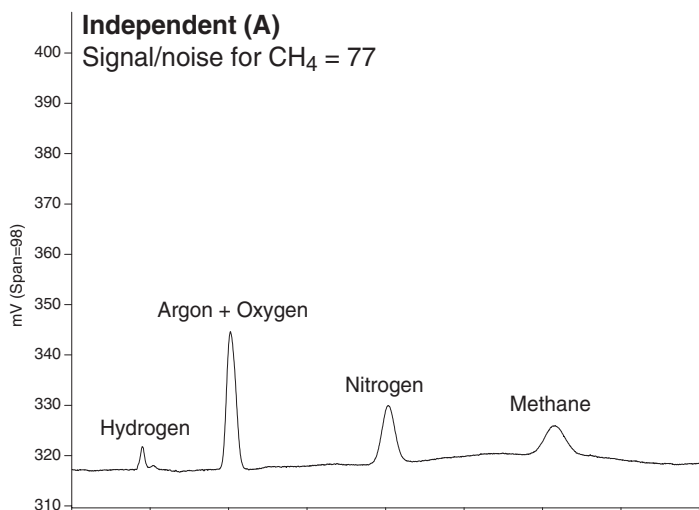
Unleaded Gasoline
50 m x 320 micron columns, 0.06 μl valve injection



Gas Standard
30 m x 530 micron PLOT column, 100 μl valve injection

Independent vs. referenced operation

Specifications



Helium Blend

Sample size: 250 µl
 Sample concentration: 100 ppm each
 Column: 10' x 1/16" OD x 0.040" ID
 Molesieve 5Å, micropacked
 Column temp: 65°C
 Detector temp: 100°C
 Filament temp setting: 5.0
 Flow rate
 Channel A: 5.5 ml/min
 Channel B: 5.42 ml/min

Overall

Linear range 1 nanogram to 3 micrograms nC₄
 Minimum detectable approx. 50 picograms n-butane quantity
 Time constant < 150 milliseconds
 Cell temperature Automatic proportional control with control
 ±0.02°C stability
 Maximum cell 300°C
 temperature

Detector assembly

Dimensions 3.12" x 6" x 3.75" high
 (8 cm x 15 cm x 9 cm)
 Gas connections Valco 1/16" zero dead volume fittings
 Single multi-pin 5 foot cable supplied
 connector

Control unit

Dimensions 12" x 8" x 5" high
 (30 cm x 20 cm x 13 cm)
 Electrical connections... Single multi-pin connector
 Operator controls Cell temperature control (40-400°C)
 10-turn filament temperature
 potentiometers (A & B)
 10-turn coarse and fine baseline
 adjustment potentiometers (A & B)
 12 position recorder attenuator output
 switch (A, B, or A-B)
 Filament power on/off switch
 Indicator LEDs Detector heater "on"
 Filament power "on"
 Power requirements Universal 100-250 VAC
 50/60 Hz, 100W maximum

Product numbers

| | 110 VAC | 230 VAC |
|---------------------------------|-----------|---------------|
| Dual cell microvolume TCD with: | | |
| nickel/iron filaments | TCD2-NIFE | TCD2-NIFE-220 |
| tungsten/rhenium filaments | TCD2-WRE | TCD2-WRE-220 |

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