

DPS Instruments is pleased to introduce the small, rugged, and versatile DPS Micro-TCD Gas Chromatography Systems, featuring a micro-machined Thermal Conductivity Detector. The DPS Micro-TCD GC can pack 1 to 4 Column Oven/Micro-TCD Channels inside the same Exchangeable cartridge. Each Channel contains a Column Oven, Pre-Column, Analytical Column and 2 Micro-TCD detectors.

In addition, each Channel also connects Injection and Backflush valves offering unattended operation and super-fast analysis times. A built-in Stream Selector automatically loads each sample stream, or calibration gas. Most analyses are completed in seconds and one sample can be injected right after another for Continuous Monitoring applications.

The DPS Micro-TCD GC Systems are a new kind of GC. Offering all of the separation power of our conventional GC System in an ultra-small package, allowing on-line, at-line, or laboratory analyses to be performed almost anywhere. And with 4 Channel capability, even complex analyses can be performed in seconds.

The DPS Micro-TCD GC specifications are on par with the biggest selling Micro GC's in the market, yet they are smaller, lighter, faster, more intelligent, and have delightful pricing.

# DPS Micro-TCD GC

**Permanent Gases,  
Light Hydrocarbons,  
Natural Gas,  
Mud Logging,  
Greenhouse Gases,  
Mine Safety,  
Dissolved Gases,  
...and more!**

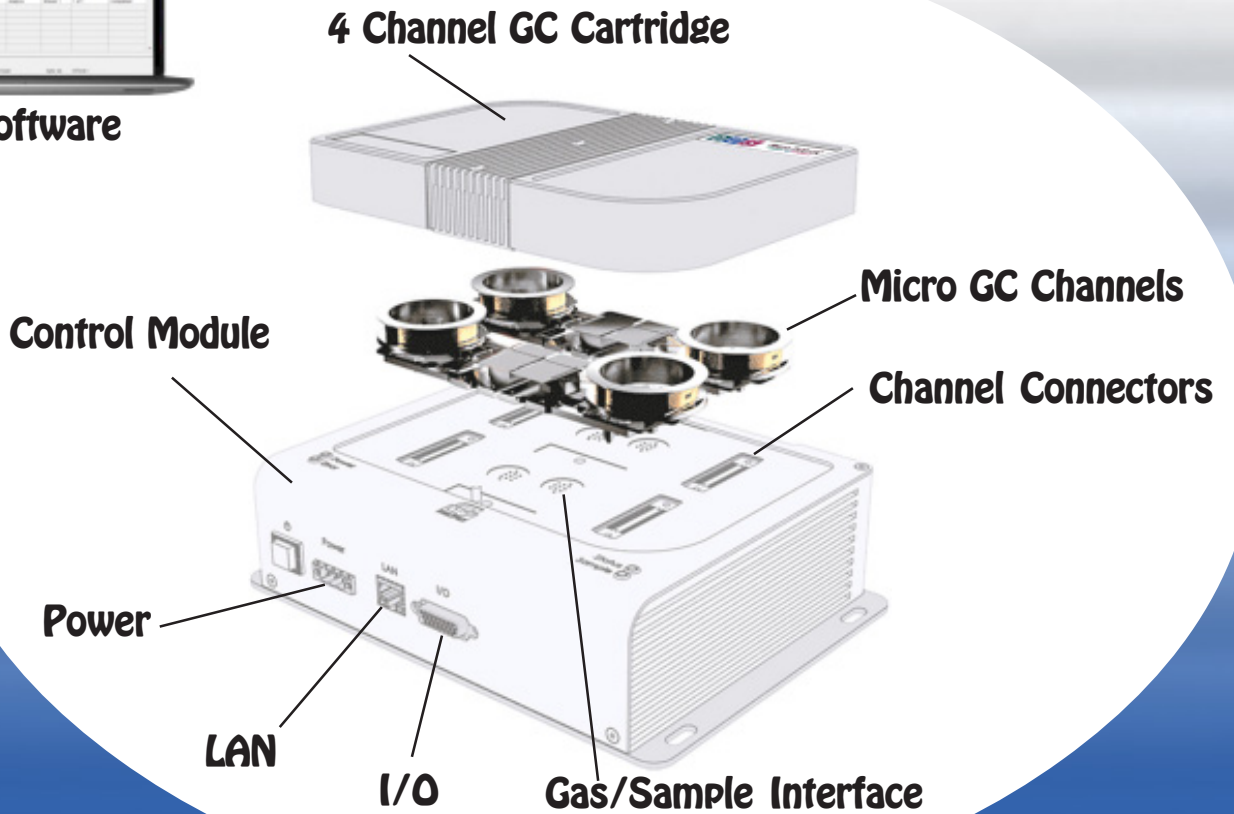
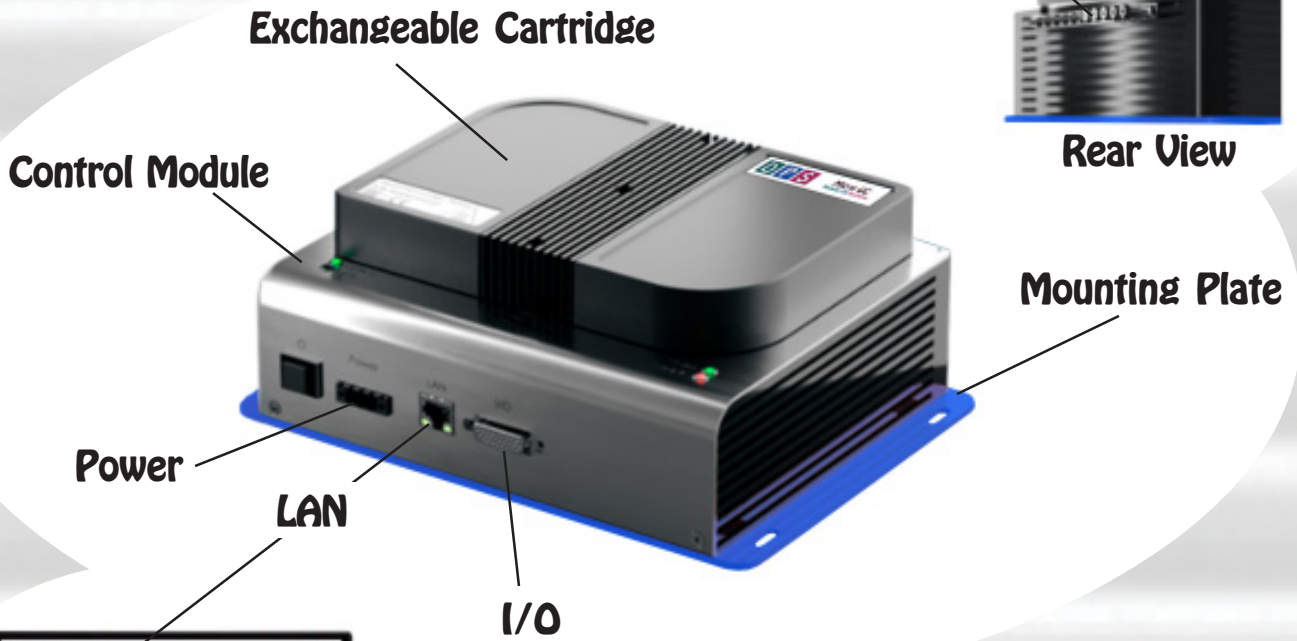


## General Specifications:

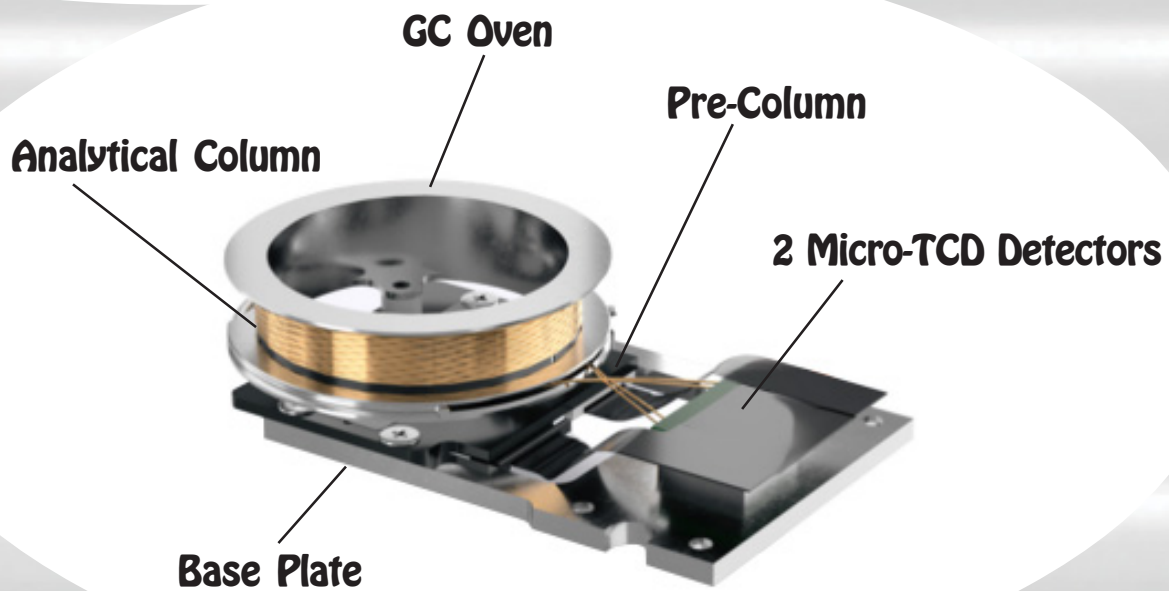
- Rugged Micro-TCD Gas Chromatograph
- Designed for Unattended Continuous Operation
- Most analyses in less than 1 min
- 1 to 4 GC Column Oven/Micro-TCD Channels
- Integrated 3-Stream Selector
- Automated Calibrations
- Fast & Accurate with Low Maintenance
- Free standing operation with on-board GC Methods
- Built-in Instrument Diagnostics
- Easy Chromatography Data System
- Temperature Control to 0.001 °C
- Pressure Control to 0.001 kPa
- Ultra Compact and Lightweight,  
(20 x 15 x 10 cm), approximately 8 kg

**DPS**  
Instruments, Inc.

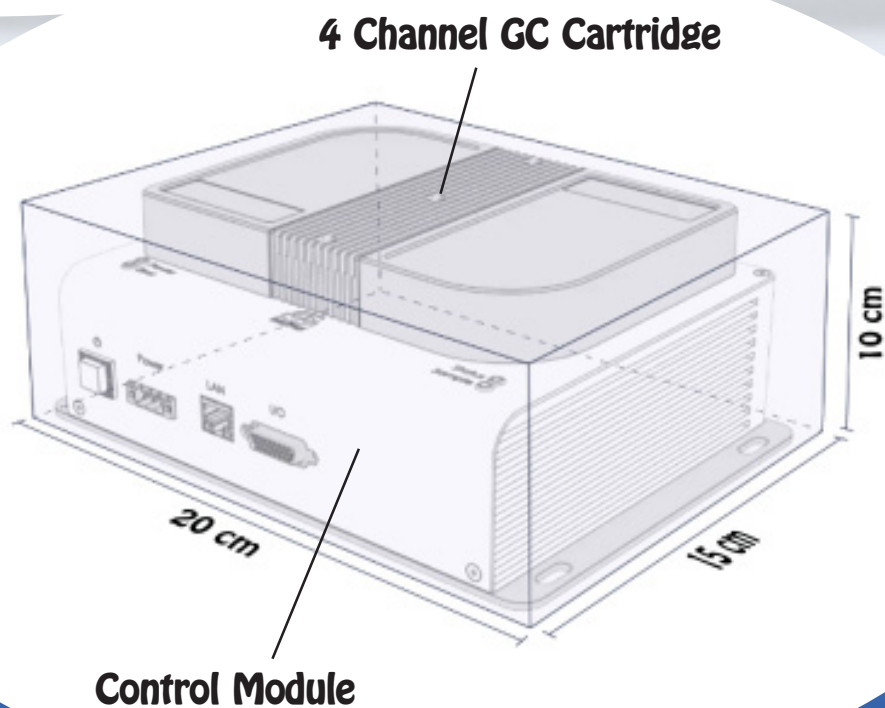
# DPS Micro-TCD GC Layout



## DPS Micro GC Channel



## Micro GC Dimensions



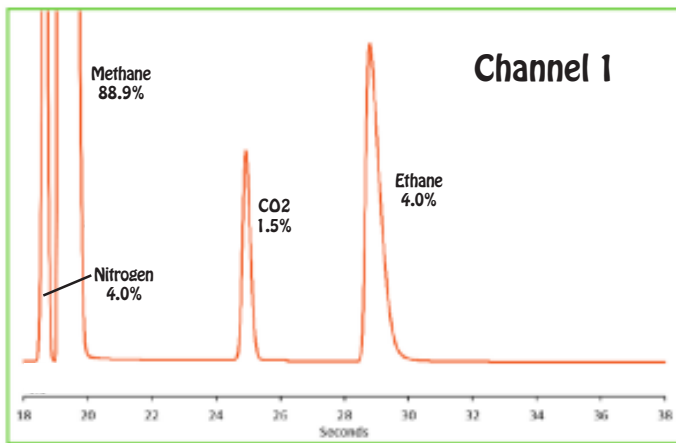
# Application Examples

## Natural Gas Analyzer

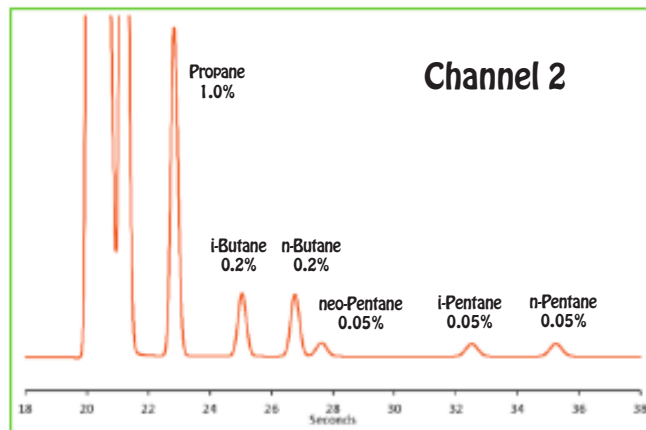
**2 Channel Micro-TCD GC** - Typically, a 3 Channel Micro GC is needed for a Natural Gas analysis. However, with our unique detector configuration, we only need a 2 Channel GC System.

Every GC Channel includes 2 TCD detectors, one for the Analytical Column and the other for the Pre-column backflush. Using this to our advantage we backflush the C6+ compounds from the 2nd Channel to the Pre-column TCD detector giving us 3 chromatograms of data from a 2 Channel Micro-TCD GC.

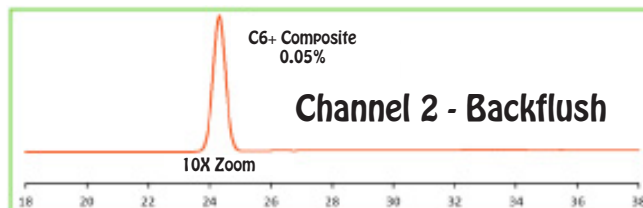
This is just one example of how we reduce Analysis complexity, which saves money and reduces maintenance Costs.



C1 - C2 Hydrocarbons



C3 - C5 Hydrocarbons

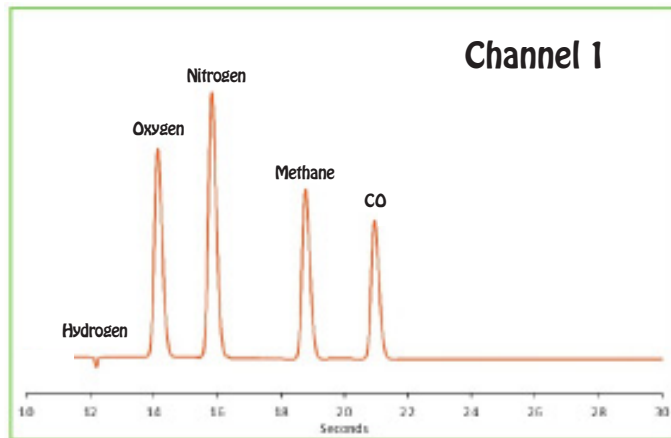


C6+ Hydrocarbons

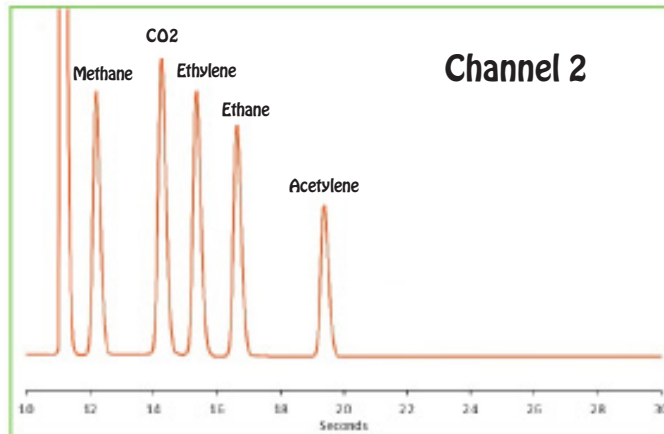
## Permanent Gas Analyzer

**2 Channel Micro-TCD GC** - Using a Molecular Sieve column to separate hydrogen, oxygen, nitrogen, methane and carbon monoxide. Simultaneously, a U-Bond column separates carbon dioxide and other light hydrocarbons. Both channels use helium as the carrier gas.

Every GC Channel includes 2 TCD detectors, one for the Analytical Column and the other for the Pre-column backflush. Using this to our advantage we backflush the C<sub>2</sub>+ compounds from the Molecular Sieve column keeping the column clean and maintenance free.



Permanent Gases



CO<sub>2</sub> &  
Light Hydrocarbons

## Micro-TCD GC Specifications:

### Micro GC Channels:

- 1- 4 Micro GC Channels in an Exchangeable Cartridge
- Each GC Channel contains GC Oven, Analytical Column, Pre-Column, Micro-TCD Detector, Electronic & Gas Connectors.

### Software/GC Control Interface:

- Enter and store GC Methods via Computer connection
- GC Methods run without Computer connection
- Safety Limits on all user entered parameters
- Communications: RS232, RS485, Ethernet, Digital I/O
- Protocols: Modbus, TCP
- Sequencing for Sampling, Injection, Backflush, etc.
- Memory Storage - up to 256Gb
- Control for Carrier Gas(s)
- Control for Valves (Injection, Backflush, Sample)
- Schedule Auto-calibration
- Control for Stream Selection
- Digital Signal Outputs for each Detector
- Universal voltage input (85 – 240 Vac, 50-60Hz)
- Power Supply - (20 – 28 Vdc)
- Power Consumption - 75 Watts maximum

### Detectors:

- 1 - 4 Micro-TCD Detector Modules Installed
- 2 Micro-TCD's per Module (8 total)
- Detection Limit (500ppb - 100%)
- 150 °C Temperature Limit with 0.1 °C set-point resolution

### Injectors:

- 1 Micro-machined Injector per Channel
- Sequence Controlled Injection Time

### Valve:

- 1 Micro-machined Valve per Channel

### Columns:

- 1 Pre-Column with Backflush per Channel
- 1 Analytical Column
- Isothermal Operation
- Repeatability - < 0.05% RSD
- Cycle Time (Typical) - 15 - 60 sec
- Optional Temperature Program

### Control Module:

- Moisture - (5 to 95 %)
- Operating Temperature - (5 to 55 °C)
- Storage Temperature - (-20 to 60 °C)
- Dimensions - 20 X 15 X 10 cm
- Weight - 8 Kg

### Gas/Sampling:

- Gas Ports - 1/16"
- Carrier - Helium, Argon, Nitrogen, or Hydrogen
- Carrier Input Pressure - 450 kPa
- Carrier Consumption (Typical) - 15 mls/min
- Sampling - Pressurized, or internal Vacuum Pump
- 3 Sample Streams (more optional)

DPS Micro-TCD GC

