

PCF ELETTRONICA Srl

PCF YOUR PARTNER IN MONITORING BY GC

MOD. 529/NR/TCD

INDUSTRIAL ANALYZER BY TCD DETECTOR

- TCD (Thermo Conductivity Detector), a proprietary detector
- Analysis displayed on monitor in real time.
- Integrated self-diagnostic system .

TCD DETECTOR

The TCD detector (Thermo Conductivity Detector) is a low sensitive and low specific detector, but extremely stable and reproducible.

Combined with an adequate chromatographic column and with a specifically designed analysis procedure, it can give excellent results.

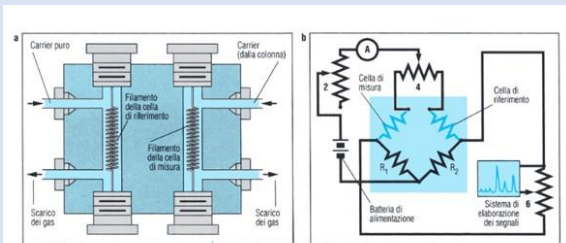
The sample eluted from the Gas Chromatographic column is sent to the TCD detector which senses different molecules from the carrier gas due to the different thermal conductivity. The cell is part of a Winston bridge which is unbalanced according to the compound under analysis. The electrical imbalance is proportional to the concentration of the compound (CH_4/CO_2) under analysis.



Front panel of Mod. 529/NR/THC



Analysis in real time



Rivelatore TCD

WORKING PRINCIPLE

The PCF ELETTRONICA automatic analyzer Mod. 529/NR/THC is a small process gas chromatograph which carries out continuous analyzes of specific compounds (e.g. CH_4 and CO_2) using the conductometric technique (unbalancing of a Winston bridge). The heart of the analysis lies in the special gas chromatographic column designed to separate specific compounds in known environments. A pump downstream of the analyzer fills a capillary with a known volume of 0.6 cc. which is brought to atmospheric pressure to obtain repeatable sampled volumes, before introduction into the column. The time for a complete cycle depends on the analysis under consideration and on the separation capacity of the column used. An industrial INTEL microprocessor presides over the management of all the analyzer functions and the processing of the analysis data, as well as the continuous control of a self-diagnostic system which, among other things, provides for:

- Control of operating parameters and alarms.
- Checking that the instrument is fully operational.

TECHNICAL SPECS

The specified characteristics were obtained experimentally.

| | |
|---|---|
| - Measuring range | : 0-10.000 ppmV (about 1%, or larger) |
| - Measuring scales | : 6 possible scales, starting from 0-20 ppmV TVOC. E.g. 0-20/50/100/200/500/1,000 |
| - Measuring unit : | ppmV |
| - Background noise | |
| R(0) | : 0,01 ppmV. |
| R (80% f.s.d.) | : 0,01 ppmV. |
| - Lower Detectable Limit (LDL) | : 0,02 ppmV. |
| - Zero signal variation VZ12 (12 hours) | : ± 0,01 ppmV. |
| - Zero signal variation VZ24 (24 hours) | : ± 0,02 ppmV. |
| - Measured signal variation VM20 | : ± 0,01 ppmV. |
| - Measured signal variation VM80 | : ± 0,02 ppmV. |
| - Precision at 20% of the range P20 | : ± 0,02 ppmV. |
| - Precision at 80% of the range P80 | : ± 0,03 ppmV. |
| - Measuring cycle | : 180 second (reduced according to the analysis) |
| - Linearity | : 1 % of the (f.s.d.) |
| - Sample flow rate | : 500 ml/min. |
| - Working temperature | : 0 – 40 °C |
| - Display | : Colour 640 x 200 pixel LCD graphic display; touch screen with displayed analysis in real time. |
| - Analogue outputs | : 0-10 Vdc/4-20 mA. |
| - Serial output | : RS 232 (9 pin connector). |
| - ZERO drift | : Automatically compensated every cycle. |
| - Zero/Span, check/calibration | : Either from front panel or remote control. |
| - Services | |
| - Carrier gas [4.5 Bar (63 psi)]. | : 30 ml/min. |
| - Recommended calibration mixture | : 60-70% of measuring range (process gas balance). |
| - Dimensions | : 480x190x560 mm (19"x7.6"x22", WxHxD). |
| - Weight : | : 15 Kg. |
| - Power supply (to be specified in order) | : 230/110 Vac 50/60 Hz. |
| - Consumption | : 300 VA. |

CODE

041-0TCD
041-1N2
041-2TCD
041-1TCD
041-3TCD

DESCRIPTION

Basic industrial automatic Gas Chromatograph.
Carrier gas cylinder.
Calibration gas cylinder.
Consumables kit for Mod. 529/NR/TCD
Spare parts kit for Mod. 529/NR/TCD