

# PCF ELETTRONICA Srl

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VOC MONITORING

## MOD. 8807/NR

PORTABLE ANALYZER OF REACTIVE HYDROCARBONS, NMH, (NON\_METHANE\_HC) AND OTHER HC

### Topics:

- FID Flame Ionization Detector.
- Analysis shown on the display.
- Integrated self-diagnosis system

### FID DETECTOR

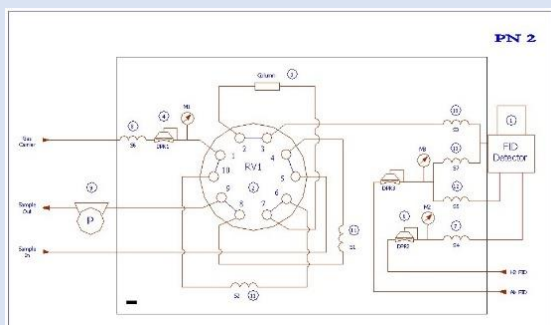
The FID detector is a 'carbon atom counter'.

The sample is sent to a micro flame fed with hydrogen and air. The organic carbon contained in the measurement gas is split into carbon ions and hydrogen ions.

The H ions bind to the oxygen in the air generating water, while the C ions that are formed as a result of the oxidation  $C_x = CO$ , are proportional to the concentration of hydrocarbons present; moving in an electrostatic field (anode and cathode) they are attracted to one of the polarities, triggering an ionic current proportional to the concentration of the sample.



Open Mod. 8807/NR Top Panel



### WORKING PRINCIPLE

Mod. 8807 / NR is very similar to the rack analyzer Mod. 529 / NR / NMH, both carry out the continuous analysis of total VOC and Methane, as well as other specific compounds, with flame ionization detection F.I.D and separation by GC column. 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 being introduced into the FID. The complete cycle includes two injections: the first to determine the Methane and the second to determine the TCOV (THC).

An INTEL industrial microprocessor oversees 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, includes:

- Control of operational parameters and alarms.
- Check that the instrument is fully operational.
- Automatic ignition of the flame.
- Activation of alarms in case of flame extinction or pressure drop in the H<sub>2</sub> circuit.

## TECHNICAL SPECIFICATIONS

The specified characteristics were obtained experimentally.

- Measuring Range	: 0-10.000 ppmV VOC (THC)
- Measuring Scales	: 6 possible scales starting from 0-5 ppmV VOC. E.g. 0-5/10/50/100/500/1,000
- Measuring Units	: ppmV (or mg/m <sup>3</sup> )
- Background Noise	: 0,01 ppmV.
- LDL (Lower Detectable Limit)	: 0,02ppmV.
- Zero Signal Variation VZ12 (12 hours)	: ± 0,02 ppmV.
- Zero Signal Variation VZ24 (24 hours)	: ± 0,02 ppmV.
- Measured Signal Variation VM20	: ± 0,02 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 (NMH)	: 180 s (reduced if necessary)
- Linearity	: better than 1 % of the f.s.d.
- Sample Flow Rate	: 500 ml/min.
- Working Temperature	: 0 – 40 °C
- Display	: 640 x 200 pixel LCD colour graphic display; touch screen with analysis displayed in real time.
- Analogue Outputs (NMH)	
CH4	: 0-10 Vdc/4-20 mA.
TVOC (THC)	: 0-10 Vdc/4-20 mA.
NMH (difference of above signals)	: 0-10 Vdc/4-20 mA.
- Serial Outputs	: RS 232 (9 pin connector).
- ZERO Drift	: Automatically compensated at each cycle.
- Zero/Span, check/calibration	: From front panel or through remote control.
- Services	
Hydrogen	: 30 ml/min.
FID UPP Air	: 300 ml/min.
Service Air (for activating the rotation valve)	: > 4.5 Bar (63 psi).
- Suggested Calibration Gas Mixture	: 3 ppmV CH <sub>4</sub> + 1 ppmV C <sub>3</sub> H <sub>8</sub> , in AIR.
- Dimensions	: 150 x 216 x 360 mm (6"x8.5"x 14", HxWxD).
- Weight:	: 15 Kg.
- Power Supply (to be specified in order)	: 230/110 Vac 50/60 Hz.
- Consumption	: 300 VA, in the heating phase.

The shown technical specifications refer to NMH measurements.

For specific HC analysis they may vary accordingly.

### CODE NR.

041-4001  
041-4002  
041-4031  
041-4013  
041-4012  
041-4011  
041-4022

### DESCRIPTION

Mod. 8807/NR, portable HC analyzer, 220 Vac 50 Hz  
Mod. 8807/NR, portable HC analyzer, 110 Vac 60 Hz  
Hydrogen Generator.  
Mod. 9588 UPP Air Generator.  
Gas Cylinder with the calibration mixture.  
Mod. 8807/NR Consumables Kit.  
Mod. 8807/NR Spare Parts Kit.