

VOC/THC PORTABLE ANALYSER MOD. 2001

For continuous source monitoring, VOC/THC/CH₄ detection procedure according to CEE CEN 264 # 326 as well as UNI 10391 regulations

PCF's Mod. 2001 is a very versatile and light (just 9.5 Kg) portable source monitor. One of the best solutions in emission controls. The hot FID analysis is continuous with a very fast response time (from 0 to 98% of full scale in 1 second according to UNI 10391 - CEE 326). If required the methane fraction evaluation is carried out by insertion of catalytic converter.

DESCRIPTION

PCF's Mod. 2001 VOC/THC/CH₄ analyser has been designed, developed and built according to the CEE CEN 264 # 326 and UNI 10391 regulations for the detection of VOC, THC and CH₄ fractions at emissions. The sample is extracted through a variable length probe carrying a ceramic filter on the top, an heat traced PTFE tube at 150÷180°C and an heated head sucking pump. A farther SS sintered heated filter is placed in front of the sample capillary.

The sample is continuously fed into the FID detector, therefore the response is fast and continuously active without any delay cycles due to the sampling valve cycling. The sample way from up the sampling filter down to the FID detector is kept at controlled high temperature.

The methane fraction is eventually determined continuously by a simple manual insertion of a catalytic converter (through a by pass valve) that converts all organic compound, but the CH₄, into CO₂, that does not show any response in a flame ionisation detector.



FID DETECTOR DESCRIPTION

A micro flame fed by hydrogen can be used as a detector for the organic compounds, as the carbon oxidation reaction $C_x=CO$, that takes place within, generates a consistent quantity of ions proportional to the concentration of organic carbon in the sample.

The actual structure of the detector shows the mixing of the hydrogen with the gas sample; then the combustible mixture is burnt at the extremity of a small nozzle in an oxygenated environment (pure air

with a large stochiometric excess). The electric charges generated by the combustion of the organic matter in the sample are collected by a polarised couple of electrodes and converted into electrical micro-current. These ionisation currents through an electrometer generate a voltage drop at the output proportional to the current in the flame.

The changes in polarisation of the flame show up as voltage changes of the output electrometer and then transferred either to a display or to a pen recorder.

TECHNICAL SPECIFICATIONS

- Measuring ranges : 0-30/300/3000 ppm and/or mg/m³
or
: 0-100/1000/10000 ppm and/or mg/m³
(other ranges optional)
- Methane fraction separation : by manual insertion of deviation valve
- Background noise : 1% of full scale
- Linearity : ±1% of full scale
- Lower Detectable Limit (LDL) : 1% of full scale
- Zero drift (24 hours) : ±1% of full scale
- Span drift (24 hours) : ±1% of full scale
- Response time : 1 second
- Lag time : 2 seconds
- Linearity : better than 1% full scale
- Precision : ±1%
- Sample flow rate : 800 ml/min
- Operating temperature range : 0–40°C
- Digital display : 320 x 200 pixel 5.5" colour TFT=LCD display
- Data storage : in built 3.5" FD driver
- Data management : standard SW package for 95/98/NT Windows
- Instrument configuration : from front panel
- Services :
 - Hydrogen : IP 25 ml/min from external gas cylinder
 - Air : 200 ml/min, from in built generator
- Suggested calibration gas cylinder : 30 ppm CH₄ + 10 ppm propane, air balance
- Dimensions : 400x300x150 mm (16:12"x6", WxDxH)
- Weight : 9.5 Kg
- Carrying case : reinforced aluminium box with carrying strip
- Standard power supply : 220/110 Vac 50/60 Hz (to be specified in order)
- Power consumption : 500 VA
- Pneumatic connections : 1/4", 4/6 mm and 1/2 mm tubes

Standard supply includes the 316 SS sampling probe, according to UNI 10391 norms, as well as 3 m heat traced sampling line.

How to order

Code number	Description
041 - 6001	Mod. 2000, portable VOC/THC/CH ₄ monitor, 220 Vac 50 Hz
041 - 6002	Mod. 2000, portable VOC/THC/CH ₄ monitor, 110 Vac 60 Hz
041 - 6031	Mini cylinder carrying basket (two cylinders)
041 - 6013	Hydrogen cylinder, 101 with pressure reducer
041 - 6011	Calibration gas cylinder, 101 with pressure reducer
041 - 6021	Expendables kit
041 - 6022	Spare parts kit

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