

PCF Elettronica S.r.l.

Multi-point automatic FID analyser

Model THC-110

For continuous L.E.L. - VOC/THC in process monitoring



FID detector

The FID detector is a carbon atom counter. Sample is introduced into a micro flame fed by hydrogen and air, where the electrical charges generated by the oxidation of Cx to CO are proportional to the hydrocarbon content in the sample. Actual concentration is computed out of a calibration with a traceable reference gas mixture.

The electrical charges are collected by two polarised electrodes and converted by an electrical circuit into an electronic signal.

Description

The measuring system foresees a rotation automatic sampling valve, that introduces into the analy-

tical circuit about 0.6 ml of sample gas, balanced against atmospheric pressure in order to guarantee repeatable samples.

Everything is assembled in a temperature controlled environment.

Sample is sucked by an air ejector located at the back of the sampling valve. In the temperature controlled chamber packed chromatographic columns may be installed to perform separation and determination of specific organic compounds. By a chromatographic column it's possible to determine the methane fraction content, to define, in case of too high set values whether the concentrations are due to pollutants or to methane leaks from the burner.

TECHNICAL SPECIFICATIONS

Monitor

- Detector : Hot Flame Ionisation Detector (FID)
- Selectable measuring ranges : n. 3, e.g. 0-100/1,000/10,000 ppm (other ranges optional)
- Background noise : 0.5 % full scale
- Lower Detectable Limit (LDL) : 1% full scale
- Precision : $\pm 1\%$ full scale
- Linearity : $\pm 1\%$ full scale
- Zero drift (24 hours) : $< 0,1$ ppm
- Span drift (24 hours) : $< 0,2$ ppm
- Measuring cycle : 30 seconds
- Response time : 30 seconds
- Sample flow rate : 500 ml/min
- Operating temperature range : 0-40°C
- Zero drift : automatic compensation, with alarm status
- Zero/Span check : set from front panel and/or from remote control
- Display : digital display
- Analogue outputs : 0-10 Vdc or 4-20 mA (selectable)

System

- Analysis streams		: up to 10 streams
- Services	Hydrogen	: 30 ml/min
	Air	: 300 ml/min
- Air and hydrogen distribution		: metallic membrane pressure reducers with relevant manometers
- Hydrogen leak safety		: interception valve for flame OUT alarm (safety device with visual alarm indication)
- Thermostatic chamber		: controlled up to 200°C with safety alarm for out of temperature condition
- Sampling valve		: Mod. RSV 108-8 high temperature valve
- Sampling		: air pump or air ejector
- Sampling probe		: SS sampling probe, silicon carbide filter, 1 µm porosity, 99% filtration capacity, 350°C max. operating temperature
- Analysis cycle		: 30 seconds
- Chart recorder output		: 0-10 Vdc or 4-20 mA
- Each signal		: integrated and updated at the cycle end for each line
- General alarm		: for flame out, temperature and zero alarm
- Alarm on set value		: one, SPDT for each channel
- Analysis max. temperature		: 200 °C
- Ambient working temperature		: 0-40°C
- Suggested calibration mixture		: 20 ppm C ₃ H ₈ air balance
- Mounting		: standard 19" rack 33 U
- Dimensions		: 1600x600x650 mm (63"x24"x26" HxWxD)
- Ancillary equipment		: - CLAIND rack mounted hydrogen generator - PCF Mod. 9588 ultra pure air generator - Electronics - Ten stream manifold
- Weight		: 90 Kg (fully equipped)
- Standard power supply		: 220/110 Vac 50/60 Hz (to be specified in order)
- Power consumption		: 600 W
- Heat traced line		: 80 W/m
- Pneumatic connections		: 1/4", 4/6 and 1/2 mm tubes

How to order

Code number	Description
041 - 5001	Mod. THC-110, L.E.L./THC/VOC industrial system, 220 Vac 50 Hz
041 - 5002	Mod. THC-110, L.E.L./THC/VOC industrial system, 110 Vac 60 Hz
041 - 5011	Calibration gas cylinder
041 - 5021	Expendables kit
041 - 5022	Spare parts kit

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