PORTABLE, HEATED FID TOTAL HYDROCARBON ANALYZER **OVF-3000**

The OVF-3000 fully complies with EN 12619, EN 13526 (EU), 2. BImSchV. 13. BImSchV and 17. BImSchV (Germany), and EPA Method 25A and Method 503 (USA)

The J.U.M. High Temperature Heated FID OVF-3000 is competitively priced, over the shoulder portable and compact heat FID (HFID) total hydrocarbon analyzer for high accuracy, sensiti and stability.

The Model OVF-3000 uses our long time proven VentDown hydrogen Flame Ionization Detector (FID). Including the detector a sample filter- and pump, all parts which come in contact with samp are housed in a 190°C heated oven. This prevents the loss of hi molecular weight hydrocarbons to ensure true results, fast respons fast set back to zero and very reliable performance in the analysis low trace level, to high level total carbon concentrations contaminants in stack emissions, vehicle emissions, process gas air and other gases.

The disposable heated sample filter is easily accessible in the fr panel. No special tools are required for a quick, safe and ea sample filter change. All sample wetted components are integrat into the heated chamber.

The OVF-3000 uses a new high tech, low pressure solid fuel storag system which is kept inside of the hinged cover. The user can saf and easily fill the fuel cartridge himself at low pressures from hydrogen bottle.

Low cost of ownership. Very low fuel gas consumption. Th combustion air supply for the FID-detector is already built in.

No external burner air generator or external high pressure cylinder f synthetic burner air is needed. No more dangerous refilling of hi pressure cylinder for hydrogen is needed.

Features

- All components which come in contact with sample are fully heated and micro processor controlled at 190°C
- Designed for continuous operation 24hours, 7 days per week
- Easy to change sample filter in the front panel. No special tools required for filter change
- Internal low pressure hydrogen fuel storage system holds enough fuel gas for over 40 hours of continuous operation
- Hydrogen safety; maximum hydrogen filling pressure is only 430 PSI (30 bar)
- Long life H.V. spark ignition. No more change of glow igniters
- Built in burner air generator, no external air source needed
- Built-in sample pressure and sample pumps
- Automatic flame out alarm with optional fuel shut off
- Fast response within 1 second
- Low fuel consumption
- Very selective to hydrocarbons
- Microprocessor controlled PID-type temperature controller
- Excellent accessibility for easy maintenance and service

Applications

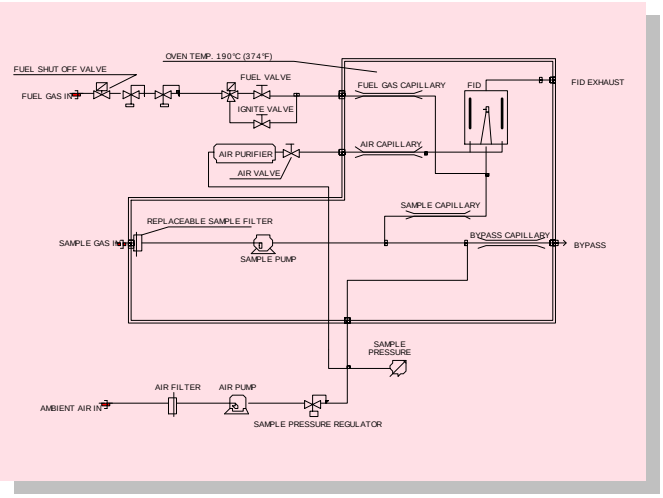
- Stack gas hydrocarbon emissions monitoring
- Raw exhaust vehicle emissions analysis
- Catalytic converter testing
- Measuring engine combustion efficiency
- Hydrocarbon contamination monitoring in air and other gases
- Carbon adsorption regeneration control
- Indoor air quality monitoring
- Fence line monitoring
- Detection of trace hydrocarbons in purity gases used in the semi conductor industry
- LEL monitor of solvent laden air

Principle of Operation

The Flame Ionization Detection (FID) method is used to determine the presence of total hydrocarbon concentrations in a gaseous sample. Burning hydrocarbon-free hydrogen in hydrocarbon-free air produces a negligible number of ions.

Once a sample containing hydrocarbons is introduced into this flame a very complex ionization process is started. This process creates a large number ions. A high polarizing voltage is applied between the two electrodes around the burner nozzle and produces an electrostatic field. Now negative ions migrate to the collector electrode and positive ions migrate to the high voltage electrode. The so generated ionization current between the two electrodes is directly proportional to the hydrocarbon concentration in the sample that is burned by the flame. This signal is measured and amplified by our electrometer-unit.

A sample pressure regulator provides a controlled back pressure at the sample capillary which gives admittance of a constant sample flow rate to the burner. This technique without the conventional back pressure regulator is used by J.U.M. Engineering for over 30 years to provide the highest possible sample flow rate stability and lowest maintenance. Our compactly designed flow control module for controlling the fuel and air flow rates via needle valves use high precision pressure regulators. The needle valves are factory adjusted and sealed to ensure the optimization of the burner.



Technical Data

Method of analysis	Heated Flame Ionization Detector (HFID)
Sensitivity	Max. 1ppm CH_4 full scale (100 ppb Idl)
Response time	0.2 seconds
T_{90} time	1.2 seconds
T_{90} time with 8 meters of heated line and probe and filter	less than 8 seconds
Zero drift	<1.5% full scale / 24h
Span drift	<1.5% full scale / 24h
Linearity	Up to 10.000 ppm within 1% FSD
Oxygen synergism	< 1.5% FSD
Measuring ranges (ppm)	0-10,100, 1.000, 10.000, 100.000,
Signal outputs	RS 232, 0-10 VDC and 4-20 mA
Display	6 digit 24 bit direct ppm or mgC/m3 reading. No range change required for up to 3 range decades
Sample pump	approx. 2.5 l/min capacity @ 190°C
Sample filter	disposable, 2µm inorganically bonded micro fiber cartridge
Zero and span adjust	Manual on front panel
FID ignition	Long life high voltage spark igniter
Fuel storage	50 liter low pressure solid hydrogen storage cartridge. Max. 30 bar
Fuel consumption 100% H_2	approx. 20 ml/min
Burner air consumption	170 ml/min: built in burner air supply
Oven temperature	190°C (374°F)
Temperature control	µ-processor PID controller
Power requirements	either 230VAC/50Hz, 600 W or 115VAC/60Hz, 600 W
Ambient temperature	5-43°C (41-110°F)
Dimensions (W x D x H)	445 mm x 220 mm x 350 mm
Weight	approx. 10 kg

J.U.M. reserves the right to make improvements on the product described in this brochure at any time without prior notice. Information provided in this brochure is subject to be changed without notice.

Available Options

AZM 3000	Automatic flame ignition and reignition
RCI0 3000	0-20 mA analog output, galvanically isolated, instead of standard 4-20 mA
RCI4 3000	4-20 mA analog output, galvanically isolated, instead of standard 4-20 mA
TPR 3000	Internal temperature controller for heated sample line, e.g. JUM TJ100

Control panel and low pressure 50-liter solid fuel gas storage cartridge

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