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 a competitively priced, over the shoulder portable and compact heated FID (HFID) total hydrocarbon analyzer for high accuracy, sensitivity and stability.

The Model OVF-3000 uses our long time proven VentDown° hydrogen Flame Ionization Detector (FID). Including the detector and sample filter- and pump, all parts which come in contact with sample are housed in a 180°C heated oven. This prevents the loss of high molecular weight hydrocarbons to ensure true results, fast response, fast set back to zero and very reliable performance in the analysis of low trace level, to high level total carbon concentrations of contaminants in stack emissions, vehicle emissions, process gases, air and other gases.

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

The OVF-3000 uses a new high tech, low pressure solid metal fuel storage system which is kept inside of the hinged cover. The user can safely, legally and easily refill the fuel cartridge himself at low pressures from any hydrogen bottle.

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

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

Features

- ⇨ All components which come in contact with sample are fully heated and micro processor controlled at 180°C
- ⇨ Internal low pressure hydrogen fuel storage system holds enough fuel gas for over 40 to 50 hours of continuous operation. Hydrogen safety; maximum hydrogen filling pressure is only 430 PSI (30 bar)
- ⇨ Reserving Hydrogen as a fuel gas in METAL HYDRID a storage is the guarantee for maximum safety of zero explosion risk.
- ⇨ Designed for continuous operation
- ⇨ Easy to change sample filter in the front panel. No special tools required for filter change
- ⇨ Long life L.V. FID ignition system
- ⇨ New condensation free FID exhaust
- ⇨ Built in burner air generator, no external combustion air source needed
- ⇨ Built-in sample pressure and sample pumps
- ⇨ Automatic flame out alarm with fuel shut off
- ⇨ Fast response within 0.2 seconds
- ⇨ 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
- ⇨ Detection of trace hydrocarbons in purity gases used in the semi conductor industry
- ⇨ LEL monitor of solvent laden air

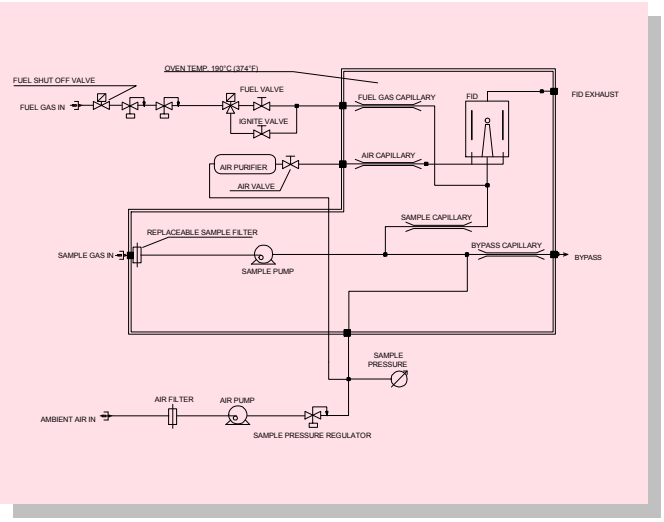
Product Brochure
FID Model OVF-3000, english

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 l.d.l.)
Response time	0.2 seconds
T_{90} time	1.2 seconds
T_{90} time with 8 meters of heated line with 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 @ 180°C
Sample filter	disposable, 2µm inorganically bonded micro fiber cartridge
Zero and span adjust	Manual on front panel
FID ignition	Long life low voltage igniter
Fuel storage	50 liter, low pressure, solid metal hydrid 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 generator, no extra cylinder needed
Oven temperature	180°C
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. 12 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	
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	External temperature controller for heated sample line, e.g. JUM TJ100
ECB 3000	Calibration adapter box to be mounted on heated line inlet or sample inlet. Adjusted for a 1 bar calibration gas pressure

Sample Inlet shown with optional ECB 3000 Calibration Box

J.U.M.® Engineering G.m.b.H.
Manufacturing, R&D, Distribution & Service

Gauss-Str. 5
D-85757 Karlsfeld, Germany
Tel.: 49-(0)8131-50416, Fax: 49-(0)8131-98894
E-mail: info@jum.com, Internet: http://www.jum.com

Represented By