HEATED TOTAL HYDROCARBON ULTRA LOW FLOW SHED ANALYZER **MODEL VE 135/15**

Complies with J2763 and 2722 Test Procedures

The J.U.M. Engineering HFID Model 135 for ultra-low total sample flows is a very economical, time proven and very reliable, rugged 19" rack mount and table top heated total hydrocarbon FID-analyzer for Mini-SHED and Micro-SHED applications for low drift, high accuracy, sensitivity and stability.

All sample wetted components are integrated into the heated chamber. The Model 135 uses our time proven hydrogen Flame Ionization Detector (FID) in a heated oven to prevent the loss of high molecular weight hydrocarbons and to provide very reliable performance in the analysis of trace level of contaminants in emissions, gases, air and other gases.

The disposable heated sample filter is easily accessible from the rear panel. No special tools are required for filter change.

Low cost of ownership. Low fuel gas consumption. The combustion air supply for the FID-detector is built in. No external cylinder for synthetic burner air is needed.

Features

- Low investment cost, low cost of ownership
- All components in contact with sample fully heated and controlled at 190°C to prevent hydrocarbon hang up and cracking
- Built-In air pressure and sample pumps
- Built-in combustion air supply, no extra air bottle needed
- Easy to change sample filter accessible on the rear panel. No special tools required for quick filter changes
- Automatic flame out alarm
- Optional automatic flame ignition and re-ignition
- Low fuel consumption
- Very selective to hydrocarbons

Applications

- Ultra-Low Flow SHED applications for Mini and Micro test chambers
- Any other low or ultra-low flow application, please contact us for flow through amounts

Principle of Operation

The Flame Ionization Detection (FID) method is used to determine the presence of total hydrocarbon concentrations in a gaseous sample stream. 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 tip of the 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.

Our proprietary VPMC sample pressure regulator provides a controlled sample pressure and flow which gives admittance of a constant sample flow rate to the burner. This technique of using our VPMC technique is time proven by J.U.M. Engineering since many years to provide the highest possible sample flow rate stability and lowest maintenance for ultra-low flow pumping systems. 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.

Available Options	
AZM 135	Automatic flame ignition and re-ignition
FOAS 135	Flame out alarm with automatic fuel shut off valve
LTO 135	Measurement of low trace hydrocarbon levels. Requires external, zero grade combustion air supply!
BLVX 135	Designed to be used in conjunktion with the LTO option to use external combustion air from a syntetic air cylinder. Needs to be specified with PO
RCI4 135	4-20 mA analog output, galvanically isolated
TPR 135	External temperature controller for J.U.M. heated sample lines Model TJ 100
Availability of options may not be complete. Changes will not be announced! Please contact us before specifying your purchase order!	

Technical Data	
Method of analysis	Flame Ionization Detector
Sensitivity	Max. 1 ppm CH_4 full scale
Response time	3 seconds @ sample inlet, given by SHED Configuration and sample line lengths
Zero drift	<1.5% full scale / 24h
Span drift	<1.5% full scale / 24h
Linearity	Up to 10.000ppm within 1% FSD
Oxygen synergism	< 2% FSD
Measuring ranges (ppm) .	0-10,100, 1.000, 10.000, 100.000, others on request
Signal outputs	0-10 VDC, 4-20 mA and RS-232 data output
Display	6- digit direct r4eading ppm units w
Toital Sample Flow through	To be user specified between 15 and 30 ml/min capacity @ operating temp.
Sample Filter	2 micron change filter
Zero and Span gas	Switch slectable, inlets on rear panel
Zero and span adjust . . .	Manual on front panel
Fuel consumption 40%H_2/60%He	approx. 90 ml/min @ 1.5 bar (22 psig)
Burner air consumption . .	Built in burner air supply
Oven temperature	190°C (374°F)
Temperature control	µ-processor PID controller
Power requirements	either 230VAC/50Hz, 850 W or 115VAC/60Hz, 850 W
Ambient temperature . . .	5-43°C (41-110°F)
Dimensions (W x D x H) .	19" (483 mm) x 460 mm x 132 mm
Weight	approx. 22 kg (50 lbs)
J.U.M. reserves the right, at any time and without notice, to change specifications presented in this data sheet and assumes no responsibility for the application or use of the devices described herein.	

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Manufacturing, R&D, Distribution & Service

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