



## Hydrocarbon Analyzer EnviFID 900

### Applications

The EnviFID900 is suitable for the measurement of

- maximum concentration at workplaces,
- emissions in accordance with LRV (Luftreinhalte-Verordnung or clean air act) at exhaust air cleaning plants,
- coating machines, varnishing machines, coil coating machines and impregnating machines,
- afterburning plants,
- hydrocarbon emissions both in raw and clean gas.

The EnviFID 900 offers detection of hydrocarbon breakthroughs in exhaust air cleaning plants or chemical purification plants and process monitoring and control of industrial plants.

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- *thousandfold proven technology*
  - *compatibility with BA's 3002 model*
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Further fields of operation lie within testing and research plants.

The EnviFID 900 was designed as 19 inch rack mounted instrument with 4HU.





## Accessories and Service

For the EnviFID 900 we offer extensive accessories in order to optimally adapt the device to the individual measuring task.

### Sampling

- Sample gas withdrawal probes
- Filter systems
- Heated sample line

### Gas supply

- Catalysts
- Air conditioning
- Gas stations

### Case

- Desk case
- Wall mount case

### Service

- Consultation
- Project management
- Maintenance

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### Advantages

- thousandfold proven detector geometry
- automatic flame ignition
- automatic fuel shut-off when flame out occurs
- automatic pump shut-off when flame failure occurs
- low fuel gas consumption
- low operating costs
- built-in temperature controller for the heated sample line
- compatible with BA's 3002 model

## EnviFID 900's Measuring Principle

The EnviFID 900 is a 19 inch rack mounted instrument with 4HU and is designed and constructed for continuous measurement of hydrocarbons in gases. It works according to the principle of flame ionization detection (FID) and converts the hydrocarbon concentration in the measuring gas into an electrical signal. This occurs by means of a hydrogen flame and the supply of hydrocarbon-free air in a burner, on which an electrical field is set. The hydrocarbons in the measuring gas are then cracked causing CH fragments to form. These fragments are oxidized by the oxygen in the combustion air and CHO<sup>+</sup> ions form.

Due to the electrical field, the ions lead to a current that is measured and proportional to the quantity of carbon atoms in the measuring gas. The readings of the measuring values are made by an analog instrument in ppm or mgC, so that a conversion of the measuring values is displayed.

The measuring gas in the heated sensor block is sucked in by the built-in diaphragm pump. A portion of the measuring gas flows into the analysis chamber, the remaining portion is led outward by the bypass capillary.

The regulation of the measuring gas pressure provides a constant pressure at the gas inlet into the analysis chamber. The parts which come into contact with the measuring gas are heated at 200 °C (392 °F), whereby the EnviFID 900 can be used in most industrial processes without condensation problems.

The EnviFID 900 utilizes self-monitoring for both detector flame as well as sample pressure and it uses a measuring gas pump.

# EnviFID 900 Technical Specifications



Measuring components	Hydrocarbons, chlorinated hydrocarbons	
Measuring method	Flame Ionization Detector (FID)	
Measuring ranges (relative to C <sub>3</sub> H <sub>8</sub> )	5 selectable ranges: Standard: 0 ... 10 ppm up to 0 ... 10 vol%	Optional: special measuring range: 0 ... 1 ppm up to 0 ... 1 vol%
Detection limit	≤1.5% of measuring range value	
Linearity	±1% of selected range	
Repeatability	≤1% at constant temperature and pressure	
Zero point drift	≤0.5% of measuring range value/month	
Span drift	≤2.8% of measuring range value/week	
Oxygen synergism	<1.8% based on measurement of 80 ppm C <sub>3</sub> H <sub>8</sub>	
Warm-up time	Approx. 25 minutes	
Response time (90%)	Typically <1.5 seconds	
<b>Sample gas conditions</b>		
Pressure	Atmospheric ±0.05 bar	
Temperature	0 – 230 °C (446 °F)	
Flow	Approx. 1.2 l/min	
Sample gas connection	Compression fitting for 0.24 inches (6 mm) OD stainless steel tube	
<b>Auxiliary gases</b>		
Fuel gas	Hydrogen, 5.0 grade, residual HCs <0.5 ppm, Pressure: 3 bar, consumption during continuous operation: 1.2 l/h; alternatively H <sub>2</sub> /He mixture, consumption: approx. 2.4 l/h	
Calibration gas	Concentration of approx. 80% of range (typically propane) in synthetic air, Pressure: 3 bar, consumption during span calibration: 1.6 l/min	
Combustion air	External supply (free of hydrocarbons), pressure: 3 bar	
Connection	Quick-connect coupling	
Power requirements and consumption	115 or 230 V AC 48 ... 63 Hz; power consumption: max. 500 W typically 200 W without heated sample line	
Weight	Analyzer: 19.8 lbs (9 kg)	
Dimensions (H x W x D)	6.97 x 17.52 x 14.37 inches	
<b>Signal outputs</b>		
Analog outputs	0/4 ... 20 mA output, max. load 500 Ω or 0 ... 10 V, min. load 10 kΩ; optional separate Potential	
Measuring range ID	0 ... 5 V, in 1 V increments	
Digital outputs	Operational status: normally open contact, SPST relay 250 V AC 6 A, Flame, Pressure	
Conformities	CE, EMV, VDE 0701, DIN EN 15267-3 in preparation	

## Our Company

We carry out all repair and maintenance work on Bernath Atomic's Total Hydrocarbon Analyzer from FID 3001 model to EuroFID. Besides that we are also able to change measuring ranges or measured value outputs as well as reparameterizations.

If you would rather like to perform the maintenance of your devices by yourself, we will gladly supply you with the appropriate wearing and/or spare parts.

If you require high availability of your equipment, we offer an individual service on the spot. You just have to arrange an appointment with us!

ErsaTec GmbH was founded in May 2005 and our employees have decades of experience in the area of analytical measurement. Due to this, we are able to provide you with a competent and reliable service.

\* The information in this leaflet does not represent any assured characteristics.

