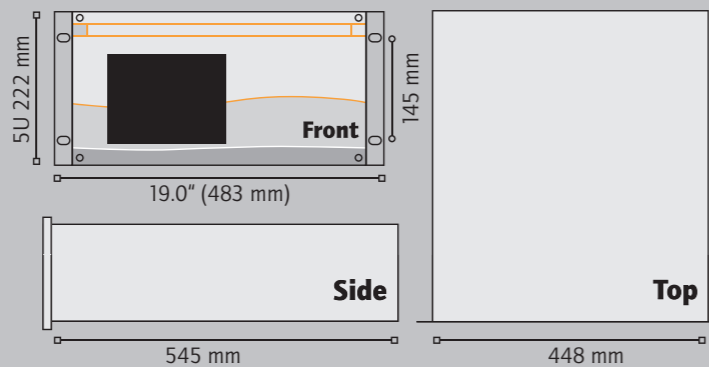


## SPECIFICATIONS FID520

Accuracy	0.5 % at full scale
Drift	1 % over 24 hours
Temperature drift	1 % per degree
Operating temperature	± 20°C without wide variations of temperature
<b>Sampling gas</b>	<b>N<sub>2</sub>, Ar, He, Air, H<sub>2</sub>, O<sub>2</sub> or CO<sub>2</sub></b>
Sample gas connection	1/8" Swagelok OR 1/8" VCR
Sample flow rate	Approximately 3 to 5 l/h
Sample pressure	< 100 mBar
<b>Combustive gas</b>	<b>Synthetic air</b>
Combustive gas connection	1/8" Swagelok OR 1/8" VCR
Combustive gas pressure	Type : <b>FID520</b> : from 4 to 9 Bar Type : <b>FID521</b> : 2 Bar stable
Combustive gas flow rate	300 ml/min
Recommended quality	5.0
<b>Fuel gas</b>	<b>Hydrogen</b>
Fuel gas connection	1/8" Swagelok OR 1/8" VCR
Fuel gas pressure	Type : <b>FID520</b> : from 4 to 9 Bar Type : <b>FID521</b> : 1 Bar stable
Fuel gas flow rate	38 ml/min
Recommended quality	5.0 or 6.0 depending on the application (LQL)
<b>Carrier gas</b>	<b>Nitrogen</b>
Carrier gas connection	1/8" Swagelok OR 1/8" VCR
Carrier gas pressure	7 Bar
Carrier gas flow rate	2 to 6 l/h
Recommended quality	5.0 or 6.0 depending on the application (LQL)
Power supply	220 Vac, 50-60 Hz
Power consumption	500 VA
4-20 mA output	1 for CH <sub>4</sub>   1 for C <sub>2</sub> H <sub>2</sub>   1 for C <sub>2</sub> H <sub>4</sub>   1 for C <sub>2</sub> H <sub>6</sub> 1 for C <sub>3</sub> H <sub>8</sub>   1 for C <sub>3</sub> H <sub>6</sub>   1 for nC <sub>4</sub> H <sub>10</sub> + iC <sub>4</sub> H <sub>10</sub> 1 for 1,3C <sub>4</sub> H <sub>6</sub>
RJ-45 connection	Computerised system maintenance
Output relays	1 General Alarm contact 1 Alarm High contact 1 Alarm High High contact

## Dimensions

Standard rack mount 5U  
Height > 222 mm | Depth > 545 mm | Width > 483 mm



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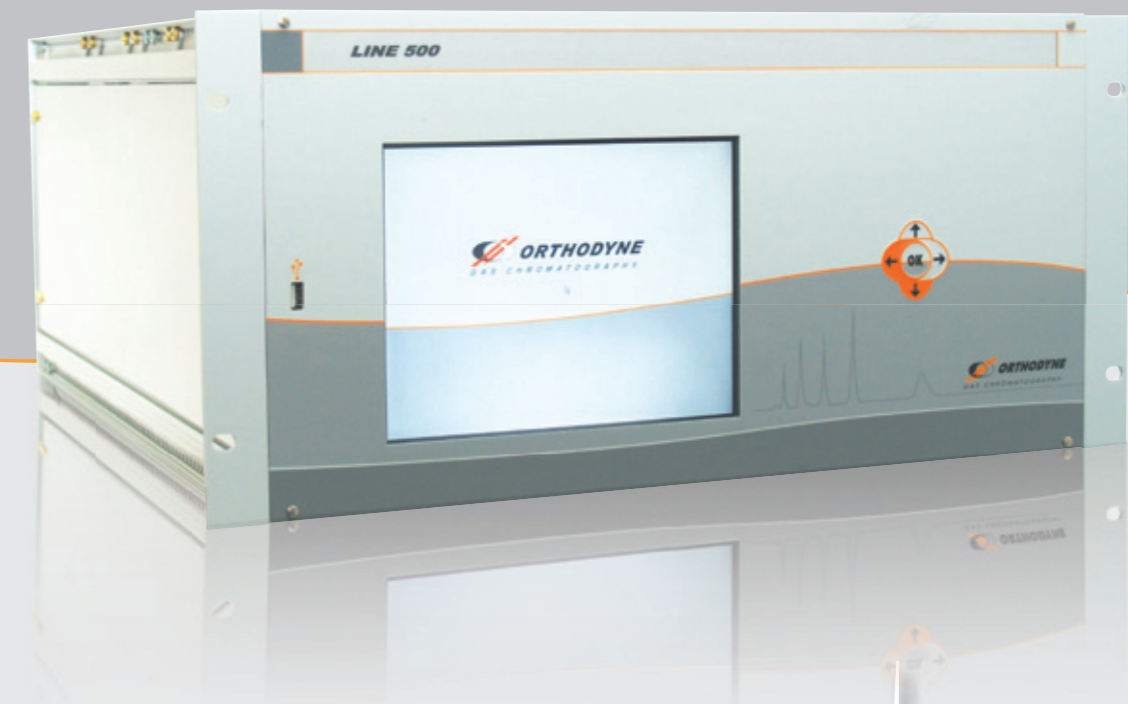


A new generation  
of intelligent detectors

# FID520

Carbotras analyser

Analysis of CH<sub>4</sub>, C<sub>2</sub>H<sub>2</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, C<sub>3</sub>H<sub>8</sub>, C<sub>3</sub>H<sub>6</sub>,  
nC<sub>4</sub>H<sub>10</sub>, iC<sub>4</sub>H<sub>10</sub> and 1,3C<sub>4</sub>H<sub>6</sub>  
in PPB or PPM or % level



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**ORTHODYNE**  
GAS CHROMATOGRAPHY

# FID520

## Carbotras analyser

The FID520 is an analytical system that measures  $CH_4$ ,  $C_2H_2$ ,  $C_2H_4$ ,  $C_2H_6$ ,  $C_3H_8$ ,  $C_3H_6$ ,  $nC_4H_{10}$ ,  $iC_4H_{10}$  and  $1,3C_4H_6$  impurities in ppm level in various gases, such as Oxygen, Air, Carbon Dioxide, Nitrogen, Argon, Helium and Hydrogen.

### PRINCIPLE

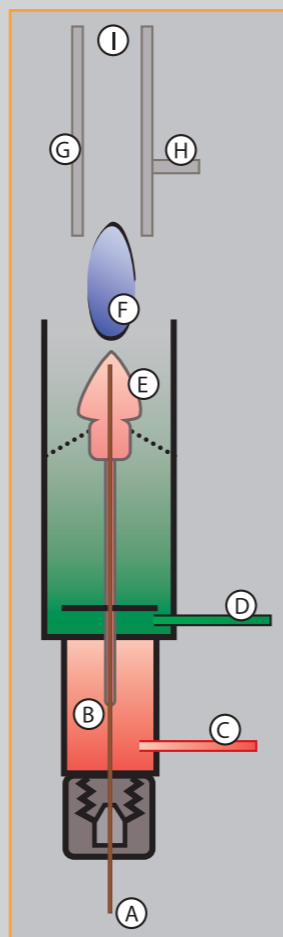
The FID520 module is composed of a flame ionization detector placed in a temperature regulated chamber and coupled with GC technology.

This analyser has been designed for stand-alone operation. Easy configuration and quick start-up make this new system ideal for process gas analysis.

In addition to its user-friendly interface, this analyser has its own chromatographic software that allows the concentration of  $CH_4$ ,  $C_2H_2$ ,  $C_2H_4$ ,  $C_2H_6$ ,  $C_3H_8$ ,  $C_3H_6$ ,  $nC_4H_{10}$ ,  $iC_4H_{10}$  and  $1,3C_4H_6$  to be displayed directly.

The equipment status, together with any programmable alarm levels, are signalled to the exterior by output relays.

Eight analog 4-20 mA outputs provide information about  $CH_4$ ,  $C_2H_2$ ,  $C_2H_4$ ,  $C_2H_6$ ,  $C_3H_8$ ,  $C_3H_6$ ,  $nC_4H_{10}$  +  $iC_4H_{10}$  and  $1,3C_4H_6$  concentration levels.



### FID DETECTOR EXPLANATION

The above diagram shows the general construction of a FID.

Organic compounds from the separation column are injected into the detector housing where they are mixed with Hydrogen and Synthetic Air before entering the detector nozzle where the mixture is burned.

During this process, organic compounds are broken down into carbon fragments and acquire a positive charge (i.e., become ionized) at the surface of the anode.

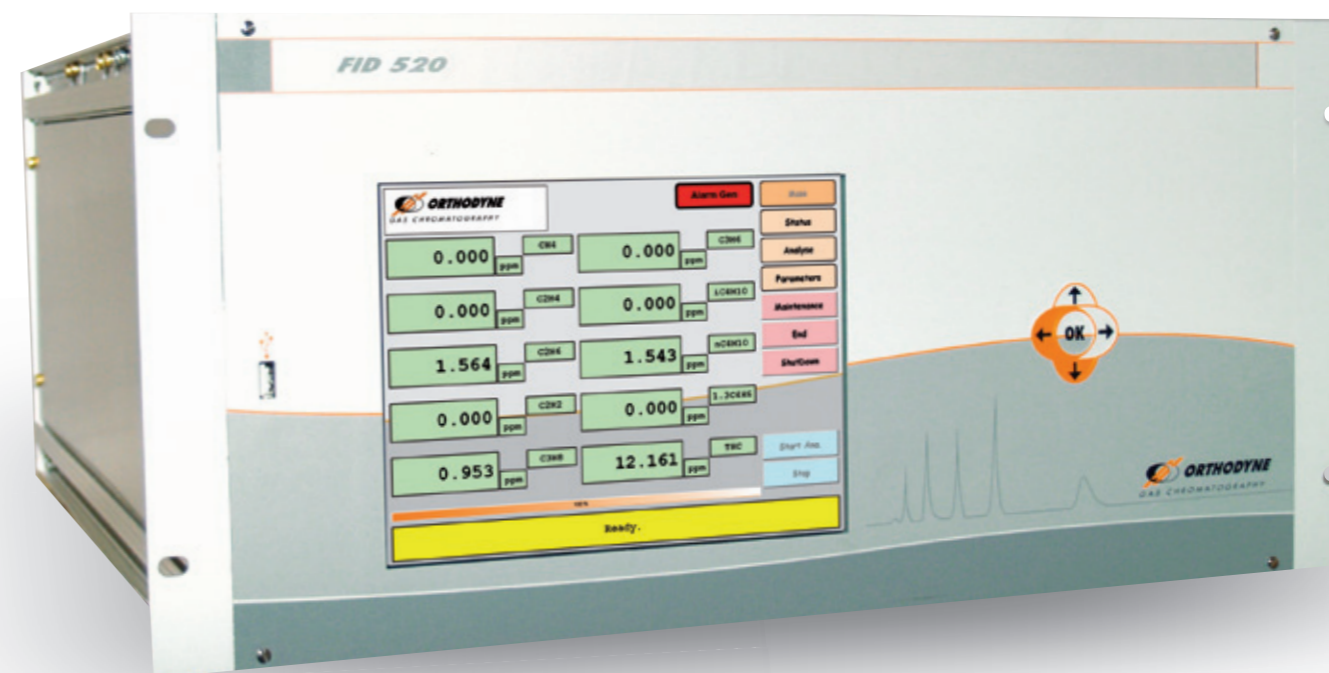
Carbon fragments are detected by the collector.

The signal is then amplified and sent to the data processing system.

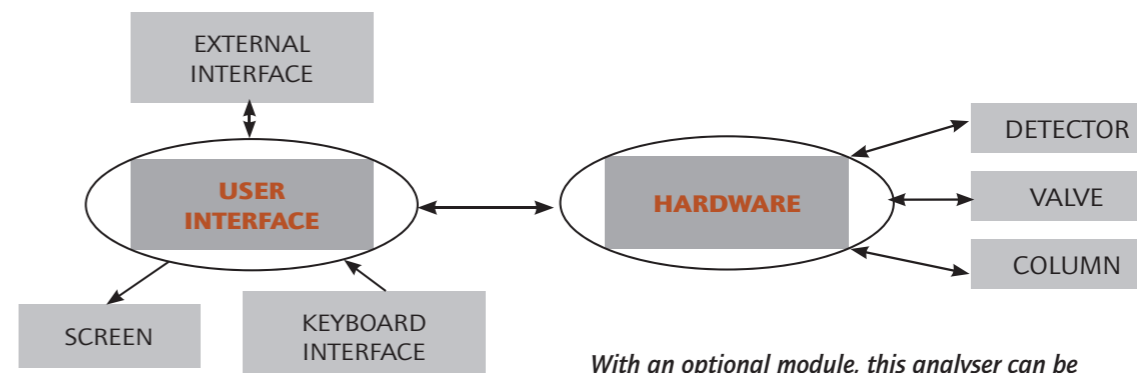
- A > Sample inlet
- B > Mixture between the sample and the Hydrogen
- C > Hydrogen inlet
- D > Synthetic Air inlet
- E > Nozzle
- F > Flame tip
- G > Collector
- H > Anode & Ignitor
- I > Flame guard

### FEATURES

- < 10 ppb resolution guaranteed. (Quantification level limit)
- User-friendly software.
- GC technology used for complete separation between  $CH_4$ ,  $C_2H_2$ ,  $C_2H_4$ ,  $C_2H_6$ ,  $C_3H_8$ ,  $C_3H_6$ ,  $nC_4H_{10}$ ,  $iC_4H_{10}$ ,  $1,3C_4H_6$  and the balance gas.
- Electronic flame-out guard circuit.
- Automatic fuel shut off system.
- Adjustable alarm and oven settings.
- Fast response.
- Possibility of auto-calibration programming – ideal for unmanned plant conditions.
- Easy access to pressure and flow control devices.
- CE marked.



### System overview



With an optional module, this analyser can be controlled remotely over Ethernet or the Internet.

### Type of configuration

- **FID520** : Plug and Play solution with a Mass Pressure Controller on the carrier gas and Mass Flow Controllers on both feeding gases.
- **FID521** : Solution with a Mass Pressure Controller on the carrier gas and a capillary system on both feeding gases.

### Applications

- Air separation plants
- Cryogenic truck loading station
- Specialty gas laboratories
- Process control
- Steel industry