

**CO-202** is a new totally automatic and compact instrument able to realise a carbonate analysis in less than three minutes, being eliminated the uncertainties, improving the reliability and increasing the facility and comfort in the execution of the analysis according to norm\*

Based on the principle of decomposition by acid attack, CO-202 transforms carbonates and bicarbonates of the sample in CO<sub>2</sub> quantifying them later with an infrared cell.

Triple rank of measurement controlled by the computer and the mass flow controller that allows us the accomplishment of samples from very low contents (Slurrys), until limestone samples.

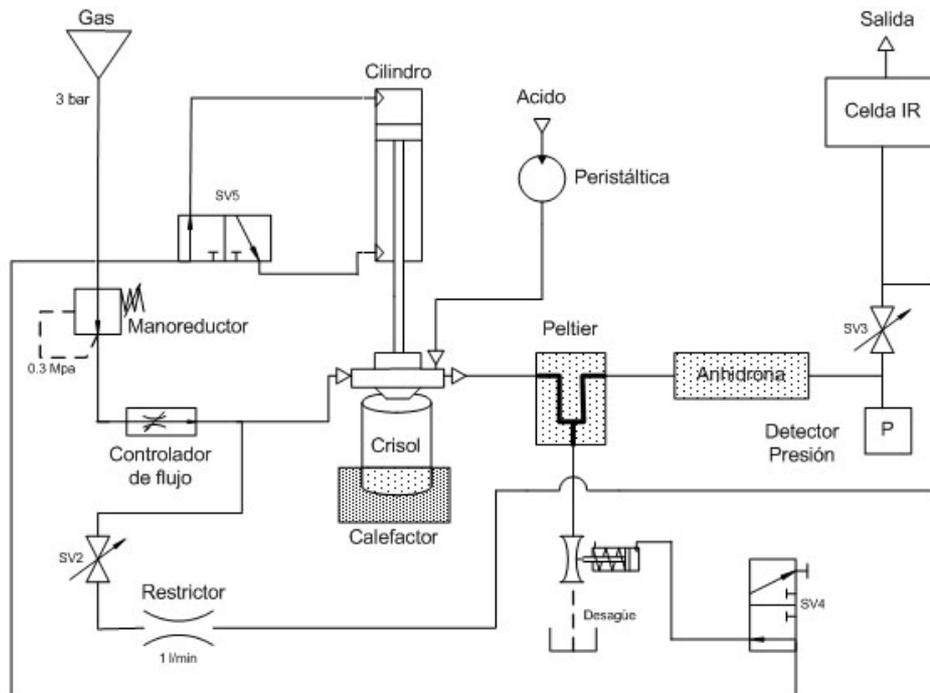
***Analysis of solid and liquid samples without any previous preparation of the sample.***



The Analyzer can be provided - according to the customer's order -:

- Controlled by an industrial PC with touch screen fullcolor of 8", inserted in the frontal panel.
- Controlled by an external PC.

## Simplified diagram of the CO-202 analyzer



Control, with great comfort, all the operations of the CO-202 from its software: Execution of the analysis sequence, data introduction, calibration, linealización of the cell, management of all results, control in real time from your monitor all process parameters and a general state of the analyzer in hi-resolution graphs, wich facilitates the tasks of diagnosis and repair.

\*Normas: ASTM D1796 – ISO 925 – UNE 80-217-91.



## User's screen of the CO-202 control program

**Analizador de CO2**

Datos Configuración Calibración Chequeo de dispositivos Temperaturas Help Salir

Parámetro	Valor actual	Valor mínimo	Valor máximo
<input checked="" type="checkbox"/> Voltaje de La Celda IR	2,417 voltios	0,8 Voltios	2,5 Voltios
<input checked="" type="checkbox"/> Temperatura del Crisol	135 oC	70.0 oC	160.0 oC
<input checked="" type="checkbox"/> Temperatura de La Celda	41,5 oC	35.0 oC	50.0 oC
<input checked="" type="checkbox"/> Temperatura Peltier	7,5 oC	2.0 oC	8.0 oC
<input checked="" type="checkbox"/> Flujo de Análisis	1	0.5 l/min	2.0 l/min

Analizar Muestra

Teclado en pantalla

Archivo Teclado Configuración Ayuda

esc F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 psc slk brk

1 2 3 4 5 6 7 8 9 0 ' i bkspp ins hm pup nk / \* -

tab q w e r t y u i o p + ç del end pdn 7 8 9 +

lock a s d f g h j k l ñ ent 4 5 6 +

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Inicio Teclado en pantalla Analizador de CO2 8:01

## Analysis results screen

**Secuencia de Análisis**

Análisis finalizado

Muestra: ca7 LBase = 2,528 V Comparador = 2,477 V

Peso = 0,1095 gr. Pico = 1,310 V V celda = 2,485 V

13/10/2008

V, voltios

— Voltaje de la Celda — Límite de saturación

Carbonatos = 9537,281 m moles

Teclado en pantalla

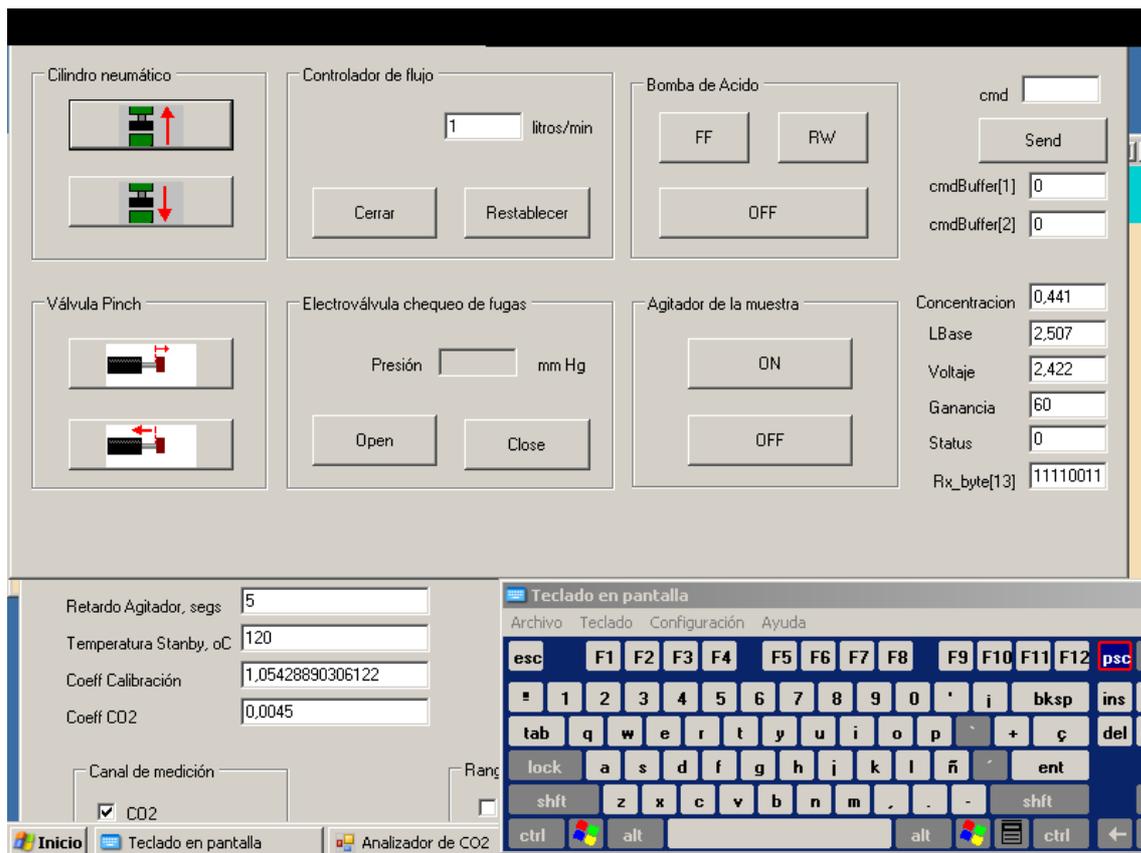
Archivo Teclado Configuración Ayuda

esc F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12 psc slk brk pup pdn

1 2 3 4 5 6 7 8 9 0 ' i bkspp nk / \* - ins

Inicio 17:15

## Devices manual controls screen



### Stages of the Analysis:

- |   |   |   |
|---|---|---|
| <p>1 - Decomposition of the sample</p> <ol style="list-style-type: none"> <li>1. Acid dosage.</li> <li>2. Heating until boiling temperature..</li> <li>3. Agitation.</li> </ol> | <p>2 - Acid steam condensation and elimination of humidity</p> <ol style="list-style-type: none"> <li>1. Peltier cooler.</li> <li>2. Anhidrona Filter.</li> </ol> | <p>3 - Drag and obtaining of results</p> <ol style="list-style-type: none"> <li>1. Flow controller.</li> <li>2. Infrared cell.</li> </ol> |
|---|---|---|

### ENGINEERING SPECIFICATIONS OF THE CO-202 ANALYZER

**Measurement rank:**  
From 0 to 44% (máx.150 mg of CO2)

**Triple rank of measurement:** From 0 to 0.5% of CO2  
From 0.5% to 5% of CO2  
From 5% to 44% of CO2

**Precision:**  
0.1 % for concentrations < 1% of CO2  
1.5 % for concentrations >= 1% de CO2

**Sample weight:**  
From 0.1 to 5 gr.

**Sensitivity:** 0.01 %

**Results:** CO2, CO3Ca, mmol/L

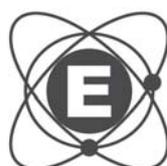
**Analysis time:**  
Programmable from 60 seconds.

**Reagents:**  
Anhydrona, H<sub>2</sub>SO<sub>4</sub>

**Work temperature:**  
From 10 °C to 35 °C

**Power supply:**  
220 VAC, 50 Hz 1 kW

**Drag gas:**  
Instrumentation air or Nitrogen 99.99 40 psi (2.8 kg)



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