



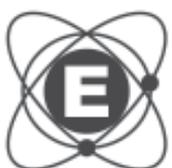
CO-211



Continuous Carbonates Analyzer

The Equilab CO-211 is an instrument specially designed to analyze the content of inorganic carbon in continuous in a carbonate solution in water.

Carbonates contained in the solution, dosed continuously and consistently, are attacked with an acid solution in a reactor, the acid decompose carbonates, releasing CO₂ which is drawn by a stream of air trough a series of peltier and chemical driers to condition the sample before being quantified in an infrared cell selective (NIR).



Equilab



"Una manera de hacer Europa"

To perform the analysis, the equipment has the following subsystems:



- Sampling
- Reactor
- Exchanger liquid to gas phase
- Sample dryer
- CO2 measuring equipment
- Gases circuit
- System controller

Currently the **CO-211** works with a flow rate of about 5ml / min, which is considered as optimal of carbonate content (between 0 and 200mmol/l) of the sample.

CO-211 has a 700cc reactor where the reaction of carbonate with acid sample that keeps the sample in constant agitation and to a constant temperature.

All gases generated in the reactor together with the entrained air and vapors are conducted to the heat exchanger where the vapors condense, letting only air with CO₂. From there the gases pass through a new stage of condensation and remove all moisture through an absorbing reagent to be absolutely certain that has removed any possible trace of moisture, before being delivered to the measuring equipment.

The measurement takes place in a fully autonomous subsystem consists in a selective solid state IR cell to CO₂ and a microprocessor that controls and regulates the entire system including the cell gain, the pulse frequency of the IR emitter, the mathematical algorithm necessary so that their response will be linear, the algorithm that transforms CO₂ concentrations that required the engineering units, calibration values and other parameters required for proper operation. This process is isolated to avoid thermal environmental influences.

The gas circuit is controlled by a flow controller that maintains a constant flow.

All CO-211 processes are absolutely controlled by a powerful industrial PLC.

**for more information,
please contact us at**

 **91 661 00 22**

This project was made possible thanks to the invaluable collaboration of the Spanish Ministry of Industry, Trade and Tourism through its support of experimental development project DEX-560620-2008-52 to the design and manufacture of a Carbonate Analyzer.



Equilab, S.A.

Avda. Camino de lo Cortao, 21 - Nave 6
28703 San Sebastián de los Reyes - Madrid
Tlf.: +34 91 661 00 22 - Fax: +34 91 661 81 46
e-mail: equilab@equilab.es