MOG-701

Analyzer of CO_2 in ambient air and seawater.

MOG-701

To Measure CO_2 in the Seawater.

The marine is as important as the forest as the sink of CO_2 in the ambient air. The marine surface is about 70% of the total of the earth. It is very important to know the correct CO_2 exchange volume in the marine and the ambient, to the prediction of change of CO_2 concentration in the ambient air change in 21st century. However, data of CO_2 in the seawater observed densely by both the time scale and the space scale is very few now.

Analyzer of CO_2 in ambient air and seawater, MOG-701, is a continuous monitoring system to measure CO_2 in the ambient air and the CO_2 partial pressure in the seawater by high speed and high accuracy, by the combination of the flow-through system tandem type gas-liquid Equilibrator (Eq-701 patent No. :3530863) and the non-disperse infrared absorption (NDIR) method. MOG-701 is a new compact type with the communication unction with GPS.

Monitoring system of CO_2 in ambient air and seawater is used in one project, "Study on CO_2 absorption at the surface phase of north pacific ocean" by (Independent Administrative Agency) National Institute for Environmental Studies from 1995. For this monitoring, this system is installed ion a big vessels like as container liner or car carrier, of regular lines. In this project, higher frequent and more high accurate data of CO_2 in the ambient air and CO2 partial pressure in the seawater are gained, and this project is continued.

A study, "2003, pCO_2 - System Inter-comparison experiment" that analyze pCO_2 data of 7 countries and 11 institutes by (Independent Administrative Agency) National Institute for Environmental Studies was widely acclaimed by worldwide investigators.

High Accurate Continuous Monitoring of pCO_2.

High accurate continuous monitoring of pCO_2 in the seawater is possible by using the flow-through system tandem type gas-liquid equiliblator (option).

The temperature controlled detector unit.

The high accurate and stable measurement of CO_2 is achieved by the temperature controlled analysis unit.

Monitoring by Network PC.

It is possible to monitor the real time data and the graph of data change with time by network PC connected by LAN cable.

High Accurate Measuring by the Feedback System.

Higher accurate measuring is possible by the feedback system (option) that supplies bubbling gas adjusted to measured concentration to the gas-liquid Equilibrator.

Current Position and UTC (universal time coordinated) by GPS.

By GPS server (option), it is possible to get the current position and to adjust time of each devices to UTC.

Exchangeable of 5 kinds of Standard Gas line.

It's possible to connect standard gas up to 5 kinds at maximum. And the accurate calibration is possible by exchange standard gas automatically at anytime you select.

Flow-Through Tandem Type Gas-Liquid Equiliblator*.

The gas-liquid Equilibrator is a device that mixes enormous amounts of seawater and air to reach equivalated condition in that CO_2 partial pressure in the air becomes same with one in the seawater.

In Flow-Through Tandem Type Gas-Liquid Equilibrator, the total gas pressure is kept to the ambient air pressure at the field, without seawater temperature change, and the gas-liquid equivalated condition is achieved at once. And more, the error of the result is less than 1 ppm.

By this device, the ambient air and the seawater sample (equivalated gas) can be measured in the same dehumidification line / detector (NDIR) by flow -through method. (refer to a figure if the system.)

* joint patent with (Independent Administrative Institution) National Institute for Environmental Studies and Kimoto electronic Co., Ltd..

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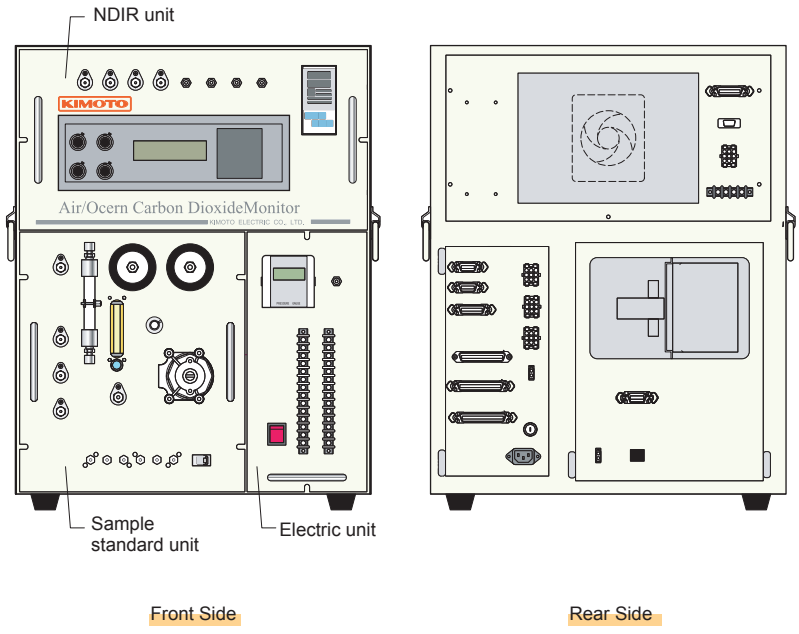
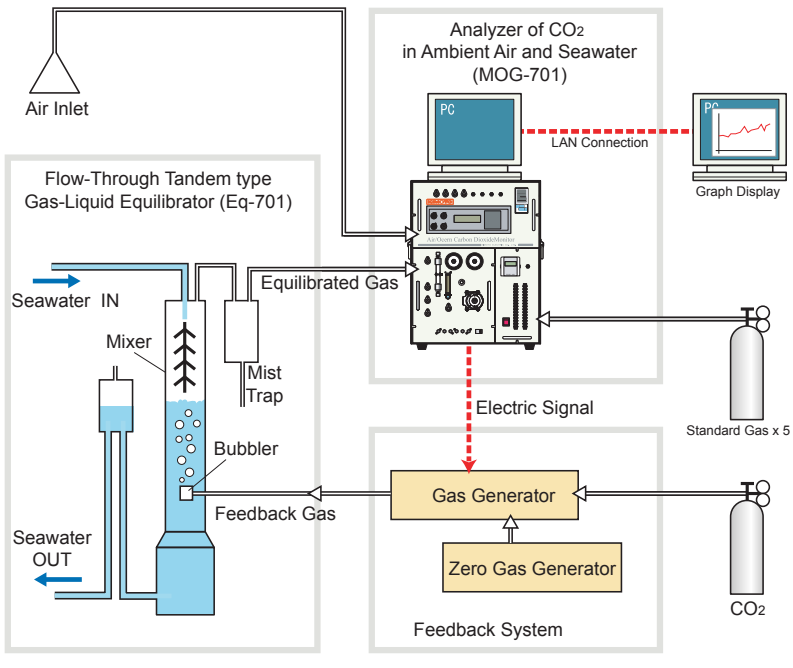


Front Side

Rear Side



Specifications

- **Name**
  Analyzer of CO_2 in ambient air and seawater.
- **Model**
  MOG-701.
- **Measuring Item**
  CO_2 in ambient air and seawater.
- **Principle**
  NDIR with Flow-Through procedure
- **Measuring Range**
  0 - 1000 micro mol/mol
- **Minimum detectability**
  0.1 micro mol/mol
- **Repeatability**
  +/- 0.3 micro mol/mol
- **Responsibility (standard gas)**
  less than 3 min.
  (99.5% of 0 - 370 micro mol/mol)
  less than 3 min.
  (99.5% of 370 - 0 micro mol/mol)
- **Calibration**
  5 points calibration by standard gas.
- **Data Storage**
  CSV, 2 files/day,
  (10 seconds data, 1 min. data).
- **Power**
  AC 100 V 50/60 Hz, 500 VA
- **Rack Material**
  high-impact plastic
- **Size**
  about W 500xD600xH 650 mm
  (except PC)
- **Weight**
  About 70 kg (except PC)

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Note) Specifications are subject to change without the notice for the improvement.

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