Measurement Products | Measurement made easy

Continuous Emission Monitoring for Marine
We are on your wavelength

ABB's industry proven photometric analyzer modules are covering all the wavelengths for a precision measurement of CO_2, NOx and SOx according to the International Maritime Organization's requirements.
Advance Optima gas analyzers are the choice if it comes to emission monitoring and combustion optimization.

Background

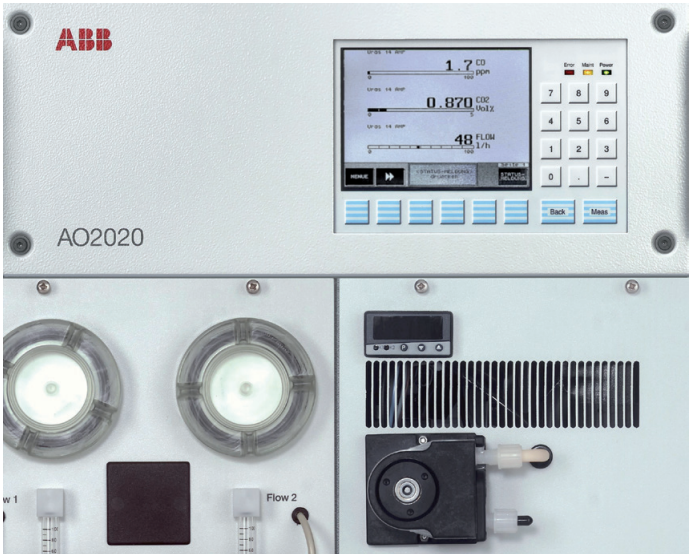
The legislation set out by International Maritime Organization (IMO) is coming into force starting January 2015 for SOx control and starting 2016 for NOx.
Ship yards, ship owners and marine scrubber manufactures need to equip vessels with continuous gas analyzers for Continuous Emission Monitoring.

Oceangoing ships including:
- Container ships
- Tankers
- Rigs
- Cruise ships

are major contributors to increase global air pollution and exhaust gases emitted from their diesel engines. This have been recognized by International Maritime Organization to be a serious health threat.

Marine vessel engines are under observation and recent norms set by IMO clearly calls for monitoring of exhaust emission constituents from Heavy Fuel Oil (HFO):
- Oxides of nitrogen (NOx)
- Sulfur oxides (SOx), along with carbon dioxide (CO_2)

The IMO has identified rules to ensure SOx control emissions monitoring worldwide; initially (2015-2020) these rules are planned to apply for ships seagoing in the Environmental Control Areas (ECAs); at a later stage the same rules are extended to all oceans areas. The NOx Technical Code (NTC) 2008 state the conditions and processes for NOx emission control and foresees continuous emission monitoring ("direct measurement") as method for ensuring NOx emissions compliance, starting from January 1st 2016.



Measurement of SOx/CO_2

The continuous gas analyzer AO2000 Uras26 is based on the Non Dispersive IR (NDIR) technology. NDIR is a referenced and recognized for monitoring SO_2/CO_2 ratio for IMO. The NDIR technology allows for selective measurement of SO_2 and CO_2. ABB's Advance Optima series grant advanced capabilities and calculation of SO_2 (ppm)/CO_2 (Vol. %) ratio, as specified on the MEPC 184 (59). When burning fuels with sulfur content higher than 0.1 Vol. % in ECAs, ships must abate SO_2 and keep SO_2/CO_2 ratio under control at the ECGS (Exhaust Gas Cleaning System).

Measurement of NOx

The continuous gas analyzer AO2000 Limas11UV can be easily and successfully used for direct measurement of NO and NO_2 at the catalytic reactor or directly at the stack. UV based technology doesn't require ozone generators, nor NO/NO_2 catalytic conversion units and allows for a direct and separate measurement of both nitrogen oxides with high repeatability and stability. The Non Dispersive UV technology has been specifically studied by ABB for NO and NO_2 analysis and offers operators a simplified approach, is easy to be used and requires no auxiliary accessories.

Direct measurement of NOx allows ships to operate engines with the highest flexibility, without any need for time consuming engine re-certifications and with no restrictions on OEM parts.

Measurement of O_2

The continuous gas analyzer AO2000 Magnos206 is specifically designed for monitoring O_2. Magnos206 can be used for example to monitor oxygen in excess at the engine outlet exhaust or before SOx scrubbing. It also helps to find and maintain engine combustion efficiency at the desired set-point. ABB's Magnos206 is based on paramagnetic effect and is therefore an IMO referenced analytical technique for oxygen measurements.

The modular gas analyzers Advance Optima combine advanced technologies with more than 75 years of experience in process and environmental gas analysis. Advance Optima is the innovative solution for the demands of today and the challenges of tomorrow.
ABB has the right gas analyzers portfolio to allow oceangoing vessels to stay compliant to upcoming legislations and optimize energy and fuel consumptions.

ABB´s Advance Optima solution can be integrated in a single cabinet, to be installed close to the measuring point.

In addition all Advance Optima solutions can be interfaced with the latest ABB Marine Advisory Tools such as EMMA and OCTOPUS, for an optimized visualization and a real-time actions.
We are on your wavelength.

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