

MARPOL ANNEX VI Compliance Using a Portable Emissions Analyzer



Application Note # IA-14-0701

Marine vessels can emit air pollution such as CO, CO₂, NO_x (NO+NO₂), and SO₂ from their diesel engines and onboard incinerators. MARPOL Annex VI and the technical code for control of emissions of nitrogen oxides (NO_x Technical Code) issued by IMO are internationally recognized regulations for the prevention of air pollution and emissions from marine vessels. Ships over 400 gross tons are also required to have an International Air Pollution Prevention (IAPP) certificate which can be obtained by confirming compliance with MARPOL Annex VI.

Compliance to MARPOL Annex VI and the NO_x Technical Code can be achieved by using a portable emissions analyzer to measure NO_x and other relevant pollutant gases emitted from the marine engines. Ships are also subject to initial and periodical emissions surveys as well as unscheduled inspections during the validity period of the IAPP certificate where the emitted air pollution levels must be proven to be in compliance. If emissions levels exceed allowable limits, then required tuning and adjustments to the engine must be performed immediately with a new set of emissions measurements to be taken.



With newer ships that already fall under Tier II that took effect in 2011 or Tier III that will start in 2016, pollution control methods such as catalysts, scrubbers and SCR systems will be required more often to reduce emissions and achieve compliance. A portable emissions analyzer can be used not only to measure the final emissions downstream of the emissions reduction equipment, but it can also help optimize the performance and quantify the effectiveness of each pollution control unit.

Instrumentation Solution:

The E Instruments E8500-MK Portable Emissions Analyzer Marine Kit can provide reliable and accurate measurements of O₂, CO, CO₂, True NO_x (NO+NO₂), SO₂, and C_xH_y hydrocarbons to help ships achieve and confirm compliance with MARPOL Annex VI and the NO_x Technical Code and obtain IAPP certification. The E8500 marine kit also includes a built-in thermoelectric chiller with automatic condensate removal and a real-time software program with Bluetooth wireless communications.



E8500-MK