

NEWS RELEASE

For immediate use

Ammonia is the New Black

An advanced solution for accurate measurement of ammonia in addition to oxides of nitrogen.

New regulations in Europe and the USA demand that on road (truck) and off road (construction equipment) heavy duty diesel engines reduce NO_x and PM₁₀ by 20% to 50% depending on vehicle type. To achieve these reductions the engine manufacturers have found that “after treatment” is the only effective solution.

“After Treatment” means treating the exhaust with urea dosing over a selective reduction catalyst (SCR). This has then led to a new type of exhaust measurement so that the set up can be analysed for effectiveness. Ammonia is the by product of urea dosing and is a pollutant in its own right. NH₃ is therefore required to be measured in the post treatment stack. Other requirements are continuous real time measurement of NO, NO₂, NO_x, CH₄ and the usual CO, CO₂ and O₂. Even gas turbine based power stations, which are known to produce very low NO_x emissions, are now being fitted with deNO_x processes based on urea injection over SCR. There are also new US EPA regulations that stipulate a NO_x reduction from diesel locomotive and diesel marine applications from 2012 such that SCR will also be required.

Responding to these developments Signal Group have designed a chemiluminescence based analyser system for the continuous measurement of NH₃, NO₂, NO_x and NO. The basis of the analytical technique is the use of two converters. One converts NH₃ and the other NO₂ into NO so that it may be measured by the chemiluminescent detector. There is then a third channel with no converter measuring the NO content in the sample directly. These measurements simultaneously allow the values for NO, NO₂, NH₃ to be derived.

The main advantage of this technique over other methods generally used for measuring ammonia is that the sample can be measured hot and without needing to be cooled and dried. Ammonia, and indeed NO₂, are highly soluble in water and so cooling of the sample tends to result in reduced values as the sample dissolves in the water condensate. Being able to measure the sample hot allows it to be measured in a similar state to that when it was emitted, giving a truly representative measurement of the gases at the point the sample is taken.

This represents an accurate and cost effective way of measuring a total of four pollutants in just one analyser which has not been available before. This combined with the innovative Series IV chassis provides a superior equipment for any application including air quality monitoring. For further information see the website at www.signal-group.com

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