Ensure Reliable, Continuous NO\textsubscript{x} Emissions Monitoring with a Laser-Based Analyzer Solution

**Background**
Nitrogen Oxide (NO\textsubscript{x}) measurement is an indicator of process quality and plays a significant role in continuous emissions monitoring applications and compliance with environmental regulations. As a major pollutant, NO\textsubscript{x} emissions require increasingly strict, continuous measurement reporting with high sensitivity and accuracy. There is a growing need for reliable measurements with a low cost of ownership.

**What’s Your Challenge?**
Operators are continually aiming to improve efficiency of operation and meet increasingly strict regulatory compliance guidelines.

Traditional technologies for NO\textsubscript{x}, measurement require high levels of consumables and complex sample treatment. Operators are challenged to find robust measurement solutions that offer high performance with minimal maintenance and calibration requirements.

Often with a large installed base of aging analyzers, operators need technology compatible with existing plant infrastructure.

**What’s Your Opportunity?**
Rosemount’s hybrid Quantum Cascade Laser (QCL) and Tunable Diode Laser (TDL) technology has been optimized to the specific wavelengths required to target NO\textsubscript{x}, emissions measurement. As an upgrade to existing technologies or end of life replacement, Rosemount™ analyzers can be easily integrated into existing infrastructure, offering superior performance and reliability. In addition, plug and play technology and minimal service needs reduces analyzer downtime and enhances plant efficiency.

**QCL Benefits for Combustion Flue Gas Monitoring**
- High-sensitivity and high-accuracy monitoring to ensure operators meet regulatory requirements
- Direct and independent measurement of NO and NO\textsubscript{2} using fundamental principles of direct absorption spectroscopy
- No need for NO\textsubscript{x} convertors or ozone generators as part of sample pre-treatment
- Reduced complexity results in higher reliability and analyzer availability through minimized maintenance
- Real-time reporting provides critical insight into process performance, enabling operators to monitor plant operation and realize true savings
- Inherently stable spectroscopic technique means outstanding reliability and stability
- Patented laser chirp technique enables detection of individual gas species, free from cross interference effects of other gas stream components
- Fast, easy installation, commissioning and upgrades thanks to rugged, modular design and solid-state components
- Compatible with existing plant infrastructure to minimize disruption or additional expense when replacing legacy analyzers
- Multi-component and simultaneous component analysis within a single analyzer reduces the need for multiple analyzers

**What if you could...**
- Reduce need for consumables?
- Reduce maintenance requirements?
- Decrease frequency of calibration?
- Increase analyzer availability for your operation?
Recommended Technology

Rosemount™ CT4400 Continuous Gas Analyzer

- Standardized spectroscopic solutions available to meet NO, measurement needs
- Additional gases CO, CO₂, O₂ and SO₂ are also available (dependent on selected configuration)
- Standard 19” rack enclosure. Available as a half-rack (illustrated) and full 19” rack option depending on measurements required
- Extractive, cold/dry solution

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(1) Repeatability ±1% of reading or the Limit of Detection (LOD), whichever is greater.
(2) Non standard NO and NO₂ ranges available on request.

Features & Benefits

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