

# Rosemount™ X-STREAM Enhanced XECLD Continuous Gas Analyzer

Proven chemiluminescence technology for reliable and cost-effective NO<sub>x</sub> measurement



## Reliable Performance at Excellent Value

Designed for optimum reliability and carefree maintenance, the Rosemount XECLD Continuous Gas Analyzer utilizes a thermoelectrically-cooled, solid-state chemiluminescence detector assembly to measure low concentration of nitrogen oxides (NO/NO<sub>2</sub>/NO<sub>x</sub>). This ensures highly stable measurement performance and a longer operating life. In addition, the analyzer eliminates vacuum pumps often used in chemiluminescence instruments, reducing a source of vibration which can compromise equipment integrity and reliability, or add maintenance requirements.

- A versatile and cost-effective solution for continuous NO<sub>x</sub> emissions monitoring in industrial combustion applications, vehicle emissions and engine testing, as well as gas purity measurements in medical, industrial and food and beverage applications.
- Fast response time of less than two seconds and widest user-selectable NO<sub>x</sub> measurement ranges on the market—from low 0 - 5 parts-per-million (ppm) up to 10,000 ppm.

## Features and Benefits

- Remote and secure analyzer connectivity via integrated web interface simplifies operation, configuration, audit checks, and access to performance diagnostics
- Intuitive local operator interface allows direct operation or programming without the need for handheld communicators or personal computers
- Automated calibration and validation routines along with parameter limit alarms ensure reliable measurement performance
- Atmospheric pressure operation eliminates the need for vacuum pumps and their maintenance requirements, increasing reliability and reducing ownership costs
- Energy-efficient corona discharge ozone generation delivers full performance up to 10,000 ppm without pure oxygen supply requirements

For more information visit [Emerson.com/RosemountGasAnalysis](https://www.emerson.com/RosemountGasAnalysis) or contact your local Emerson Sales Representative



Rosemount next-generation, solid-state chemiluminescence NO<sub>x</sub> analyzer is designed around the U.S. EPA Method 7E procedure and the European Standard EN 14792, delivering value and peace of mind.

Rosemount XECLD NO<sub>x</sub> Analyzer combines the time-proven sensitivity and stability of the original CLD analyzer with the powerful, digital communication architecture of the Rosemount X-STREAM *Enhanced* gas analyzer series to deliver fast and accurate measurement of NO/NO<sub>2</sub>/NO<sub>x</sub>.



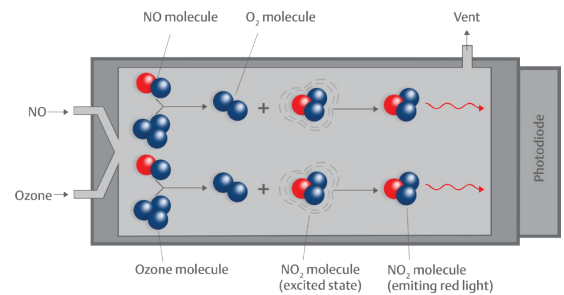
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## Continuous NO/NO<sub>2</sub>/NO<sub>x</sub> Measurement

### Measurement principle

Pioneered by Emerson's Beckman Instruments, chemiluminescence detection technology still reigns today as the industry's standard method for measuring concentrations of nitrogen oxides.

- Chemiluminescence is the emission of light as a direct result of a chemical reaction of nitric oxide (NO) with ozone.
- This reaction yields nitrogen dioxide (NO<sub>2</sub>) in an excited state.
- Relaxation from the excited state produces a distinctive light that is measured using a solid-state photodiode and is directly proportional to the amount of NO concentration present in the gas sample.



The chemiluminescence reaction between ozone and nitric oxide (NO) is used to determine the presence of oxides of nitrogen (NO<sub>x</sub>) in a sample gas.

### Performance specifications\*

<b>Detection limit (4 σ) <sup>(1)(2)</sup></b>	≤ 1%
<b>Linearity <sup>(1)(2)</sup></b>	≤ 1%
<b>Zero point drift <sup>(1)(2)</sup></b>	≤ 0.5% per 24 h
<b>Span (sensitivity) drift <sup>(1)(2)</sup></b>	≤ 1% per 24 h
<b>Repeatability <sup>(1)(2)</sup></b>	≤ 0.5%
<b>Response time (t<sub>90</sub>) <sup>(3)</sup></b>	≤ 2 s (≤ 4 s for range < 25 ppm)
<b>Sample flow rate</b>	0.5 - 1.0 L/min
<b>Inlet gas pressure</b>	8.7 to 21.8 psig (0.6 to 1.5 BarG)
<b>Permissible ambient temperature</b>	41 to 104 °F (5 to 40 °C)
<b>Warm-up time</b>	60 min
<b>Converter efficiency</b>	> 98%
<b>Influence of temperature</b>	On zero point: ≤ 2% per 10 K On span (sensitivity): ≤ 3% per 10 K

\*See product data sheet for full specifications.

(1) Related to full scale

(3) From gas analyzer inlet

(2) Constant pressure and temperature

(4) Temperature variation < 10 K per h

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