

**Ensure Environmental Compliance  
for Industrial Process.**



## **Rosemount Continuous Emissions Monitoring Solutions**

Ensure environmental compliance for industrial process with CEMS analyzers  
and systems integration services.





## You face challenges in complying with limits on emissions with ever-changing requirements

Regulatory requirements to monitor and manage emissions are a necessary practice. However, understanding ever-changing regulatory standards and technology options can be a challenge. Operators have to take action on continuous emissions monitoring systems (CEMS) to ensure they are reporting accurately to prevent costly fines and unexpected shutdowns.

A significant percentage of Continuous Emissions Monitoring Systems rely on obsolete or discontinued systems.



The EPA mandated 95% availability means systems can only be down 18 days per year.



Analyzer technicians report being responsible for a larger number of analyzers than a decade ago.



What if you could have superior emissions monitoring coverage with high reliability and low maintenance to ensure greater analyzer availability and emissions compliance?



## Rosemount Continuous Gas Analyzers deliver superior emissions monitoring, meeting EPA 40 CFR Part 60 and 75 requirements



Rosemount™ CT5100, CT5400 and CT4400 Series of Quantum Cascade Laser (QCL) Gas Analyzers reliably deliver highly accurate measurement of all CEMS measurements in one analyzer from ppm to percent concentrations using up to six Quantum Cascade and Tunable Diode Lasers.



Rosemount Continuous Gas Analyzers provide all CEMS measurements using traditional technologies such as NDIR/NDUV for CO and CO<sub>2</sub>, Chemiluminescence for NO<sub>x</sub>, Paramagnetic for O<sub>2</sub> and Electrochemical for cells and sensors.



Reliable, stable analytical technologies for continuous emissions monitoring can ensure compliance and improve overall performance and insight into an operation.

All Emerson systems meet EPA 40 CFR Part 60 and 75 requirements.

### Technology options that work for your application.

Emerson provides a wide choice of technologies, from NDIR, NDUV, Chemiluminescence, Paramagnetic O<sub>2</sub> to the new Quantum Cascade Lasers.

### Built to perform in harsh environments.

Analyzer systems are designed for outstanding reliability and stability in the most extreme conditions and operations.

### Designed to reduce costs and simplify monitoring.

Rugged, compact, and versatile design allows the system to be closer to the sample probe, simplifying and reducing system cost for continuous emissions monitoring.

### Reliable measurement for controlled gases.

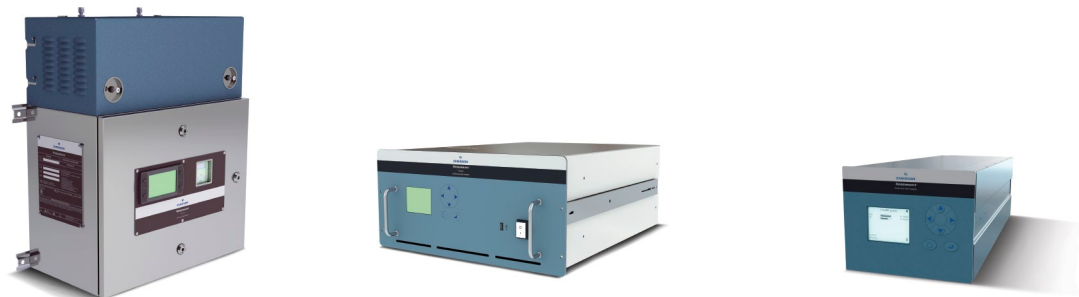
Emerson solutions provide reliable and interference-free measurement of O<sub>2</sub>, CO, NO<sub>x</sub>, O<sub>2</sub>, SO<sub>2</sub>, CO<sub>2</sub>, HCl, NH<sub>3</sub> in flue gas. Patented laser chirp technique allows analysis of all constituents from single digit ppm to percent concentrations in one analyzer.

### Simplify emissions monitoring with options for dry or wet systems.

Traditional Cold/Dry systems are widely used, and Emerson's solutions are a direct replacement for many existing continuous emissions monitoring systems. Hot/Wet systems with QCL/TDL performance up to 374 °F (190 °C) simplifies and shrinks CEMS. Water measurement enables reporting on dry basis.



## Multi-Component Quantum Cascade Laser (QCL) Analyzers



Rosemount CT5100 Continuous Gas Analyzer   Rosemount CT5400 Continuous Gas Analyzer   Rosemount CT4400 Continuous Gas Analyzer

### The multi-component Quantum Cascade Laser analyzers have several great features to simplify CEMS measurement:

- Measure up to 12 components simultaneously
- Accurate and sensitive gas measurements
- Excellent linearity of response and repeatability
- Auto validating fitting algorithms ensure analyzer performance without taking technician time
- Low maintenance and low lifetime cost of operation
- Continuous health diagnostic reporting
- Intuitive, simple front panel user interface allows complete access to instrument
- Systems built to match operating permit requirements

The QCL Analyzers are field-serviceable and completely configurable, with a modular design for up to six lasers.

#### Ultra-reliable semi-conductor lasers increase repeatability and reduce maintenance:

- Quantum Cascade Laser (QCL) for mid infrared spectra
- Tunable Diode Laser (TDL) for near infrared spectra

## X-STREAM Enhanced Series Gas Analyzers

The Rosemount X-STREAM Enhanced (XE) Series Continuous Gas Analyzers use time-tested technology



Rosemount XEGP, XEGK, XEFD and XEXF Continuous Gas Analyzers

- The Rosemount X-STREAM Enhanced analyzers use traditional technologies such as NDIR/NDUV for CO, CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, Paramagnetic O<sub>2</sub> and Electromechanical cells and sensors.
- Tabletop, portable or rack mounted options available to meet IP20
- Flame-proof version (IP66/NEMA 4X)
- Model available with ATEX, IECEx, and CSD USA/C Approvals on flame-proof version
- Field housing with IP66/NEMA 4X for analyzer (single or dual component)

## Reduce the risk involved in executing complex CEMS projects with turnkey services

Emerson's Analytical Systems and Integration Capabilities can eliminate potential risk involved with complex CEMS projects. Our complete turnkey services include:



- Project management execution
- System design, manufacturing and integration
- New application development
- Procurement
- Certifications and documentation
- Factory Acceptance Test (FAT)
- Global logistics
- Site Acceptance Test (SAT)
- Start-up and commissioning
- Training on-site or at customer location
- Lifecycle services support

#### Emerson's systems are designed to reduce complexity and cost.

The compact design allows for the system to be close to the sample probe, reducing space and complexity. Modular systems ensure flexibility in designing simple rack-mount to walk-in shelters.

## Our local team of experts can provide service and support for your CEMS equipment



Emerson's Lifecycle Services team is here to support you. Our trained technicians can provide:

- Start-up and commissioning
- Training at factory or on-site
- Telephone support/troubleshooting
- On-demand field service
- Paid service contracts
- Spare parts
- Analyzer repair shop





For more information, contact:

[Emerson.com/RosemountLifeCycleServices](https://www.emerson.com/RosemountLifeCycleServices)

# Rosemount Continuous Emissions Monitoring Solutions



Ensure environmental compliance with EPA 40 CFR Part 60 and Part 75.

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