

# Process Gas Analysis Solutions



>>>>> Visualize > Analyze > Optimize

**ROSEMOUNT™**  
Analytical



**EMERSON™**  
Process Management



>>>>> Visualize > Analyze > Optimize

## Visualize

>>>>> a *flexible* analytical solution that will meet the needs of your unique process — today and into the future

## Analyze

>>>>> with instruments that are easy to use and simple to maintain, but *powerful* enough for your most critical analyses

## Optimize

>>>>> using *industry-proven* analytical solutions to maximize uptime and reliability



## **Visualize** unequaled accuracy, reliability, and performance in a process gas analyzer

Every day, around the world, Emerson Process Management helps companies achieve higher quality, greater reliability, and faster time to market, while steadily advancing productivity and profitability. Emerson's Rosemount Analytical brand of instrumentation offers unmatched real-time measurement, resulting in a new level of plant optimization. We go far beyond simple data collection to offer proven analytical solutions, including systems expertise, analytical products, and worldwide installation and service. Emerson can help you:

- > **Improve** product quality and increase throughput
- > **Lower** process variability and improve process diagnostics and safety
- > **Reduce** energy, installation, and maintenance costs
- > **Meet or exceed** regulatory requirements

# Visualize > the Perfect Process

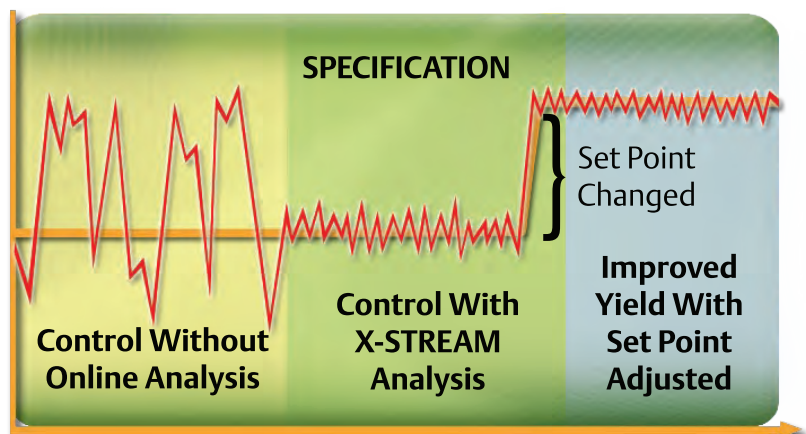
*Rosemount Analytical designs process gas analyzer solutions that enable you to fine-tune your process for maximum yield and cost efficiency.*

## Meeting your toughest analytical challenges

Rosemount™ Analytical is a premier supplier of analytical instrumentation and systems for process and environmental gas analysis. We offer an array of process solutions including:

- Single- or multi-component process gas analyzers
- Continuous emissions monitoring systems (CEMS)
- General purpose and flame-proof housings
- Process gas chromatographs
- Combustion analyzers

Our analyzers are used extensively in automotive, chemical processing, semiconductor, food and beverage, hydrocarbon processing, metals, pulp and paper, pharmaceutical, power, textile, biogas, bio-technology, waste, and wastewater industries.



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## Analyze the Value

Check out this comparison of key factors between a process utilizing Rosemount Analytical X-STREAM analyzers and one without. See for yourself why X-STREAM makes sense.

	With X-STREAM	Without X-STREAM
Real-time control	+	-
Immediate, continuous feedback	+	-
Labor efficient	+	-
Lower process variability	+	-
Measurement of contaminants	+	-
Enhanced product quality	+	-
Increased throughput	+	-
Reduced energy consumption	+	-
Increased safety	+	-

A prime consideration for these applications is accuracy and reliability. We previously purchased cheaper analyzers with electrochemical sensors, but we find that the X-STREAM's proven infrared technology provides a superior solution — something our customers will readily acknowledge.”

**John Robson**  
Managing Director  
Roplex Engineering

# Analyze > For optimal performance and control

*The X-STREAM process gas analyzer sets a new standard in delivering the analytical tools you need for precise, accurate readings in a wide variety of applications and environments. Its comprehensive package sets X-STREAM apart from other analyzers.*

X-STREAM process gas analyzers offer multi-component analysis using infrared, ultraviolet and visible (NDIR/UV/VIS) photometry, paramagnetic and electrochemical oxygen, and thermal conductivity sensor technologies for consistent, precise process gas measurement.

X-STREAM measures up to four components in various combinations, and its versatile design allows physical benches to be installed in their own compartment, separate from the electronics.



## X-STREAM Features

- > **IntrinZ** intrinsically linear photometric technology:
  - High sensitivity for the toughest measurements
  - Exceptional long-term stability saves maintenance time and expensive calibration gases
  - Large dynamic ranges minimize measurement channels
- > **Superior** environmentally hardened field-mounted housing:
  - Closer to the process for faster response time and better process control
  - Often eliminates the need for long, heated sample lines and costly shelters
- > **Enhanced communication** for remote control with web browser
  - Enables calibration and configuration such as range switching
  - Onboard data acquisition with data, event, and calibration logger
  - PLC capability with valve switching for sample stream switch and sample handling control
  - Calculator and analog inputs enable external measurements and provide calculated values
  - Capable of remote data download and download to USB devices
- > **Common platform** for ease of ownership
- > **Low maintenance** with field reparability

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### Flameproof X-STREAM

- > Wall mountable, with NEMA 4X/IP66 painted cast aluminum housing that can be field mounted without the need for a purge for Class 1, Zone 1, Group IIB + H<sub>2</sub> hazardous areas requiring ATEX, CSA-C/US or IECEx certification



### Field Housing X-STREAM

- > Wall mountable, with NEMA 4X/IP66 painted stainless steel housing
- > Available with a CSA-C/US-approved Z-purge pressurization system for installation in Div. 2 hazardous areas or an ATEX-certified pressurization system for installation in Zone 2 hazardous areas
- > Non-Incendive versions enable measuring non-flammable gases in Zone 2 and Div. 2 hazardous areas without the need for pressurization systems



### General Purpose X-STREAM

- > Available as a standard (19") or compact (half 19") version in a rackmount or tabletop variation



The X-STREAM XE takes process gas analysis to the next level for ease of use and communication capabilities. With a unique new web-browser interface, it enables users to securely log in to calibrate parameters and manage alarms from any Ethernet connection. The ability to remotely manage the analyzer greatly simplifies diagnostics, speeds the troubleshooting process, and reduces the number of trips into the field by an estimated 50%.

With powerful processing capabilities and innovative new built-in engineering tools, the X-STREAM XE offers a programmable logic controller (PLC) that enables automation of the sample handling system and online programming through the web browser. In addition, an enhanced data logger offers improved data tracking, including a NAMUR status indicator, improved event logging, and a new cal log file.

# Analyze > Flexible analytical options

*Rosemount Analytical's MLT series of analyzers offer multi-component, multi-method analysis utilizing infrared, visible, ultraviolet, thermal conductivity, paramagnetic, and electrochemical sensor technologies, as well as trace oxygen and moisture.*



The MLT series of analyzers has the capability of measuring up to five gas components using NDIR/UV/VIS photometry, thermal conductivity, and paramagnetic and electrochemical oxygen. Flame ionization and chemiluminescence detector modules can be linked as an option.

- > MLT measurements in a dual compartment field housing – for example CO, CO<sub>2</sub>, O<sub>2</sub> in combination with NO<sub>x</sub> from CLD detector
- > High-temperature solutions in a dual compartment field housing up to 120 °C (148 °F)
- > FOUNDATION™ fieldbus communication
- > PLC and calculator functionality
- > ATEX, CSA-C/US, GOST and other certifications for hazardous areas
- > TUEV, MCERTS, and QAL 1 certifications for CEMS applications

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With PlantWeb digital plant architecture, Emerson delivers what everyone else has missed: *proof.*

Across all industries, we're proving that PlantWeb can increase overall plant efficiency by 2% or more. So you operate more cost effectively, even as the PlantWeb network of predictive intelligence lets you work more safely by detecting problems before they happen.

- > Reduce installation, energy, and maintenance costs
- > Lower process variability and improve process diagnostics and safety
- > Enhance product quality and increase throughput
- > Meet or exceed regulatory requirements

Talk to your Emerson representative to find out how PlantWeb can improve your bottom line.



## Rosemount Analytical analyzers feature ...

NDIR: Robust microflow detectors for high sensitivity

NDUV/VIS: Vacuum diode detectors for stability and long life

O<sub>2</sub>: Fast response paramagnetic sensors and electrochemical sensors with long-term stability

TC: Coated stainless steel thermal conductivity cells

FID: Flame ionization detectors for measuring hydrocarbons in a wide variety of applications

CLD: Chemiluminescence detectors, the highly sensitive and reliable industry standard for measuring NO<sub>x</sub>

Solvent-resistant, corrosion-resistant, intrinsically safe and infallible containment solutions

Autocalibration via internal or external valve block

# Optimize > The integration of your entire analytic system

*Whether your design philosophy favors close-coupled field mounting of analyzers, or a centralized air purged, air conditioned shelter approach, Rosemount Analytical offers turn-key analyzer solutions that are tailored to your exact needs.*

Rosemount Analytical manufactures a full range of process and environmental gas analysis solutions. From single gas analyzers to complex, multipoint systems with sample conditioning, data acquisition, analyzer cabinets, and even pressurized analyzer shelters, Rosemount Analytical can customize an engineered solution to meet your specific requirements.

Our leading-edge instruments, application expertise, customer service, and worldwide support will help ensure compliance with increasingly stringent regulations and will enable you to maximize process performance, productivity, and profitability.

## Sample Conditioning Systems

We engineer application-specific sample conditioning systems that meet your specified measurement requirements to provide the best protection for your sensitive gas analyzer components.

Our sample conditioning systems include a built-in intelligence that ensures the sample handling will not affect the sample gas composition. A Rosemount Analytical sample conditioning system will:

- Condition sample to proper pressure and temperature
- Filter particulates in preparation for analysis
- Eliminate contaminants even in high-flow, high-moisture samples
- Return sample to the process or approved disposal point

Rosemount Analytical offers a full suite of analytical products



*Rosemount Analytical instrument and sensors continuously monitor and analyze pH, conductivity, dissolved oxygen, ozone, chlorine, and turbidity. Instruments come in two or four wire versions, as well as wireless.*



*With Rosemount Analytical direct in-line combustion analysis equipment, you can reduce energy consumption, increase process availability, meet or exceed regulatory requirements, and enhance product quality.*

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## Environmental solutions for continuous emissions monitoring

Rosemount Analytical's continuous emissions monitoring systems (CEMS) are the smart choice to help you manage your business in today's regulatory environment. Our strengths include leading-edge research and development, field-proven reliability, a variety of modular solutions to fit your specific application, a comprehensive warranty, and a full spectrum of global service and support options.

Rosemount Analytical's CEMS reduce the total cost of ownership by maximizing uptime while minimizing installation, operation, and maintenance costs. And, our CEMS expertise ensures certification and compliance with appropriate regulations, such as EPA, TUEV, MCERTS, QAL 1, GOST metrological, and KOSHA.



*Rosemount Analytical's process gas chromatographs provide an advanced combination of innovative technology and hardened instrumentation for critical processing facilities.*

## Solutions for Every Application

### CHEMICAL/PETROCHEMICAL

- General inert gas blanketing control
- Hydrogen plant
- Ammonia, urea, and fertilizer production
- Ethylene and propylene production
- Acetone, alcohols, chlorine, nitric acid, phosgene, sulfuric acid, toluene, and other processes

### GAS PROCESSING

- LNG
- Ammonia
- Vinyl chloride
- Syn gas
- Hydrogen
- Carbon dioxide

### REFINING

- Naphtha isomerization
- Hydrocracking
- Catalytic reforming
- PSA Units
- Hydrocarbon compressor
- Marine unloading and vapor recovery

### AIR SEPARATION/LIQUEFACTION

- Nitrogen, oxygen, and argon separation and bottling plants

### POWER AND ALTERNATIVE ENERGY

- Hydrogen cooling of gas turbines
- Coal gasification

### OIL AND GAS

- Pipeline monitoring

### METALLURGICAL

- Furnaces
- Heat treating
- Blast furnaces
- Direct reduction processes

### CEMENT/CERAMICS

- Kilns

### ENVIRONMENTAL

- Biogas
- Carbon bed scrubbers
- Continuous emissions monitoring

## SURESERVICE™

### SureService™ Customer Support Program

Rosemount Analytical's SureService modules enable you to build a custom support agreement to meet your specific needs. Whether your company is self-maintaining or chooses to outsource all analytical instrument service tasks, you will find the right SureService elements to tailor a service package that will fit just right. Modules include:

- Startup and commissioning services
- Scheduled maintenance services
- Emergency on-site services
- Training programs

Take advantage of a customized SureService agreement that is built specifically for your needs. Our service manager and sales team will help you put together the perfect SureService agreement.



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