



**ROSEMOUNT®**  
Analytical

## >>> Process Gas Analysis Solutions

Perfecting your process  
for a better bottom line

"If you can not measure it,  
you can not improve it."

*Lord Kelvin*



**EMERSON™**  
Process Management

Unequaled accuracy and reliability > Increased productivity and profitability

## Count on Emerson Process Management to put the power of analysis in your hands.

Every day, all 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 way beyond simple data collection and offer proven analytical solutions, including systems expertise, analytical products and worldwide installation and service. Emerson can help you:

- > **Enhance** 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

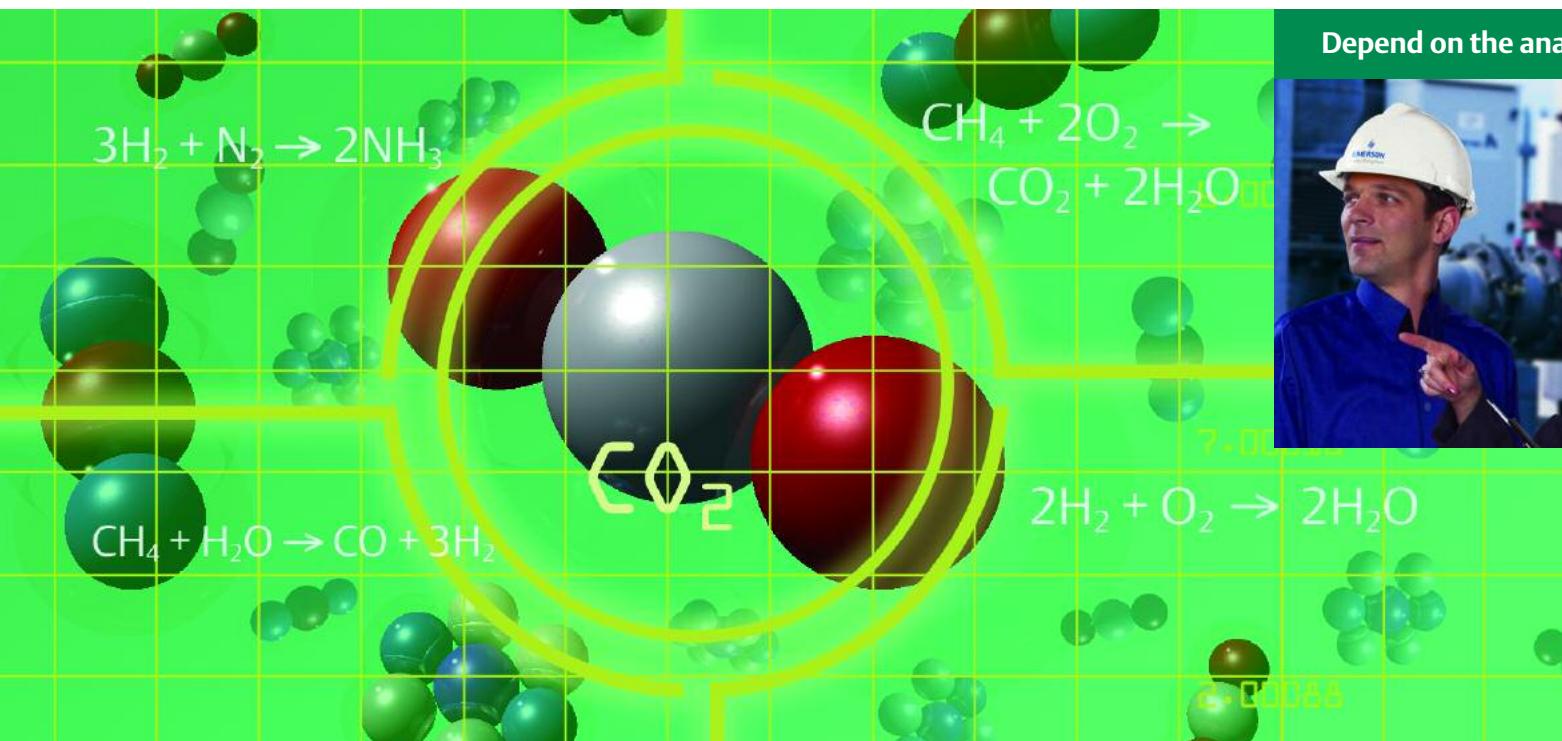
A history of product performance and industry expertise

Emerson's Rosemount Analytical products and services reach back almost a century and include:

Hagan Controls  
Westinghouse Combustion Controls  
Beckman Instruments  
Leybold AG  
Daniel Measurement and Control

With each acquisition, the Rosemount Analytical product line has been strengthened in key ways to provide more comprehensive process solutions.

## >>> Identify > Analyze > Improve



Depend on the analysis experts from Emerson



# Introducing X-STREAM Analyzers > Optimal performance in demanding applications

To tightly control a process, its constituents must first be defined – precisely and consistently, every time. Only then can your process be fine-tuned to yield its optimal performance. That's where Emerson's new Rosemount Analytical X-STREAM series of gas analyzers come in. X-STREAM is available in three versions – general purpose, field housing and flame-proof – so there's one for your application.

X-STREAM gas analyzers offer single and dual channel analysis using infrared, ultraviolet and visible (NDIR/UV/VIS) photometry, paramagnetic and electrochemical oxygen, and thermal conductivity sensor technologies. They can measure up to 2 components in any measuring combination. Physical benches are installed in their own compartment, separated from the electronics. Optional thermostatic control enables measuring lower sample gas concentrations and

higher dew points. Additionally, a purge can be added for handling corrosive and toxic gases to protect the electronics and to provide operator safety.

X-STREAM analyzers have an alphanumeric LCD. Easy to read text messages and front panel LEDs provide information about the measurement and analyzer status. X-STREAM analyzers are equipped with an internal wide-range power supply for all world areas.

## X-STREAM Analyzers provide:

- User-friendly operator interface
- Support for multiple languages
- Easy access for maintenance and repair
- Extended ambient temperature range
- Global certifications

## X-STREAM Analyzer features:

- Single or dual channels
- Solvent-resistant, corrosion-resistant and intrinsically safe measuring cells are available
- NDIR: Robust microflow and solid-state detectors
- NDUV/VIS: Vacuum diode detector for stability and long life
- O<sub>2</sub>: Fast response paramagnetic and electrochemical O<sub>2</sub> sensor with long term stability
- TC: Aluminum and quartz-coated stainless steel thermal conductivity cells
- Analog and digital I/O, status signal relay outputs and serial interface with Modbus communication
- Autocalibration via internal or external valve block
- Barometric pressure compensation, internal sampling pump and flow sensor

## X-STREAM Configurations

### General Purpose X-STREAM

The general purpose X-STREAM analyzer is available in a rack mountable or tabletop version.



### Field Housing X-STREAM

This version of the X-STREAM is provided in a wall mountable NEMA 4X/IP66 painted stainless steel housing. The NEMA 4X/IP66 design allows operation in harsh industrial environments. Upgraded with a CSA-C/US approved z-purge pressurization system, this X-STREAM analyzer can be installed in Zone 2 hazardous areas in North America. ATEX-approved pressurization systems are available for installation in European hazardous areas classified Zone 1 or 2.



### Flameproof X-STREAM

The flameproof (explosion proof) X-STREAM analyzer is provided in a wall-mountable NEMA 4X/IP66 painted cast aluminum housing that can be field mounted in the harshest environmental conditions without the need of a purge. This X-STREAM analyzer can be installed in Class I, Zone 1, Group IIB + H2 hazardous areas.



# Solutions for every application > Emerson has it covered

Optimizing your process means controlling product quality and production costs – the better your data, the better your control. Rosemount Analytical analyzers take the guess-work out of fine-tuning your process with proven technologies backed by more than 80 years of experience and know-how in these industries:

## OIL AND GAS

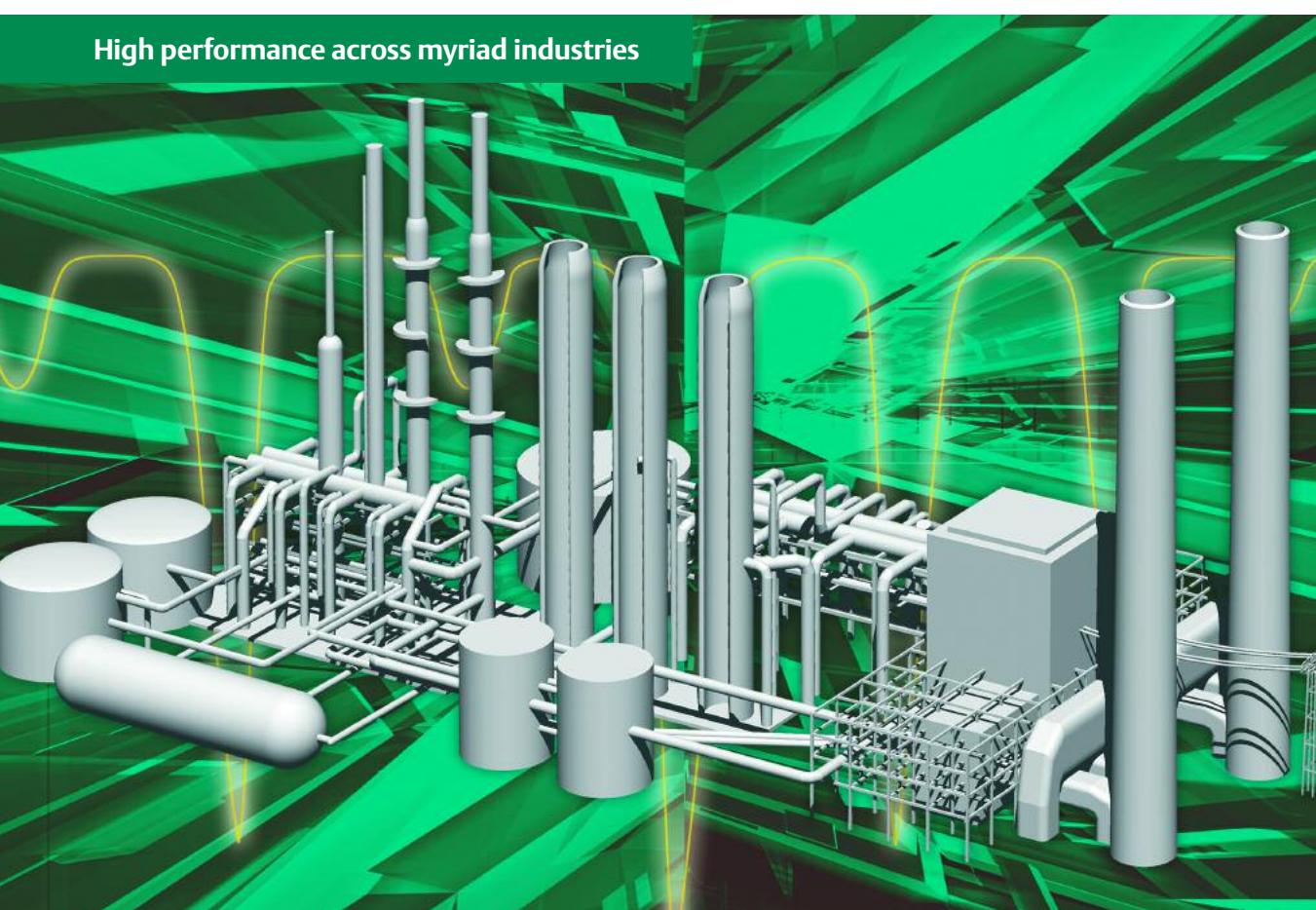
**Pipeline monitoring** – monitor hydrocarbon vapor leaks at transfer sites and trace CO<sub>2</sub> contamination in natural gas

## REFINING

**Naphtha isomerization** – measure H<sub>2</sub>, CO and CO<sub>2</sub> to assist in overall process control

**Catalytic reforming** – monitor H<sub>2</sub> and hydrocarbons for process control

## High performance across myriad industries



**Hydrocracking** – measure H<sub>2</sub> for process optimization

**Fluidized catalytic cracking** – monitor CO and O<sub>2</sub> to aid in regenerator control, safety, and to enable stable operation during a changing gas stream

**Sulfur recovery** – monitor total hydrocarbons to promote stable operation

**Hydrocarbon compressor** – measure O<sub>2</sub> for safety

**Marine unloading and vapor recovery** – monitor total hydrocarbons and O<sub>2</sub> for safety

**Feed stock heaters** – measure O<sub>2</sub> for efficient combustion control

## CHEMICAL/PETROCHEMICAL

**General** – inert gas blanketing control to maintain low O<sub>2</sub> in vessels with combustible mixtures

**Hydrogen plant** – measure H<sub>2</sub>, CO, CO<sub>2</sub> and methane for process optimization and product purity

**Ammonia, urea and fertilizer production** – measure H<sub>2</sub>, CO, CO<sub>2</sub>, methane and ammonia for process control and elimination of contaminants

**Ethylene and propylene production** – monitor ethylene, propylene and CO<sub>2</sub> to maximize product yield and minimize CO<sub>2</sub> contamination

**Wide range** of other processes such as acetone, alcohols, chlorine, nitric acid, phosgene, sulfuric acid and toluene

## AIR SEPARATION/LIQUEFACTION

**Nitrogen, Oxygen and Argon separation and bottling plants** – monitor the gases for product purity and trace hydrocarbon, O<sub>2</sub>, CO and CO<sub>2</sub> contamination

## POWER

**Hydrogen cooling of gas turbines** – monitor H<sub>2</sub>, O<sub>2</sub> and CO<sub>2</sub> to reduce costs and for safe operation

## METALLURGICAL

**Furnaces** – measure CO, CO<sub>2</sub>, O<sub>2</sub> and H<sub>2</sub> for efficient combustion, atmospheric control and safety

**Heat treating** – monitor CO, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub> and ammonia to control metal properties

## CEMENT/CERAMICS

**Kilns** – measure CO, CO<sub>2</sub>, NO and O<sub>2</sub> to optimize kiln controls

## ENVIRONMENTAL

**Biogas** – measure methane, CO<sub>2</sub> and O<sub>2</sub> for off gas quality and safety

**Carbon bed scrubbers** – monitor hydrocarbons and CO for efficiency and fire protection

## CEMS

**Continuous emissions monitoring** – measure hydrocarbons, O<sub>2</sub>, CO, CO<sub>2</sub>, NO<sub>x</sub> and SO<sub>2</sub> to meet or exceed regulatory requirements

## ICEE

**Engine testing and development** – measure hydrocarbons, CO, CO<sub>2</sub>, NO<sub>x</sub> and O<sub>2</sub> for emission control and performance optimization

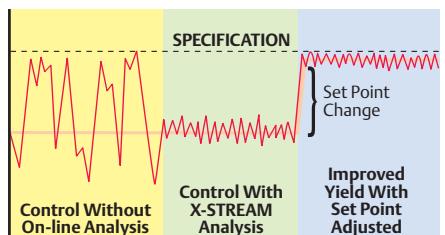
# Analyze the Value

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	+	-
Measure contaminants	+	-
Enhance product quality	+	-
Increase throughput	+	-
Reduce energy consumption	+	-
Increase safety	+	-

# Perfect your Process

X-STREAM enables you to fine-tune your process for maximum yield and cost efficiency.



# Additional Process Analytical Solutions



## Process Analysis

In addition to X-STREAM, Emerson also offers the MLT Series of analyzers. These instruments have the capability of measuring up to 5 gas components in a single analyzer using a combination of NDIR/UV/VIS photometry, paramagnetic and electrochemical O<sub>2</sub> and thermal conductivity detectors. Additionally, the MLT series is designed for high sensitivity and interference rejection in order to measure concentrations as low as 0 to 10 ppm CO and 0 to 5 ppm CO<sub>2</sub>.

Emerson also provides analyzers with flame ionization detectors (FIDs) for measuring hydrocarbons in a wide variety of applications; and analyzers with chemiluminescence detectors (CLDs), the highly sensitive and reliable industry standard technology for measuring NO<sub>x</sub>.



## Process Gas Chromatography

Emerson's Process Gas Chromatographs set a new standard for reliability and low cost of ownership for process monitoring and control. Micro-packed columns are used for fast separations and low carrier gas consumption. The thermistor-type thermal conductivity detectors (TCDs) are the most sensitive available for rugged reliable measurements at ppm levels. Our chromatographs are intended for installation outdoors without expensive temperature-controlled shelters; this dramatically lowers the total installed cost.



## Combustion Analysis

Emerson invented the first zirconium oxide oxygen analyzer and remains the industry leader in combustion flue gas analysis. In addition, we provide solutions for oxygen combustibles, carbon monoxide, opacity and fan damper control. Emerson makes combustion analyzers that will give your operators the confidence to run your combustion process at the most efficient fuel/air ratio.

# Analyze > Prove

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 its network of predictive intelligence lets you work more safely by detecting problems before they happen.



PlantWeb can help:

- > 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.



## Liquid Analysis

Emerson is the world's premier provider of liquid analysis solutions featuring products with unmatched accuracy, superior performance and worry-free dependability. Our leading-edge instruments and applications expertise, along with unbeatable customer service and support worldwide help our customers maximize process performance, productivity, and profitability. Our solutions provide reduced installation and maintenance costs while improving process quality. We offer a complete range of analyzers, transmitters and sensors for the continuous online measurement of pH, ORP, conductivity, dissolved oxygen, ozone, chlorine, turbidity and total suspended solids.

Call your Emerson Process Management representative for more information on all our process solutions.





## >>> Contact Us Worldwide

Emerson Process Management's field offices are your source for more information on the full line of Rosemount Analytical products. Field sales personnel will work closely with you to supply technical data and application information.

For more information on Rosemount Analytical products and their applications, please contact your nearest Emerson field office. To request copies of our literature, call 800.433.6076 or visit our website.

[www.raihome.com](http://www.raihome.com)

### WORLD HEADQUARTERS

Emerson Process Management  
Rosemount Analytical Inc.  
6565 P Davis Industrial Parkway  
Solon, OH 44139  
T 440 914 1261  
T 800 433 6076  
F 440 914 1262  
gas.csc@emersonprocess.com

### GAS CHROMATOGRAPHY CENTER AND LATIN AMERICA

Emerson Process Management  
Rosemount Analytical Inc.  
11100 Brittnoore Park Drive  
Houston, TX 77041  
T 713 467 6000  
F 713 827 3329

### ROSEMOUNT ANALYTICAL EUROPE

Emerson Process Management  
GmbH & Co. OHG  
Industriestrasse 1  
63594 Hasselroth  
Germany  
T 49 6055 884 0  
F 49 6055 884209

## >>> Analyze Us

Emerson Process Management the worldwide industry leaders in:

- > Combustion Analysis and Optimization
- > Process Analysis
- > Environmental Analysis & Systems

## >>> Identify > Analyze > Improve

Let us prove what Emerson Process Management can do for you. Call your Emerson representative today.

### EUROPE, MIDDLE EAST AND AFRICA

Emerson Process Management  
Shared Services Limited  
Heath Place  
Bognor Regis  
West Sussex PO22 9SH  
England  
T 44 1243 863121  
F 44 1243 845354

### ASIA-PACIFIC

Emerson Process Management  
Asia Pacific Private Limited  
1 Pandan Crescent  
Singapore 128461  
Republic of Singapore  
T 65 6 777 8211  
F 65 6 777 0947  
analytical@ap.emersonprocess.com

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