

# X-STREAM Enhanced Process Gas Analyzer



**ROSEMOUNT™**  
Analytical

  
**EMERSON™**  
Process Management

# LONGEST WARRANTY

## GET MORE OUT OF YOUR PROCESS GAS ANALYZER

**Emerson**

Simple, user-friendly process analysis



Rosemount Analytical sets new standards of ease of use with the X-STREAM *Enhanced* process gas analyzer. With a unique web-based interface that securely enables remote diagnostics without additional software installation and provides a host of convenient new features and user capabilities, the X-STREAM *Enhanced* simplifies your analytical experience.

### Compare Emerson's warranty against competitors

| ANALYZER COMPONENT | YEAR 1  |             | YEAR 2  |             | YEAR 3  |             |
|--------------------|---------|-------------|---------|-------------|---------|-------------|
|                    | Emerson | Competition | Emerson | Competition | Emerson | Competition |
| Chopper            | ✓       | ✓           | ✓       | ✗           | ✓       | ✗           |
| Source             | ✓       | ✓           | ✓       | ✗           | ✓       | ✗           |
| Detector           | ✓       | ✓           | ✓       | ✗           | ✓       | ✗           |
| Filter Cells       | ✓       | ✓           | ✓       | ✗           | ✓       | ✗           |
| Electronic Boards* | ✓       | ✓           | ✓       | ✗           | ✓       | ✗           |

### Significant Opportunities for Cost Savings

| ANALYZER COMPONENT | YEAR 1  |             | YEAR 2  |             | YEAR 3  |             |
|--------------------|---------|-------------|---------|-------------|---------|-------------|
|                    | Emerson | Competition | Emerson | Competition | Emerson | Competition |
| Chopper            | \$0     | \$0         | \$0     | \$\$\$\$    | \$0     | \$\$\$\$    |
| Source             | \$0     | \$0         | \$0     | \$\$\$      | \$0     | \$\$\$      |
| Detector           | \$0     | \$0         | \$0     | \$\$\$\$    | \$0     | \$\$\$\$    |
| Filter Cells       | \$0     | \$0         | \$0     | \$\$\$      | \$0     | \$\$\$      |
| Electronic Boards  | \$0     | \$0         | \$0     | \$\$\$      | \$0     | \$\$\$      |

Emerson's advantage goes further than covered components for three years — tremendous savings is realized from avoiding maintenance and labor fees and unplanned downtime.

\*Electronic boards that are connected to external equipment are excluded

## 3 YEAR WARRANTY

### Standard Three-Year Extended Warranty

The X-STREAM *Enhanced* process gas analyzer comes with the longest, most comprehensive warranty in the industry. Replacement parts for the bench are covered, excluding sample-wetted components and boards connected to external equipment. Failed or problem parts can be mailed back to the factory for a replacement. Phone support and remote diagnostics support are covered during the three-year warranty period.



## Comprehensive Testing

*Allows us to offer the industry's best standard warranty*

### 1 Detector Testing

Each detector undergoes a helium leak test. Extremely low leakage rates are achieved through the use of a unique glass soldering technique for the detector and special steel cells. The detector is superheated to remove any contaminants prior to filling with appropriate gas.

Finally, noise, cross interference for special gases, and sensitivity are measured on a special optical bench.

### 2 Chopper Testing

Rosemount Analytical incorporates a brushless eddy current drive that eliminates mechanical influence of a motor on the chopper wheel.

Each chopper is tested for deviation relating to turning frequency and the possible influence of temperature changes (ambient temperature up to 70 °C).

### 3 Climate Chamber Testing

Every analyzer undergoes 48-hour climate testing in an environmental chamber. With this test, the analyzer is optimized for temperature error.

The chamber offers insight into the behavior of the analyzer to achieve a complete compensation over the full temperature range. This 48-hour test assesses temperature compensation and verifies the overall performance.

### 4 Long-Term Testing

Rosemount Analytical tests every analyzer for seven days to verify that there are no drift issues.

### 5 Linearization Testing

For each measurement requiring a linearization, Rosemount Analytical performs a raw measurement of the data. Next, a linearization curve is calculated. Finally, the functionality of the linearization is validated.

# SUPERIOR PERFORMANCE

Emerson

Operating Beyond Expectations

## Best-in-Class Analyzer

Rosemount Analytical redefines industry standards

### Lowest Total Cost of Ownership

Emerson's Rosemount Analytical X-STREAM *Enhanced* process gas analyzer demonstrates the lowest total cost of ownership over a five-year period with best-in-class operating specs and the industry's longest warranty.

That means the X-STREAM *Enhanced* is two times more stable than any other process gas analyzer available.

### Broadest Total Operating Temperature Range

Emerson's X-STREAM *Enhanced* features a total temperature range that is greater than most competitors. The X-STREAM *Enhanced* is tested to perform between -20 °C to 50 °C.

### Highest Protection Classes

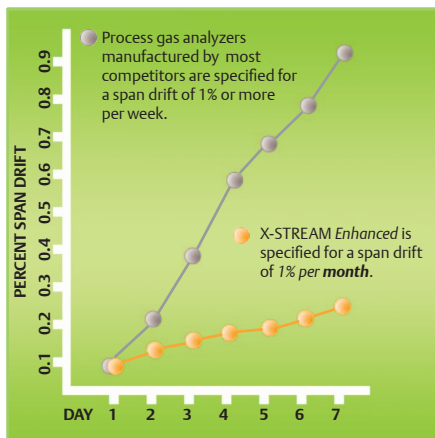
The X-STREAM *Enhanced* is designed to operate in rough environments. With IP66 and NEMA 4X certification, the X-STREAM *Enhanced* is proven to withstand offshore, wet, and heavy-dust conditions, as well as temperature swings.

### Tight Repeatability & Zero Drift

Emerson's X-STREAM *Enhanced* process gas analyzer can operate with a zero drift at 1% per week, depending on component and range. It offers a repeatability of <0.5% of range.

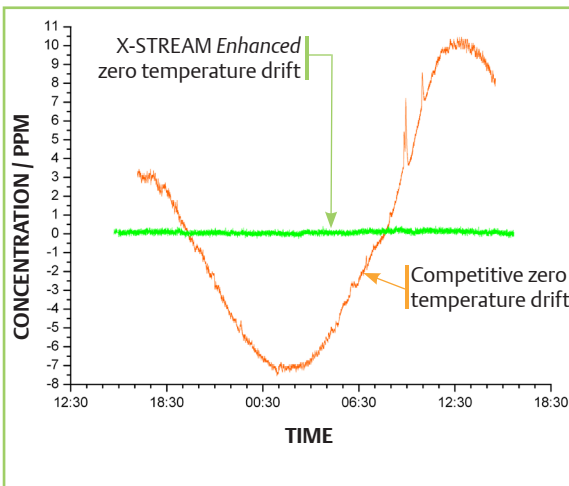
### Lowest Span Drift

With a span drift of 1% per month, *not 1% per week like most other competitors*, the X-STREAM *Enhanced* consumes less calibration gas each month, and requires four to eight times fewer service calls than any other process gas analyzer. This means that the X-STREAM *Enhanced* costs thousands less to maintain.



### Lowest Temperature Dependency

The X-STREAM *Enhanced* offers a temperature dependency that is two times better than the nearest competitor. With zero temperature drift specs of 0.5%/10 Kelvin, Emerson's X-STREAM *Enhanced* offers a rate of temperature error that is less than 2.5%, when competitor's have a rate of error of 5% (50 K intervals).



2x more stable



## X-STREAM Enhanced Specifications

|                              | X-STREAM Enhanced | Competitive Best |
|------------------------------|-------------------|------------------|
| <b>Span Drift</b>            | 1%/month          | 1%/week          |
| <b>Temperature Error</b>     | 0.5%/10 K         | 1%/10 K          |
| <b>Measurement Frequency</b> | 150 Hz            | 10 Hz            |
| <b>Zero Drift</b>            | 1%/week           | 1%/week          |
| <b>Reproducibility</b>       | 0.5%              | 0.5%             |
| <b>Linearity</b>             | 1%                | 1%               |
| <b>Detector Seal</b>         | Glass Soldering   | Glue             |

## INNOVATION MATTERS

**INTRINZ<sup>X</sup>**

Rosemount Analytical process gas analyzers feature IntrinzX intrinsically linear photometric technology. IntrinzX uses split-cell, dual-beam photometry and constant comparison of the reference signal and measurement signal to achieve an intrinsically linear response to changes in concentration. This enables sensitivity as low as 0-10 ppm, a span drift of less than 0.023 ppm per week, and dynamic ranges as large as 0-200 to 50,000 ppm.



The unique web-browser interface of the X-STREAM *Enhanced* process gas analyzer enables users to securely login to calibrate parameters and manage alarms from any Ethernet connection. The ability to remotely manage the analyzer greatly simplifies diagnostics.

*than any competitor*

# INNOVATIVE PROCESS ANALYSIS

**Emerson**

## Enhanced Analytical Capabilities

### Communications Capabilities

Accommodates up to three simultaneous Modbus connections (two standard Modbus TCP/IP links over Ethernet and one optional Modbus RTU link over a serial connection).

- > Shares information between multiple locations.
- > Connects without the use of special converters.

### Benefits

Sends key data to systems throughout the plant

Requires less engineering time, which translates into lower costs

Requires no additional multiplier with explosion-proof housing

### Flexible I/O

Features four analog outputs and two analog inputs, which can be used for concentration, pressure, and temperature measurements, as well as interference compensation and calculations.

- > Enables the integration of any third-party devices equipped with an analog output.
- > Captures data from external analog devices with the data logger.

Brings third-party device signals into the analyzer to enhance the capabilities of that device

Uses data from the sample handling system to auto correct the analyzed component data

### On-board Data, Event, and Calibration Loggers

Incorporates a built-in data logger to capture and store event history, alarms, and calibration information for later use.

- > Pulls event history, calibrations, alarms, and results from the analyzer.
- > Logs data as fast as once per second.
- > Also available in a half 19" option that is small enough to be mobile and can be moved around the plant to capture and compare data from several sample points. The design of the half 19" analyzer includes a handle to make it easily portable. It enables direct connection to any Ethernet-enabled computer.

Offers additional backup capabilities for processes not requiring a full-time connection to the plant DCS

Predicts potential issues by tracking the calibration deviations

Tells precisely when data was pulled with a time-stamp, and allows users to compare collected data

Offers further savings when simultaneous measurements are unnecessary, as one analyzer can conduct measurements at several sample points

### Remote Software Update & Maintenance

Offers the capability for simple updating, including a full update of the firmware remotely through the web-browser interface or via USB upload.

Allows analyzer software and firmware updates in the field

*Flexible, reliable,*

With the X-STREAM *Enhanced* process gas analyzer, Emerson offers precise analysis capabilities in one powerful instrument. The X-STREAM *Enhanced* can combine multiple measurements, such as photometric (NDIR and NDUV), thermal conductivity, paramagnetic and electrochemical oxygen, and trace moisture, to analyze more than 60 different gases.



### Remote Diagnostics

Incorporates remote diagnostics capabilities to allow Rosemount Analytical's team of field service experts to remotely connect to the analyzer to troubleshoot and perform maintenance.

- > Enables fast identification of issues with the bench or polluted optics with the calibration log file.
- > Permits identification of component failures in the event log protocol.

### Benefits

Enables viewing of calibration, user, and event protocols

Saves a trip into the field and the expense of a service call through online diagnostics. Enables virtual field service when our field experts log into your system to see raw count data and determine why the analyzer is operating outside of expected parameters

### Alarm Management

Incorporates alarming capabilities — including pre-alarms and main alarms — that can be set for concentrations, secondary measurements, and calculator results.

- > Displays alarms and status messages on the analyzer's LOI, on the browser interface, and through digital outputs. Optional email notification is available.

Emails alarm notifications

Enables problem identification and correction before costly downtime occurs

### On-board Calculator

Features up to four built-in calculators and offers remote access with an Ethernet connection.

- > Incorporates plain-text programming capabilities to enable full customization of the calculator.
- > Offers superior application flexibility and allows the combination of multiple channels into one result.

References measurements against stated oxygen content for CEMS

Calculates NO<sub>x</sub> as the sum of NO and NO<sub>2</sub> concentrations for environmental applications

Calculates BTU/cubic feet (calorific value/cubic meter) from multiple components

### On-board Programmable Logic Controller (PLC)

Uses a built-in PLC to control internal and external equipment, such as valves, for time-controlled switching of multiple gas streams.

- > Offers easy external programming and implementation, and eliminates the expense, maintenance, and hassle of one or more analytical devices.

Controls inputs and outputs, eliminating the cost of an external PLC for sample handling or sample point switching

Supports program upload remotely or via USB devices

*rugged*

## 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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