Reliable gas composition analysis to control your process and ensure product quality

Rosemount™ 700XA Gas Chromatograph
Reduce costs and ensure robust performance with a field-mountable, explosion-proof gas analyzer.

EMERSON™

Rosemount 700XA
Process Gas Chromatograph

D riven by a rich heritage of over 100 years of environmental, industrial and online process analysis experience, Emerson's Rosemount gas analyzers continue to set the industry standard. The latest generation of transmitter-style, field-mountable gas analyzers enable our customers to significantly reduce capital and operating costs, while ensuring reliable process analytics.

Around the world, customers count on Emerson as a single-source provider of products, systems, solutions, and application expertise to not only reduce complexity and cost, but to operate efficiently, safely, and with peace of mind.

Rosemount 700XA Process Gas Chromatograph provides extended gas composition analysis for extreme conditions. It offers increased analytical capability, reliability, and maintainability, combined with a wide range of analysis options in a transmitter-style, field-mounted design.

Known for its reliability and flexibility, the Rosemount 700XA Process Gas Chromatograph provides precise process analysis with remote or local interface operation capabilities, parallel chromatography, and proven mechanics that simplify maintenance and reduce costs. With a single-cast enclosure, the Rosemount 700XA Gas Chromatograph offers an efficient use of oven space to accommodate both micropacked and capillary columns, as many as six analytical valves, a rotary valve for liquid injections, up to four thermal conductivity detectors (TCD), and an optional micro flame ionization detector (μFID) or micro flame photometric detector (μFPD). With a significant reduction in internal cabling, the Rosemount 700XA Gas Chromatograph allows maximum access to valves and internal components, making maintenance quick and easy.

- **Our proven, high-quality, heavy-duty design** is built to last and perform with minimal adjustment and maintenance.
- **Flexible, field-mounted installation** — The ultra-rugged Rosemount 700XA Gas Chromatograph Process Gas Chromatograph can be installed without a shelter, which translates into significant capital and operating cost savings.
- **Proximity to the sample tap** means fast analysis without long, costly sample lines. Whether your extraction point is 150 feet up on a distillation column or in the middle of a tank farm, our chromatographs go wherever you need them.
- **Simplified connectivity and communications** let you network your gas chromatographs with simple Ethernet connections and access your data either locally or remotely — while reducing technician time and training.
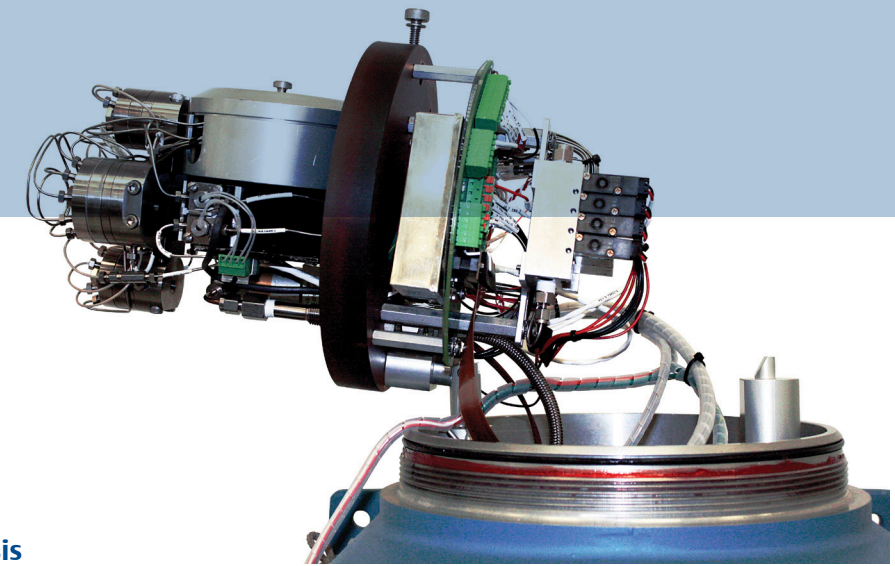
Precise, reliable analysis
The Rosemount 700XA Gas Chromatograph measures the molecular compounds in your product in minutes — communicating the data in real-time to your distributed control or enterprise system.

No-hassle installation
The Rosemount 700XA Gas Chromatograph uses 24V DC power directly and can be mounted practically anywhere — on a pipe, wall, or floor. With integrated controller electronics, the Rosemount 700XA Gas Chromatograph has a reduced footprint and fits well in tight locations.

Rugged durability
For many decades, Emerson has set the industry standard with its line of gas chromatographs in terms of durability and ruggedness. Today, it is not uncommon to find a 20-year-old Emerson Gas Chromatograph in a plant or on a pipeline. The evolutionary Rosemount 700XA Gas Chromatograph is built with that same commitment to quality and longevity. In addition, the Rosemount 700XA Gas Chromatograph requires no shelter or separate heating or cooling system — offering significant cost savings.

Flexible communications
Whether the requirement is a plant-wide network, or a single connection to a flow computer system, the Rosemount 700XA Gas Chromatograph can be configured to communicate via I/Os, Ethernet, serial RS-232, RS-422 and RS-485, or via OPC.

The analytical oven of the Rosemount 700XA Gas Chromatograph is designed for maximum serviceability and expandability. It features a clean architecture with fewer cables, making the Rosemount 700XA Gas Chromatograph simple to maintain.

Reduced maintenance and service costs
By not requiring a shelter, the Rosemount 700XA Gas Chromatograph reduces initial purchase costs significantly. In addition, low carrier and power consumption reduces lifecycle costs and minimizes the environmental impact. Parts can also be replaced or repaired individually, without expensive modules to replace. This significantly reduces service repair costs.

700XA

A **wide range** *of capabilities*

*The **Rosemount 700XA Process Gas Chromatograph** is designed for a variety of refining, petrochemical, power, gas processing (NGL fractionation, LNG), and environmental applications where selected components in gaseous or liquid streams must be precisely monitored on a continuous basis.*

Applications

Refineries
- Catalytic reformer
- Isomerization unit
- Aromatics unit

Petrochemical
- Ethylene plants
- Polymer plants

Gas processing
- NGL and LNG plants
- Cryogenic gas plants

Power generation
- Combustion turbines

Sustainability
- H_2 blending/fuel
- Biogas/biomethane
- Carbon capture
- Ambient air monitoring
- HR-VOCs in flares and cooling towers

Custom applications

If the applications listed above do not fit your unique needs, the Rosemount 700XA Gas Chromatograph can be customized to meet many measurement requirements. Contact your sales representative for more information.

Service and support

Every Rosemount 700XA Gas Chromatograph is backed by an array of service and support options that ensure your unit continues to perform to precise specifications. For every new system, we offer on-site training conducted by our GC experts, so your operators, engineers, and technicians have the skills and knowledge they need to keep your system operating at peak performance.

Emerson provides on-call field service and around-the-clock customer service for customers who need assistance with:

- Startup and commissioning
- Product upgrades
- Product repair
- Maintenance contracts
- Education services
- Remote diagnostics
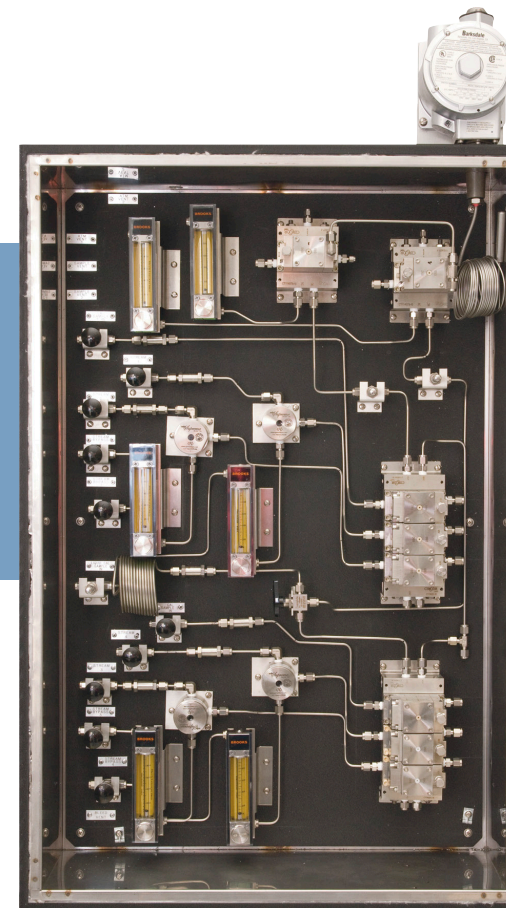
Emerson custom-engineers sample systems to meet the specifications of each unique requirement. Common features include heated and open panel designs, automatic calibration/validation, and a variety of sample probes to extract a reliable and stable sample from the process. In addition, sample systems and all related components can be rated for area classification.

The Rosemount 700XA Gas Chromatograph has the capacity to support up to 6 analytical valves, which are guaranteed for the life of the system.

Environmental chamber testing

Every Rosemount Gas Chromatograph that leaves our facility undergoes rigorous testing throughout assembly. The majority of our systems are put into a 18-hour environmental chamber test, where they must operate to specification in an environment where the temperatures cycle between 0° and 130 °F (-18° and 54 °C) for a minimum of 18 hours. This is part of our commitment to providing gas chromatographs that can withstand the toughest conditions in your field environment.

Custom-engineered solutions

Although Rosemount Gas Chromatographs are designed for easy installation and operation in hostile environments, customers may still require engineered solutions to meet their unique demands. We can engineer numerous levels of customization, including:

- Three-sided enclosures
- Custom-sized cabinets
- Hazardous-rated area shelters
- Complex sample system development
- Integration into existing and new data acquisition networks
- Custom software solutions

MON2020

Intuitive *software tools*

*The **Rosemount 700XA Gas Chromatograph** is designed to operate unattended, and when occasional adjustments need to be made, our exclusive MON2020™ software allows you complete control of your gas chromatograph – both locally and remotely.*

The Rosemount 700XA Gas Chromatograph is equipped with MON2020, a powerful software package that allows secure, remote connectivity, simplifying analyzer configuration, operation, maintenance and reducing the need to attend remote locations. Using MON2020, you can:

- Review and modify analytical settings on one screen
- Upload and display multiple chromatograms on the screen for comparison
- Upload and trend any of the measured results
- Export data for use in other third-party applications
- Check original calibration against last calibration
- Perform GC operation checks and modifications simultaneously

MON2020 is a Microsoft® Windows™ - based software designed to make analyzer configuration, maintenance, and data collection easy. With intuitive drop-down menus and fill-in-the-blank tables, even new users can quickly navigate through the software. Users of previous-generation MON software will be familiar with the layout and functionality of the software and can leverage the additional features that make the software even easier to use.

MON2020 software collects and organizes the analyzed data from the Rosemount 700XA Gas Chromatograph. With the ability to communicate to the enterprise network or export to numerous file types, MON2020 is a powerful software tool that ensures operators, engineers, maintenance personnel, and management have access to critical data, such as current and archived chromatograms, alarm history, event logs, and maintenance logs.

MON2020 also has a number of tools built in to help users manage their analyzers such as:

- Automatic recording of alarms in a log file
- Event logs that provide a continuous record of all operator changes with time and user name stored
- Maintenance log scratch pad for keeping track of maintenance or testing done

Data can also be exported in formats compatible with most third-party Windows® applications.
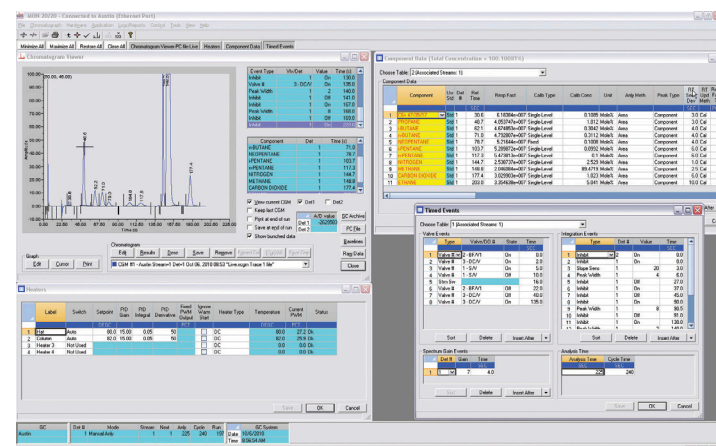
Specifications

Please consult Emerson if your requirements are outside the specifications listed below.

Construction

Environmental temperature: -20 ° to 60 °C (-4 ° to 140 °F)

Environmental temperature without safety certification: -40° to 60 °C (-40 ° to 140 °F)

Enclosure Protection Rating: IP66

Dimensions (without sample system):
- **Wall-mount:** 711 mm H x 445 mm W x 498 mm D (28" H x 17.5" W x 19.6" D)
- **Pipe-mount:** 711 mm H x 445 mm W x 671 mm D (28" H x 17.5" W x 26.4" D)
- **Floor-mount:** 1532 mm H x 445 mm W x 612 mm D (60.3" H x 17.5" W x 24.1" D)

Corrosion Protection:
- **GC Enclosure Material:** Copper-free aluminum coated with industrial-grade powder coat suitable for high humidity and salt-laden environments
- **Process Wetted Materials:** Stainless steel; where the function of an item excludes the use of stainless steel (e.g. glass rotameter tubes), materials that are resistant to corrosion are used
- **Electronics:** All electronic circuit boards are tropicalized with a clear conformal coating

Mounting: Floor-standing (standard), wall- or pipe-mount (optional)

Approximate Weight (without sample system): 50 kg (110 lbs.)

Area Safety Certification Options:*
- **CSA:**
  - USA and Canada
    - Class I, Division 1, Groups B, C, and D
- **ATEX/IECEx**
  - Ex II 2G
  - Ex d IIC Gb T6 (Ta = -20 °C to 60 °C)

*Stated T-ratings can vary based on applications.

Performance Capabilities

Oven: Airless, maximum 150 °C (302 °F)

Valves: Six-port and ten-port diaphragm chromatograph valves (other types of valves, such as liquid injection or rotary valves, may be used depending on the application)

Carrier Gas: Application-dependent. Typically zero-grade helium, nitrogen, or hydrogen

Sample & Calibration Gas Input Pressure Range: 0.2068–2.0684 bar: 1.0342 bar (recommended) or 15 PSIG

Carrier Gas Input Pressure Range (recommended): 6.2052–6.8947 bar (90–100 PSIG)

Detector: Thermal Conductivity Detector (TCD), Micro Flame Ionization Detector (µFID), Micro Flame Photometric Detector (µFPD).

Gating Options: Fixed-time, slope sensing gating of peaks

Streams: Up to 20 externally controlled streams or up to eight internal (includes calibration stream)

Chromatograms stored/archived internally: Stores over 80 days of analysis report data and up to 2,500 individual chromatograms

Electronics

Power:
- **Standard:** 24 VDC (21–30 VDC)
- **Optional:** 90–264 VAC, 47–63 Hz

Typical Power Consumption at 22 °C (72 °F):
- **Startup:** 105 Watts DC (125 W AC)
- **Steady State:** 35 Watts DC (40 W AC)

Note: Add 15.5 Watts DC (18 W AC) for LOI

Communications (Standard)

- Ethernet: Two ports – one RJ-45 and one – four-wire – with 10/100 mbps
- Analog inputs: Two standard isolated inputs filtered with transient protection, 4–20 mA (user scalable and assignable)
- Analog outputs: Six isolated outputs, 4–20 mA
- Digital inputs: Five inputs, user assignable, optically isolated, rated to 30 VDC @ 0.5 A
- Digital outputs: Five user-assignable outputs, Form C and electromechanically isolated, 24 VDC
- Serial: Three termination blocks, configurable as RS-232, RS-422 or RS-485 and one RS-232 D-sub (9-pin) Modbus/PC Connection

Communications (Optional)

Two expansion slots available for additional communications. Each slot has the capacity to add one of the following:

- Four analog inputs (isolated) card
- Four analog outputs (isolated) card
- Eight digital inputs (isolated) card
- Five digital outputs (isolated) card
- One RS-232, RS-422 or RS-485 serial connection card
- One modem card, 300-19.2k baud

Memory Capacity: 2 GB of flash memory for data storage; 256 MB of SDRAM system memory with 2 MB static RAM (battery-backed)

Touch-Key Local Operator Interface (Optional)

The Rosemount 700XA local operator interface (LOI) allows for maintenance and operation of a Rosemount 700XA without a laptop or PC. The LOI is a state-of-the-art high-resolution color display that is touch-key infrared activated and supports all core GC operations.

Gain greater insight into your process gas composition and quality.

With its reliable performance and rugged, field-mountable design, the explosion-proof Rosemount 700XA Gas Chromatograph simplifies gas analysis and reduces costs.

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EMERSON™

CONSIDER IT SOLVED™