Our leading-edge instruments and applications expertise – based on a rich heritage of more than 70 years of online process analysis experience – make Emerson’s Rosemount Analytical instruments the industry standard. We help our customers maximize process performance, productivity, and profitability. Our solutions reduce installation and maintenance costs, while improving process quality. We offer a complete range of instrumentation for gas chromatography, combustion, process and emission analysis, and continuous online liquid analysis.

Around the world, thousands of customers count on Emerson Process Management as the single source for design, manufacturing, commissioning, training, and ongoing support.

Emerson’s worldwide strength
Emerson Process Management is part of Emerson, a global company that brings together technology and engineering to provide innovative solutions for our customers in a wide range of industrial, commercial, and consumer markets. Our priority is to design, produce, and deliver products, systems, and solutions that make people’s lives better.

700XA
Process Gas Chromatograph

*Rosemount Analytical’s 700XA Process Gas Chromatographs provide extended analysis for extreme conditions. The 700XA offers increased analytical capability, reliability, and maintainability, combined with a wide range of analysis options in a field-mounted gas chromatograph (GC).*

With a redesigned, single-cast enclosure, the 700XA offers an efficient use of oven space to accommodate both micropacked and capillary columns, as many as four 6-port or 10-port valves, a rotary valve for liquid injections, up to two thermal conductivity detectors, and an optional micro flame ionization detector (μFID). With a significant reduction in internal cabling, the 700XA 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** — Rosemount Analytical’s ultra-rugged 700XA Process Gas Chromatographs can be installed without a shelter, which translates into significant savings for our customers.
- **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.
The 700XA analytical oven has been redesigned for maximum serviceability and expandability. It features a new, cleaner architecture with fewer cables, making the 700XA simple to maintain.

Precise, reliable analysis
The 700XA 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 700XA uses 24V DC power directly and can be mounted practically anywhere — on a pipe, wall, or floor. With integrated controller electronics, the 700XA has a reduced footprint and fits well in tight locations.

Rugged durability
Decades ago, Rosemount Analytical set a new industry standard with its line of gas chromatographs in terms of durability and ruggedness. Even today, it is not uncommon to find a 20-year-old Emerson GC in a plant or on a pipeline. The evolutionary 700XA is built with that same commitment to quality and longevity. In addition, the 700XA requires no shelter or separate heating or cooling system — offering significant savings to our customers.

Flexible communications
Whether the requirement is a plant-wide network, or a single connection to a flow computer system, the 700XA can be configured to communicate via traditional I/Os, Ethernet, Foundation fieldbus, serially (RS-232, RS-422 and RS-485) or via OPC.

Reduced maintenance and service costs
By not requiring a shelter, the 700XA reduces initial purchase costs significantly. In addition, low carrier and power consumption reduces lifecycle costs and minimizes the environmental impact. The system comes with the longest valve and column warranties available. Parts can be replaced or repaired individually, without expensive modules to replace. This reduces the cost of each service repair by thousands.
The 700XA Process Gas Chromatograph is designed for a variety of refining, petrochemical, power, and environmental applications where selected components in gaseous or liquid streams must be precisely monitored on a continuous basis.

A wide range of capabilities

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

Environmental monitoring
• Ambient air monitoring
• HR-VOCs in flares and cooling towers

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

Service and support
Every 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.

Rosemount Analytical 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
The 700XA Gas Chromatograph has the capacity to support up to four 10-port or 6-port diaphragm/piston valves, which are guaranteed for the life of the system.

Environmental chamber testing

Every Rosemount Analytical Gas Chromatograph that leaves our facility undergoes rigorous testing throughout assembly. The majority of our systems are put into a 24-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 24 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 Analytical 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

Rosemount Analytical 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 700XA Gas Chromatograph is designed to operate unattended, and when occasional adjustments need to be made, our exclusive MON2020™ software can be loaded on to your Windows®-based desktop PC or laptop, giving you complete control of your gas chromatograph – both locally and remotely.

MON2020 software collects and organizes the analyzed data from the 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.

MON2020 is 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 will be impressed with the additional features that make the software even easier to use.

MON2020 software allows complete control of your gas chromatographs locally or remotely. From within MON2020, a user 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

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Specifications

Please consult Rosemount Analytical if your requirements are outside the specifications listed below. Improved performance, other products and material offerings may be available depending on the application.

Electronics

Power:
- **Standard:** 24V DC (21–30V DC)
- **Optional:** 90–264V AC, 47–63 Hz

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

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

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 and NEMA 4X

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)

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 / IEC-EX**
  - 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), flame ionization detector (FID), TCD/TCD or TCD/FID dual detector configurations possible; flame photometric detector (FPD) available.

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

Streams: Up to 20 externally controlled streams or up to 8 internal (includes calibration stream)

Chromatograms stored / archived internally: Stores over 80 days of analysis report data and up to 2500 individual chromatograms.

Communications (Standard)

- Ethernet: Two ports – one RJ-45 and one 4-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 30V DC @ 0.5 A
- Digital outputs: Five user-assignable outputs, Form C and electromechanically isolated, 24V DC
- 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 (Options):

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, 300–19.2 k baud

Additionally, a FOUNDATION fieldbus module is available as an option.

Memory Capacity: 1 GB of flash memory for data storage; 128 MB of SDRAM system memory with 2 MB static RAM (battery-backed)