Rosemount™ 700XA Gas Chromatograph
Overview

With little internal cabling used, the Rosemount 700XA allows maximum access to valves and internal components, making maintenance quick and easy.

Applications

The Rosemount 700XA gas chromatograph is designed for a variety of natural gas, refining, petrochemical, power, and environmental applications in which selected components in gaseous or liquid streams must be precisely monitored on a continuous basis.

<table>
<thead>
<tr>
<th>Natural gas</th>
<th>Refineries</th>
<th>Gas processing</th>
<th>Petrochemical</th>
<th>Power generation</th>
<th>Environmental monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTU and hydrocarbon dewpoint</td>
<td>Catalytic reformer</td>
<td>Natural gas liquids (NGL) and liquefied natural gas (LNG) plants</td>
<td>Ethylene plants</td>
<td>Combustion turbines</td>
<td>Ambient air monitoring</td>
</tr>
<tr>
<td>Pipeline monitoring</td>
<td>Isomerization unit</td>
<td>Cryogenic gas plants</td>
<td>Polymer plants</td>
<td></td>
<td>HR-VOCs in flares and cooling towers</td>
</tr>
<tr>
<td>Custody transfer</td>
<td>Aromatics unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Features and benefits

Flexible design to meet all process requirements
- Fully compatible with modern Ethernet networks and DCS communication
- Diaphragm-based chromatograph valves available in six-port and ten-port versions
- Thermal conductivity detector (TCD) sensitive down to very low parts-per-million levels
- Flame ionization detector (FID) sensitive to parts-per-billion levels
- Micro flame photometric detector (µFPD) for sulfur measurements in the parts-per-billion levels
- Storage of up to 2,500 chromatograms, including sample calibration and validation streams
- Archives up to 86,464 item averages and over 240 days of standard runs and calculations
- Minimizes maintenance and spare parts requirements
- Simplifies the scope of analyzers at the pipeline
- Reduces the overall cost of the analytical solution

Simplified functionality and ease of use
Full color local operator interface (LOI) with built-in software assistants to guide the operator through common tasks, such as:
- Gas chromatograph (GC) start-up
- Changing calibration gas

Reduced installation costs
- Flexible power with both 120/240 Vac and 24 Vdc options
- Integrated controller electronics
- Pipe-mount, wall-mount, or floor-mount

Lower operational costs
- Designed for field-mounting without the need for expensive analyzer shelters or sacrificing analytical performance
- Hazardous area operation with no need for purge gas
- Low carrier and power consumption
- Longest gas chromatograph valve and column warranties available

Unmatched measurement performance
- Wide dynamic range from percent to trace-level components
- Reliable performance over broad ambient temperatures -4 to 140 °F (-20 to 60 °C) and reliable hydrocarbon dew point calculations from the extended C9+ analysis
- Capable of complex natural gas analysis, process applications for refinery, chemical, LNG, power plants and other applications.
The Rosemount 700XA is designed for the continuous online analysis of natural gas. The analyzer can support multiple valve combinations from two to six valves of either a 6-port or 10-port variety.

**Note**
The GC can support only four 10-port valves.

The typical measurement ranges for natural gas are shown in the table.

**Table 1: C6+/C7+ /C9+ Standard Measurement Ranges**

<table>
<thead>
<tr>
<th>Component</th>
<th>C6+</th>
<th>C7+</th>
<th>C9+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane</td>
<td>65 to 100 mole %</td>
<td>65 to 100 mole %</td>
<td>65 to 100 mole %</td>
</tr>
<tr>
<td>Ethane</td>
<td>0 to 20 mole %</td>
<td>0 to 20 mole %</td>
<td>0 to 20 mole %</td>
</tr>
<tr>
<td>Propane</td>
<td>0 to 10 mole %</td>
<td>0 to 10 mole %</td>
<td>0 to 10 mole %</td>
</tr>
<tr>
<td>n-Butane</td>
<td>0 to 5 mole %</td>
<td>0 to 5 mole %</td>
<td>0 to 5 mole %</td>
</tr>
<tr>
<td>Iso-butane</td>
<td>0 to 5 mole %</td>
<td>0 to 5 mole %</td>
<td>0 to 5 mole %</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
</tr>
<tr>
<td>Iso-pentane</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
</tr>
<tr>
<td>Neo-pentane</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
</tr>
<tr>
<td>Heptane(1)</td>
<td>N/A</td>
<td>0 to 1 mole %</td>
<td>N/A</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>0 to 20 mole %</td>
<td>0 to 20 mole %</td>
<td>0 to 20 mole %</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>0 to 20 mole %</td>
<td>0 to 20 mole %</td>
<td>0 to 20 mole %</td>
</tr>
<tr>
<td>Hexanes(2)</td>
<td>N/A</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
</tr>
<tr>
<td>Heptanes(2)</td>
<td>N/A</td>
<td>0 to 1 mole %</td>
<td>0 to 1 mole %</td>
</tr>
<tr>
<td>Octanes (3)</td>
<td>N/A</td>
<td>N/A</td>
<td>0 to 0.5 mole %</td>
</tr>
<tr>
<td>Nonane(3)</td>
<td>N/A</td>
<td>N/A</td>
<td>0 to 0.5 mole %</td>
</tr>
</tbody>
</table>

(1) C7+ analysis results
(2) C7+ and C9+ analysis results
(3) C9+ analysis results
Superior performance

Modular analytical oven

Building off of the proven valves, columns, and detectors, the Rosemount 700XA gas chromatograph analytical oven has been designed for maximum serviceability and expandability. It features a clean architecture with few cables, making the analyzer simple to maintain. In addition, the oven features a unique, pivot-top base that provides maximum accessibility to all of the components below. By accommodating as many as six gas chromatograph valves, the Rosemount 700XA can handle more complex applications, and it can perform standard applications faster.

The gas chromatograph (GC) has a dual stage isothermal oven and up to six valves and multiple independent detectors, which provide extreme application flexibility and range. All components in the oven are completely accessible and serviceable in the field to reduce the total cost of ownership over the life of the analyzer.

Gas chromatograph valves

The GC has the capacity to support up to six 6-port or 10-port diaphragm/piston gas chromatograph valves. These pneumatic valves are guaranteed for the life of the gas chromatograph and are specified to operate over five million cycles. The unique, double-diaphragm design removes the need for springs, O-rings, and lubrication. To service the valve, the operator just needs to replace a cost-effective diaphragm set, which can normally be done in less than ten minutes.
Thermal conductivity detectors (TCDs)

The TCD is the detector of choice for most applications due to its universal response to components of interest in natural gas and light refinery and hydrocarbon processing gas analysis. The TCD in the Rosemount 700XA gas chromatograph is able to measure well beyond the normal ranges seen in other designs by performing many applications with low parts-per-million measurement requirements. This greatly simplifies the gas chromatograph design and lowers the cost to the end user when a simple and rugged TCD can be used.
Flame ionization detector (FID)

The FID permits measurement of trace hydrocarbons in a variety of samples at parts-per-billion (ppb) concentrations. The FID is unique in the industry because of its small size (less than three inches high) that fits inside the explosion-proof housing of the GC. Typical applications include measuring trace impurities in gases and light hydrocarbons as well as ambient air monitoring.
Micro flame photometric detector (µFPD)

The µFPD photo multiplier tube (PMT) module enables the measurements of trace sulfur compounds when integrated with Rosemount 700XA gas chromatographs.

The µFPD is installed in the analyzer oven. The associated electronics are mounted underneath. The design eliminates the need for instrument air, greatly reducing installation cost of the process gas chromatograph. The µFPD module comes fully integrated with the GC.

Micro-packed columns

The GC offers micro-packed columns with a superior combination of features found in both capillary and conventional packed columns — speed, sharp peak resolution, and low carrier gas consumption. In addition, the unique design provides for greatly extended column life and the longest warranty available on the market. You can also use standard capillary columns in GC applications if required.

Stream switching module

The internal sample stream switching module is available in four-stream or eight-stream versions. This saves end users the additional hardware and assembly costs associated with externally mounted stream selection assemblies. The module uses inert gas for solenoid actuation, with easy access for tubing changes and maintenance. For applications with varying stream composition, a double-block-and-bleed configuration is optionally available.
Controller electronics and communications

Modular electronics
The controller electronics, option cards, and field termination boards are all packaged conveniently in the lower section of the gas chromatograph (GC). Customer-terminated power and output connections are also made in this lower section of the GC.

Local indication and operation panel
You can view analyzer health and valve status through the GC's front cover. The panel displays green (healthy), yellow (warning), and red (failure) light emitting diodes (LEDs), along with LEDs indicating gas chromatograph valve on/off actuations, power, and central processing unit (CPU) health. Each valve can be actuated manually for simplified troubleshooting and fast system purging after maintenance.

Flexible inputs and outputs (I/O)
The GC offers flexible I/O, including five discrete digital outputs, five discrete digital inputs, two analog inputs, and six analog outputs for digital/analog signal I/O, plus expansion slots to accommodate additional I/O as required.

Touch key local operator interface (LOI), optional
The LOI permits maintenance and operation of the analyzer without a laptop or personal computer (PC). The LOI is a high-resolution color display that is touch key infrared activated and supports all core gas chromatograph (GC) operations.

Features include:
- Color LCD display with full VGA (640 x 480 pixels) resolution
- Auto-backlighting (adjustable)
- Eight infrared-activated touch keys and screen saver

In addition, the LOI:
- Maintains the Rosemount 700XA hazardous area classifications
- Indicates complete GC status, control, and diagnostics, including full chromatogram display and alarm messages.

Figure 1: Rosemount 700XA LOI
Data archiving and reports

With its expandable, solid-state memory, the gas chromatograph (GC) virtually eliminates the need for external data storage for archiving and reports.

Every analysis is time and date stamped and archived for retrieval via the MON2020 software. You can display, print, and/or store pre-configured reports internally. Trend results directly or export them in ASCII format.

Security
Four levels of password-protected security, configurable to read/write or read-only for third party access.

Audit logs
Data and event logging fully conforms to API report 21.1 for metering audit purposes and backup to primary systems (flow computer, SCADA, or DCS).

Event logs
A continuous record of all operator changes, with time, date, and user identification name records.

Alarm logs
A continuous record of all historical alarms, time and date stamped with alarm state and description.

Maintenance log
A scratch pad for tracking maintenance or testing performed on the GC system.

Archiving
Over 86,464 analysis records, 370 final calibration records, and 370 validation records for 240 days with a four-minute cycle time are archived automatically with time and date stamps.

Standard reports include

Average reports
Hourly, 24-hour, weekly, monthly, and variable averages

Analysis reports
Physical property calculations for component and group analysis and alarms

Raw data report
Retention times, peak areas, detector number, method, integration start/stop, and peak width for analysis

Calibration report
Raw component data, new response factors, retention times, and deviation from last calibration

Final calibration report
Results from the calibration response factors and retention time adjustments

MON2020™

Emerson has designed the Rosemount 700XA gas chromatograph (GC) to operate unattended. If adjustments are needed, Emerson’s proprietary gas chromatograph software, called MON2020, allows complete control of the GC either locally or remotely.

From MON2020, you can:
- Start or stop analysis, calibration, or validation cycles
- Configure, ignite, and check the status of the micro flame photometric detector (μFPD) or the flame ionization detector (FID) flames
- Generate and save current and historical analysis and calibration reports
- Review and modify analytical settings
- Upload and display multiple chromatograms for comparison
- Upload and trend any of the measured results
- Export data to text, HTML, or Microsoft® Excel™ for use in third party applications
- Check on original calibration against the last calibration
- Perform GC operation checks and modifications simultaneously
- Upload and view manuals and drawings stored in the gas chromatograph

MON2020 is a Windows® based software program that makes 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.
MON2020 is a powerful 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's chromatogram viewer allows you to view and compare both live and archived chromatograms simultaneously. Despite its small size, the chromatogram file includes analysis and calculation results, integration and valve time settings, retention time settings, and raw peak data.

MON2020's trend viewer makes it easy to trend multiple variables on a single chart. To help diagnose process or analysis issues, you can select single or multiple points on the trend viewer; the chromatograms associated with these points will open in the chromatogram viewer. You can save the trend files or export them as text, CSV, or Microsoft Excel files.

MON2020 can connect to a Rosemount GC via Ethernet directly or over your local or wide area network. The software is equipped with multi-level username and password security settings to limit and control access to the GC and provide levels of access authority ranging from read-only access to full control of the GC and its data.
Integration with third-party networks

Whether you want to network gas chromatographs (GCs) throughout your network or simply link a single GC to a flow computer, the you can configure the Rosemount 700XA to handle most any scenario.

- Choice of Ethernet, Modbus® Serial, or 4–20 mA analog outputs
- Can use the same network to connect Rosemount 370XA, Rosemount 700XA, and Rosemount 1500XA gas chromatographs
- Connectivity to plant control systems using industry standard protocols, such as Modbus

The GC supports three types of communication interfaces:

- 10/100 Mbps Ethernet connectivity
- RS-232, RS-422, and RS-485 serial communication links
- 4–20 mA analog outputs

**Ethernet connectivity**

Two Ethernet interfaces are available on the GC. You can configure each interface with a static Internet protocol (IP) address, subnet mask, and gateway. The Ethernet interfaces on the GC serve MON2020™ connections and Modbus TCP requests. The dual Ethernet interfaces can be used in many ways. Examples:

- Connect to a plant network for GC maintenance personnel and the other to a control network using Modbus TCP
- Connect to a broadband cellular wireless gateway for remote GC access, for data collection and maintenance, and the other for a local connections.

**Modbus serial**

The Modbus protocol is widely used today, because it is simple and effective. It allows full GC database access and analytical control, which provides the greatest level of flexibility when connecting a GC to a DCS or flow measurement system. Modbus uses RS-232, RS-422, and RS-485 to physically connect to the GC.

**4–20 mA analog outputs**

The GC supports isolated 4–20 mA analog outputs. The analog outputs allow very long connections to traditional DCS measurement points using existing plant wiring infrastructure. Emerson has built six analog outputs into the Rosemount 700XA as standard features, but we can expand it to 14 analog outputs with optional expansion cards.

**Data communication**

The GC can provide data to third-party products, such as control systems or flow computers, using Modbus TCP (SIM 2251 and User Modbus), Modbus Serial, and 4-20 mA analog outputs.
Analytical systems and integration services

Emerson offers a comprehensive range of analytical system solutions and third party integration services. From stand-alone panels and cabinets to three-sided shelters and environmentally controlled walk-in enclosures, our complete range of capabilities is backed by over 60 years of analytical expertise across thousands of process installations throughout the world.

From front end engineering design (FEED) and consulting services to manufacturing, integration, and testing to commissioning services and on-going lifecycle support, Emerson provides complete turnkey analytical solutions.

Emerson has full scope analytical systems integration centers and regional support facilities strategically located across the world. Emerson has the global resources and analytical expertise to provide localized support.

Engineered sample systems

Any process gas chromatograph (GC) is only as good as the quality of the sample it measures. So Emerson custom engineers every sample system for process GCs for the specific requirements of the application. Common features include:

- Heated and open-panel designs
- All components rated for the area classification
- Automatic calibration/validation as an option
- Variety of sample probes to extract a reliable and stable sample from the process
Environmental chamber testing

Every Rosemount GC that leaves an Emerson facility undergoes rigorous testing throughout assembly. Emerson puts the majority of its systems into an environmental chamber test, where the systems must operate to specification in an environment where the temperatures cycle between 0 and 130 °F (-18 and 50 °C).

Emerson's product testing procedures are much stricter than the industry standard for analytical measurement products. When you purchase an Emerson GC, you can be assured that you are investing in the highest-quality process gas chromatograph available.

As a result of rigorous lab and chamber testing, 100 percent of all GCs that we ship will operate to the performance specifications across the quoted temperature range.

The Emerson process gas difference

- Low power consumption
- Low install cost
- Small footprint
- Remote connectivity
- Built tough to stand up against any environment
- Rigorously tested to ensure performance
- Field-mountable technology means solid performance at reduced cost
- High-sensitivity thermal conductivity detectors (TCDs) can often replace more complex detectors
- Micro-packed columns that are made to last
- Capillary columns support, option when needed
- Diaphragm valves with a lifetime warranty
- Broad application scope with single-or dual-detector capability
- Easy-to-use MON2020™ software for advanced diagnostics and simplified troubleshooting

Specifications

Consult Emerson if your requirements are outside the specifications listed below. Improved performance, other products, and material offerings may be available.

Construction

Hazardous area certified for:

| Environment temperature         | -4 to 140 °F (-20 to 60 °C) |
| Enclosure protection rating     | IP66                        |
| Corrosion protection            | Gas chromatograph (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. |
| Mounting                        | Floor-standing (standard), wall, or pipe-mount (optional) |
|                                 | Refer to Recommended installation for mounting dimensions. |
| Approximate weight (without sample system) | 110 lb. (50 kg) |

Certifications and approvals

The Rosemount 700XA has the following certifications and approvals. Refer to the Rosemount 700XA product page for product certificates and approvals. Follow all safety markings on the analyzer.

<table>
<thead>
<tr>
<th>Type</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>Operating temperature</td>
</tr>
<tr>
<td></td>
<td>- Thermal conductivity detector (TCD): 0 to 130 °F (-18 to 55 °C)</td>
</tr>
<tr>
<td></td>
<td>- Flame ionization detector (FID): 32 to 140 °F (0 to 60 °C)</td>
</tr>
<tr>
<td></td>
<td>- Micro flame photometric detector (µFPD): 32 to 122 °F (0 to 50 °C)</td>
</tr>
<tr>
<td></td>
<td>- Hazardous area certified: -4 to 140 °F (-20 to 60 °C)</td>
</tr>
<tr>
<td></td>
<td>- 0 to 95% relative humidity (non-condensing)</td>
</tr>
<tr>
<td></td>
<td>- Indoor/outdoor</td>
</tr>
<tr>
<td></td>
<td>- Pollution - degree 2 (The GC can withstand some non-conductive environmental pollutants, e.g., humidity.)</td>
</tr>
<tr>
<td></td>
<td>- Vibration: Conforms to ASTM D4169</td>
</tr>
</tbody>
</table>
**Type**

Hazardous area certifications (hardware dependent)

**Specifications**

- USA and Canada
  - Class I, Zone 1, Ex/AEx db IIC, Gb T6/T4/T3
  - Class I, Division 1, Groups B, C, and D, IP66
- EU ATEX and IECEx
  - Ex db IIC Gb T6/T4/T3
  - \( T_a = -20 \, ^\circ\text{C} \) to \( 60 \, ^\circ\text{C} \)
  - SIRA 08ATEX 1328X
  - IECEx SIR 08.0093X

Consult factory for additional product certifications available.

**Table 2: Approval Temperature Ratings**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T6</td>
<td>Basic system no alternative options included</td>
</tr>
<tr>
<td>T4</td>
<td>Liquid sample injection valve (LSIV) option included</td>
</tr>
<tr>
<td>T4</td>
<td>Heat trace option with a maximum 176 °F (80 °C) temperature switch setpoint</td>
</tr>
<tr>
<td>T3</td>
<td>Heat trace option with a maximum 230 °F (110 °C) temperature switch setpoint</td>
</tr>
</tbody>
</table>
Performance capabilities

**Oven**
Airless, maximum 248 °F (120 °C)

**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 and calibration gas input pressure range**
3 to 30 psig (0.2 to 2.1 bar)
15 psig (1 bar) recommended

**Gas input pressures (maximums)**
- Sample gas: 90 psig (6.2 bar)
- Carrier gas: 90 psig (6.2 bar)
- Actuation gas: 110 psig (7.6 bar)

**Detectors**
- Thermal conductivity detector (TCD)
- Flame ionization detector (FID)
- Micro flame photometric detector (µFPD)
Available in multiple configurations

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

**Gating options**
Fixed-time, slope sensing gating of peaks

**Chromatograms stored/archived internally**
- Analysis results: over 240 days
- Analysis chromatogram: 86,464 records

Electronics

**Power**

**Standard**
- 24 Vdc at the unit (21 - 30 Vdc)
- 55 Watts (startup)
- < 25 Watts (steady state)

**Optional**
90 to 264 Vac, 47 to 63 Hz

**Power consumption**
Typical (at 72 °F [22 °C])
- Start-up: 105 Watts DC (125 Watts AC)
- Steady state: 35 Watts DC (40 Watts AC)

**Note**
Add 15.5 Watts DC (18 Watts AC) for local operator interface (LOI).
Communications (standard)

- Ethernet: Two available connections - one RJ-45 port and one four-wire terminal with 10/100 Mbps
- Analog inputs: Two standard input filtered with transient protection, 4-20 mA (user scalable and assignable)
- Analog outputs: Six self-powered isolated outputs, 4-20 mA
- Digital inputs: Five input, user assignable, optically isolated, rated to 30 Vdc at 0.5 A
- Digital outputs: Five user-assignable output, Form C and electro-mechanically 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®/personal computer (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

Memory capacity: One Gb of flash memory for data storage; 128 MB of SDRAM system memory with 2 MB static RAM (battery-backed)

Airless analytical oven

<table>
<thead>
<tr>
<th>Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valves</td>
<td>6-port and 10-port XA valves; piston-operated diaphragms with pneumatic actuation</td>
</tr>
<tr>
<td>Columns</td>
<td>Maximum of 90 ft. (27.4 m) of micro-packed columns; 1/16-inch (1.6 mm) outside diameter or 300 ft (91.4 m) of capillary columns</td>
</tr>
<tr>
<td>Solenoid actuation</td>
<td>■ 24 Vdc</td>
</tr>
<tr>
<td></td>
<td>■ Max 100 psig (6.9 bar)</td>
</tr>
<tr>
<td>Temperature control</td>
<td>■ 24 Vdc</td>
</tr>
<tr>
<td></td>
<td>■ 2 heaters</td>
</tr>
<tr>
<td></td>
<td>■ 2 optional heaters</td>
</tr>
<tr>
<td></td>
<td>■ Maximum oven operating temperature of 302 °F (150 °C)</td>
</tr>
</tbody>
</table>
Software

<table>
<thead>
<tr>
<th>Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software</td>
<td>Windows™-based MON2020™</td>
</tr>
<tr>
<td>Firmware</td>
<td>Embedded firmware</td>
</tr>
<tr>
<td>Methods</td>
<td>8 timed event tables and 8 component data tables</td>
</tr>
<tr>
<td>Analysis clocks</td>
<td>Multiple analysis clock configurations</td>
</tr>
</tbody>
</table>
| Peak Integration   | ■ Fixed time or auto slope and peak identification  
                      ■ Update retention time upon calibration or during analysis |
| Cyber security     | Encrypted SSL communication between gas chromatograph (GC) and MON2020 |

Corrosion protection

<table>
<thead>
<tr>
<th>Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure material</td>
<td>Copper-free and aluminum-coated with industrial grade powder coat suitable for high humidity and salt-laden environments</td>
</tr>
<tr>
<td>Process wetted materials</td>
<td>Stainless steel; if the function of an item excludes the use of stainless steel, such as the glass rotameter tubes, materials that are resistant to corrosion are used</td>
</tr>
<tr>
<td>Electronics</td>
<td>All electronic circuit boards are tropicalized with a clear conformal coating</td>
</tr>
</tbody>
</table>

Archived data storage capabilities

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum number of records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis results</td>
<td>86,464 (240 days with 4-minute cycle time)</td>
</tr>
<tr>
<td>Final calibration results</td>
<td>370</td>
</tr>
<tr>
<td>Calibration results</td>
<td>100 (per row in Analysis Configuration table)</td>
</tr>
<tr>
<td>Final validation results</td>
<td>370 (per row in Analysis Configuration table)</td>
</tr>
<tr>
<td>Validation results</td>
<td>100 (per row in Analysis Configuration table)</td>
</tr>
<tr>
<td>Analysis chromatograms</td>
<td>1,703</td>
</tr>
<tr>
<td>Final calibration chromatograms</td>
<td>370 (per row in Analysis Configuration table)(1)</td>
</tr>
<tr>
<td>Final validation chromatograms</td>
<td>370 (per row in Analysis Configuration table)(1)</td>
</tr>
<tr>
<td>Protected chromatograms</td>
<td>100</td>
</tr>
<tr>
<td>Hourly averages (up to 256 variables)(2)</td>
<td>2,400</td>
</tr>
<tr>
<td>Daily averages (up to 256 variables) (2)</td>
<td>365</td>
</tr>
<tr>
<td>Weekly averages (up to 256 variables)(2)</td>
<td>58</td>
</tr>
<tr>
<td>Monthly averages (up to 256 variables)(2)</td>
<td>12</td>
</tr>
</tbody>
</table>
### Type

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum number of records</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable averages (up to 256 variables)(^{(2)})</td>
<td>2,360</td>
</tr>
<tr>
<td>Every run (up to 256 variables)</td>
<td>2,360</td>
</tr>
<tr>
<td>Alarm logs</td>
<td>1,000</td>
</tr>
<tr>
<td>Event logs</td>
<td>1,000</td>
</tr>
</tbody>
</table>

\(^{(1)}\) The gas chromatograph (GC) can store final calibration or final validation chromatograms for up to one year, provided that no more than one calibration or validation is run per day, and the cycle time is less than 15 minutes. If the cycle time exceeds 15 minutes, the oldest final calibration or validation chromatograms will be deleted to make room for newer ones.

\(^{(2)}\) A total of 256 averages, including hourly, daily, weekly, monthly, variable, and every run averages are archived.

### Touch key local operator interface (LOI), optional

The Rosemount 700XA local operator interface (LOI) allows for maintenance and operation of a gas chromatograph (GC) without a laptop or personal computer (PC).

The LOI is a high resolution color display that is touch-key, infrared-activated, and supports all core GC operations.
Recommended installation

The drawings below represent the minimum recommended installation guidelines for the Rosemount 700XA gas chromatograph. Please consult Emerson for detailed installation recommendation of your application.

Dimensions are in inches (mm).

Floor mount details

Figure 3: Floor Mount Side and Front Views
Pole and wall mount details

Figure 4: Pole Mount Side View and Wall Mount Side and Front Views

A. Pole mount option
B. Wall mounting kit
C. Mounting holes
D. Liquid sample injection valve (LSIV)