Model 2350A
Gas Chromatograph Controller

Optimize the Performance of Your Gas Chromatograph

With the Emerson Model 2350A Gas Chromatograph Controller, you can increase the processing power, operating efficiency and system performance of your existing Emerson Model 500 Gas Chromatograph.

Remotely accessible via the easy-to-use MON2000 software, diagnostic capabilities are significantly expanded, allowing users to access on-screen chromatograms directly from their PC or workstation. Another key feature is the "Overlay" function, which makes a direct comparison of historical chromatograms and simplifies troubleshooting. The "Zoom" function, offers a better view of the baseline to improve peak integration for maximum analytical performance.

Increase Your Operating Efficiencies
- Utilize as many as eight-field-configurable serial ports to support four unique user-selectable versions of Modbus to simplify communications between flow computers, PLCs, DCSs, and SCADA systems
- Access your gas chromatograph using industry standard Modbus/TCP connectivity
- Simplify the work process by eliminating strip chart recorders, printers, portable service panels, and workstations
- Download MON2000 software enhancements directly from the Rosemount Analytical website to update your 2350A controller.

Increase Your Diagnostics Capabilities
- Choose from the latest ISO 6976, GPA 2172, AGA 8 calculation methods with GPA 2145 physical constants
- Calculate hourly, daily, weekly, monthly, or variable (0–167) averages
- Access up to 254 archived item averages and over three months of standard four-minute runs
- Trend archived variables graphically on a PC or printer

Expand Your System’s Potential
- Enhance resolution with advanced 16-bit analog-to-digital converters
- Employ a second gas chromatograph oven in parallel with four user-configurable auxiliary analog inputs, or monitor alarms, and peripheral devices with five digital inputs/outputs
- Detect trace thermal conductivity detector (TCD) component analysis at lower detectable limits with a second gas chromatograph oven
- Utilize parallel chromatography for advanced applications
Specifications

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

Construction

Physical Environment: Operating range at 0° to 130 °F (-18° to 55 °C), storage range at -40° to 185 °F (-40° to 85 °C). Humidity 0–95 % RH non-condensing.

Mounting Options:
- Integral/field mount – X-proof – 60 lbs (27.21 Kg) NEMA 4X, IP 65 19
- Rack-mount – 25 lbs (11.34 Kg)
- Panel-mount retrofit – 22 lbs (9.98 Kg)

Safety Classification:
- 2350A Explosion Proof Controller
  CSA certified for use in Class I, Division 1, Groups C and D hazardous locations in both the US and Canada. ATEX-certified to Ex d IIB T6 standards EN50014 and EN50018 for potentially explosive atmospheres Parts 1 and 5.
- 2350A Rack Mount: CSA certified for general purpose classifications.

Electronics

Electrical Power: 115 VAC +/- 15 % at 0.55 A, 50/60 Hz; 230V AC +/- 15 % at 0.275 A, 50/60 Hz

Digital Outputs: Five digital outputs can be used for alarms, optically isolated, with transient protection. 30V AC 500 mA maximum.

Keypad Display: Optional 18 keys/8 lines x 41 characters. Uses Com 4 or Com 8, depending on serial port options.

Parallel Port: One parallel port available for printed reports.

Internal Modem: Optional 300 to 33.6 k baud field configurable.

Performance Capabilities

Detector Inputs: TCD, FID, FPD, single or dual pre-amp inputs.

Transient Protection: CE tested and certified to the highest levels (3 & 4) of the European IEC 801 STD.

Methods: Four timed event tables, four component tables freely assignable to each stream.

System Memory: 128 MB disk on a chip storage for all historical data.

Chromatogram Storage: Last run for each stream and last cal for each method. Additional chromatogram storage in MON2000 software running on a connected computer.

Communications (Standard)

Four serial ports standard (user-selectable RS-232/484/422)
One RJ-45 Ethernet connection

Analog Inputs:
- Detector 1–4 x 16 Bit A/D, each filtered with transient protection dedicated to the GC auto-ranging pre-amp.
- Four additional 16 Bit A/D with transient protection for optional inputs from other devices or for use with a second auto-ranging pre-amp from a second GC oven.

Analog Outputs:
- Two outputs standard
- 4–20 mA with software calibration
- Optional: Four or eight additional outputs

Digital Inputs:
- One GC alarm, optically isolated with transient protection
- Five user alarms, optically isolated, with transient protection
- 12 V standard, maximum 24 V external

Optional:
- Com 4A board for additional serial ports (5, 6, 7, 8)
- Internal modem connected to dedicated serial port

Latest Measurement Standards

- AGA8 compressibility and density calculations
- GPA 2172 Physical properties calculations
- The latest GPA 2145 physical properties (energy content and related calculations) are included as standard components
- ISO 6976-1995 applications for metric energy measurement with a full choice of calculation methods
- Manual entry of alternate physical constants is permitted (but tagged as "User" for GC audit purposes)
- Hydrocarbon dewpoint calculations are an option for the extended C9+ analysis (using PR or RKS equations of state and latest physical property data)
Recommended Installation

Specialized for ease of use, the controller performs all signal processing, calculations, instrument control, communications, and data storage for the Model 500 Gas Chromatograph. The drawings below represent the minimum recommended installation guidelines for the 700XA Gas Chromatograph. Please consult Danalyzer for detailed installation recommendation of your application.
MON2000™ Software

The Model 2350A Gas Chromatograph is designed to operate unattended. If, however, adjustments are needed, our exclusive MON2000™ software allows complete control of your gas chromatographs – either locally or remotely.

From within MON2000, a user can:

- Review and modify analytical settings
- 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
- Overlay multiple chromatograms for troubleshooting and calibration
- Check original calibration against last calibration

MON2000 also has a number of tools built in that 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 collected from the gas chromatographs can be stored and displayed in a wide range of options, such as trend lines on the screen and logs automatically documenting all changes made to the gas chromatograph. Data can also be exported in formats compatible with most third-party Windows® applications.

The MON2000 Software is Windows®-based software designed to make analyzer configuration, maintenance, and data collection easy. With intuitive dropdown menus and fill-in-the-blank tables, even new users can quickly navigate through the software.

The MON2000 software can display both current and multiple archived chromatograms on the screen, streamlining the time needed to perform routine analyzer maintenance.

Comparing multiple chromatograms and zooming into specific sections is easy with the point-and-click design of MON2000.