MON2000™ Software and Networking for Model 500 and Model 700 Gas Chromatographs

MON2000 is Windows®- based software designed to make Emerson Model 500 and Model 700 gas chromatographs simple to operate. Analyzer configuration, maintenance, and data collection combined with intuitive dropdown menus and fill in the blank tables allows even the most inexperienced users the chance to quickly learn and navigate through the software.

Providing you with increased flexibility, calculation power and data security, MON2000 provides increased measurement accuracy and simplifies identification of gas components required for your specific applications needs, including process control, custody transfer, and environmental solutions.

Features

Increased Operating Efficiencies & Simplified Troubleshooting
Model 500 and Model 700 gas chromatographs are designed to operate unattended. If, however, adjustments or troubleshooting is needed, MON2000 allows complete control and operation of your gas chromatograph through local or remote connectivity.

Improved functionality includes:
- Full choice of ISO 6976-1995 or GPA 2172-09 calculation methods and parameters
- Trend archived variables graphically on a PC or printer
- Analyze up to eight chromatograms simultaneously
- Overlay multiple chromatograms to spot and trend
- Check and compare current calibration against previous results
- Zoom screen capabilities to optimize peak integration
- Automatic recording of alarms in a log file
- Maintenance log scratch pad for keeping track of any maintenance or testing performed
- Event logs provide continuous record of all operator changes with Time and User information recorded

Communication Flexibility
MON2000 has the communication flexibility and networking power to send information to other devices such as SCADA systems, flow computers, and plant control systems.
- Support for RS-485, RS-422 and Ethernet
- Option to link to multiple PC workstations using MON2000
- RS-232C local port for easy maintenance and operation
- Polling of alarms and chromatogram reports to MON2000 workstations from anywhere in your GC network
- Export data for use in other third-party applications

Communication Flexibility
- Last chromatogram for each sample and calibration stream stored in the gas chromatograph
- Fixed time or auto slope detection for peak integration
- Hot-keys shortcuts for raw data, analysis results, and other data directly from chromatogram screen
- Ticks downward for timed events, ticks upward for peak integration
- Colored tick marks for easier TEV and CDT tracking
Networking and Data Communication

Emerson Gas Chromatographs can be configured in a number of networking and data communication schemes to meet the communication requirements for the process and natural gas industry. Whether you want to network gas chromatographs throughout the plant or simply link a single gas chromatograph to a flow computer, the Gas Chromatograph can be configured to handle most any scenario.

Options include RS-485 networks, Ethernet, modem, as well as multi-drop. It is even possible to set up automatic polling for data collection if desired.

- Choice of Ethernet, RS-422 or RS-485 network
- Same network connects Danalyzer Model 700, Model 500 and Model 1000 Gas Chromatographs
- Able to connect multiple PC workstations using MON2000
- Connectivity to flow computer or SCADA systems using industry standard protocols such as Modbus and OPC
- Data communication options include simple analog and discrete signals as well as Modbus serial links

To preserve the integrity of the analysis data, all Gas Chromatographs are capable of storing analysis data internally in the event of loss communication.

RS-485

In the process industry, serial communication based on an RS-485 network is a very popular choice between gas chromatographs and other devices such as Distributed Control Systems. Simple yet robust, the serial link makes it easy to transfer compositional data to other field devices needing the information. Furthermore, Rosemount Analytical Process Gas Chromatographs have multiple serial ports built in to provide the ultimate in communication flexibility.

When configured in a “multi-drop” network, up to 32 analyzers can be connected together to simplify networking as well as giving the user the option to access all the analyzers from one workstation if desired.

Ethernet

Ethernet is the most widely-installed local area network technology in the world. The most commonly installed Ethernet systems are 10Base-T and provide transmission speeds up to 10 Mbps. But Ethernet systems using fiber optics and transmission speeds of up to 100 Mbps are being increasingly used.

When the Ethernet option for networking the gas chromatographs is selected, restrictions on network size and number of analyzers and MON2000 workstations are removed. With the use of media converters and appropriate hubs, the user can freely select between using wire-based networks (10 BaseT) or fiber-based networks (10 BaseF).
Secure Modbus Connectivity
For on-line gas chromatographs, Modbus continues to be the preferred choice to transfer gas chromatograph data to flow computers and SCADA systems. The Danalyzer Modbus design avoids the use of central interface cards or computers that can act as a single-point of failure in the Modbus link. Instead, the flow computer or SCADA system can “talk” directly to each gas chromatograph to gather the data needed. Danalyzer Gas Chromatographs provide 4-8 optional communication ports.

Furthermore, the register and coil addresses can be easily customized to meet the specific data structure of the flow computer or SCADA system. There is even a program built into the MON2000 software to test the Modbus link if troubleshooting is needed.

OPC Communication
A new standard replacing Modbus is OPC (OLE for Process Control). OPC is a data transmission standard developed in the mid-1990s to share data in a fast, robust fashion, and eliminates proprietary schemes used by some vendors. OPC works on a server / client format that provides bi-directional communication between a host of analyzers from various manufacturers and the plant control system.

The OPC option follows the tag naming protocol proposed by the Center for Process Analytical Chemistry (CPAC). The option also supports OPC Historical Data Archiving (HDA) functions which can be important to help ensure that data is not lost even if communication links are down for extended periods of time.

Communication To Other Devices
With the power of the Rosemount Analytical Process Gas Chromatograph networking capability, it is natural for users to want to bring in other types of field data onto the network such as measurement data from non-network analyzers or a status signal from a safety monitor.

The Model 2350A Continuous Analyzer Controller (CAC) is the ideal solution for integrating a wide range of on-line analyzers on to the robust gas chromatograph network. Analyzers integrated onto the network include any analyzer capable of sending its data via an analog signal such as oxygen, moisture, and infrared analyzers as well as signals from pressure and temperature transmitters.

Once on the network, the data from the on-line analyzers is accessible to all the gas chromatograph communication links and workstations; eg, Modbus, OPC and data archiving on PC workstations. The data can also be used in common reports and calculations.

The Model 2350A CAC is also able to interact with the on-line analyzers to monitor alarm status, initiate calibration / validation as well as monitor for concentration limit alarms.

The Model 2350A CAC provides a portal for non-gas chromatograph data to enter onto the powerful Danalyzer™ network system.
MON2000 Software and Networking

Powerful Yet Simple – MON2000 Software

Simple drop-down menus
Connect to any GC with a mouse click
Full featured chromatogram display

Summary of application event status and time
Automatic listing of measured components
Quickly add chromatograms to overlay
Save CGM’s to hard drive

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