

Fast Parallel Processing for Multi-Component Gas Analysis

FXI[®] Series 7[™] Process
Gas Chromatograph



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FXI® Series 7™ Process Gas Chromatograph

NextGen Process GC

The FXI Series 7 is the next generation process gas chromatograph developed by our Analyzer Systems business, (formerly AIT) from a heritage of highly reliable process GCs. The FXI Series 7 blends an all new state-of-the-art HMI software and modular electronics platform with field-proven, robust chromatography architecture. New enhancements to the platform feature ChromFX™ software, parallel chromatography and multiple-oven capability.

New ChromFX Software

ChromFX™ delivers a game-changing user experience in process gas chromatography. Our new software platform simplifies user setup and operational functions through an intuitive, attractive and easy to navigate menu-selectable user interface. Utilizing a brilliant 15" touchscreen color GUI, it provides a large, color chromatogram display with easy to read overlays and labels. It integrates a modern scripting engine that is compatible with VB.NET, allowing rich user interfaces to be developed using commonly available support software.



FXI Series 7 Applications

Chemicals

- Ammonia Plants
- Chlorine Plants
- Air Separation Plants

Environmental

- Ambient Air Monitoring
- VOC Monitoring in
- Waste/Cooling Water & Flare Stacks

LNG Plants

Natural Gas Processing

- BTU Analysis
- H2S and Total Sulphur
- Natural Gas Sweetening

Petrochemicals

- Ethylene Plants
- Polymerization Processes
- Convert Control
- Reactor Control

- Distillation Control
- Purification Efficiency
- Product Purity
- Process Safety Monitoring
- Aromatics Products
- Additive Product Analysis

Petroleum Refining

- Alkylation
- Catalytic Reformer
- Crude Distillation
- Catalytic Cracker
- Light Ends Recovery
- Hydrogen Reforming
- Vapor Recovery
- Isomerization

Pharmaceuticals

- EO Sterilization
- Solvent Analysis
- Gas Purity



Upgrade to the FXI Series 7 Platform

For heritage users of Foxboro® 931s and AIT's FXI Series 5 systems, our engineers have designed an easy to install, single platform kit to bring your existing systems into a state of the art configuration. The upgrade kit features new electronics with ChromFX Software on an easy to install plate. The kit includes a new door with touch-screen interface. To minimize downtime the upgrade can be easily performed in the field, leaving the existing sample conditioning systems and oven intact.

Customer Benefits

- Improved plant efficiency
- Enhanced user-friendly operator interface
- Increased production and reliability

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New Packaging & Electronics for Superior Performance

The FXI Series 7 combines state-of-the-art ChromFX software in a highly configurable system to deliver custom process chromatography like never before. Advanced packaging of the integrated purge system allows clean exterior lines.

Networking Communications Capabilities

The FXI Series 7 analyzer offers open system architecture allowing for a variety of connection options to a DCS system as well as supervisory connections to a plant Local Area Network. The Series 7 offers more flexibility and more expandability.

DCS Communications

- Serial MODBUS® RTU as the primary DCS connection using the Modicon® data format. Dual port redundancy and data formats are offered as options.
- Redundant Modbus, Ethernet TCP, OPC and HART are available as options for DCS communications.
- Fully configurable analog & digital I/O with trending and data multiplexing available.

Connectivity

- TCP/IP Ethernet connection is available for networking several GCs together for central monitoring within a shelter for remote monitoring over a plant LAN.
- Optional modem and remote communication software for remote diagnostics and troubleshooting.

Workstation Option

- Remote analyzer workstation for interfacing to single or multiple PGCs for functions such as real-time chromatograms, data analysis reports and programming control.
- Multiple GCs can be configured without the touchscreen and be interfaced to a single remote workstation for cost savings.

New GC Electronics Enhance Application Flexibility

Expanded, faster GC applications now available with multi-detector, parallel chromatography operation

- Parallel GC detectors, running simultaneously, collecting data from simple valve/column applets
- Option for multi-oven and different GC oven temperature zones can be provided
- Modular assembly with flexibility for Electronic Pressure Regulation and application techniques
- New small profile, very long life diaphragm chromatograph valves
- Up to 32 process streams in a single GC with ability of sample system control and monitoring

The FXI Series 7 is Available Packaged in Multiple Oven Configurations



Standard Oven



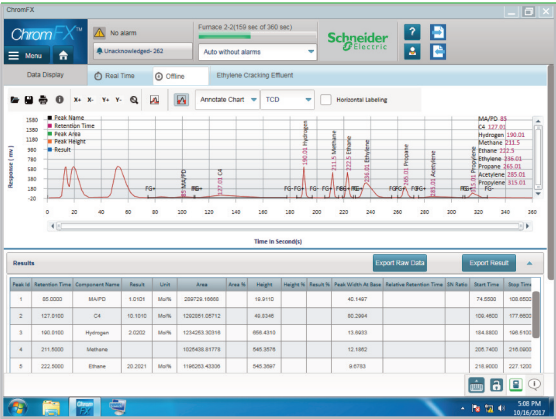
Dual Detector Oven



Multi-Detector DualOven

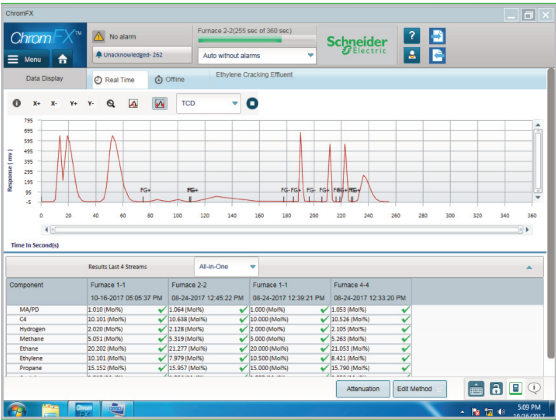
ChromFX Software Delivers Power to Your Process

ChromFX changes the game for process GC's. Created with the most advanced software development tools, ChromFX provides the user with an unmatched experience. It offers the most intuitive and easy-to-use process GC software available on the market. It's specifically designed for use with fingertip touch or stylus. The FXI Series 7 GC analyzer has a built-in processor for standalone operation and control. A powerful 15" color display, touch-screen offers user interface with an "on demand" pull down virtual keyboard.



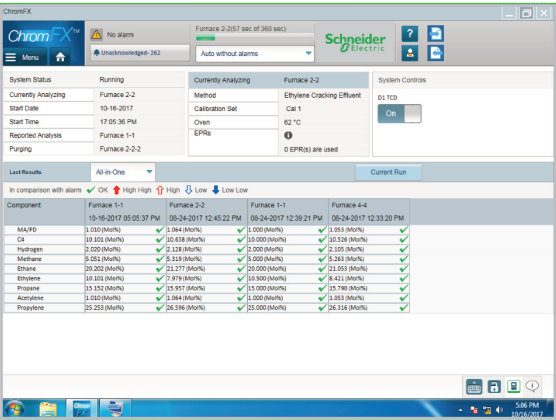
The Dashboard Manager >

The Dashboard Manager provides a convenient home page landing location. Developed for both the operator and technician, it gives an instant GC hardware status including real-time status of current stream data, alarms, composition and analysis of the prior four streams. Other screens can be easily navigated to via the drop down menu.



Real-Time Chromatograms & Saved Chromatograms >

ChromFX is a menu driven package utilizing pull down selections that allow for full GC configuration, status, maintenance and control operations that are easily accessed and can be changed on the fly. It also incorporates real-time & saved chromatograms with a new chromatogram simulating system that allows for active real-time comparison of theoretical stream chromatograms.



Method Set-Up >

ChromFX utilizes a step-by-step set-up wizard to configure your detectors, valves, columns and methods. You can easily configure the GC with ability to pull up a virtual keyboard. The set-up wizard will guide you through the configuration of a series of seven primary set pages utilizing touch screen, stylus or mouse and keyboard interface.

Specifications

Gas Chromatograph Standard Specifications

Performance – Repeatability Measurement by Area Integration*

Range	TCD packed Column	FID Packed Column	FPD Packed Column	TCD/FID Capillary Column
0 to 100%	± 1%	± 1%	N/A	± 1%
0 to 10%	± 1%	± 1%	N/A	± 1%
0 to 1%	± 1%	± 1%	N/A	± 1%
0 to 0.5%	± 1.5%	± 1%	N/A	± 1.5%
0 to .1%	± 2%	± 1%	± 1%	± 2%
0 to 500 ppm	± 3%	± 1.5%	± 1.5%	± 2%
0 to 100 ppm	± 4%	± 2%	± 2%	± 2%
0 to 50 ppm	N/A	± 2%	± 2%	± 3%
0 to 10 ppm	N/A	± 2%	± 2%	± 4%
0 to 5 ppm	N/A	± 3%	± 3%	N/A
0 to 1 ppm	N/A	± 4%	± 4%	N/A

*Note: Specifications stated here are typical and must be confirmed based on specific applications.

Environmental and Oven Specifications

- Ambient Temperature Limits: - 15° and +50°C (5° and 122°F)
- Relative Humidity Limits: 0 - 95%, noncondensing
- Oven Temperature Range: 40° to 140°C (104° to 284°F)
- Power Requirements: 115/230 Vac, ±10%, 50/60 Hz
- Power Consumption: 1,100 VA Single Oven
- Power Consumption: 2,000 VA Dual Oven

Area Classification / Safety

- Electrical Safety Specifications:
 - Class I, Division 1/2 Groups B, C, & D (US & Canada)
 - ATEX, IECEx IIB+H2, T3 with air purge Zone 1/2
 - General purpose areas
 - IP66 Ingress protection

Process Control interface

- Digital Inputs – 16 digital input for remote monitoring
- Digital Outputs – Up to 32 current sinking outputs or 18 dry contacts
- Analog Inputs – Eight analog input channels; 4-20 mA / 0-10 V. Signals can be integrated into data reports
- Analog Outputs – Up to 16 isolated 4-20 mA signals proportional to measured range.
- Modbus TCP as standard. Modbus RTU (RS232, RS485 - 2 or 4 wire) as option
- Redundant Modbus RTU/TCP, and OPC are available as options.

Gas Requirements (application dependent)

- Operating Air: dry and oil-free air at 345 kPa (50 psi) minimum and 3.4 to 5.1 m³/h (2 to 3 ft³/min) at standard conditions. Maximum supply pressure is 690 kPa (100 psi)
- Carrier Gas: per application (e.g., He, N₂, H₂). Chromatographic grade (CG) required. Max. supply pressure is 414 kPa (60psi)
- Zero Air: CG hydrocarbon-free, dry air at 400 cm³/min (0.85 ft³/h) required for FID. Maximum supply pressure is 414 kPa (60psi)
- Zero Hydrogen: CG hydrocarbon-free, dry hydrogen at 40 cm³/min (2.4 in³/min) required for FID. Maximum supply pressure is 414 kPa (60 psi)

Detectors

- Thermal Conductivity, Flame Ionization, Flame Photometric; or combination of up to 2 detectors; (application dependent)

Instrument Dimensions (large single oven)

- Inside Dimensions of Oven:
 - Large (W x H x D): 515 x 452 x 273 mm (20.3 x 17.8 x 10.8 in)
 - Small (W x H x D): 515 x 300 x 273 mm (20.3 x 11.8 x 10.8 in)
- Overall Dimensions:
 - (W x H x D): 824 x 1,403 x 452 mm (32.5 x 55.25 x 17.8 in) includes purge/regulator panel
- Approximate Weight: 120 kg (265 lb)

System Integration & Design

System Integration Designed to Meet Your Needs. We'll design and build integrated systems for your project. Schneider Electric offers single or multi-stream sample conditioning systems to optimize the performance of your FXI Series 7 analyzers.



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