

MGA iSCAN™

The **MGA iSCAN** advances the state-of-the-art in process mass spectrometry with the first double-focusing, magnetic scanning process analyzer. Fusing mass spectrometer technology from Hamilton Sundstrand's military and space businesses, the MGA iSCAN provides real-time multicomponent gas analysis.

- Superior stability, sensitivity, resolution and ruggedness.
- Rapid analysis time – multiple components in less than 30 seconds.
- Investigative scan provides unknown compound identification to better characterize processes.
- Measures up to 40 components from low ppb to 100% for as many as 100 sampling sites.
- Mass range of 2-200 amu.
- Easy to use Cypress® Windows® based software designed for use by maintenance personnel, engineers and development chemists.
- Communication options including Modbus®, Ethernet OPC® and analog protocols.
- Optional validation assistance for 21 CFR Part 11 compliance.



MGA Advantage

- Easily configurable to meet changing application needs
- Designed to monitor reactive gases
- Scalable sample interface solutions
- Global applications and after-market support



Hamilton Sundstrand
A United Technologies Company



Cypress Software – Windows® Based

Cypress is designed to be an intuitive, user-friendly interface to the MGA iSCAN. It offers a stable and robust platform with easy to use, menu-driven, point and click graphical user interfaces.

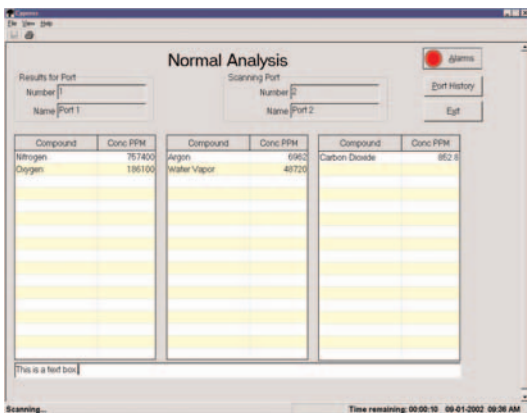
- Real-time diagnostics
- Real-time configuration changes
- Sample system controls
- Auto-restart after power failure

Real-time displays

Displays up to 40 components and 100 process streams.

User can define any port sequence depending on operational parameters, or manually select any single stream.

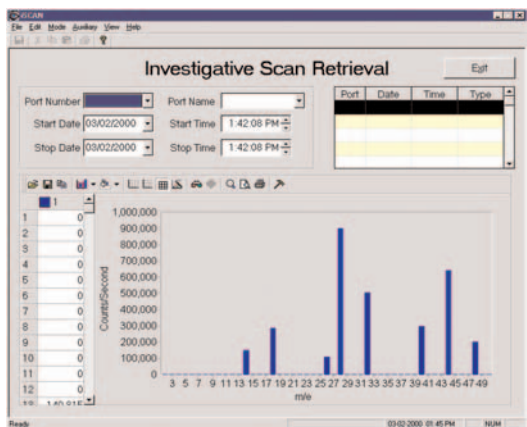
- Compositional analysis
- Access to alarm conditions
- Display previous analysis of any port without affecting the current analysis
- User-defined calculations



Investigative Scan

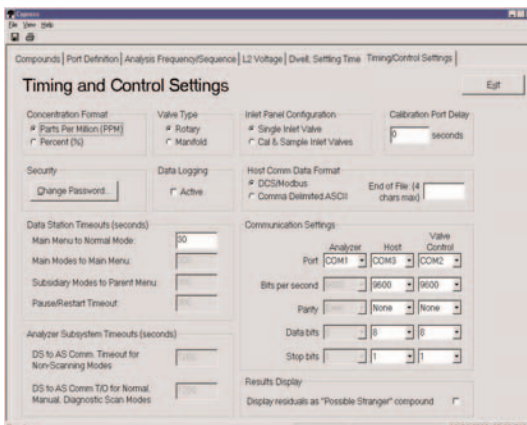
Provides the ability to identify unknown compounds and evaluate spectra to better characterize processes.

- Export data to a spreadsheet for comparison of mass spectra



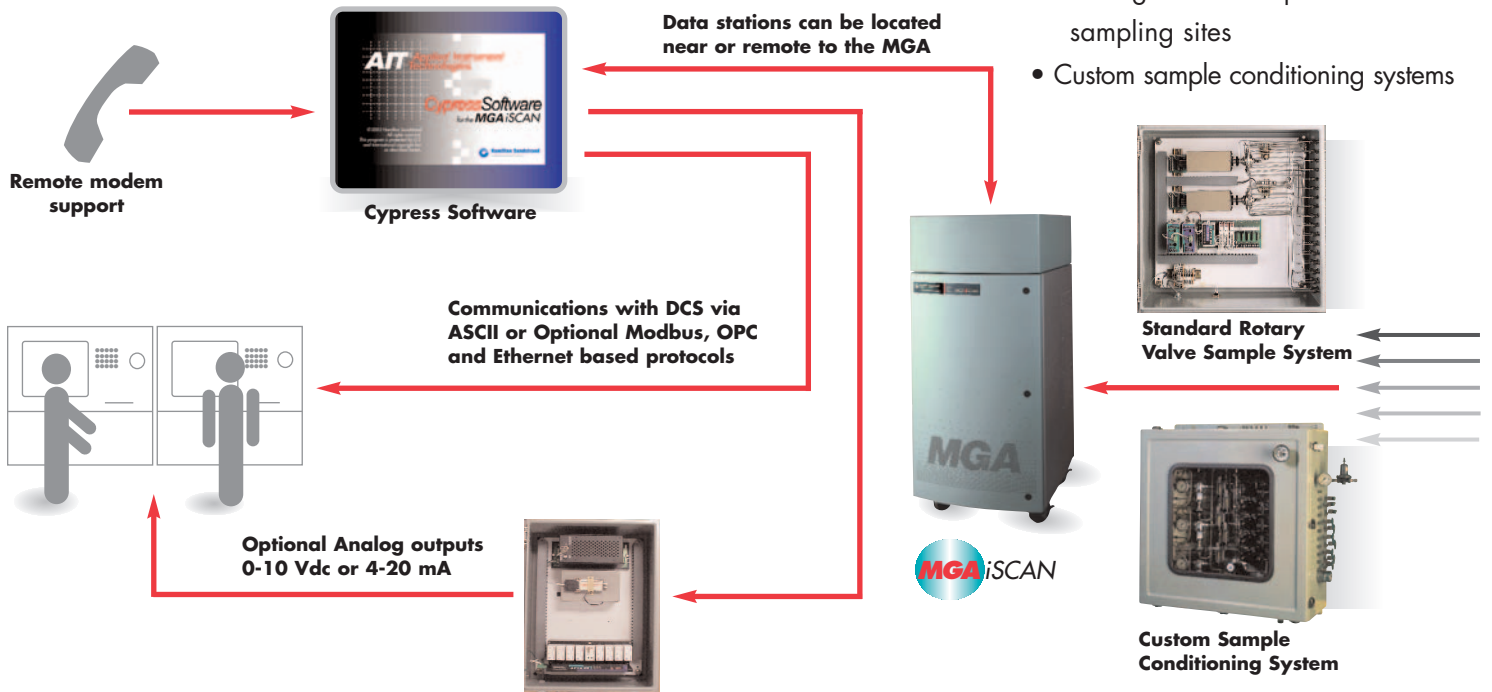
Communications

- Standard serial output, ASCII format
- Other optional protocols include:
 - Modbus RTU over multidrop network
 - OPC for process control
 - 4-20 mA or 0-10 Vdc isolated analog outputs



Interface Solutions

AIT understands that in order for an on-line analyzer to produce reliable results, it must be properly interfaced to the process streams as well as the control system. This is why AIT has engineered scalable solutions to provide turnkey sample systems and communications protocols to ensure that your MGA produces results you can trust.



Customized Sample Interfaces

The MGA iSCAN is easily integrated to a variety of accessories providing turnkey system solutions including:

- Multi-point stream switching systems
 - Rotary or solenoid valve based
 - Configurable for up to 100 sampling sites
- Custom sample conditioning systems

Analytical Performance – AIT’s policy of modular product design enables us to customize a system configuration for today’s requirements as well as an upgrade path when your application changes.

Features

Magnetic sector mass spectrometer

Double-focusing design

Magnetically scanned

Electron multiplier (Optional) and electrometer detector channels

Reactive Gas Inlet and ion source (Optional)

Software configurable for analyzing up to 40 compounds

Optimized sample path

Turbomolecular pump

Modular layout

Benefits

Proven superior stability and high sensitivity

High resolution and specificity in separating masses

Consistent sensitivity over a 2-200 amu mass range

High dynamic range for detecting compounds at ppb to % levels with superior analysis

Measures reactive gases

Easily programmed for specific applications

Real-time compositional analysis

Long life with rapid vacuum pumpdown time

Simplified maintenance

Value

Better characterization of processes with less frequent calibration

Improved product quality

Provides application versatility

Provides application versatility

Provides application versatility

Comprehensive monitoring for tighter process control

Rapid identification of process changes

Continuous use with minimal maintenance

Lowest cost of ownership

Specifications

Spectrometer	
• Double-focusing, magnetically scanned design	
• Mass range:	2-200 amu
• Number of filaments:	2
• Maximum no. of compounds:	40
• Maximum no. of sample valves under software control:	100
Performance	
• Dynamic range:	20 ppb to 100% with optional electron multiplier 200 ppm to 100% w/o optional electron multiplier
• Drift:	1 hour ±0.1% of full scale 1 day ±0.24% of full scale 1 month ±1.0% of full scale
Sample Conditioning Requirements	
• Temperature:	20-120°C
• Particles:	2 microns or less
• Condensables:	None, must be removed prior to entry into MGA
Sample Inlet Requirements	
• Minimum/maximum flow:	0.25-1 Liters/min
• Max supply pressure:	0.5 psig/34 mBar (gauge)
• Discharge pressure:	Local ambient
Ambient Environment Conditions	
• Temperature:	20-40°C
• Humidity:	<80%
Area Classification	
• Standard:	General purpose
• Optional:	Air conditioned or vortex cooled
• Hazardous area options:	ATEX zone 1 or 2
Utility Requirements	
• Line voltage:	115/230 Vac ±10%, 50/60 Hz
• Power:	910 VA
• Instrument air cooling (purged):	425 liters/min. (226 liters/min.)
Communications	
• Standard:	RS 232/422 serial communications
• Optional:	Analog (0-10 Vdc or 4-20 mA)
• Optional:	Serial Modbus RTU and Ethernet OPC
Physical Dimensions	
• Analyzer cabinet size:	60"H x 22"W x 23"D 152cm x 56cm x 58cm
• Weight:	440 lb/200 kg

Applications

Air Separation - Purity

- Hydrogen
- Helium
- Nitrogen
- Carbon Dioxide
- Others

Ammonia/Urea

- H₂/N₂ Converter Efficiency
- Feed Gas
- Reactor Efficiency
- Separation

Biotech/Pharmaceuticals

- Microbial Fermentation
- Mammalian Cell Culture
- Sterilization
- Vacuum Dryer

Chemical/Petrochemical

- Vinyl Chloride
- Methanol
- Ethanol
- Polyethylene/Polypropylene

Coal Gasification

- Ethylene Oxide**
- Reactor Inlet / Outlet
- Ethylene Purity

Fuel Cell Analysis - PEMFC/SOFC

- Fuel Source and Converter Emissions

Leak Detection

- Hydrogen Leaks
- Hazardous Gases

Liquid Natural Gas

- Separation Efficiency
- Feedstock

Petroleum Refining

- Hydrogen Production
- Reformer
- Tail Gas

Steel Processing

- Blast Furnace Top Gas
- BOF Top Gas
- Fuel Gases
- Vacuum Degasser

General

- High Purity Analysis
- Ambient Air Monitoring-
Low Level Toxins
- Turbine Feed Gas Analysis
- Batch Contamination

Contact our Marketing Dept. in Pomona, California

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International locations, see our website for your authorized representative.

MGA is a trademark of Hamilton Sundstrand Corp. Windows is a registered trademark of Microsoft Corp. Modbus is a registered trademark of Modicon Corp.



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