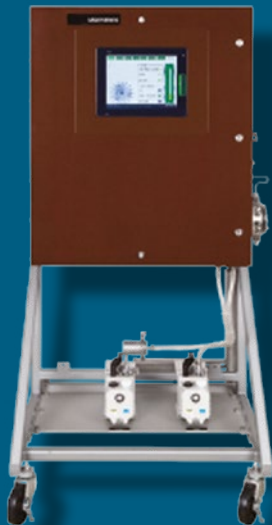


**PRODUCT DATASHEET**

# MGA™ 1200CS Process Mass Spectrometer

Cybersecure & Future-Proof Architecture –  
100% ROI in Less Than One Year



**Precise**

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**Fast**

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**Reliable**

- Rugged cybersecure communication options standard
- Non scanning ultra-fast parallel processing of spectra
- Analyze up to 100 streams in a user-defined sequence configured at the HMI
- Hazardous area compatible touchscreen HMI
- Role-based access permission standard

# MGA 1200CS CyberSecure

## Next-Gen Process Mass Spectrometer Monitoring Designed for IIoT

The MGA™ 1200CS process mass spectrometer is a fixed magnetic sector analyzer that provides rapid, accurate and stable real-time analysis of up to 16 gas components in significantly less than 1 second. The optional Phoenix multi-stream sampler provides fast-purging stream selection for 16, 32, 50 or 100 streams. The unique combination of parallel spectrum processing and rapid stream selection makes this the world's fastest available process gas analyzer with new stream analysis data provided every 2-3 seconds.

Designed with IIoT in mind, the control architecture is based on the Modicon M580 ePAC programmed with EcoStruxure Control Expert software. The Magelis touch-screen HMI provides full support for secure role-based access permissions and stored audit trails for end-to-end cybersecurity.

The hazardous area compliant HMI provides full access to system configuration, real-time data, stored data, system status and diagnostics. The native ethernet control architecture provides industrial connectivity for SCADA, DCS, SIS and Data Historians.

## Applications

### *Ammonia*

- Precise HN ratio
- Steam/carbon ratio
- Methane slippage
- Inert gas buildup
- Catalyst activity

### *Biotech & Pharmaceuticals*

- Fast & precise OUR, CER, RQ in fermentation
- Greater precision available in cell culture
- Up to 100 reactors monitored at 3 second intervals

### *Ethylene Oxide*

- Precise carbon balance
- Precise oxygen balance
- Selectivity near real-time

### *Ethylene Cracking*

- High-speed cracking severity measurements
- Multiple furnace capability
- 3 second interval between furnaces

### *Steel Processing*

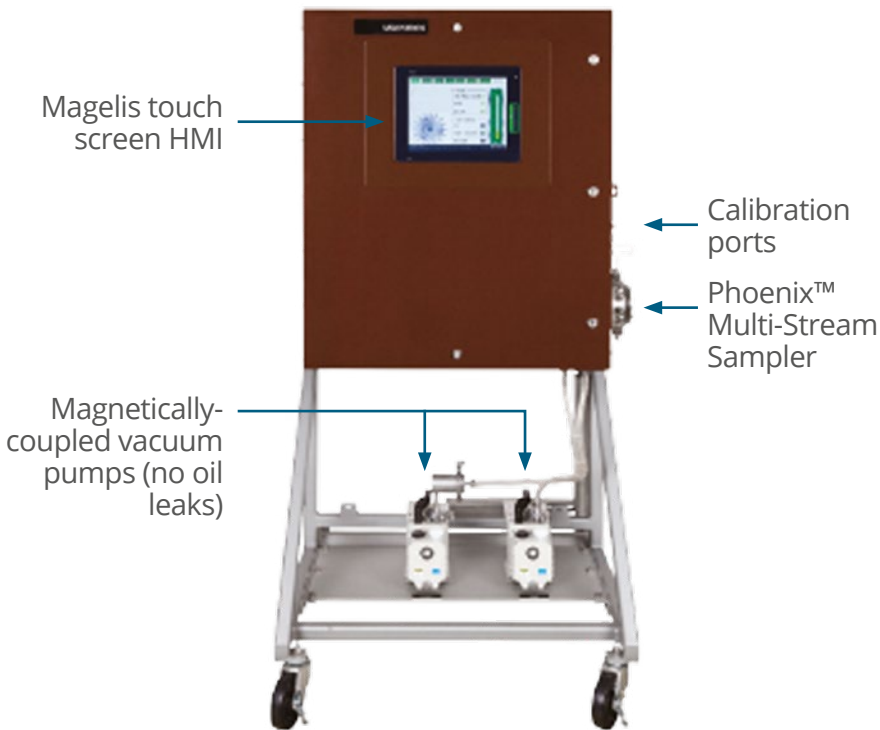
- Blast furnace top gas
- Blast furnace burden probes
- Steel converter gas analysis
- Fuel gas mixing control

## System Advantages

- Analyze up to 100 streams in a user-defined sequence configured at the HMI and/or in the DCS
- Rugged cybersecure communication options is standard
- Hazardous area compatible touchscreen HMI provides configuration and interrogation without opening the door or requiring a PC
- Role-based access permission standard
- Non scanning ultra-fast parallel processing of spectra

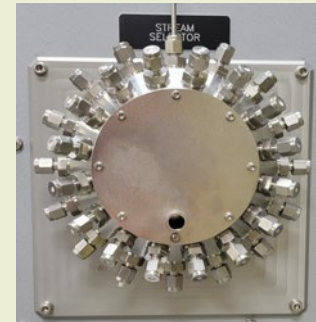
# MGA 1200CS CyberSecure

Gives you a REAL advantage for the most challenging applications



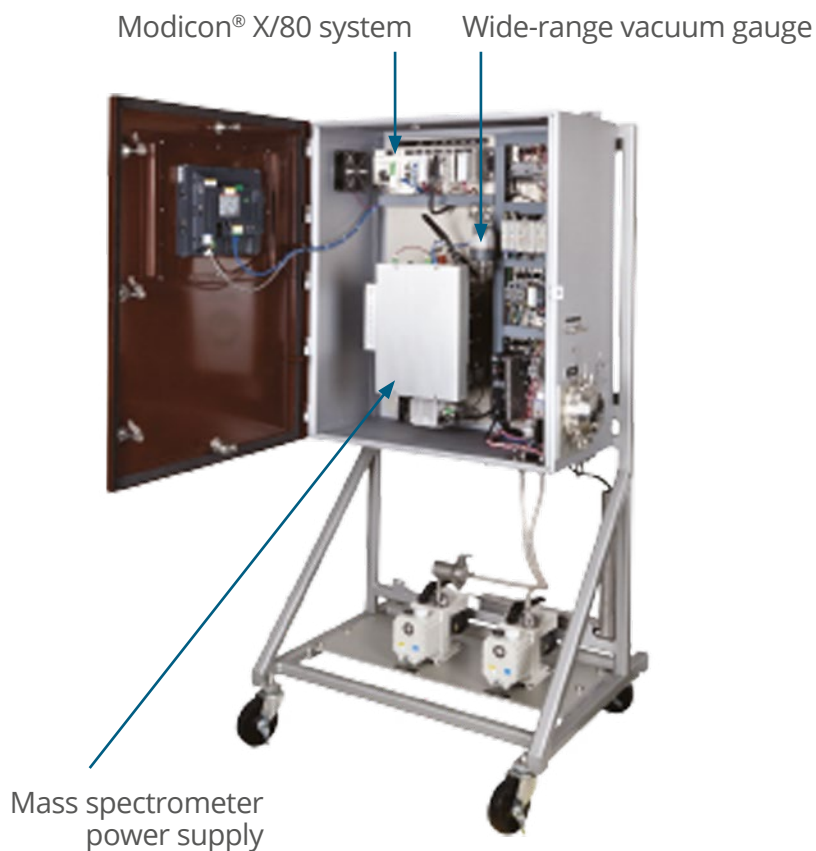
## The Phoenix Multi-Stream Sampler

- Zero dead volume
- <1 second flush
- Flow validation
- Very low maintenance

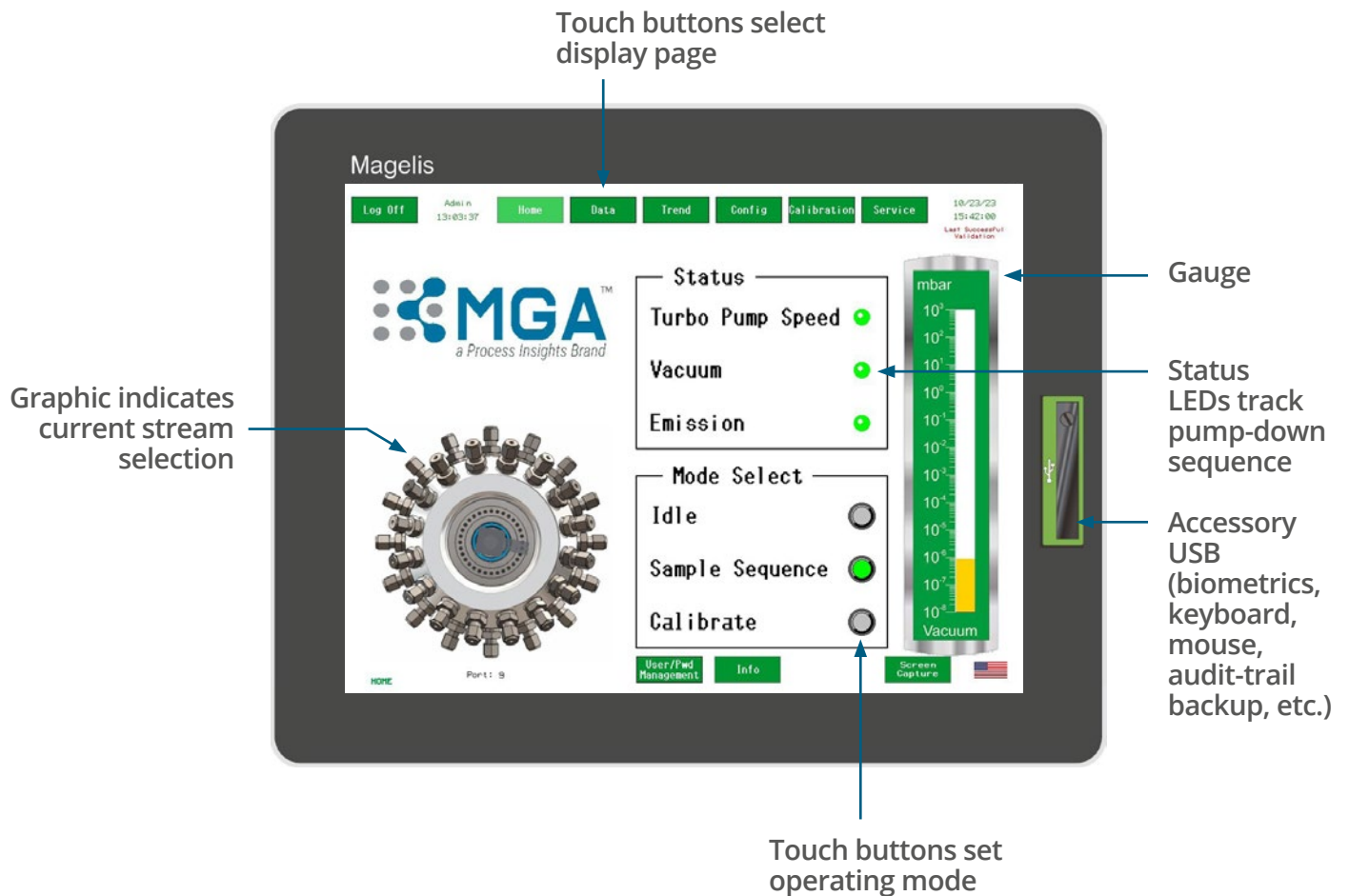


## Benefits

- Near real-time analysis
- Analysis speed more or less real time due to multiple collectors
- Monitor up to 16 components in a complex gas stream
- Best available measurement precision for all gases
- Single analyzer to calibrate and maintain
- Reduces maintenance costs
- Single link data highway (Modbus, OPC, Profibus, HART)
- Simplifies communication to host computer
- Improved measurement precision for all components
- Provides tighter process control



## MGA 1200CS CyberSecure HMI Home Screen



## Touch-Screen HMI

Provides robust and versatile access to system status, analytical data, stream alarms, system configuration, extensive diagnostics, and role-based secure access control for analyzer tuning.

- Analytical data can be immediately interrogated using both tabular and historical trend presentations. Diagnostic data are presented in a root-cause manor to simplify troubleshooting.
- Multiple languages are supported.
- The Magelis HMI also supports ancillary equipment such as secure data backup and biometric interfaces.



Specifications:	MGA 1200CS CyberSecure
<b>Analyzer Type</b>	Multi-Collector, Fixed Magnet Mass Spectrometer
<b>Control Architecture</b>	Modicon X80 I/O control system configured with cybersecure M580 ePAC (dual ARM processors running EcoStructure Control Expert software Harmony touch-screen display for configuration, data review, diagnostics and troubleshooting. HMI includes the Premium BOX with RISC CPU running Vijeo Designer run time
<b>Inlet Type</b>	Temperature controlled micro-capillary/orifice with bypass – configurable for low flow applications
<b>Sample Flow</b>	70mL/min to 1.0 L/min Standard (lower limits to 20 mL/min available)
<b>Sample Streams</b>	Options for 1, 16, 32, 50 or 100 streams. Flush times 4 - 10 seconds typical per stream (longer times possible, application dependent)
<b>Ion Source</b>	Enclosed Electron Impact, with dual Filaments, controlled by state-of-the-art proprietary Power Supply providing precision High Voltage, Current and Temperature control and diagnostics
<b>Detectors</b>	Up to 16 Faraday cups and Electrometers. Simultaneously measured
<b>Gases Monitored</b>	Up to 16, factory configured (field changes possible)
<b>Vacuum System</b>	Multi-stage turbomolecular Pump – 85 liters per second pumping speed (N2), with... Single or dual magnetically-coupled rotary vane pumps (app. dependent) Wide-range vacuum gauge (10 - 1,000 mbar)
<b>Analysis rate</b>	0.1 seconds for all compounds (averaged over one second)
<b>Precision</b>	<0.005% Relative Standard Deviation*
<b>Accuracy</b>	<2% relative at 1 second updates (higher precision with additional averaging, dependent on calibration standards accuracy)
<b>Dynamic Range</b>	<10ppm – 100% (typical, application/gain setting dependent)
<b>Stability</b>	<0.01% relative over two weeks (typical, application dependent)*
<b>Communications</b>	Native TCP/IP Modbus with Achilles L2 cybersecurity for IIoT RS-232C, RS-485, RS-422 Available: OPC UA, PROFIBUS, HART... others on request.
<b>Rated Voltage/Power</b>	120 VAC 50/60 Hz, or 240 VAC 50/60 Hz, 800 VA
<b>Calibration/Validation</b>	Annual/Monthly – manual or automatic on demand

\* Based on Nitrogen analysis at 78%

<b>Maintenance</b>	Typically one PM per year
<b>Operating Temperature</b>	0-30°C (32-86°F) standard; 0-40°C (32-104°F) with optional cooling
<b>Ingress Protection</b>	NEMA 4X, IP66
<b>Instrument Dimensions</b>	MGA 1200CS: approximate dimensions are configuration dependent Height with transport wheels: 73" (185 cm) Height without wheels: 67" (170 cm) Width: 30" (76.2 cm) Depth: 33" (84 cm) Weight: 442 lbs (200 kg)

## Experience and Support Makes a Difference

Our staff of applications experts provide feasibility and calibration services that set the worldwide standard. We also provide system integration and post-installation support to ensure your success. We also offer annual hardware maintenance and calibration modeling service support agreements.

### Our service agreements are designed for:

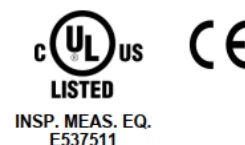
- Optimal performance of the analyzer and minimal delay in emergency situations
- Custom coverage tailored to meet your particular needs is also available
- Regular "preventative" monitoring to reduce the cost of maintenance over the life of equipment
- Priority repair service options for urgent repair situations
- A full line of quality factory-certified replacement parts also available

We design our training courses to address your specific technical and application questions. Regardless of the location, you will receive only Factory Trained and Certified instructors. The training courses are a great way to get hands-on experience with the instruments and software.

### Training: Available

- Hands-on training on standard operating procedures, including basic analyzer and software functionality
- Classroom training, including the principle of operation
- Advanced diagnostic techniques
- Analyzer interface software demo and training
- Optimal sampling systems and special materials consideration

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## GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights delivers premium analytical sensors, analyzers, instrumentation, software and solutions that are mission-critical to keep your operations, personnel, and the environment safe. Our commitment to customer satisfaction is evident through our diverse range of products, programs, and services, designed to accommodate various budgets and application needs.

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### Process Insights – The Americas

14400 Hollister Street, Suite 800B, Houston, TX 77066, USA +1 713 947 9591

### Process Insights – EMEA

ATRICOM, Lyoner Strasse 15, 60528 Frankfurt, Germany +49 69 20436910

### Process Insights – APAC

Wujiang Economic and Technology, Development Zone, No. 258 Yi He Road, 215200 Suzhou, Jiangsu Province, China +86 400 086 0106

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For a complete range of products, applications, systems, and service options, please contact us at: [info@process-insights.com](mailto:info@process-insights.com)

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