METALGUARD™ Selenium

Online Selenium Analyzer

5 YEAR WARRANTY

MetalGuard Selenium is the first fully automated, online selenium analyzer for monitoring industrial wastewater discharges.

Industrial applications are facing increased regulatory requirements to monitor wastewater discharges for metals, nutrients, and other pollutants. Stringent numerical limits for trace metal contaminants, as seen in CCR regulations and ELGs, are low enough to challenge the capabilities of existing lab-based sampling and analysis technologies.

The MetalGuard™ Selenium analyzer from Aqua Metrology Systems provides real-time reliable and accurate analysis of selenium species, including selenite/selenate, to ensure compliance with regulatory requirements. The MetalGuard Selenium analyzer features a robust and stable design that is capable of maintaining its sensitivity and calibrated status for an unlimited timeframe while operating reliably regardless of sample matrix conditions.

MetalGuard™ Selenium Applications

Monitoring influent and effluent values for organic and inorganic selenium across industrial markets such as coal-fired power stations, oil refining, and mining, fracking and smelters is critical to optimize selenium remediation processes. The MetalGuard Selenium online analyzer provides real-time data on selenium contaminant levels in less than two hours with sensitivity down to 1 ppb for certain selenium species. The application benefits of using the MetalGuard Selenium analyzer include:

- Help validate performance of remediation pilot systems
- Obtain baseline operational data on influent and effluent contaminant levels
- Monitor critical process steps to aid in remediation process control and optimization
- Quickly detect declining effectiveness of remediation process and avert regulatory breech
- Control blending schemes with mutli-stream analysis
- Efficiently undertake long-term monitoring of sampling wells to ensure containment and early-warning of leeching

MetalGuard™ Selenium Features

Automated online operation

- Eliminates operator variability
- Accuracy to 1 ppb or ±15%, whichever is higher
- Measurement time less than 2 hours
- Correlation with ICP-MS (+/- 15% typical)
- Grab sample port included

Comprehensive data acquisition

- Programmable contact closure for local selenium level annunciation
- Easy-to-use front panel HMI
- Programmable on-board data acquisition

Low operational costs

- Replaceable reagent tray provides up to 3,000 measurements
- Employs a self-regeneration sensor and is auto-calibrating

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METALGUARD™ Selenium Specifications

PERFORMANCE

Measurement Range	1 - 10,000 ppb total selenium
Measurement Accuracy	1 - 10,000 ppb or ±15%, whichever is higher
Measurement Time	Less than 2 hours
Sample Stream Supported	Standard configuration: 1
Sample Requirements	Temperature: 5 - 40°C Pressure: 5 - 45 psi pH range: 2 - 12
Sampling Scheme	Standard configuration: dead-end type, input line pumped out prior to each measurement, stagnant between measurements. Optional configuration: custom plumbing on external rack

SYSTEM

User Interface	Display: 4 line X 20 characters, sunlight readable. Dedicated function keys for: system initialization and test, automatic operation, manual maintenance, sampling and data acquisition setup
Annunciator Interface	2 alarm relays, plus 6 relays to control external solenoid valves
Electrical	100-130VAC, 50/60Hz (option for 200-260VAC 50/60Hz) 200W
Operating Conditions	Temperature (standard configuration): 5 - 40°C Temperature (with optional ambient control): -20 - 50°C Humidity: <95%, non-condensing
Monitor Cabinet	NEMA 12 rated Houses all electronics and measurement fluidics User-friendly, front panel HMI
Reagent Cabinet	NEMA 12 rated Houses Standard Reagent Tray
Maintenance Schedule	Semi-annual maintenance
Reagent Consumption	Standard Reagent Tray provides up to 3,000 measurements (Replenished monthly at continuous sampling of four sample streams)
Consumables	Nitrogen (electronic grade) required to purge oxygen from solution, regulated down to 10 psi. Deionized water supply provided
Dimensions	H 60", W 32", D 13"

OPTIONS

External Rack	Houses sample manifold & sample pressure regulation and filtering Supplies waste drain connection and waste carboy
Weatherproof Enclosure	NEMA 4X system enclosure Environmentally controlled enclosure: with /air conditioner, heat
Sample Preparation	Pre-treatment module Filter system

*Note- specifications are subject to change without notification.

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