

METALGUARD™

Online Trace Metals Analyzer



MetalGuard™ is the first fully automated online trace metals analyzer for monitoring municipal and industrial water and wastewater.

The MetalGuard™ analyzer from AMS provides real-time, multi-stream reliable and accurate analysis of a range of trace metal contaminants to ensure compliance with regulatory requirements. The 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™ Applications

The MetalGuard online analyzer provides high frequency real-time data on trace metal contaminant levels with sensitivity down to 1 ppb. The benefits of using the 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
- Control blending schemes with multi-stream analysis
- Quickly detect declining effectiveness of remediation process and avert regulatory breach

MetalGuard™ Features

Configurable for As, Cu, Cd, Zn, Cr, Fe, Ni, Co, V, U, Se, and more

Automated online operation

- Eliminates operator variability
- Accuracy to 1 ppb or $\pm 15\%$, whichever is higher
- Measurement time less than 30 minutes typical or up to 2 hours with sample preparation
- Correlation with ICP-MS ($\pm 15\%$ typical)
- Up to four online sample ports supported
- Grab sample port included

Comprehensive data acquisition

- 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



METALGUARD™ Specifications

PERFORMANCE

Measurement Range	Arsenic: 1 - 10,000 ppb total inorganic arsenic Chromium: 1 - 10,000 ppb Cr(VI) and Total Cr Selenium: 1 - 10,000 ppb inorganic/organic selenium Other trace metals: 1 - 10,000 ppb typical. System can be calibrated for a specific measurement range.
Measurement Accuracy	1 ppb or ±15%, or whichever is higher
Measurement Time	30 minutes typical, up to 2 hours with sample preparation
Sample Streams Supported	Standard configuration: One With optional external manifold: Up to six
Sample Requirements	Temperature: 5 - 40°C Pressure: 5 - 45 psi pH Range: 2 - 12 for most trace metals, Cr(VI) 2 - 9
Sampling Scheme	Standard configuration: Dead-end type, input line pumped out prior to each measurement, stagnant between measurements With optional continuous flow: 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 valve
Telemetry	Remote data access and system health monitoring
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	Quarterly 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 - AMS reserves the right to change the specifications as necessary.

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