

AccuSeries

Wet-Chemistry Process Analyzer

Offered By:

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Introducing AccuSeries

AccuSeries is Galvanic's newest line of robust process analyzers for industrial and municipal applications. These "robotic chemists" are custom-configured to integrate seamlessly into your process.

- **Return on Investment:** Multi-Parameter; Multi-Stream
- **Narrow 16" Width:** Small Footprint Simplifies Installation
- **± 2 ppb Accuracy:** For 0 – 100 ppb LDL Calibration Range
- **User-Defined Methods:** Match the Lab; Avoid Interferences
- **Hazardous Area Rated:** Meets Div. 2 & Zone 2 *without* a Purge
- **Custom Wetted Parts:** Maximum Resistance to Difficult Samples
- **Wide-Bore ¼" Tubing:** Handles Samples During Upset Conditions
- **Internal Fast-Loop:** Ensures Representative Sample Every Analysis

Service Support

Galvanic offers a suite of services to help operators keep their analyzers running smoothly. This includes installation and training, factory acceptance tests, scheduled preventative maintenance, and more. These services are available on-site performed by Galvanic's factory-trained service engineers or in-house at Galvanic's Massachusetts factory.

Common Applications

- Aerospace
- Dairy
- Mining
- Semiconductor
- Aggregate
- Edible Oils
- Oil & Gas
- Steel & Metals
- Beverage
- Education
- Pharmaceutical
- Sugar Refining
- Biofuel
- Fertilizer
- Plating
- Textile Processing
- Chemical
- Food
- Power Plant
- Water Treatment
- Chlor-Alkali
- Inks & Dyes
- Pulp & Paper
- Waste Water

Methods of Analysis

AccuSeries performs colorimetric and potentiometric methods.

Colorimetry: Colorimetry is the measured absorbance of a solution after adding a color-stimulating reagent. The intensity of color observed is directly related to concentration based on the Beer-Lambert law. AccuSeries uses a dual-wavelength colorimetric method that compensates for turbidity.

Titration: Titration volumetrically determines the concentration of a sample by adding a substance of known concentration (titrant). This causes a quantitative reaction with the sample that allows for the concentration to be calculated. AccuSeries can perform both potentiometric and color titrations.

ISE: ISE's are built with special membrane materials that are sensitive to specific ions. Each ISE monitors a voltage potential change that is directly proportional to the ion's concentration. AccuSeries uses direct or standard known addition (SKA) methods for high and low concentration ranges.

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Enclosure

- **Material:** IP66, NEMA 4X, Painted 304SS
- **Ambient Limits:** -20°C to 60°C, 95% RH
- **Dimensions:** 40" x 16" x 9.5"
- **Weight:** 100 lbs.
- **Manufactured:** USA

Certifications

- **NEC:** Zone 2, AEx nA nC IIB+H2 T3 Gc
- **Canada:** Zone 2 Ex nA nC IIB+H2 T3 Gc
- **ATEX/IECEX:** Ex II 3G Ex nA nC IIB + H2 T3 Gc
- **CE:** General Purpose

User Interface

- **HMI:** 4.5" Color LCD, 480 x 272 WQVGA
- **Security:** 3 Access Levels
- **Graphic User Interface:** Windows 7 Software
- **GUI Access:** USB, Serial RS232/RS485, Ethernet

Power

- **Supply:** 24 VDC (90 to 240 VAC Available), 50/60 Hz
- **Consumption:** 350 Watts
- **Surge Protection:** Yes

Boards

- **Design:** Segmented Fluidics & Main Board
- **Corrosion Resistance:** H₂S, Moisture
- **Configuration:** Plug n' Play Modules

Communications

- **4-20 mA:** Isolated (Self-Powered)
- **Modbus:** Enron, Modicon 16, Modicon 32
- **Modbus Access:** Serial RS232/RS485, TCP/IP
- **Relays:** 2 Mechanical; 6 Solid-State
- **Digital Inputs:** 8 Dry Contacts
- **Diagnostics:** Fluidics, Input/Output, Hardware

Key Parameters

| | | | | |
|--------------------|----------------|-------------------|---------------|---------------------|
| Acid Gas Loading | Ammonium | Cobalt | Lead | Silica |
| Acid Number | Barium | Color | Magnesium | Silver |
| Acid, Acetic | Base Number | Copper | Manganese | Sodium |
| Acid, Boric | Bicarbonate | Cyanide | Mercaptans | Sodium Chloride |
| Acid, Citric | Boron | Free Fatty Acids | Mercaptides | Sulfate |
| Acid, Cyanuric | Bromide | Fluoride | Mesityl Oxide | Sulfide |
| Acid, Hydrochloric | Bromine | Fluoroborate | Molybdate | Sulfite |
| Acid, Hydrofluoric | Cadmium | Formol Number | Molybdenum | Sulfur Dioxide |
| Acid, Lactic | Calcium | FOS-TAC | Nickel | Surfactants |
| Acid, Nitric | Carbon Dioxide | Hardness | Nitrate | T.M.A.H. |
| Acid, Phosphoric | Carbonate | Hydrazine | Nitrite | Tert-Butyl Catechol |
| Acid, Sulfuric | Caustic | Hydrogen Peroxide | Perchlorate | Thiocyanate |
| Acidity | Chlorate | Hydrogen Sulfide | Persulfate | Thiosulfate |
| Alkalinity | Chloride | Hypochlorite | Phenol | Thiourea |
| Aluminium | Chlorine | Iodide | Phosphate | Tin |
| Amine | Chlorite | Iodine | Phosphorus | Urea |
| Ammonia | Chromium | Iron | Potassium | Zinc |

Analysis

- **Measurement:** On-Line, Continuous Batch Analysis
- **Samples:** Single or Multi-Stream (Up to 6)
- **Parameters:** Single or Multi-Parameter
- **Units:** ppb, ppm, g/l, % (User-Defined)
- **Method:** ASTM, EPA, ISO (User-Defined)
- **Reaction Time:** Typically 3 to 15 Minutes

Sample

- **Temperature:** 0°C to 70°C (Higher °C *With Cooling*)
- **TSS Limit:** 500 ppm (1,200 micron particle size)
- **Flow Requirement:** 200 ml/min (~5 psi)

Methods

- **Titration:** Acid-Base, Redox, Complexometric Argentometric, Color, Back Titration
- **ISE:** Direct, Standard Known Addition (SKA)
- **Colorimetry:** Dual-Wavelength

Performance

- **Accuracy:** ± 2% of Full Scale (Calibration Range)
- **Repeatability:** ± 2% of Full Scale (Calibration Range)
- **Linearity:** ± 2% of Full Scale (Calibration Range)

Functions

- **Analysis:** Automatic or Manual Grab Samples
- **Calibration:** Automatic, Up to 3 Points
- **Validation:** Automatic
- **Cleaning:** Automatic (Customized)

Maintenance Schedule

- **Weekly:** Analyzer Calibration
- **Monthly:** Pump Flow Rate Calibration
- **Quarterly:** Maintenance Kit
- **Annual:** Potentiometric Sensor
- **Biennial:** Optical Filters, Source Lamp