# 9523sc CATIONIC CONDUCTIVITY ANALYZER


**Applications**

- Power

## Simple to Integrate. Simple to Operate.

An integral part of the most complete water analytics system for the Power industry. Hach provides a broad range of product options designed to work together into flexible solutions to meet your unique needs. Hach's comprehensive approach saves you time on design, installation, training, maintenance, and operation. Our cationic conductivity system calculates accurate and reliable pH measurements even in the presence of contaminants such as chlorides, sulfates, nitrates and organic acids that commonly interfere with traditional pH probes.

### Save time on design

A single design source and one product platform means you spend less time searching for design files or configuring components. Create and reuse your optimal design templates. Each sensor has a unique four-digit cell constant determined according to ISO 7888 and ASTM D 1125 standards.

### Accelerate your installation

One source, interchangeable components, a common user interface, and one support team make installation faster and less complicated. Quickly and easily transfer user settings between analyzers.

### Reduce training complexity

A single platform minimizes time required to teach and learn product operations, getting new systems in use faster.

### Simplify maintenance and operation

Common menu guides reduce variability and provide step-by-step procedures for maintenance and calibration. Standard visual alerts across parameters notify operators when troubleshooting is required. Low maintenance system is equipped with long-lasting resin which provides visual indication of exhaustion.

HACH®
Be Right™

## Specifications*

| | |
|---|---|
| **Cell Constant k** | 0.01 $cm^{-1}$ |
| **Range** | Specific Conductivity: 0.01 to 200 µS/cm |
| **Measurement Range 2** | Specific Resistivity: 5 to 100000 kΩ x cm |
| **Accuracy** | ± 1% of displayed value |
| **pH Range** | 7 to 10 for Ammonia<br>7 to 10.7 for Sodium Hydroxide |
| **Operating Temperature Range** | -20 to 60 °C at 0 to 95% RH (non-condensing) |
| **Sample Input** | 1/4 inch exterior diameter tubing |
| **Sample Output** | 1/2 inch interior diameter tubing with barbed connector |
| **Temperature Compensation** | No, Automatic, and Manual |
| **Temperature Sensor** | PT 100 Accuracy: < ± 0.2°C |
| **Power Requirements (Voltage)** | 100 - 240 V AC, 24 V DC |
| **Power Requirements (Hz)** | 50 - 60 Hz |
| **Relays** | Four electromechanical SPDT (Form C) contacts, 1200 W, 5 A |
| **Analog Outputs** | Five available 0/4 to 20 mA isolated current outputs, max 550 Ω , Accuracy:± 0.1% of FS (20mA) at 25°C, ± 0.5% of FS over -20°C to 60°C range |
| **Analog Output Functional Mode** | Linear, Logarithmic, Bi-linear, PID |
| **Communication** | Five 4-20 mA Outputs, MODBUS RS232/RS485, PROFIBUS DPV1, or HART Communications |
| **Electrical Certifications** | EMC<br>CE compliant for conducted and radiated emissions:<br>- CISPR 11 (Class A limits)<br>- EMC Immunity EN 61326-1 (Industrial limits)<br>Safety<br>CAN/CSA C22.2 No. 61010-1<br>cETLus safety mark for:<br>- General Locations per ANSI/UL 61010-1 & CAN/CSA C22.2. No. 61010-1 |
| **Enclosure Rating** | NEMA 4X/IP66 |
| **Flow** | 83 to 333 mL/min (5 to 20 L/hr) |

**Subject to change without notice.*

## Principle of Operation

Measurement of pH in environments of low conductivity using the standard potentiometric method (glass electrode + reference) is extremely delicate and not very accurate because it is proportional to the concentration logarithm. It also requires a more frequent calibration to compensate for variations in the measurement chain (junction potential, degradation of the glass membrane).

On the other hand, measurement of conductivity in these environments is a lot more reliable and more accurate as it is directly proportional to the concentration in impurity, and in addition requires little or no maintenance.

Therefore, given the relationship between the pH and conductivity of a product, the conductivity measurement can be used to determine a precise pH.

If the product contains impurities (generally in the form of salts), this calculation cannot be applied. The principle is then to transform the salt into acid by passing it through a cationic resin and, given the relationship of the conductivity between the acid and the corresponding salt (always around 3), to determine the conductivity originating only from the conditioner:

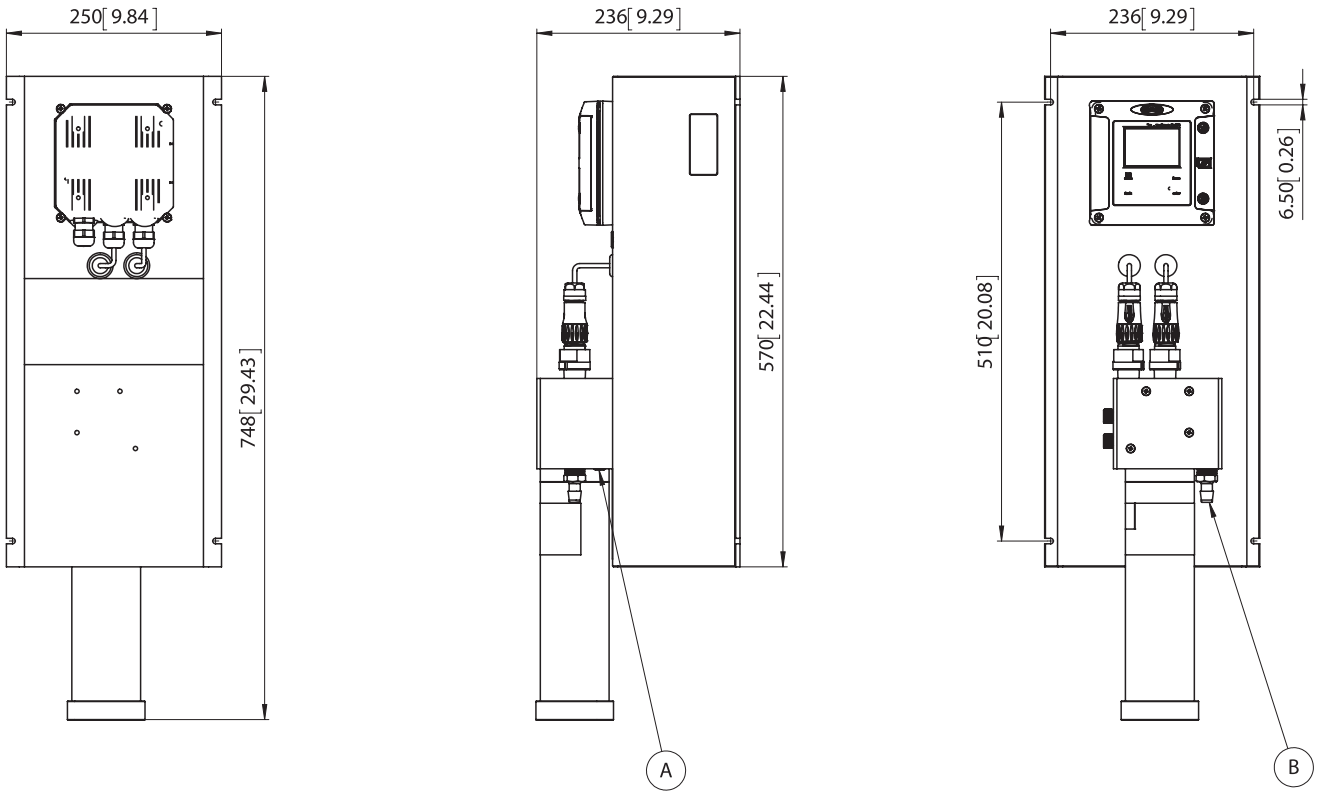
ΔC = Conductivity before resin (C1) – Conductivity after resin (C2) / A

and

pH = f(ΔC)

Note: The calculated pH is the pH of the sample at the analyzer inlet (channel 1). The 9523sc analyzer does not calculate the pH downstream of the resin cartridge.

## Dimensions




A: Sample inlet PE tube OD 6mm (standard) or OD 1/4" (with adapter)
5° to 50°C (40° to 120°F), pressure 0.2 to 6 bar (3 to 90 PSI), flow 5 to 20L/h

B: Drain, tube ID 12mm or 1/2", atmospheric pressure

All dimensions are in mm [inches]

# Ordering Information

## Complete Analyzers

| | |
|---|---|
| **9523.99.09P2** | 9523sc Cationic Conductivity Analyzer, 5x 4-20mA Out, AC-DC |
| **9523.99.01P2** | 9523sc Cationic Conductivity Analyzer, Modbus 232/485, AC-DC |
| **9523.99.03P2** | 9523sc Cationic Conductivity Analyzer, Profibus, AC-DC |
| **9523.99.05P2** | 9523sc Cationic Conductivity Analyzer, HART, AC-DC |

## Communication and Module Options

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|---|---|
| **9013200** | Modbus 232/485 Module |
| **9173900** | Profibus DP Module |
| **9328100** | HART Module |
| **9525800** | Analog Conductivity Module for Polymetron Sensors |

## Accessories and Consumables

| | |
|---|---|
| **08310=A=0000** | 8310 Conductivity Sensor, K= 0.01 $cm^{-1}$ |
| **09523=A=7000** | Spare Resin Cartridge (includes resin inside) |
| **09523=A=7010** | Resin Kit (includes 2 filters, 2L of resin, funnel, and instructions) |
| **09123=A=8001** | Electrode Cable (1m) |

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