Series RAH-210
Residual Chlorine Analyzer

- **Amperometric Measurement**
- **Available with pH & temperature compensation without buffer chemicals for Free Chlorine**
- **Free Chlorine, Total Chlorine, Chlorine Dioxide, Bromine, and Iodine**
- **Includes complete PID control program (standard)**
- **Provides four analog outputs (selectable between residual, pH/ORP, Temperature, Turbidity, and control signals) and four alarm relays**
- **Optional Data Logger**
- **Adjustable measurement range**
- **Continuous Measurement / Fast Response**
- **Continuous cleaning mechanism**
- **Modbus RS-485 Two-way communication**

The Series RAH-210 Analyzer makes use of the Amperometric method to determine residual levels in the sample water. The measurement cell consists of large anodic and cathodic electrodes in direct contact with the sample water. The measurement is continuous, not relying on sample and hold methods, thereby allowing for better process control. A continuously driven cleaning system is employed to prevent the build up of impurities on the surface of the electrodes and reduce the need for maintenance.

The Series RAH-210 Free Chlorine Analyzer is available with pH & Temperature compensation performed in software. For applications with stable pH, the known pH value can be manually input for software compensated residual analysis. A gravity driven buffer feed system or peristaltic pump are also available to inject the required chemicals for measuring Free Chlorine, Total Chlorine, Chlorine Dioxide, Iodine and Bromine. The measurement range is field adjustable through menu driven digital programming.

INSTRUMENTS

PROUDLY MADE IN USA

ISO 9001 Certified

600 Emlen Way, Telford, PA 18969 • Telephone: (215) 799-0980 • Fax: (215) 799-0984
Toll Free in the U.S.: 1 (888) 38-HYDRO • www.hydroinstruments.com • sales@hydroinstruments.com

BULLETIN RAH-210 Rev. 10/16

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Residual Chlorine Analyzer

Basic Specifications:

MEASUREMENT

Temperature Range:	0º to 50º C (32º to 122º F)
Sample Water Flow Rate:	500 ml/minute (0.13 GPM or 8 gal/hr)
Sample Pressure:	5 psig (0.3 bar) maximum at inlet point.
Sample Supply:	Continuous. Electrodes must be kept wet with fresh water.
Speed of Response:	4 seconds. Full-scale residual change 90 to 120 seconds.
Sample Water:	Metal ions or corrosion inhibitors effect operation.
Range:	0 to 0.1 to 0 to 20 mg/l (PPM). Field adjustable.
Accuracy:	0.003 mg/l or +/-1% of range, whichever is larger.
Sensitivity:	0.001 mg/l (1 ppb)

ELECTRICAL

Power Consumption:	10 W max
Power Requirements:	120VAC, 50/60 Hz or 240VAC, 50/60 Hz, single phase
4 Analog Outputs:	(4) isolated 4-20 mA (residual, pH/ORP, Temperature, Turbidity, or control)
4 Relay Contacts:	10 Amps @ 120 VAC or 24 VDC, resistive load, 5 Amps @ 240 VAC, resistive load
5 Analog Inputs:	Up to five 4-20mA input channels for Turbidity, Flow, or other loop powered sensors
Modbus:	RS-485 Two-way communication
Data Logger:	Optional data logging writes data on a removable MicroSD card

REAGENT REQUIREMENTS

Measured Chemical Residual	Reagents Required
Free Chlorine (pH Compensated):	None
Free Chlorine (not pH Compensated):	pH Buffer or CO_2 gas
Total Chlorine:	pH Buffer or CO_2 gas and Potassium Iodide
Chlorine Dioxide:	pH Buffer and Glycine
Bromine Chloride:	pH Buffer or CO_2 gas and Potassium Iodide
Iodine:	pH Buffer or CO_2 gas

NOTE: It is not recommended that Automatic pH compensation be used for applications with sample water of pH 8.5 or higher. In these instances the pH of the sample water should be buffered before entering the residual analyzer.

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