

The Hydro Instruments Series RAH-280 Residual Analyzer is an ideal solution for any application needing accurate measurement and control of process water residual, pH, ORP, Conductivity and/or Temperature.

### Features

- Residual chlorine Amperometric open cell
- Up to three measurement electrodes: pH, ORP, and Conductivity
- Simple and easy to perform calibrations
- Electrodes do not require replacement of electrolyte
- Graphical color display
- Parameter trending charts
- Independent, adjustable alarm relays
- 4-20mA output of live readings
- Modbus (RS485) communication  
Profibus communication can optionally be supported
- PID control included:  
Two independent PID control loops  
4-20mA input for water flow signal  
Set point control for Chlorine Residual, pH, ORP or Conductivity
- Data logger with MicroSD card, optional



### Description

The Hydro Instruments RAH-280 residual analyzer includes an open cell Amperometric chlorine residual measurement cell, one temperature thermistor and can also utilize up to three electrodes in any combination to measure and monitor pH, ORP and conductivity. Each aspect of the sample water is measured using an independent electrode, installed into its own sample cell for simplicity and cost savings.

The controller's color screen is able to display the live readings with large easy to read fonts. Live charting provides a quick view of water quality trending over a user adjustable period of time for all parameters being monitored. The controller has independently adjustable alarm settings and relays for alarm indication for each parameter being measured as well as an independent 4-20mA output to remotely monitor readings in real-time. Additionally, alarm conditions and live readings can be monitored and settings changed remotely using Modbus; a feature included standard in the RAH-280

Calibration of the controller has been designed with ease of use in mind and can be performed in the field. pH calibration can be carried out using a single or two-point calibration with buffers. ORP and conductivity calibrations can be performed using known standards.

Dual PID control loops are included standard to perform either set point or compound loop control and provides a 4-20mA output that can be used to control chemical feed. Compound loop is facilitated by a 4-20mA input from a water flow meter. Set point control can be based on residual, pH, ORP or Conductivity.

## Basic Specifications

### MEASUREMENT

Residual Range: 0-0.10 PPM min.  
(Field Selectable) 0-20 PPM max.  
pH Range: 0-14  
ORP Range: -2000 to +2000 mV  
Conductivity Range: 10  $\mu$ S/cm to 200 mS/cm  
Temp. Range: 32-122°F (0-50°C)

### SAMPLE WATER

Max. pressure: 5 PSI (0.3 bar) max.  
Flow rate: 8 GPH (500 ml/min) ideal  
2.4 GPH (150 ml/min) min.

### CONTROLLER

Power: 115 VAC 50/60 Hz  
230 VAC 50/60 Hz  
Screen: 320 x 240 pixel, color  
Enclosure: NEMA4X  
I/O's: (4) 4-20mA output  
(1) 4-20mA input for PID control  
(4) SPDT relays  
Modbus: RS485 RTU  
Profibus: Optionally supported  
Data Logger: Optional data logger records to a removable MicroSDHC card.

## Ordering Information

Model No.	RAH-280- <span>A</span> <span>B</span> <span>C</span> <span>D</span> <span>E</span> <span>F</span> <span>G</span> <span>H</span> <span>I</span>								
Position	Feature	Description							
A. Measurement Type	F	Free Chlorine (Requires pH buffer feed pump—Position D. or pH electrode—Position E.)							
	T	Total Chlorine (Requires reagent feed pump—Position D.)							
	O	Other (Consult with Hydro Instruments for available options.)							
B. Measurement Range	#	Residual Chlorine Measurement Range (Example: 0.5, 1, 2, 5, 10 or 20)							
C. Power	1	115 VAC, 50/60 Hz							
	2	230 VAC, 50/60 Hz							
D. pH Buffer / Reagent Feed	0	None							
	1	pH Buffer / Reagent Feed Pump (Reagent storage vessel not included.)							
E. pH Electrode	1	pH electrode (pH 0-14)							
F. ORP Electrode	0	None							
	1	ORP electrode ( $\pm$ 2000 mV)							
G. Conductivity Electrode	0	None							
	1	Conductivity (10 $\mu$ S—200 mS)							
H. Data Logger	0	None							
	1	Included							
I. Process Stop Function	0	None							
	1	Included w/ Sample Water Flow Switch (MB181 input board + RAH-SWFS sample water flow switch)							
	2	Included (MB181 input board only.)							