



Specifications for the Hydro Model RPH-250 Residual Analyzer **Specification RPH-250**

Probe Type Free Chlorine Residual Analyzer

1.01 GENERAL

1.01.1 Completeness

The system shall be complete with all components, equipment, and appurtenances.

1.01.2 Quality Assurance

All materials and components shall be new and unused of first quality by well-known manufacturers. Inferior materials or components shall not be allowed.

1.02 MANUFACTURER

The manufacturer shall be Hydro Instruments, Telford, PA, USA or approved equal. The residual analyzer shall be Hydro Instruments Model RPH-250 Residual Analyzer.

1.03 RESIDUAL ANALYZER

1.03.1 General

1. The residual analyzer shall employ an amperometric probe using a semi-permeable membrane and electrodes immersed in an electrolyte solution to continually monitor the targeted species.
2. The residual analyzer shall be capable of monitoring free chlorine or total chlorine residual without the need for any reagent chemicals.
3. Shall be capable of software compensation for variations in temperature and pH.
4. The residual analyzer shall include a complete PID control program.
5. The residual analyzer shall be provided with a temperature sensor and available with an optional pH probe.
6. The residual analyzer shall include an integrally designed sample water flow control valve and graduated sample water flow indicator tube. A PRV and pressure gage shall also be provided.
7. An optional data logger shall be available for automatically recording the analyzer output data (residual, temperature and pH when applicable) at a selectable frequency.

1.03.2 Measurement Probe

1. The probe shall use the amperometric method to continually monitor (free or total) chlorine residual. The current signal generated by this probe shall be read by the residual analyzer monitor/controller.
2. The electrodes shall be immersed in an electrolyte behind a semi-permeable membrane.
3. The measurement cell shall have a 10 second speed of response and a full-scale reaction time of 90 to 120 seconds.

1.03.3 Optional pH Probe

1. The residual analyzer shall be capable of incorporating an optional pH probe to measure the pH of the sample water entering the measurement cell.
2. The pH reading can be used by the monitor/controller to allow software compensation for the effects of pH and Temperature changes on free chlorine residual measurements.

1.03.4 Standard Monitor/Controller Electronics

1. Shall include two-line, 20 characters per line digital display and four push button interface and shall be housed in a NEMA4X rated enclosure.
2. Shall include a complete PID control software program, which can be enabled and disabled in the field and offer proportional, set-point or compound loop control analog output signal(s) for chemical feed control.
3. Shall accept input signals from the residual measurement probe, thermistor, pH probe, and a proportional process variable (flow meter).
4. Shall be capable of zero and span calibrations for all input channels through software.
5. Shall be capable of software compensation for temperature fluctuations and also for temperature and pH effects on free chlorine measurements.
6. Shall include two (2) isolated 4-20mA output signals, each field-selectable for indication of residual level reading, pH, temperature or control signal output.
7. Shall include one additional 4-20mA input channel for process water flow.