Specification
RA-1000 Residual Analyzer

1.0 Scope

This specification describes the RA-1000 Chlorine Residual Analyzer as manufactured by Eagle Microsystems, Inc.

2.0 Description

The Eagle Microsystems, Inc. RA-1000 Chlorine Residual Analyzer shall continuously analyze a liquid sample in an amperometric type cell and produce a current output proportional to the free chlorine/total chlorine/chlorine dioxide/potassium permanaganate residual of the sample. The range of the analyzer shall be field selectable from 0-0.5 mg/l to 0-30 mg/l with continuous output to 1 part per million (PPM).

3.0 Design

The analyzer shall be wall panel mounted. The electrodes shall be fixed and shall be continuously cleaned. The sample flow to the cell shall be kept constant by the built-in gravity flow regulator design. Automatic temperature compensation shall be provided. A pH buffer solution feed system shall provide pH regulation in the cell to reduce signal drift. An optional CO2 gas buffer feed system shall also be available.

SENSING CELL

The sensing cell shall consist of fixed gold and copper electrodes with fixed output contacts. The output shall be 4-20 mAdc into a maximum of 800 ohms. The cell shall be kept clean by a motor driven striker agitating small PVC spheres against both electrodes to keep dirt and other foreign substances from adhering to the face of the electrodes. The cleaning operation shall be continuous.

REAGENT FEED SYSTEM

Chemical reagents shall be gravity fed from an integral storage bottle through a rotary valve. Mechanical feed pump shall not be required. Reagent storage shall be sufficient for 5 to 7 days of operation without attention.

OR

A CO2 buffering system shall be provided for maintenance of optimal pH. A pressure and flow regulated CO2 supply shall be furnished by the user.

ANALYZER RANGE

The residual analyzer shall be field selectable in any of the following ranges: 0-0.5, 0-1.0, 0-3.0, 0-5.0, 0-10.0 or 0-30.0 mg/l.

INDICATOR/CONTROLLER

Indication of the residual value shall be provided through a 2 line x 16 character alphanumeric LCD display. The display and electronic components shall be housed in a NEMA 4X enclosure. The display shall be direct reading in mg/l of residual of chemical being measured. Where required by the application the indicator/controller shall be capable of standard PID single loop residual control or compound loop control. All parameters for the indicator calibration and for control shall be entered through the front panel mounted pushbuttons.

ALARMS

Three (3) field adjustable alarm contacts shall be provided. Alarms shall be settable over a range of 0-100% of instrument input. Each alarm set point shall be set through input of actual process values (mg/l) via the front panel mounted, 4-pushbutton keypad and set point values shall be displayed on the LCD indicator on the face of the unit. Each alarm shall have a corresponding relay contact rated at 1.2 amp @ 120 Vac.

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