Model A15/79 Total Residual Chlorine

On-line residual chlorine monitors shall be provided to continuously measure total residual chlorine at the _____(Specify Locations)_____. Each Chlorine Monitor shall consist of a residual chlorine chemistry module and an electronic monitor housed in a panel mount enclosure (or housed in a NEMA 4X enclosure for surface mounting).

Chlorine monitors shall measure total residual chlorine using the EPA recommended method of reaction of the sample with potassium iodide and measurement of the iodine released by the chlorine in solution. The released iodine shall be measured by air stripping the iodine out of the treated sample and passing the air/iodine gas stream past a special gas phase iodine sensor. This method shall insure that the residual chlorine concentration can be read continuously without contact between the sensor and the wastewater sample.

The chemistry module component shall provide the sample conditioning and air stripping components required for chlorine measurement. Peristaltic pumps shall provide sample and reagent metering, with quick-load pump heads to facilitate tube changes. Air stripping of the iodine shall occur in a special stripping chamber with air supplied from an internal diaphragm pump. Airflow shall be controlled at a fixed flowrate using a precision metering valve, and an internal rotameter shall provide flow indication. A sample overflow assembly shall be provided on the outside of the chemistry module. This assembly shall allow high sample flowrates (10-20 GPH) to the analyzer to reduce sample transport time to a minimum.

The sensor for the total chlorine measurement shall be a special gas phase iodine sensor which plugs into the side of the stripping chamber. Air passages in the stripping chamber shall direct the airflow from the sample column directly to the sensor. The sensor shall generate a current signal linearly proportional to measured iodine concentration, and a 25-foot sensor cable shall be supplied for connection to the chlorine monitor. The sensor shall have a quick-disconnect plug at the back to facilitate sensor replacement when necessary.

The Residual Chlorine Monitor shall provide a display of residual chlorine concentration directly in PPM on a backlit LCD display. The overall display range shall be programmable for ranges of either 0-2.000 PPM or 0-20.00 PPM using the keys on the front of the unit. In the low range, the display shall show residual chlorine concentrations with a resolution of 1 PPB. For remote recording, control, or data logging, an isolated 4-20 mA output shall be provided, capable of driving loop loads up to 600 ohms. The 4-20 mA output shall be programmable for any span from a minimum of 0-0.1 PPM to a maximum of 0-20 PPM. For alarm purposes, the monitor shall contain two independent alarm relays, which shall be programmable for setpoint, hysteresis, and time delay.

The Residual Chlorine Monitor shall be housed in a compact 1/4 DIN panel mount enclosure for flush mounting. For outdoor or surface mounting applications, the monitor shall be enclosed in a NEMA 4X Fiberglas enclosure, with a clear hinged window providing access to controls. All programming and calibration functions shall be done through the front panel keys, and a keyboard software lock shall be included to avoid unauthorized tampering with alarm or calibration settings.

The complete Residual Chlorine Monitor shall be Model A15/79 as manufactured by Analytical Technology, Inc.