Technical Reference Section: pH/ORP

Maintenance Tips

- Cleaning pH and ORP electrodes and calibrating the systems should be done regularly. The required frequency is application-dependent, but once/week for cleaning, and twice/month for calibration is recommended.

- Isopropyl alcohol may be used for removing mild grease and oils from the pH sensitive glass or from the metallic tips of ORP electrodes. Use 5% HCl on porous reference junctions clogged with hard water deposits, or other solvents/detergents as necessary. Always consider the electrode's materials of construction when selecting a cleanser.

- The purpose of calibration is to compensate the system for the continual changes occurring within the electrodes. Like batteries, all pH and ORP electrodes eventually deplete and must be replaced. A good time to determine the condition of an electrode is after cleaning and during calibration. Note the mV readings in pH buffers and replace the electrode if its actual mV output differs more than 50 mV from these theoretical values: pH 7 = 0 mV, pH 4 = +177 mV, pH 10 = -177 mV. Replace an ORP electrode if its actual mV output differs more than 50 mV from the theoretical values in the table below:

ORP Values of Standard pH Buffers <u>Saturated</u> with Quinhydrone

	pH4			pH7		
Temperature (°C)	20	**25**	30	20	**25**	30
ORP Value (mV)	268	**264**	258	92	**87**	79

- The typical shelf-life recommendation for +GF+ SIGNET pH and ORP electrodes is 12 months at 25°C (77°F). Refrigeration will extend this period, but do not allow them to freeze! Expansion of internal solutions during freezing can cause permanent damage to the electrodes. The risk of putting older electrodes into service is the possible disappointment of shorter than expected service-life. All +GF+ SIGNET pH and ORP electrodes are marked with date codes to identify the date of manufacture.