

# Monitoring water quality using pH and ORP

## APPLICATION A133

Type of Company: [Manufacturer, Chemical Systems](#)

Location: [Illinois](#)

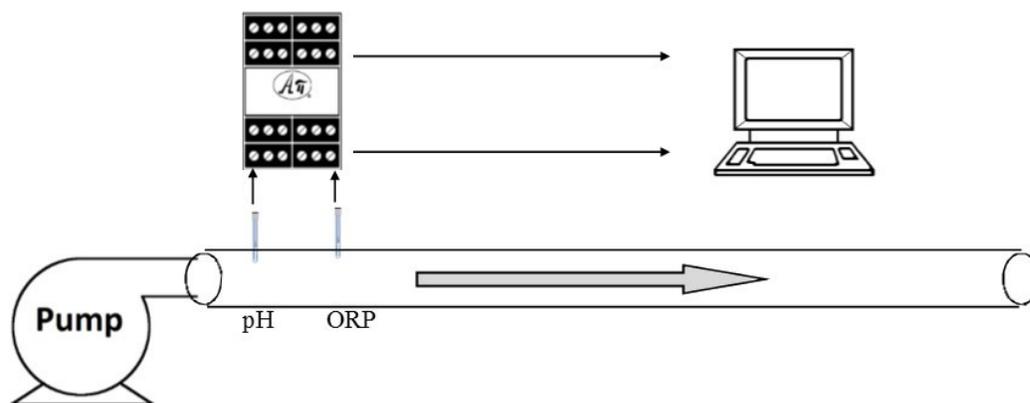
Proper sanitation of swimming pools is needed to prevent the transmission of infectious waterborne diseases. Sanitation methods include a water filter to remove pollutants, disinfection to kill infectious microorganisms, and regular testing of pool water, including chlorine and pH levels. When any pool chemicals are used, it is very important to keep the pH of the pool in the proper range as a higher pH drastically reduces the sanitizing power of chlorine due to reduced oxidation-reduction potential (ORP). The customer manufactures the equipment and control system to maintain water quality in commercial swimming pools.



Photo by GaryRuley

## The Engineering Issue

- The engineer has a requirement to monitor the pH and ORP of the water to ensure that the chemicals used to sanitize the undesired contaminants are at the proper and safe levels.
- The Van London-pHOenix pH and ORP sensors and the Automation Direct PLC are experiencing interface interaction and isolation issues.



The API engineering team created a custom-modified APD 2000 to interface the outputs from the sensors (one channel for pH and one channel for ORP) to the inputs to the PLC. The OEM APD 2000 also furnishes isolation, eliminating the interaction problems between PLC input channels.

**Problem. Solved.**