

# PPM and ORP

*Now you can have both!*

*A revolutionary solid state PPM SENSOR with a selective membrane provides direct readings of Free Chlorine in water.*

In November 1985, Dr. J. Steininger, President of Santa Barbara Control Systems, wrote an article in *Swimming Pool/Spa Age* called: **“PPM or ORP: Which Should Be Used?”**. This article contributed greatly to the recognition and use of ORP (Oxidation-Reduction Potential) for chemical automation in swimming pools and spas.

ORP has the great advantage of showing the activity of an oxidizing sanitizer - such as chlorine or bromine. Because it shows the effects of pH and cyanuric acid on the effectiveness of the sanitizer and correlates very well with its bactericidal activity, it has become an invaluable tool for proper water sanitation.

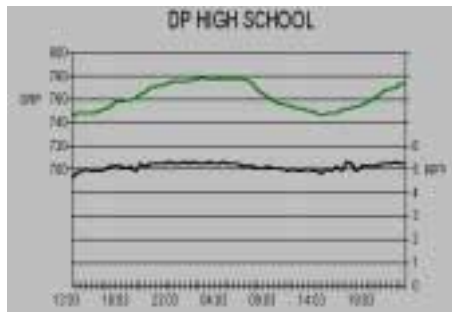
However ORP sensors cannot show chlorine concentration. Approximate values of PPM (parts per million) or mg/l (milligrams per liter) values can be derived indirectly through algorithms or more precisely with amperometric sensors. The problem is that these sensors are expensive and difficult to use because they require special pressure cells and expendable reagents.

Unlike conventional amperometric sensors, the new solid state PPM sensor is simple to install and operate because it does not require expensive reagents or special flow cells. More significantly, it is not affected by cyanuric acid (CYA), oxidizers and most other chemicals. Extensive testing has shown that this sensor is very accurate and reliable.

## Is ORP control obsolete?

Absolutely not! With the new PPM sensor, the operator can now control either free chlorine or ORP, or both.

The DP High School graph below shows the data log for a CHEMTROL™ PC6000 controller using the new solid state sensor for PPM control. The ORP variations show the diurnal effects of sunlight in a



## PPM Control

cyanuric-stabilized pool. During the day, the chlorine decomposes more rapidly under UV radiation and the ORP decreases accordingly. At night, the ORP increases again. At all times though, the Free Chlorine level remains stable.

Another advantage of the new PPM sensor is that the two control modes can be used simultaneously with PPM control for chlorine and ORP control for an oxidizer, such as Potassium Monopersulfate, used to eliminate chloramines.



## New PPM Sensor

## Availability

The PPM sensor is now available on the new CHEMTROL™ PC5000 controller which features PPM, ORP, pH and Temperature control.

It is also available as an upgrade for existing CHEMTROL™ PC3000 and CHEMTROL™ PC6000 controllers.

Please consult your local dealer or CHEMTROL™ for more information.



## CHEMTROL™ PC5000



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