

## SENTINEL® Advanced Water Disinfection Automation System

### New FSMA Preventive Controls

- ✓ Active Free Chlorine (ppm)
- ✓ Chlorine Dioxide (ppm)
- ✓ Peroxy Acetic Acid (PAA)
- ✓ Total Chlorine
- ✓ ORP
- ✓ pH
- ✓ Flow
- ✓ Level
- ✓ Temperature
- ✓ Conductivity
- ✓ Built-in Alarm
- ✓ HMI and PLC
- ✓ Graph Trends
- ✓ Production/Sanitation Mode
- ✓ Line Occupation Mode History
- ✓ Processed Product History
- ✓ Data Reporting/Recording
- ✓ Recipes
- ✓ Alarm Notification
- ✓ Email and SMS
- ✓ Intuitive Navigation
- ✓ User Friendly Program



The Advanced **SENTINEL** is an essential “*state of the art*” tool for complete automation and management of the water treatment process. It provides multi-parameter monitoring, pump and valve control, data recording and data reporting of all the processes. The **SENTINEL** uses real time monitoring with internet and network connectivity using Ethernet and Wi-Fi. The **SENTINEL** can measure Chlorine, Total Chlorine, Chlorine Dioxide (ppm), PAA, ORP, pH, Conductivity, Flow and Temperature. Modular design allows you to select any desired measurement options.

The **SENTINEL** is a versatile system for the automation of your wash water disinfection. It may be used to manage Chlorine, Chlorine Dioxide, Peroxide, Peroxy Acetic Acid (PAA), pH control for Acid and Caustic and most other oxidizer treatments.

#### Monitoring and Control

Analytical measurements of various water parameters provide critical and useful information that may be utilized for optimizing water treatment and proper disinfection. The **SENTINEL** has 6 direct sensor inputs which may be any controlling ppm, ORP, pH and Conductivity or may be any combination of these. Can manage 4 measuring pumps, flow sensor, level sensor and automatic valve with 6 user levels of access.

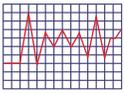
#### Alarm

Built in safety alarms are used to interrupt and shut off chemical feed pumps and valves and create an alarm notification. An alarm may be programmed on the upper and lower limits of any parameter. Functional timers may be programmed for safety interlocks and to shut down or start up specific items. In the event of an alarm, a visual strobe light turns ON, and a notification is transmitted by email up to 5 email addresses.

#### Interlocks

Unique interlocks and advanced algorithms are applied to not allow certain functions to occur while another function is active. Typically, when Chlorine and Acid treatments occur, mixing of the two chemicals in the process can cause a dangerous and volatile reaction. If chlorine is added at a high acid low pH condition, it causes the chlorine gas to release which can cause irritation and worker hazard. The interlock function prevents the two chemicals from injecting together.

In order for chlorine to be active, it requires the pH to be in the optimum range between 6.5 and 7.5. If the pH is too high, the chlorine is inactive and ineffective, and the free chlorine (hypochlorous acid) level will be low. If acid and chlorine (sodium hypochlorite) are added together, it may cause a seesaw effect between acid and chlorine levels. Interlocks can prevent the two chemicals from injecting together.



# AQUAPULSE SYSTEMS

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## Timers

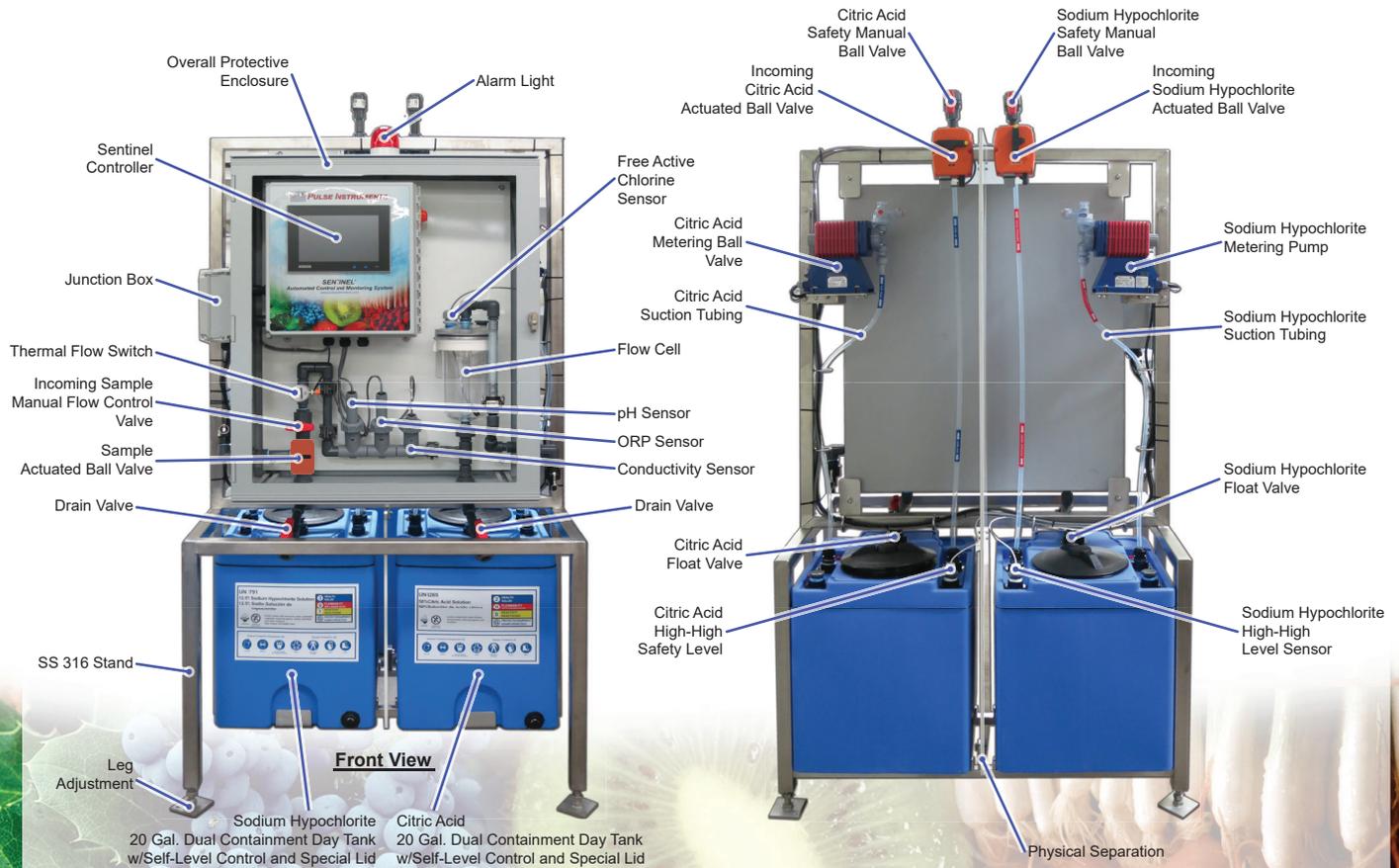
Timer functions of the **SENTINEL** are effective in managing process conditions for accurate treatment at appropriate times. They are also utilized to create alarms in order to prevent any undesirable conditions that may be unsuitable for the process. Initial startup timer is used to set a time limit at initial system startup to create a time delay and prevent any alarms from occurring while the water system is equalizing. Another timer is activated after an alarm condition is reset in order to prevent new alarms from occurring, and to allow the system to equalize. Several other timers are utilized that are activated when a chemical feed pump turns ON, and if the process condition is not corrected within the specified time, it turns ON the alarm.

## Tank Water Quality

The **SENTINEL** automatically refreshes the water tank and prevents build up of organic materials that may cause undesirable chloramines and trihalomethanes, which compromise chemical reactions and affect product quality and safety. Measurement of Total Chlorine or conductivity may be used to measure the build up of organic and inorganic materials. An output signal activates a relay to open a solenoid valve and drain some of the water out of the tank. As fresh water enters the tank, the water gets cleaner and the solenoid is automatically shut off, thus maintaining clean water.

## Communication and Interface

User friendly menu selection provides easy set up of control, alarm points and data recording with access via Ethernet or USB connection. Ethernet and WiFi internet connection allows access via any web browser from anywhere. Alarm notifications are sent by emails. Regularly scheduled data record file may be sent automatically via email.



## Ordering Information

Call 888-239-4447 for pricing and to configure your **SENTINEL** Advanced Water Automation Disinfection System