

EP2100 Automated Water Disinfection System

Powered by *ePulse*[®]

New FSMA Preventive Controls

- ✓ Advanced System Interlocks
- ✓ Active Free Chlorine (ppm)
- ✓ Total Chlorine
- ✓ Chlorine Dioxide (ppm)
- ✓ Peroxy Acetic Acid (PAA)
- ✓ Turbidity
- ✓ ORP
- ✓ pH
- ✓ Flow
- ✓ Conductivity
- ✓ Temperature
- ✓ Data Logging and Reports
- ✓ Customizable Color Touchscreen
- ✓ Visual and Audible Alarm
- ✓ Email and SMS Alarms

The Advanced **EP2100** 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 **EP2100** uses real time monitoring with internet and network connectivity using Ethernet and WiFi. The **EP2100** measures Chlorine, Chlorine Dioxide (ppm), ORP, pH, Flow Rate and Totalizer, Chemical Level and Temperature. Modular design allows you to select any desired measurement options.

EP2100 is a versatile system for the automation of your wash water disinfection. It may be used to manage Chlorine, Chlorine Dioxide, Ozone, Peroxide, Peroxy Acetic Acid (PAA), First Step+ 10, pH control for Acid and Caustic and most other oxidizer treatments. It is also used to manage NatureSeal treatment for sliced apples, potatoes, broccoli and other products using an anti-oxidant.

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 **EP2100** has 4 direct sensor inputs which may be used for controlling ppm, Total Chlorine, ORP, pH, TDS and Conductivity or may be any combination of these. With 8 analog input signals of 4-20 mA, a variety of measurements may be used such as ppm of chlorine, ppm of chlorine dioxide, chemical levels for inventory management, and flow rate and totalizing for monitoring water usage, etc. The **EP2100** has 12 digital input channels may be used for discrete inputs such as flow sensors, flow switches and process interlocks.

Alarm

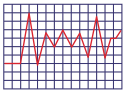
Built in safety alarms are used to interrupt and shut off chemical feed pumps and valves and create an alarm notification. An alarm may be programmed on the upper and lower limits of any parameter. Functional timers may be programmed for safety interlocks and to shut down or start up specific items. In the event of an alarm, an audio and visual strobe light turns ON, and a notification is transmitted by email up to 4 email addresses, and up to 4 SMS messages.

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.





Timers

Timer functions of the **EP2100** 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 **EP2100** 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 turbidity, total suspended solids 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 and alarm points, data recording with access via Ethernet or USB connection. Ethernet and WiFi internet connection allows access via any web browser from anywhere. No proprietary software required. Alarm alert notifications are sent as text messages up to 4 SMS and emails may be sent up to 4 email addresses. A regularly scheduled data record file may be sent automatically via email.

