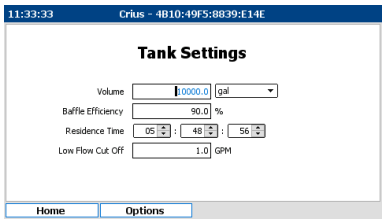
CTSense

Contact Time Controller

CTSense is either a stand alone controller or an algorithm that can be added to a standard CRIUS®4.0 controller to give a real time CT output which in turn can be used to control a process to give a desired CT. With datalogging and alarms, CTSense can be used to ensure that CT values are always achieved. CTSense is able to calculate contact time in real time and control the chlorine setpoint to ensure a minimum contact time value.

- **Uses flow, residual chlorine and contact time baffle efficiency**
- **Uses external or integrated residual chlorine**
- **Has pH and temperature optional inputs**



"Calculating CT in real time and using it to achieve a desired CT"

Dr. Craig Stracey, Pi

Simply put, the CTSense takes in (or measures itself) signals for flow, pH, temperature and chlorine. It allows a factor for the mixing efficiency of the contact tank and it combines all of these using the formula to calculate the CT in real time.

Contact Time = Chlorine Residual x Detention Time

(mg x min/L) = (mg/l) x (mins)

CRIUS®4.0 CTSense

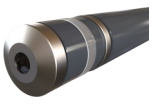
- **High Quality - Lowest Cost**
- **Multilingual**
- **High resolution colour display**
- **Intuitive user interface**
- **Downloadable data logs**
- **Customisable home pages**
- **Up to 8 sensors**
- **Remote access via LAN/3G/4G**
- **Expandable to 16 sensors**
- **8 digital I/O**
- **Optional Modbus/ Profibus comms**

Introduction

In order to ensure the effective disinfection of drinking water, chlorine needs to be in contact with the water to be disinfected at a high enough concentration, for long enough, to deactivate viruses and bacteria. The WHO recommends a contact time value of 15mg.min/l at a pH of <8.0. In theory this is easy, simply measure the chlorine residual at the outlet of the contact tank and using the flow rate, calculate the residence time.

Unfortunately, other factors must be taken into consideration, such as the effect of baffles within the tank (making the tank more or less effective), the pH and the temperature of the water, all of which are provided for in the CTSense from Pi.

Sensors for Contact Time Control



Free chlorine

– self cleaning

– membraned amperometric sensor

– uses no reagents

pH/Temperature

Flow

– signal from existing plant flow meter

Key Features

- **Integrated or existing residual chlorine**
- **Feed forward and feedback chlorine controls**
- **Integrated or existing pH and temperature signals**
- **Data logging and alarms to ensure CT value compliance**
- **Comms to SCADA or remote access**

For more information please see the individual brochure for CRIUS®4.0