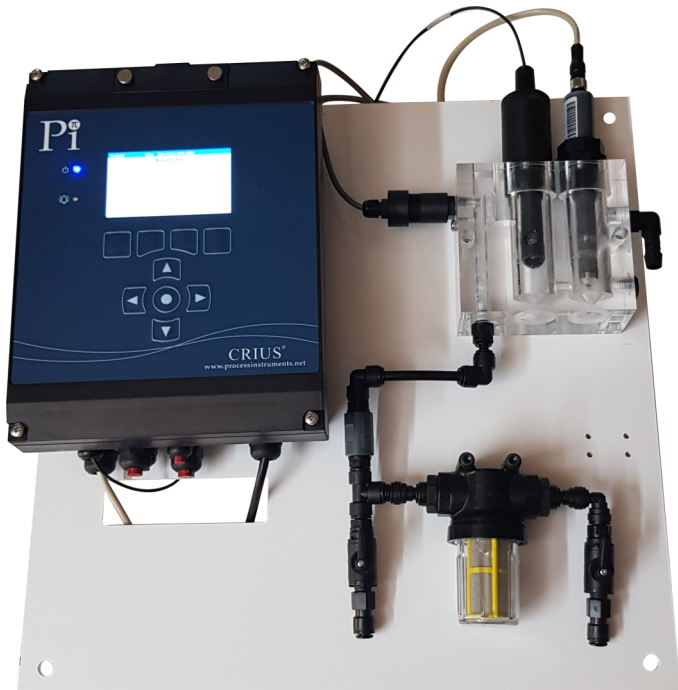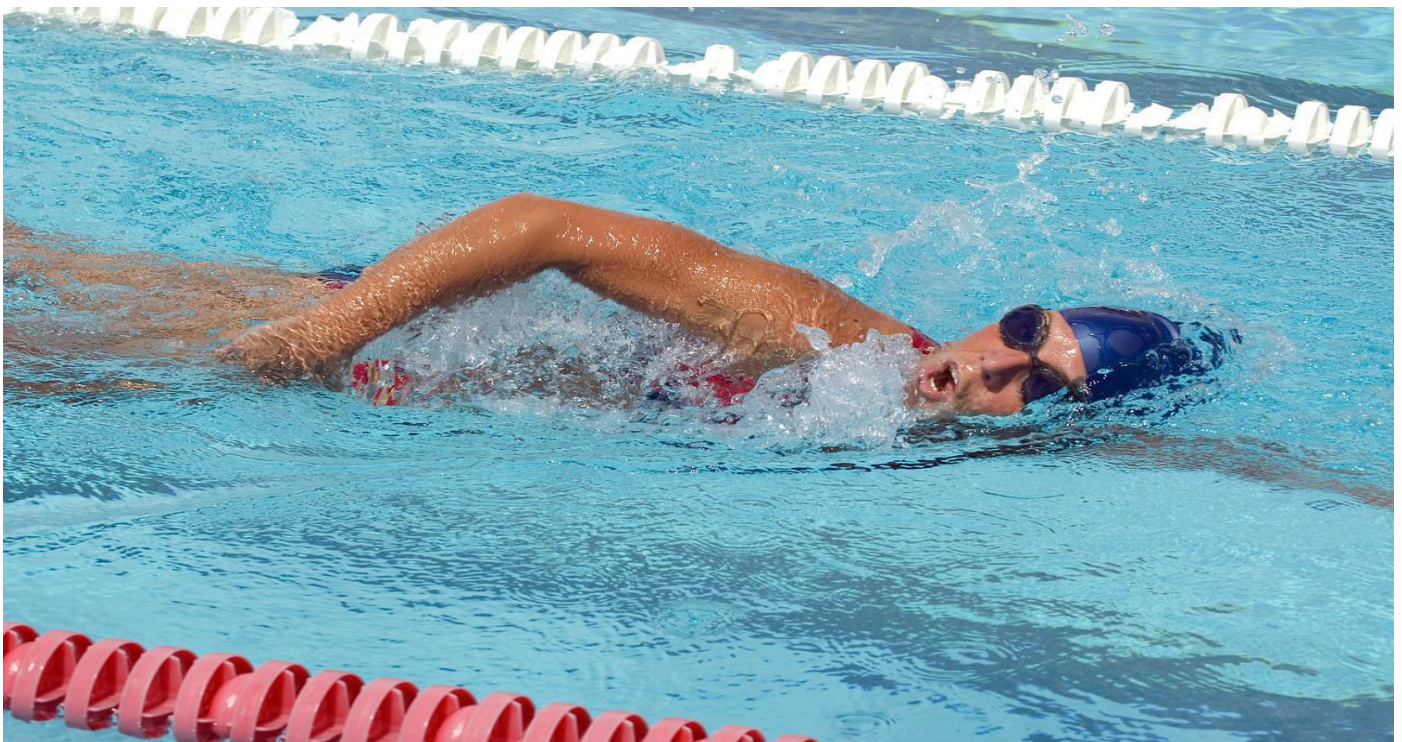# AquaSense

Pool Controller and Spa Controller

- **Significant Operational Cost Savings**
- **Better Sensors Leading to Better Control**
- **Better Bathing Experience**
- **Reduced CO_2 Emissions**
- **Reduced Electricity Usage**
- **Reduced Chemical Usage**
- **Proactive Maintenance Notifications**
- **Simple to Use for All**
- **Full Two Way Cloud Based Remote Access**

"Incredible value for money."

Alan Murphy, UK

Introduction

The AquaSense range of pool controllers has been designed to three criteria:

- **Improved Safety -** better sensors lead to better process control which leads to less variation in chlorine residuals even with a highly variable bathing load.

- **Improved Bathing Experience -** better process control leads to reduced chemical usage, lower costs and an improved bathing experience.

- **Reduced Costs -** better process control leads to lower chemical cost. Added to hugely reduced electrical usage costs, these are just a few of the ways that the AquaSense can save you money which can pay for a new controller in just a few months.

"Since installing seven CRIUS® AquaSense in 2011, our control over the pool chemistry has greatly improved, leading to a better bathing experience for our customers."

Andy Brown, UK

Sensors

Traditionally pool chemistry has been controlled by using ORP (redox) or residual chlorine sensors. The quality of the sensors has a huge effect on the ability of the controller to maintain a safe and pleasant bathing water. The sensors used in AquaSense controllers are the best available in the world today and are exactly the same sensors that are used to monitor and control drinking water in many municipal drinking water plants worldwide.

Chlorine Sensors
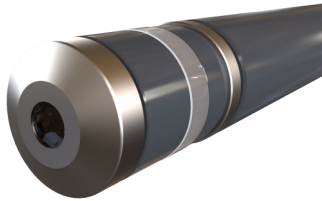
Three sensors are available to measure; free chlorine, total chlorine or chlorine in the presence of cyanuric acid. All of these sensors have a long life (10 years) with reduced maintenance and calibration requirements. They are very high quality and very easy to own.
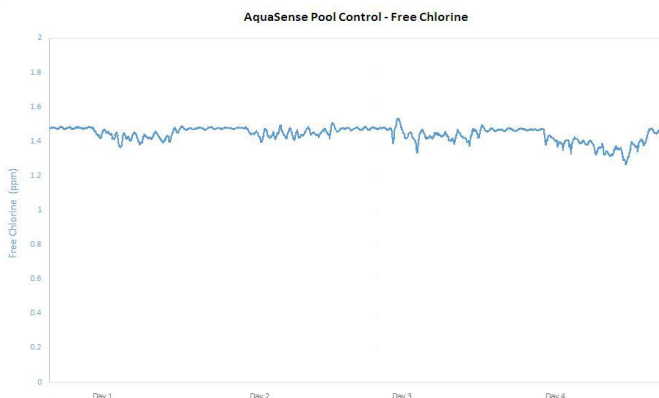
Being able to accurately measure the chlorine and respond to varying bathing loads means that pools and spas can operate at lower chlorine levels, reducing the formation of unpleasant combined chlorines and reducing the chemical usage, thereby reducing costs and reducing emissions, all while providing a better bathing experience.

pH and ORP Sensors

The pH and ORP sensors are made specifically for the AquaSense controllers. These AquaSense pH and ORP sensors are also exactly the same as those used in the water industry and are not the low cost, low quality sensors that are often supplied into the pool industry.

"I have installed many pool controllers over the years and the quality of the AquaSense sensors is the best there is.

Chris Tedeschi, USA
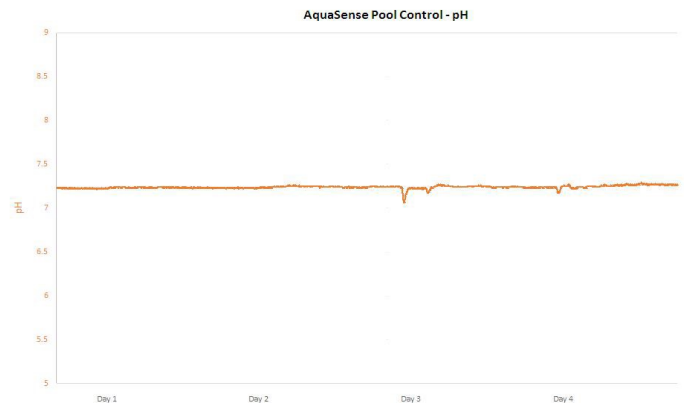
Remote Access and Text Alarms

More and more pools are maintained by service professionals that are based off-site and the ability of these engineers to respond quickly and effectively to a process upset at a pool depends on them getting the correct information as soon as possible.

The CRIUS®4.0 AquaSense can come equipped with its own integral 3G, 4G or CDMA modem. This, in turn, allows anyone with the appropriate security level to receive text and email alarms relating to the chemistry in the pool or spa and also allows them to log in to the controller over the internet and perform almost any action that they could do if they were standing in front of the instrument.

(For more information, please go to https://www.processinstruments.co.uk/products/remote-access-demonstration/)

The highly sophisticated proactive text alarms and remote access capability of the CRIUS®4.0 AquaSense means that:

- **Improved Communication -** the right people know as soon as something happens.

- **Improved Control -** your expert is in your pool room no matter where they are.

- **Less Time to Fix Problems -** the time taken to fix any problem is greatly reduce.

- **Reduced Costs -** time, cost and car exhaust emissions are reduced.

BMS

Many leisure facilities are now fitted with sophisticated BMS (Building Management Systems) and all AquaSense pool and spa controllers are able to communicate directly to the BMS, whatever system it might be. Each of the pool and spa controllers from Pi can come equipped with a range of communication protocols including LAN, Profibus, Modbus and more traditional analogue and digital outputs.

Save Money and the Planet!

Most pool recirculating pumps are over-specified for the duty required and as such there is scope to turn them down and save considerable amounts of money on the electricity usage. Whenever you save electricity you are reducing CO_2 emissions and the carbon footprint of your pool and spa. For many organisations, reducing CO_2 emissions is a significant factor in choosing which equipment to purchase. In order to turn down the pool recirculating pump, the pump motor must be fitted with an invertor. The question then arises - on what basis do we turn the motor down?

Each pool has a minimum turnover set by the manufacturer or consultant at the time of installation. The CRIUS®4.0 AquaSense allows the user to turn down the recirculating pump during periods of non pool use (overnight) to the minimum level. While the pool is being used, the recirculating pump motor is set based on chlorine demand which is proportional to bathing load. This ability to control the recirculating pump based on chlorine demand means that pool operators can save significant sums of money on electricity during the day when electricity costs the most.

CRONOS® AquaSense

- High Quality - Lowest Cost

- Multilingual

- High resolution grayscale display

- 9 buttons for easy navigation

- Graphing and datalogging

- Enclosure; wall, panel, pipe or pole-mounting. IP65/Nema 4x.

- Options:

  - **Modbus RS485/LAN**

  - **Profibus DPV 1**

  - **Up to 2 sensors**

  - **PID/flow proportional controls**

  - **Remote sensors**

CRIUS®4.0 AquaSense

- High Quality - Lowest Cost

- Multilingual

- High resolution colour display

- Intuitive user interface

- Downloadable data logs

- Customisable home pages

- All CRONOS® options plus:

  - **Up to 4 sensors**
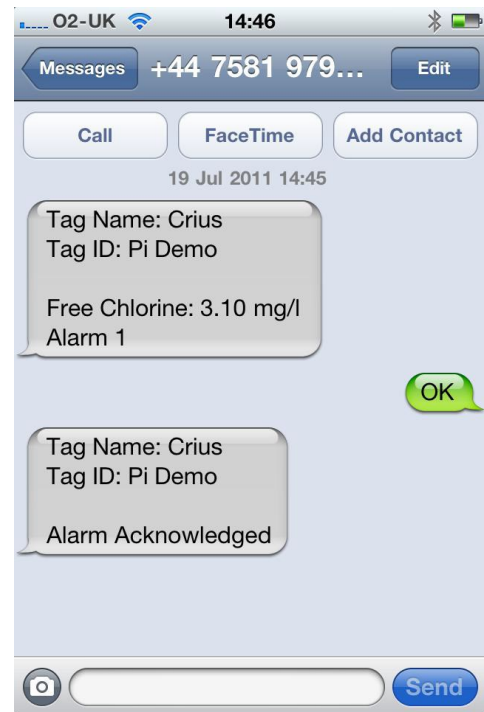
  - **Remote access via LAN**

For more information please see the individual brochures for CRONOS® and CRIUS®4.0

Specification

	CRONOS®	CRIUS®4.0
Highest quality sensors	●	●
Multilingual	●	●
System logger	●	●
On display trending	●	●
Event logger	●	●
Download logs	Optional	●
PID controls	Optional	Optional
Up to 2 sensors	●	●
Up to 4 sensors		●
Expandable up to 16 sensors		Optional
Analogue outputs V and mA	●	●
Isolated universal inputs & outputs	●	●
Large high resolution display	●	●
Colour display	Optional	●
Up to 8 relays	●	●
Expandable up to 32 relays		Optional
Up to 8 digital inputs	●	●
Expandable up to 32 digital inputs		Optional
Remote internet access		Optional
Integrated cellular modem/LAN		Optional
MQTT		●
Profibus	Optional	Optional
Modbus ASCII/RTU serial	Optional	Optional
Modbus TCP (LAN enabled)	Optional	Optional
AC/DC (110-240VAC)	●	●
DC (9-36VDC)	Optional	Optional
Wall and panel mountable	●	●
Pole and handrail mountable	●	●
IP65/Nema 4X enclosure	●	●
Fire retardant ABS Enclosure	●	●

Texting via GSM Modem

Remote Access via GPRS/CDMA Modem