

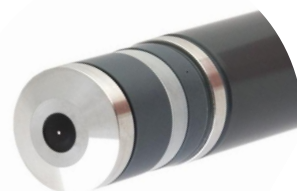


HaloSense

Total and Free Chlorine Analyzer

The HaloSense range of Residual Chlorine Analyzers, Residual Chlorine Controllers and Residual Chlorine Monitors utilize the very latest and best chlorine sensors available in the world today. They are membrane devices which are insensitive to changing pH, use no reagents, are extremely stable, and have reduced maintenance and reduced whole life costs.

- **Amperometric sensors - accepted under US EPA method 334.0**
- **No chemical reagents - lower cost of ownership**
- **Stable and reliable - excellent process control**
- **Suitable for all potable, process and salt waters**
- **Up to 1 year between maintenance**
- **Up to 3 months between calibration**
- **Up to 15 years life - reduced costs**



"In my opinion the Pi chlorine analyzers are simply the best in the world"

John Clark, USA

The HaloSense sensors and flow cells are available with different controllers giving you the same great performance with different communication, display, and control options. With the HaloSense range of residual chlorine analyzers, you get an extremely sophisticated chlorine analyzer, chlorine monitor and chlorine controller.

CRONOS® HaloSense



- 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
 - Up to 2 sensors
 - PID/flow proportional controls
 - Remote sensors
 - Color display
 - Downloadable data logs

CRIUS® HaloSense



- Highest Quality - Low Cost
- Multilingual
- High resolution color display
- Intuitive user interface
- Customizable home pages
- All CRONOS® options plus:
 - Up to 4 sensors
 - Remote access via LAN
 - Remote access via GPRS
 - Expandable to 16 sensors

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

Mounting Options



- Open overflow cell (single, double or triple)



- Single closed flow cell



- Single or double Autoflush

Principle of Operation

The membraned amperometric chlorine sensors, are enhanced with a third, reference electrode which eliminates zero drift. Its unique design means that pH correction is not usually required at all, completely eliminating reagents.

In addition to the state of the art potentiostatic chrono-amperometric free chlorine and total chlorine sensors, the HaloSense range of residual chlorine analyzers has all the functionality that you need, and more. Simply choose the CRONOS® or CRIUS® controller to give you the highest quality chlorine analyzer, with all the functionality you need at the lowest price possible. This means that you pay for everything that you need and nothing you don't, without sacrificing the quality of measurement!

The HaloSense comes with a number of sensors including free chlorine, total chlorine and free chlorine 'zero' (please see separate brochure).

CO₂ Buffering

An alternative to pH compensation is the use of CO₂ to suppress the pH such that changes in the pH of the sample do not affect the chlorine reading.

Water Treatment

- Chlorine Dosing
- Cooling Towers
- Paper Mills
- Remote Sites
- Food Preparation
- Secondary Chlorination

The HaloSense chlorine analyzer range is particularly suited to

working in sites where reliability and ease of use are most important.

Autoflush

As described in a separate [brochure](#), the HaloSense can come equipped to automatically clean itself at user defined intervals with all the benefits of no operator intervention. The Autoflush is particularly useful in food preparation, pulp and paper, waste water and many applications where there is likely to be a build up of solids in the sample.

pH Compensation

For some applications with high and variable pH, pH compensation can improve the accuracy of the chlorine readings. For pH compensation to be valid it must be done with the highest quality pH sensors and with chlorine sensors that have a reduced susceptibility to varying pH, such as those used in the HaloSense range of chlorine analyzers.

Installation

The HaloSense can be installed in a variety of auxiliary flow cells and self-cleaning devices. Please ask for details.



Specification*

** All subject to change without notice*

Type:	Membrane covered potentiostatic chrono amperometric three-electrode system
Measurand:	Total Chlorine or Free Chlorine
Range:	0.01-2mg/l, 0.01-5mg/l, 0.01-10mg/l, 0.01-20mg/l, 0.5-200mg/l (free only)
Resolution:	0.01mg/l (ppm) (0.1 on 0-200mg/l ranges)
Reproducibility:	Better than ±0.05mg/l
Stability:	-1% per month (without calibration)
Working electrode:	Gold
Counter electrode:	Stainless Steel
Reference electrode:	Silver / silver halide
Membrane material:	Micro-porous hydrophillic membrane
Flow rate:	Approximately 0.5l/min (min 0.25l/min)
Temperature range:	0 to <45°C
Temperature compensation:	Automatically by an integrated thermistor
pH-range:	pH 4 up to pH 9
First-polarisation time:	2 hours
Re-polarisation time:	30 min
Response time:	T ₉₀ : approx.120 seconds
Zero-point adjustment:	Not necessary
Calibration:	Manual using Electrochemical test kit or DPD test kit
Housing material:	PVC, silicone, polycarbonate stainless steel
Dimensions:	Diameter approx. 25mm, length 175mm
Maintenance intervals:	
Membrane:	Once a year (depending on water quality)
Electrolyte:	Once a year (depending on water quality)
Interferences:	High levels of other oxidants such as Ozone and Chlorine Dioxide