HALOGEN
systems inc

MULTI PARAMETER SENSOR

A robust, integrated sensor module platform for drinking water, ballast water, wastewater and cooling systems.

FEATURES

Measures

- Chlorine, Bromine or Monochloramine
- Optional Differential pH
- Rapid Response ORP™
- Conductivity
- Temperature

Lower Maintenance

- Self-Cleaning
- Long Interval Between Calibrations
- No membranes or electrolyte replacements

Easier Installation

- No waste stream required
- Direct, in pipe installation- no flow cell needed

Sensor Module
SWN-P(H)

APPLICATIONS

Ballast Water	Total Residual Oxidant (TRO), ORP, Temperature
Cooling Towers	Chlorine or Bromine, ORP, Temperature
Wastewater	Total Chlorine, pH, ORP, Conductivity, Temperature
Drinking Water	Free Chlorine or Monochloramine, pH, ORP, Conductivity, Temperature
Swimming Pools	Free Chlorine or Monochloramine, pH, ORP, Conductivity, Temperature

FREE CHLORINE (TRO) is measured using amperometry without the use of membranes, electrolytes or reagents and consequently requires far less maintenance than conventional systems. It's integrated pH and temperature sensors enable onboard compensation for temperature and pH. It measures Free Chlorine using auto-ranging from 0 to 15 ppm. Unlike ORP, the relationship of chlorine to signal is linear, not logarithmic, resulting in higher accuracy.

RAPID RESPONSE ORP™ method of measurement resists poisioning with organics and responds much to faster to disturbances. By sequentially measuring ORP (for 5 seconds), a potential is impressed on the measuring electrode every cycle during the chlorine measurement that keeps the electrode free of poisoning. Rapid Response ORP is self-cleaning and is a more robust ORP measurement than other dedicated ORP monitors.

FLOW INDEPENDENT MEASUREMENT The sensor can operate from zero to fifteen feet per second of velocity without significant loss of signal (Patent Pending). The signal isimmune to changes in pressure, both momentary spikes and extended changes. No waste stream is required.

SELF CLEANING Continuous cleaning of the pH and chlorine electrodes ensures that the measurements will be accurate, further reducing the need to recalibrate, removing salts oils and biologicals. The wetted parts are made from Teflon and resist adhesion of biofilm, grease and gels in wastewater and seawater applcations. The chlorine sensor can operate in seawater with high hardness, alkalinity and salt without scaling.

DIFFERENTIAL PH OPTION This type of pH construction is resistant to stray currents and requires much lower maintenance. The electroyte does not require replenishment over its two to three year life.

DIRECT CONNECTION TO A PLC or other OEM equipment, a 4-20 mA output for both chlorine or TRO is included. The system operates on 12 to 24VDC power. ModBusRTU communication with other devices is fully supported for all parameters.

COMPACT the highy integrated design perform signal conditioning on board and is resistant to external noise and stray electrical currents.

SENSOR MODULES

Sensor modules are available in several configurations. A display is usually necessary for calibration and local monitoring. These functions can also be implemented in a PLC using the Modbus protocol.

Sensor Modules	MODEL #	APPLICATION
No pH 4-20 mA Output Modbus RTU Display	SWI-P	TRO in Ballast Water, Seawater
No pH No Display Modbus RTU	SWN-P	TRO in Ballast Water, Seawater. Used in a Modbus application where a display in unnecessary.
pH Display ModBus RTU	SWI-PH	Drinking Water, Wastewater
pH No Display ModBus RTU	SWN-PH	Used in a Modbus or controller application

Specifications	Value	Resolution	Notes
Free Chlorine, Bromine or TRO	0 to 15 PPM	.01	Auto Ranging
Oxidation Reduction Potential (ORP)	-1100 to 1100 mV	1	Rapid Response
Conductivity	0 to 40,000 µS	10	Auto Ranging
pH	2 to 12	.01	Differential, Long- Life
Temperature	0 to 100° C	.1	Lower maintenance, no down time
Pressure	150 PSI (10 Bar)		
Ambient Temperature Range (operating)	-20 to 140° F (-4 to 60° C)	Modules with display will suffer some performance degradation at lower temperatures	
Sample Conductivity	>50 µS/cm at 25°C		
Process Connection	Fits In 2" NPT Female		
Shipping Weight	4 lb. (1.8 kg)		
Measurement Frequency	15 to 60 Sec	Seawater (30 to 60 seconds)	

DISPLAY/ TRANSMITTER SENSOR MODULES

The display enables remote display and calibration of the sensor parameters. An optional Controller Card can be added for relay control of two chemical dosing pumps.

DISPLAY/TRANSMITTER

- For calibration
- Four Line Transflective Display with Backlight
- Up to four 4-20 mA outputs (2 are standard)
- 24 VDC Input (standard)
- Input for flow sensors
- Displays all parameters simultaneously

Display D-01

OPTIONAL CONTROLLER CARD

- Universal Input 80 to 230VAC 50/60 Hz.
- Two 5 Amp Relays for chemical dosing pumps
- Alarm relay

See the table for selection:

Transmitter-Display	Model
Display with two 4-20 mA Outputs	D-01
Display with four 4-20 mA Outputs	D-02
With Controller Board	D-NN-C

CONTACT

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