

# TempHion™

## SMART SENSOR WITH DATA LOGGING



### APPLICATIONS

Single- or multi-well tracer tests

Saltwater intrusion tracking

Tidal influence studies

Wastewater treatment discharge

pH monitoring

### Features

- Measures & records pH/ORP or Bromide and temperature
- Low power
- Modbus® RTU (RS485) and SDI-12
- Measures pH at up to 150 PSI
- 6-month sensor stability\*
- Solution ground for excellent noise protection
- Small diameter — 0.75" (1.9 cm)
- 200,000 records in non-volatile memory
- Free, easy-to-use software

\* may vary due to environmental factors

The **Seametrics TempHion™** Smart Sensor is a microprocessor-based submersible sensor with built-in data logging.

The internal processor in the TempHion allows for easy calibration, using the calibration utilities in Aqua4Plus. Once calibrated, this calibration data is stored in non-volatile memory within the Smart Sensor. When data is collected, this calibration information is applied to the data, resulting in highly accurate readings at a wide range of temperatures.

The TempHion is powered internally with two replaceable AA batteries. Alternately it can be powered with an external auxiliary power supply for data intensive applications. The unit is programmed using our easy-to-use Aqua4Plus control software. Once programmed the unit will measure and collect data on a variety of time intervals.

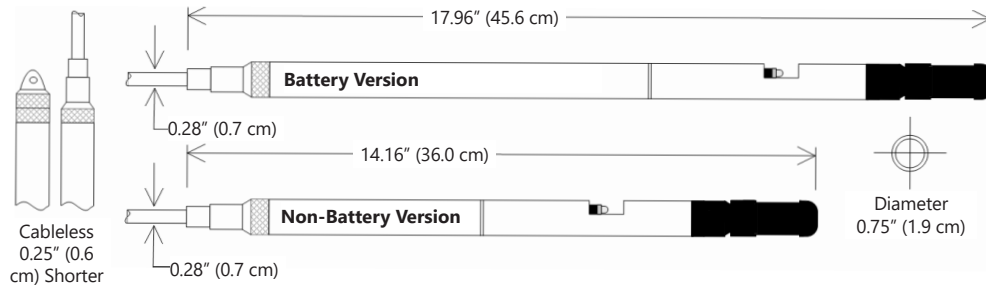
Several TempHions, or a combination of TempHions and other Seametrics Smart Sensors, can be networked together and controlled directly from a single computer.

While most will use the TempHion with our free, easy-to-use Aqua4Plus software, it is by no means limited to that software. You can use your own Modbus® RTU or SDI-12 software or logging equipment to read measurements, thus tying into your existing telemetry and control systems.

### Contact Your Supplier



## Dimensions



## Specifications\*

<b>Housing &amp; Cable</b>	<b>Weight</b>	0.8 lb. (0.4 kg)			
	<b>Body Material</b>	Acetal & 316 stainless or titanium			
	<b>Wire Seal Material</b>	Fluoropolymer and PTFE			
	<b>Cable</b>	Submersible: polyurethane, polyethylene, or ETFE (4 lb./100 ft., 1.8 kg/30 m)			
	<b>Field Connector</b>	Standard			
<b>Temperature</b>	<b>Operating Range</b>	0° to 55°C (32° to 131°F)			
	<b>Storage Range</b>	Without batteries: -20° to 80°C (-4° to 176°F)			
<b>Power</b>	<b>Internal Battery</b>	Two replaceable lithium 'AA' batteries - Expected battery life: 18 months at 15 min. polling interval (may vary do to environmental factors)			
	<b>Auxiliary</b>	12 Vdc - Nominal, 9-15 Vdc - range			
<b>Communication</b>	<b>Modbus®</b>	RS485 Modbus® RTU, output=32bit IEEE floating point			
	<b>SDI-12</b>	SDI-12 (ver. 1.3) - ASCII			
<b>Logging</b>	<b>Memory</b>	4MB - 200,000 records			
	<b>Logging Types</b>	Variable, user-defined, profiled			
	<b>Logging Rates</b>	2x/sec maximum, no minimum			
	<b>Baud Rates</b>	9600, 19200, 38400			
	<b>Software</b>	Complimentary Aqua4Plus			
	<b>Networking</b>	32 available addresses per junction (Address range: 1 to 255)			
	<b>File Formats</b>	.a4d and .csv (also .xls in Windows 8 and earlier)			
<b>Output Channels</b>		<b>Temperature</b>	<b>pH</b>	<b>ORP</b>	<b>Bromide</b>
	<b>Element</b>	30K ohm thermistor, Epoxy bead/external housing	Glass combination electrode	Platinum ring	Ag/AgCl solid-state electrode (Ion electrode method)
	<b>Accuracy</b>	±0.2°C	±0.2 pH units, 0.1% mV value (typical)	0.1 mVH, 0.1% mV value (typical)	±5.0% of measured value (typical)
	<b>Resolution</b>	0.1°C	0.01 pH units	0.01 mVH units	0.1 ppm
	<b>Units</b>	Celsius, Fahrenheit, Kelvin	pH, mV	Eh, mV	ppm, mV
	<b>Range</b>	0° to 55°C (32° to 131°F)	0-14 pH units / -538 to 260 mV	± 1200 mV	0-10,000 ppm
	<b>Compensated</b>	---	0° to 40°C (32° to 104°F)	0° to 40°C (32° to 104°F)	Isopotential point characterization
	<b>Calibration</b>	---	One or two point calibration w/ pH buffers (4 & 7 or 7 & 10)	EH 1 pt. calibration	One or two point calibration w/ ionic strength adjustment
<b>Reference Solution</b>		Potassium Nitrate - (KNO <sub>3</sub> )	Potassium Nitrate - (KNO <sub>3</sub> )	Potassium Nitrate - (KNO <sub>3</sub> )	
<b>Reference</b>	Ag/AgCl solid state electrode, capillary liquid junction, TempHion™ reference solution				
<b>Maximum Depth</b>	pH/ORP: 700 ft (210 m) / 300 psi, ISE: 230 ft (70 m)/100 psi				
<b>Environmental</b>	IP68, NEMA 6P				

\*Specifications subject to change. Please consult our web site for the most current data (seametrics.com). Modbus is a registered trademark of Schneider Electric.