

TempHion™ Submersible Smart ISE Sensor

WITH DATA LOGGING



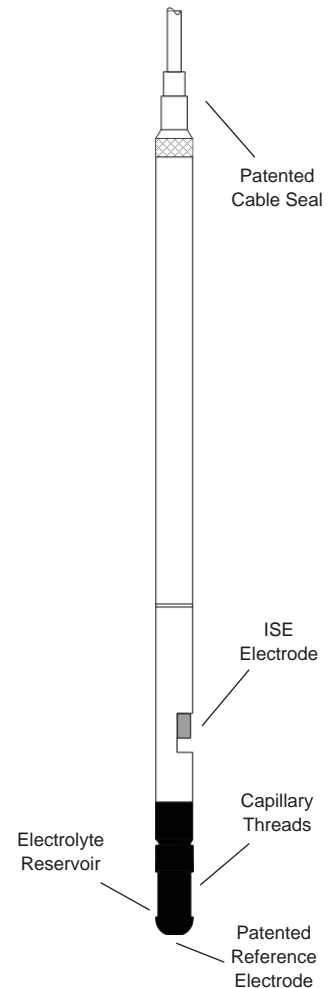
APPLICATIONS

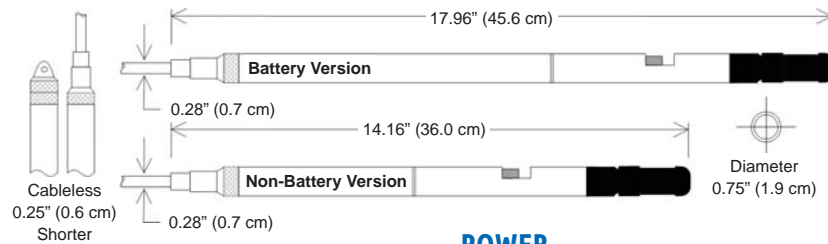
- Single- or multi-well tracer tests
- Saltwater intrusion tracking
- Tidal influence studies
- Waste water treatment discharge

Features

- Measures and records specific ions, temperature, and time
- Low power — *field replaceable AA batteries*
- Modbus® RTU (RS485) and SDI-12 interface — *great flexibility*
- Patented reference electrode — *6-month sensor stability**
- Solution ground — *for excellent noise protection*
- Small diameter — *0.75" (1.9 cm)*
- 260,000 record non-volatile memory — *no data loss in the event of a power failure*
- Wireless connectivity — *radios and/or cellular*
- Free, easy-to-use software

** may vary due to environmental factors*





GENERAL

Length w/batteries	17.96" (45.6 cm)
Length w/o batteries	14.16" (36.0 cm) <i>Cableless 0.25" (0.6 cm) shorter</i>
Diameter	0.75" (1.9 cm)
Weight	0.85 lb. (0.4 kg)
Body Material	Acetal & 316 stainless steel or titanium
Wire Seal Material	Fluoropolymer and PTFE
Submersible Cable	Polyurethane, polyethylene, or FEP
Protection Rating	IP68, NEMA 6P
Terminating Connector	Available
Communication	RS485 Modbus® RTU SDI-12 (ver.1.3)
Direct Modbus Read Output	32-bit IEEE floating point
Millivolt Channels	
<i>No. Available Channels</i>	1mv, 1 temp
<i>Range</i>	± 1200mV
<i>Accuracy</i>	0.1% value
<i>Resolution</i>	0.1mV
Reference	
<i>Electrode</i>	Ag/AgCl solid-state electrode
<i>Junction</i>	Patented capillary liquid junction
<i>Electrolyte</i>	TempHion™ reference solution
Operating Temp. Range	-0° C to 55° C
Storage Temp. Range¹	-20° C to 80° C
Maximum Depth	230 ft (70 m) 100 PSI

POWER

Internal Battery	2x1.5V AA alkaline ²
Auxiliary Power	12VDC - Nominal 6-15VDC - Range
Exp. Alkaline Battery Life	18 months at 15m polling interval ³

TEMPERATURE

Element Type	30K ohm thermistor
Element Material	Epoxy bead/external housing
Accuracy	± 0.2° C
Resolution	0.1° C
Range	-5° C to 60° C
Units	Celsius, Fahrenheit, Kelvin

CHLORIDE or BROMIDE

Measurement Principle	Ion electrode method
Probe Material	Ag/AgCl solid-state electrode
Range	0-10,000 ppm
Typical Accuracy	± 5.0% of measured value
Resolution	0.1 ppm
Thermal Compensation	Isopotential point characterization
Calibration	One or two point method w/ ionic strength adjustment
Reference Solution	Potassium Nitrate - (KNO ₃)

¹ Storage without batteries
² Lithium available upon request
³ May vary due to environmental factors

LOGGING

Memory	4MB - 400,000 records
Log Types	Variable, user-defined, logarithmic, profiled
Programmable Baud Rate (optional)	9600, 19200, 38400
Logging Rate	2x/sec maximum
Software	Complimentary Aqua4Plus or Aqua4Push
Networking	32 available addresses per junction w/ batching capabilities (up to 255)
File Formats	.xls / .csv / .a4d

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