

# CT2X Smart Sensor

## CONDUCTIVITY/TEMPERATURE WITH DEPTH/LEVEL OPTION



### APPLICATIONS

Wetland surveys

Saltwater intrusion  
monitoring

Agricultural runoff studies

Discharge monitoring

### Features

- Measures/Records conductivity, temperature, salinity, and TDS with a depth/level option
- Low power
- Modbus® RTU (RS485) and SDI-12
- 0-300,000  $\mu\text{S}/\text{cm}$
- Linear and nLFn temperature compensation
- Small diameter — 0.75" (1.9 cm)
- 349,000 records in non-volatile memory
- Free, easy-to-use, new upgraded Aqua4Plus 2.0 software

The **Seametrics CT2X** Smart Sensor is a microprocessor-based submersible conductivity/temperature sensor with built-in data logging. This device stores thousands of records of conductivity, temperature, salinity, and total dissolved solids (TDS). The CT2X is also available with a depth/level option giving added functionality in the same sensor housing.

The CT2X incorporates 4-pole electrode cell measurement technology for conductivity, salinity, and TDS. This technology reduces fringe field interference errors, lessens inaccuracy caused by polarization effects, and lowers contact resistance problems. Four-pole electrode technology also allows users to work with one electrode over a wide range of conductivity. The conductivity element is constructed of epoxy/graphite, making it extremely durable for use in rugged field conditions. To clean, simply scrub with a small brush.

Depth and level is measured with an extremely rugged and stable piezo-electric, media isolated pressure element and compensated for temperature using our proprietary calibration methodology. Temperature is measured using an epoxy bead thermistor.

The CT2X is powered internally with two replaceable AA batteries. Alternately it can be powered with an external auxiliary power supply for data intensive applications. Several CT2Xs, or a combination of CT2Xs and other Smart Sensors, can be networked together and controlled directly from a single computer.

While most will use the CT2X with our free, easy-to-use Seametrics Aqua4Plus 2.0 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

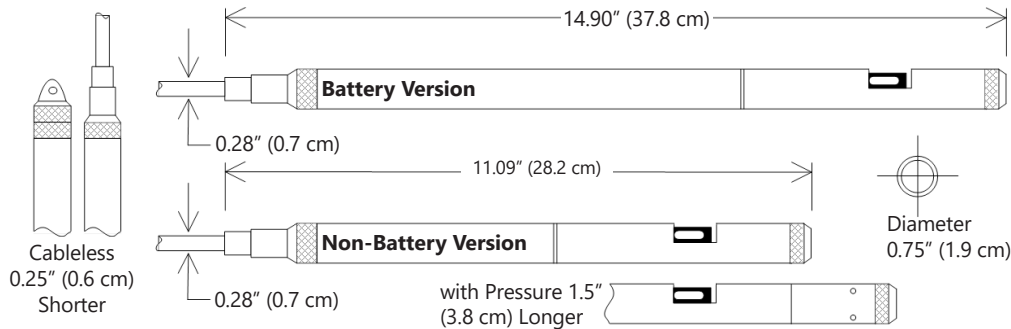


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## CONDUCTIVITY/TEMPERATURE WITH DEPTH/LEVEL OPTION



### Dimensions



### Specifications\*

<b>Housing &amp; Cable</b>	<b>Weight</b>	1.0 lb. (0.5 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>Desiccant</b>	1-3 mm indicating silica gel		
	<b>Field Connector</b>	Standard		
<b>Temperature</b>	<b>Operating Range</b>	Recommended: -5° to 40°C (23° to 104°F) Requires freeze protection kit if using pressure option in water below freezing.		
	<b>Storage Range</b>	Without batteries: -40° to 80°C (-40° to 176°F)		
<b>Power</b>	<b>Internal Battery</b>	Two replaceable lithium 'AA' batteries - Battery life: 12 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>	RS485 Modbus® RTU (output = 32-bit IEEE floating point), SDI-12 (ver. 1.3) - ASCII			
<b>Logging</b>	<b>Memory</b>	4MB - 349,000 records		
	<b>Logging Types</b>	Variable, user-defined, profiled		
	<b>Logging Rates</b>	4x/sec maximum, no minimum		
	<b>Baud Rates</b>	9600, 19200, 38400		
	<b>Software</b>	Complimentary Aqua4Plus 2.0		
	<b>Networking</b>	32 available addresses per junction (Address range: 1 to 255)		
	<b>File Formats</b>	.a4d and .csv		
<b>Output Channels</b>		<b>Temperature</b>	<b>Depth/Level</b>	<b>Conductivity</b>
	<b>Element</b>	30K ohm thermistor, Epoxy bead/external housing, Pyrex® glass	Silicon strain gauge transducer 316 stainless or Hastelloy	Epoxy/Graphite - 4-pole
	<b>Accuracy</b>	±0.25°C	±0.05% FSO (typical, static) ±0.1% FSO (maximum, static) (B.F.S.L. 20°C)	Static: ±0.5% of measured value (0 - 100,000 µS/cm)
	<b>Resolution</b>	0.1°C	0.0034% FS (typical)	(32 bit internal) 0.1 µS/cm, 0.001 mS/cm, 0.1 mg/L (TDS), 0.001 PSU
	<b>Units</b>	Celsius, Fahrenheit, Kelvin	PSI, FtH <sub>2</sub> O, inH <sub>2</sub> O, mmH <sub>2</sub> O, mH <sub>2</sub> O, inH <sub>2</sub> O, cmHg, mmHg, Bars, Bars, kPa	µS/cm, mS/cm, mg/L, PSU
	<b>Range</b>	-5° to 40°C (23° to 104°F)	Gauge PSI: 1 <sup>2</sup> ,5,7,15,30,50,100,300 FtH <sub>2</sub> O: 2.3 <sup>3</sup> ,12,35,69,115,231,692 mH <sub>2</sub> O: 0.7 <sup>3</sup> ,3.5,5,10.5,21,35,70,210 Absolute <sup>3</sup> PSI: 30, 50, 100, 300 FtH <sub>2</sub> O: 35, 81, 196, 658 mH <sub>2</sub> O: 10, 24, 59, 200	Conductivity <sup>1</sup> : 0-300,000 µS/cm TDS: 4.9-147,000 mg/L Salinity: 2-42 PSU
	<b>Compensated</b>	---	0° to 40°C (32° to 104°F)	Thermal: None, Linear, or nLFn
	<b>Warmup Time</b>	---	---	200 msec
	<b>Max operating pressure</b>	1.1 x full scale		
<b>Over pressure protection</b>	3x full scale up to 300psi			
<b>Burst pressure</b>	1000 psi (approx. 2000 ft or 600 m)			
<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. Pyrex is a registered trademark of Corning Incorporated.

1 Accuracy reduced at levels < 10 µS/cm and > 100,000 µS/cm

2 ±0.25% accuracy FSO (max) at this range

3 Depth range for absolute sensors has 14.7 PSI subtracted to give actual depth allowed.