

INW **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
- Wireless connectivity
- Free, easy-to-use software

The **INW 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 INW's proprietary calibration methodology. Temperature is measured using an epoxy bead thermistor.

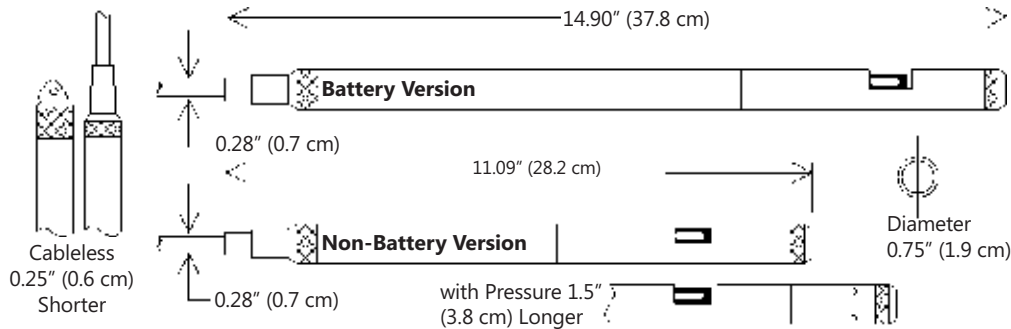
The CT2X is powered internally with two AA batteries. Alternately it can be powered with an external auxiliary power supply for data intensive applications. Several CT2Xs, or a combination of CT2Xs and other INW Smart Sensors, can be networked together and controlled from one location, either directly from a single computer or via INW's Wireless Data Collection System.

While most will use the CT2X with our free, easy-to-use Aqua4Plus Lite or 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 systems and data bases.

Contact Your Supplier



Dimensions



Specifications*

Housing & Cable	Weight	1.0 lb. (0.5 kg)		
	Body Material	Acetal & 316 stainless or titanium		
	Wire Seal Material	Fluoropolymer and PTFE		
	Cable	Submersible: polyurethane, polyethylene, or ETFE (4 lb./100 ft., 1.8 kg/30 m)		
	Desiccant	1-3 mm indicating silica gel		
	Field Connector	Standard		
Temperature	Operating Range	Recommended: -5° to 40°C (23° to 104°F) Requires freeze protection kit if using pressure option in water below freezing.		
	Storage Range	Without batteries: -40° to 80°C (-40° to 176°F)		
Power	Internal Battery	Two lithium 'AA' batteries - Expected battery life: 12 months at 15 min. polling interval (may vary do to environmental factors)		
	Auxiliary	12 Vdc - Nominal, 6-16 Vdc - range		
Communication	RS485 Modbus® RTU (output = 32-bit IEEE floating point), SDI-12 (ver. 1.3) - ASCII			
Logging	Memory	4MB - 349,000 records		
	Logging Types	Variable, user-defined, profiled		
	Logging Rates	4x/sec maximum, no minimum		
	Baud Rates	9600, 19200, 38400		
	Software	Complimentary Aqua4Plus and Aqua4Plus Lite		
	Networking	32 available addresses per junction (Address range: 1 to 255)		
	File Formats	.a4d and .csv (also .xls in Windows 8 and earlier)		
Output Channels		Temperature	Depth/Level¹	Conductivity
	Element	30K ohm thermistor, Epoxy bead/external housing, Pyrex® glass	Silicon strain gauge transducer 316 stainless or Hastelloy	Epoxy/Graphite - 4-pole
	Accuracy	±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)
	Resolution	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
	Units	Celsius, Fahrenheit, Kelvin	PSI, FtH ₂ O, inH ₂ O, mmH ₂ O, mH ₂ O, inH ₂ O, cmHg, mmHg, Bars, Bars, kPa	µS/cm, mS/cm, mg/L, PSU
	Range	-5° to 40°C (23° to 104°F)	Gauge PSI: 1 ³ , 5, 15, 30, 50, 100, 300 FtH ₂ O: 2.3 ³ , 12, 35, 69, 115, 231, 692 mH ₂ O: 0.7 ³ , 3.5, 10.5, 21, 35, 70, 210 Absolute ⁴ PSI: 30, 50, 100, 300 FtH ₂ O: 35, 81, 196, 658 mH ₂ O: 10, 24, 59, 200	Conductivity ² : 0-300,000 µS/cm TDS: 4.9-147,000 mg/L Salinity: 2-42 PSU
	Compensated	---	0° to 40°C (32° to 104°F)	Thermal: None, Linear, or nLFn
	Warmup Time	---	---	200 msec
Max operating pressure	1.1 x full scale			
Over pressure protection	3x full scale up to 300psi - for > 300psi (650 ft or 200 m), contact INW			
Burst pressure	1000 psi (approx. 2000 ft or 600 m)			
Environmental	IP68, NEMA 6P			

*Specifications subject to change. Please consult our web site for the most current data (inwusa.com).

Modbus is a registered trademark of Schneider Electric. Pyrex is a registered trademark of Corning Incorporated.

¹ Higher pressure ranges available upon request

² Accuracy reduced at levels <10 µS/cm and >100,000 µS/cm

³ ±0.25% accuracy FSO (max) at this range

⁴ Depth range for absolute sensors has 14.7 PSI subtracted to give actual depth allowed.