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Datalogging Water Quality Sensor

Seametrics CT2X Submersible Smart Sensor
Conductivity/Temperature with Depth/Level Option

The CT2X Smart Sensor is a pressure, conductivity, and temperature sensor with internal data logger. Constructed with rugged 316 stainless steel or titanium, the CT2X is ideal for monitoring groundwater level, saltwater intrusion, and discharge monitoring. The CT2X is a gauged sensor that can be operated independently or networked with other Seametrics Smart Sensors. The sensor is easily programmed and monitored using the included Aqua4Plus software.

FEATURES

- **Measures and records conductivity, temperature, salinity, and TDS with depth/level option**

- **Low power** — *field replaceable AA batteries*

- **Modbus® RTU (RS485) and SDI-12 interface** — *great flexibility*

- **0 – 300,000 microSiemens/cm** — *200,000 or 300,000 optional*

- **Also measures salinity and TDS**

- **Linear and nLFn temperature compensation**

- **Small diameter** — *0.75" (1.9 cm)*

- **349,000 records in non-volatile memory** — *no data loss in the event of a power failure*

- **Wireless connectivity** — *radios and/or cellular*

- **Barometric compensation utility for use with absolute sensors**

- **Free, easy-to-use Aqua4Plus software**

CT2X with Pressure Option

EASY-TO-USE SOFTWARE

- **Easy, in-field calibration**

- **Flexible logging sequences**

- **Real-time viewing**

- **Easy export to spreadsheets and databases**

- **Firmware upgradable in the field**

APPLICATIONS

- **Wetland surveys**

- **Saltwater intrusion monitoring**

- **Agricultural runoff studies**

- **Discharge monitoring**

CALL GEOTECH TODAY (800) 833-7958

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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

Modbus®	RS485 Modbus® RTU, output = 32-bit IEEE floating point
SDI-12	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
Networking	32 available addresses per junction (Address range: 1 to 255)
File Formats	.a4d and .csv

Output Channels

	Temperature	Depth/Level[1]		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 ±2.0°C — below 0°C (32°F)	±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, mBars, kPa		µS/cm, mS/cm, mg/L, PSU
Range	-5° to 40°C (23° to 104°F)	Gauge	PSI: 1[3], 5, 7, 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, 5, 10.5, 21, 35, 70, 210	Conductivity[2]: 0-300,000 µS/cm TDS: 4.9-147,000 mg/L Salinity: 2-42 PSU
		Absolute[4]	PSI: 30, 50, 100, 300 FtH$_2$O: 35, 81, 196, 658 mH$_2$O: 10, 24, 59, 200	
Compensated	–	0°to 40°C (32° to 104°F)		Thermal: None, Linear, or nLFn
Warmup Time	–	–		200 msec

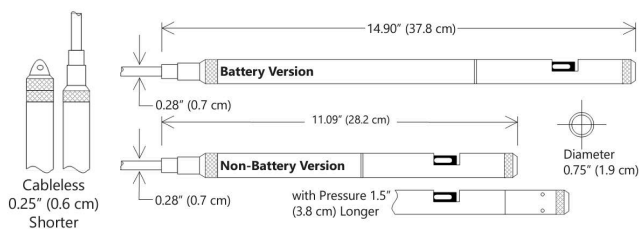|	
Max Operating Pressure	1.1 x full scale
Over Pressure Protection	3x full scale up to 300psi — for >300psi (650 ft. or 200 m) contact factory
Burst Pressure	1000 psi (approx. 2000 ft. or 600 m)
Environmental	IP-68, NEMA 6P

Specifications subject to change.

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.

14.90" (37.8 cm) — Battery Version
0.28" (0.7 cm)
11.09" (28.2 cm) — Non-Battery Version
Diameter 0.75" (1.9 cm)
0.28" (0.7 cm)
with Pressure 1.5" (3.8 cm) Longer
Cableless 0.25" (0.6 cm) Shorter