



COMBINATION CONDUCTIVITY/ TEMPERATURE/PRESSURE SENSOR MODEL CTD350

The Stevens-Greenspan Conductivity/ Temperature/Pressure Sensor provides the accuracy and reliability required for a wide range of demanding measuring applications.

With state of the art ceramic pressure and toroidal conductivity measurement technologies the Stevens-Greenspan CTD350 Sensor guarantees long term performance and highly accurate temperature compensated measurements in the harshest of environments.



Make more accurate electrical conductivity, temperature and pressure measurements with Stevens-Greenspan's state of the art CTD350 sensor

CTD350

The Stevens-Greenspan Conductivity/Temperature/Pressure Sensor provides numerous state of the art technical features:

- n Toroidal conductivity sensing technology eliminates electrode corrosion effects, guaranteeing long life and reduced field service.
- n On-board microprocessor controlled temperature compensation and linearization delivers accurate conductivity data normalized to 25°C. Alternatively, raw conductivity data is also provided.
- n Ceramic pressure sensing diaphragm offers unmatched reliability.
- n Depth readings regardless of atmospheric pressure changes (through the use of a large diameter venting tube cable).
- n Software calibration allows users to quickly and accurately recalibrate the sensor, eliminating the down time required when sensors have to be returned for laboratory calibration. Easy to use Stevens-Greenspan calibration software runs on a portable PC.

Stevens-Greenspan Reliability

The Stevens-Greenspan CTD350 Sensor combines robust, sealed construction with an electrode-less conductivity sensing system to offer unparalleled reliability. Designed for low power consumption, the sensor can be operated from remote power sources for extended periods. The high reliability of Stevens-Greenspan sensors means critical measurements are not lost through sensor down time. Time wasting unscheduled site visits are therefore minimized.

Stevens-Greenspan Accuracy

The Stevens-Greenspan CTD350 Sensor substantially eliminates inaccuracy in conductivity measurements due to temperature and electrode effects. A large toroidal sensing element uses free ions in solution as a conductive path between two shielded ferrite transformer cores, eliminating errors caused by electrode degradation. On-board microprocessor compensation substantially reduces system non-linearity and temperature drift errors.

A 316-grade stainless steel tube with an o-ring sealed Delrin end fitting provides the CTD350 with the ruggedness required for the most demanding measurement environments. The sensing head of high impact acrylic is built to sustain the rough handling required for reliable field instrumentation.



RELIABILITY • ACCURACY

Accuracy in pressure measurement is designed into the Stevens-Greenspan CTD350 Sensor through the use of a large-faced gold plated ceramic pressure sensor — a technology known for its long term repeatability — supplemented by microprocessor controlled electronics which maintain near perfect linearity (0.02%) and low temperature drift (0.002%/°C) over a wide depth range.

Intelligent Features and Data Acquisition

Stevens-Greenspan's intelligent Conductivity/Temperature/Pressure Sensor model CTD350 is a complete, self-contained conductivity, pressure and temperature measurement and data logging system. The CTD350 provides sophisticated and versatile data acquisition, control and communications capabilities. Standard features of the CTD350 include:

- n Storage of measured data within the sensor for long periods.
- n Easy configuration of logging parameters and uploading of logged data.
- n Automatic transfer of data to a central office simply by attaching a data modem and mobile phone.
- n Improved linearity and accuracy through the use of microprocessor based compensation.
- n Facility to set alarm conditions which can trigger additional monitoring equipment such as water samplers.
- n Lithium battery pack option for fully self-contained operation.

A separate data logger and weatherproof housing are not required, eliminating the added deployment costs normally associated with providing a remote data logging capability.

Sophisticated **communication features** in the CTD350 make remote site logging of key water parameters easier than ever. In combination with an external data modem and mobile phone, the CTD350 enables remote uploading of logged data and re-programming of logging schedules. In addition the CTD350 can respond to user-programmed **alarm conditions** by triggering an associated sensor or by calling one of four preset phone numbers with a user-programmed alarm message.

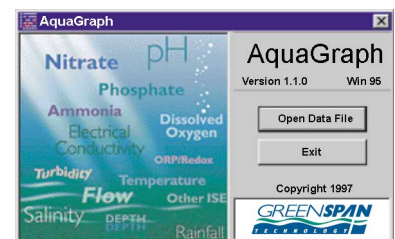
The CTD350 can be powered using external batteries (via the sensor cable) or with Stevens-Greenspan's **optional lithium battery pack**, which can be fitted as an extension to the sensor body, making a fully self-contained measurement and logging system.

The CTD350 also provides a supplementary **rain gage input**. With the addition of a tipping bucket rain gage, the CTD350 becomes a completely self-contained hydrographic measuring station, enabling correlation of rainfall and river height data from one compact monitoring package.

With all the features of a conventional data acquisition system in one compact package, the Stevens-Greenspan 300-Series intelligent sensors provide the most cost-effective solution available today where combined measurement and data collection functions are required.

Logging parameters and schedules are set up using Stevens-Greenspan's easy to use graphical software package, Smartcom, which runs on IBM compatible PCs.

Graphical representation of data can be made using Stevens-Greenspan's Aquagraph software. The software makes graphing your data simple and allows data to be exported in different formats.



Specifications

Model CTD350

	Conductivity	Temperature	Pressure
Standard ranges available	0–1,000 μ S, 0–2,000 μ S, 0–5,000 μ S, 0–10,000 μ S, 0–20,000 μ S, 0–60,000 μ S Other ranges are available to order (a calibration charge applies)	0–50 °C	7.5ft, 17.5ft, 35ft 70ft, 120ft, 240ft (feet of water)
Linearity	EC \pm 0.2% FS	\pm 0.1 °C	\pm 0.02% FS
Resolution (16 bit A-D convertor)	0.0015% FS	0.0015% FS	0.0015% FS
Normalization	Normalized to 25°C Unnormalized available	—	—
Temperature stability	\pm 0.01%/°C FS		\pm 0.002%/°C at offset
Over range pressure			2x (burst pressure 3x)
Supply voltage	8–27V (Reverse polarity protected. Surge protected to 2kV.)		
Quiescent current	30 μ A–60mA		
Warm up time to stable reading	6 secs		
Memory	0.5Mb on-board (upgradeable to 1Mb)		
Number of readings	270 days of readings for 3 parameters, every 15 minutes		
Operating temperature	0–55 °C		
Software calibration	Allows users to reset zero and adjust full scale		
Dimensions	Length 14.6in (370mm) OD 1.8in (75mm) Stainless OD 1.9in (48mm) Delrin Optional battery pack adds extra 10.25in (260mm) to length		
Weight	23.6oz (670g) Delrin 28.2in (800g) Stainless		
Wetted materials	Delrin, ceramic, 316 stainless steel		
Vented cable	8 to 12 core Polyurethane sheathed with internal 3mm vent tube		
Software supplied	SMARTCOM: Allows users to setup logging schedules, alarm levels and comms parameters. AQUAGRAPH		

Standard configuration

Options

- Calibrated to standard ranges
- Cable to requested length and terminated with data connector
- Delrin nose cone
- Copper nose cone
- 1/4" BSP adaptor
- A complete Delrin body can be provided for use in corrosive water
- Complete delrin body
- Other ranges
- Interface for mobile phone

Technical Support When You Need It

The correct choice of sensor should be supported by professional advice to ensure long term success in the field. **Stevens-Greenspan Technical Services** is dedicated to customer support and provides assistance in the selection, installation, deployment and commissioning of sensors with a full range of training and consulting services.

A full technical support and field advice service can be accessed by calling Stevens at 800 452 5272.

All Stevens-Greenspan products are designed, developed and manufactured in Australia, can be supplied at short notice and can be customized to meet most requirements.

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