COMBINATION CONDUCTIVITY/ TEMPERATURE/PRESSURE/PH SENSOR

MODEL CTDP300

The Stevens-Greenspan Conductivity/ Temperature/Pressure/pH 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 CTDP300 Sensor guarantees long term performance and highly accurate temperature compensated measurements in the harshest of environments.

Stevens GREENSPAN TECHNOLOGY

Make more accurate electrical conductivity, temperature, pressure and pH measurements with Stevens-Greenspan's state of the art CTDP300 sensor

CTDP300

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

- Toroidal conductivity sensing technology eliminates electrode corrosion effects, guaranteeing long life and reduced field service.
- On-board microprocessor controlled temperature compensation and linearization delivers accurate conductivity data normalized to 25°C. Alternatively, raw conductivity data is also provided.
- Ceramic pressure sensing diaphragm offers unmatched reliability.
- Depth readings regardless of atmospheric pressure changes (through the use of a large diameter venting tube cable).
- Innovative, optically isolated signal conditioning electronics ensure true and accurate pH readings at all times.
- Field proven gel-filled double junction pH electrode provides long term accuracy.
- 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 CTDP300 Sensor combines robust, sealed construction with a combination of high performance sensor technology to offer unparalleled reliability. 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

Toroidal conductivity sensing technology substantially eliminates inaccuracy in conductivity measurements due to temperature and electrode effects. Accuracy in pressure measurement is ensured 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

A 316-grade stainless steel tube with an o-ring sealed Delrin end fitting provides the CTDP300 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.

maintain near perfect linearity (0.02%) and low temperature drift (0.002%/°C) over a wide depth range. The gel-filled double junction pH electrode with optically isolated signal conditioning electronics provides long term accuracy in pH measurements. On-board microprocessor compensation substantially reduces system non-linearity and temperature drift errors.

Intelligent Features and Data Acquisition

Stevens-Greenspan's intelligent Conductivity/Temperature/Pressure/pH Sensor model CTDP300 is a complete, self-contained conductivity, pressure, temperature and pH measurement and data logging system. The CTDP300 provides sophisticated and versatile data acquisition, control and communications capabilities. Standard features include:

- Storage of measured data within the sensor for long periods.
- Easy configuration of logging parameters and uploading of logged data.
- Automatic transfer of data to a central office simply by attaching a data modem and mobile phone.
- Improved linearity and accuracy through the use of microprocessor based compensation.
- Facility to set alarm conditions which can trigger additional monitoring equipment such as water samplers.
- 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 CTDP300 make remote site logging of key water parameters easier than ever. In combination with an external data modem and mobile phone, the CTDP300 enables remote uploading of logged data and re-programming of logging schedules. In addition the CTDP300 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.

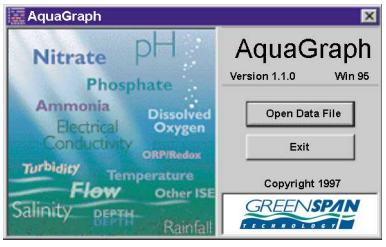
The CTDP300 can be powered using external batteries (via the sensor cable) or with Stevens-Greenspan's **optional lithium battery pack**, which can be fitted as an extension to the sensor body, making a fully self-contained measurement and logging system.

The CTDP300 also provides a supplementary **rain gage input**. With the addition of a tipping bucket rain gage, the CTDP300 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 CTDP300

	Conductivity	Temperature	Pressure	pH
Standard ranges available	0–1,000 µS, 0–2,000 µS, 0–5,000 µS, 0–10,000 µS, 0–20,000 µS, 0–60,000 µS	0–50°C Other ranges are available to order (a calibration charge applies)	7.5ft, 17.5ft, 35ft 70ft 120ft, 240ft, 350ft (feet of water)	0–14
Accuracy	±0.2% FS	±0.1°C	±0.03% FS	±0.2pH
Resolution (16 bit A-D convertor)	0.0015% FS	0.0015% FS	0.0015% FS	0.0015% FS
Normalization	Normalized to 25°C Unnormalized available	—	—	(Temperature compensated)
Temperature stability	±0.01%/°C FS	—	±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	30µA–60mA
Warm up time to stable reading	6 secs
Memory	0.5Mb on-board (upgradeable to 1Mb)
Number of readings	220 days of readings for 4 parameters, every 15 minutes
Operating temperature	0–55°C
Software calibration	Allows users to reset zero and adjust full scale
Dimensions	Length 19.7in (500mm) OD 2.4in (60mm) Stainless OD 2.6in (65mm) Delrin Optional battery pack adds extra 10.25in (260mm) to length
Weight	42.3oz (1200g) Delrin 58.2oz (1650g) 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

- Calibrated to standard ranges
- Cable to requested length and terminated with data connector

Options

- Delrin nose cone
- Copper nose cone
- 1/4" BSP adaptor
- Complete delrin body
- Other ranges
- Interface for mobile phone
- A complete Delrin body can be provided for use in corrosive water

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.

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

Stevens Water Monitoring Systems, Inc
5465 S.W. Western Ave, Suite F, Beaverton, OR 97005
Phone: 503 . 469 . 8000 Fax: 503 . 469 . 8100
Toll-free: (800) 452 5272
WWW http://www.stevenswater.com

Stevens GREENSPAN TECHNOLOGY