

ELECTRICAL CONDUCTIVITY SENSORS

MODELS EC250 & EC350

The Stevens-Greenspan Electrical Conductivity Sensors provide highly accurate conductivity measurements in a wide range of hydrological applications.

Exceptional reliability and chemical resistance are guaranteed by a state of the art toroidal measuring system. Advanced microprocessor technology provides highly accurate temperature compensated measurements.



Make more accurate electrical conductivity measurements with Stevens-Greenspan's state of the art EC sensor

EC250

The Stevens-Greenspan Electrical Conductivity Sensor offers a unique combination of advanced features:

- n Toroidal sensing technology eliminates electrode corrosion effects guaranteeing long life and reduced field service.
- n On-board temperature measurement and microprocessor controlled temperature compensation and linearization ensure highly accurate readings in demanding conditions.
- n Sensor can be field calibrated with Stevens-Greenspan's easy to use state of the art graphical calibration software.
- n Separate conductivity and temperature outputs deliver raw conductivity or on-board normalization of conductivity to 25°C.
- n Optional on-board data logger with sophisticated logging features enables unattended operation for months at a time.

Stevens-Greenspan Reliability

The Stevens-Greenspan EC Sensor combines robust, sealed construction with an electrode-less sensing system to offer unparalleled reliability. Designed for low power consumption, the Sensor can be operated from remote power sources for extended periods. Field experience has shown that the Stevens-Greenspan EC Sensor can be left unattended for up to six months. 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

Field conductivity measurements in ionized solutions have traditionally been fraught with inaccuracy due to temperature and electrode effects. **The Stevens-Greenspan EC Sensor substantially eliminates these conventional sources of error.** A large size toroidal sensor element uses the free ions in solution as a conductive path between two shielded ferrite transformer cores. This system eliminates errors caused by electrode degradation. An advanced compensation algorithm in the on-board microprocessor 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 EC250 and EC350 with the ruggedness required for the most demanding measurement environments. The sensing head of high impact acrylic contains the PT100 temperature sensor and is built to sustain the rough handling required for reliable field instrumentation.



RELIABILITY • ACCURACY

Log accurate electrical conductivity measurements cost-effectively with Stevens-Greenspan's intelligent EC sensor

EC350

Stevens-Greenspan's Intelligent Electrical Conductivity Sensor model EC350 is a complete, self-contained electrical conductivity measurement and data logging system. The EC350 adds sophisticated and versatile data acquisition, control and communications capabilities to Stevens-Greenspan's standard EC250 Electrical Conductivity Sensor. Standard features of the EC350 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 measuring equipment.
- n Lithium battery pack option for fully self-contained operation.

The added features of the EC350 are accommodated within the same **compact sensor body** used for the EC250. 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 EC350 make remote site logging of electrical conductivity easier than ever. In combination with an external data modem and mobile phone, the EC350 enables remote uploading of logged data and re-programming of logging schedules. In addition the EC350 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.

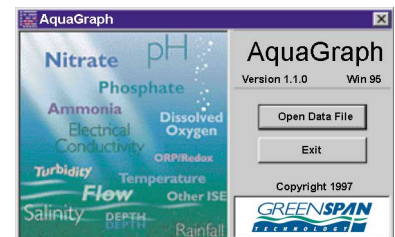
The EC350 can be powered using either external batteries (via the sensor cable) or with Stevens-Greenspan's **optional lithium battery pack**, which can be fitted as an extension to the sensor body, making a fully self-contained measurement and logging system.

The EC350 can be supplied with a built-in pressure sensor to provide a complete river level and conductivity data logger in one sophisticated and elegant 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 EC250

Model EC350

Standard EC 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 to non-standard ranges.	
Linearity	Temperature 0.1% EC 0.2%	Temperature 0.1% EC 0.2%
Temperature accuracy	$\pm 0.1^\circ\text{C}$	$\pm 0.1^\circ\text{C}$
EC accuracy, normalized to 25°C	1% over range 0–30°C	0.5% over range 0–35°C
EC accuracy, non-normalized	0.2%	0.2%
Outputs	EC: 4–20mA 0–2.5V 0–1V Temperature: 4–20mA 0–2.5V 0–1V	RS232
Supply voltage	8–27V • Reverse polarity protected • Surge protected to 2kV	same as EC250
Quiescent current	30mA	30 μ A–60mA
Warm up time to stable reading	1 sec	1 sec
Dimensions	length 13.4in (340mm) (including head) 1.8in (45mm) OD Stainless 1.9in (48mm) OD Delrin	same as EC250 optional battery pack adds extra 10.25in (260mm) to length
Weight	20.8oz (590g) Delrin 25.4oz (720g) Stainless	20.8oz (590g) Delrin 25.4oz (720g) Stainless
Wetted materials	Delrin, 316 stainless steel, acrylic	same as EC250
Cable	8 core Polyurethane sheath	12 core Polyurethane sheath
Software	ECFA, SMARTCOM, AQUAGRAPH	

Standard configuration

- Calibrated to standard range
- Cable to requested length and terminated with data connector and tinned copper wires
- Field adjust software
- 4–20 mA output

Options

- A complete Delrin body can be provided for use in corrosive water
- Voltage output

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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