

Technical Specification

Dissolved Oxygen Sensors - DO100, DO300 & DO1200

Description

The Greenspan Analytical Dissolved Oxygen Sensors provide accurate long-term measurements under a wide range of environmental conditions.

The patented Australian CSIRO diffusion cell technology developed by Greenspan Analytical, provides a simple, effective and robust means of obtaining continuous in-situ dissolved oxygen measurements with minimum maintenance requirements.

Accuracy

A combination of innovative membrane and sensor technology characterise the design of the Greenspan Analytical Dissolved Oxygen Sensor. The new generation chemical sensor provides inherently greater stability than conventional polarographic technology. Compared to conventional membrane designs, the large surface area of the Greenspan Analytical diffusion membrane substantially reduces errors caused by surface contamination. Signal conditioning electronics are designed with temperature compensation to provide true output in ppm of dissolved oxygen or percent saturation.

DO100 Features

- Sensor design requires no moving parts, ensuring long term reliable field operation and low power consumption.
- New generation chemical sensor provides excellent linearity and repeatability.
- Sensor output includes supplementary water temperature reading.
- A response time (T_{90}) of 40 minutes is achievable by the sensor when deployed in minimum flow

DO300 Features

- 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 measuring equipment.
- Lithium battery pack option for fully self-contained operation.

DO1200 Features

- Offers SDI-12 communication and control for use with external data loggers.
- Sensors can be linked to minimise cable usage.

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



Specification	Model DO100	Model DO300	Model DO1200
Dissolved oxygen range	0-20ppm or 0-200% saturated	Same as DO100	Same as DO100
Temperature range	0-55°C	Same as DO100	Same as DO100
Dissolved oxygen linearity	0.2 ppm or ±1% FS	Same as DO100	Same as DO100
Dissolved oxygen accuracy	+/- 0.3 ppm (@25°C)	Same as DO100	Same as DO100
Temperature accuracy	±1°C	Same as DO100	Same as DO100
Output	DO 4-20mA / Temperature 4-20mA	RS232	SDI-12
Supply voltage	10 - 14V Reverse polarity protected Surge protected to 2kV	Same as DO100	Same as DO100
Warm up time to stable reading	1 sec	1 sec	1 sec
Response time (T ₉₀)	40 mins	40 mins	40 mins
Dimensions	Length 510mm OD 47mm (Stainless Steel or Delrin)	Length 510mm OD 47mm (Stainless Steel or Delrin) Optional battery pack adds extra 260mm to length	Same as DO100
Weight	1.66kg (Stainless Steel) 850g (Delrin)	Same as DO100	Same as DO100
Sensor type	Galvanic Cell	Same as DO100	Same as DO100
Wetted materials	316 Stainless Steel, Delrin, Silicon Diffusion Membrane	Same as DO100	Same as DO100
Software supplied	N/A	AQUAGRAPH, SMARTCOM	N/A

Applications

- Ground water monitoring
- Tidal and estuarine studies
- Effluent monitoring
- River and stream measurements



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

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

Integrated Installation and Technical Support

The correct choice of sensor is essential to the long-term success of an installation. Professional commissioning and dedicated technical support is equally important. Greenspan Analytical offers the reassurance of integrated expert field advice, via its affiliation with sister technical services company Greenspan.

Greenspan is intimately familiar with Greenspan Analytical's complete range of sensors and analysers, with numerous successful installations throughout the world.

Greenspan Analytical and Greenspan can offer customers real value by packaging the supply of instruments with installation, commissioning, technical support and even data acquisition into a complete 'turnkey' solution.