

MODEL 4000

DATA SHEET

DISSOLVED OXYGEN / SUSPENDED SOLIDS for OEM Applications

Optical Sensors—No Membranes—No Constant Calibration

The Insite Instrumentation Group Model 4000 single or dual channel analyzer is a unique system that combines advanced electronics with solid-state, optical sensors. The analyzer will accept any combination of DO or SS sensors and automatically configure for the correct operation. The system allows for flexible and economical monitoring and control. The DO sensor does not need membranes, fill solutions, nor routine calibrations and maintenance. The SS sensor is based on near infrared technology eliminating inaccuracies caused by changes in the process color or changes in particle size. The system was designed for applications where the user will mount the electronics in their own enclosure or panel. The system is powered by a 12 volt DC supply (end user furnished) and can have one or two sensors. Outputs from the system include Modbus and 0-1VDC.



FEATURES

- **Fluorescence sensor technology**
- **No membranes, fill solutions, or cartridges**
- **Not damaged by exposure to sunlight**
 - **Connections for Data logging**
- **Calibration is factory programmed**

Benefits

- **Increased accuracy**
 - **Easy to use**
- **Reduced maintenance requirements**

FLUORESCENCE THEORY OF OPERATION

A very specific energy wavelength is transmitted to a ruthenium compound immobilized in a sol-gel matrix. The ruthenium will absorb this energy, changing the outer electron's energy level. The electron will then collapse back to its original energy state, emitting the energy as a photon with a different specific wavelength. This is called fluorescing. If the intensity of the transmitted wavelength is tightly controlled, the amount of fluorescing is both predictable and repeatable. If oxygen molecules are present the amount of fluorescing is reduced, referred to as fluorescence quenching. By measuring the amount of quenching it is possible to determine the amount of oxygen present.



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MODEL 4000 SPECIFICATIONS

Measuring Range	DO — 0 to 25 ppm SS — 0 to 30,000 mg/l
Accuracy	DO — 1% of reading or .02 ppm, whichever is greater SS — 3% of reading
Sensitivity / Resolution	DO — .01 ppm below 4.00, .1 ppm above 4.0 SS — 1 mg/l below 1000 mg/l 10 mg/l between 1,000 and 9,999 mg/l 100 mg/l above 10,000 mg/l
Repeatability	DO — .01 ppm SS — +/- 1%
Sensor Drift	Less than 1% per year
Temperature Range	0 to 60 degrees C
Response Time	95% in less than 60 seconds
Sensor Check	Automatic self diagnostics
Outputs	2 0-1 volt (one for ch. 1—one for temperature or ch 2) RS-232 Modbus 2 dry contact clean relays
Memory Backup	Yes
Sensor Cable Length	25 feet standard (optional lengths up to 2000 ft)
Ambient Temperature	minus 20 degrees C to 70 degrees C
Ambient Humidity	0 to 100 percent
Wetted Materials	Epoxy, polyurethane, and PVC
Maximum Pressure	100 psi
Shipping Weight	approximately 4 pounds

ORDERING INFORMATION

The Model 4000 D.O. system includes electronic circuit board, sensor, and computer software . Specify one (4000-1) or two (4000-2) sensor configuration.

Delivery
Terms

Ship within 4 weeks from date of order
Net 30 days, FOB Slidell, LA

CONTACT ;

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OR YOUR LOCAL REPRESENTATIVE;

