

# *InsiteIG*

## *SINGLE CHANNEL ANALYZER*

**Sensors Available for Measuring  
Dissolved Oxygen—Suspended Solids—pH—ORP**

***SMART SENSORS—PLUG AND PLAY COMPATABILITY***



The InsiteIG Single Channel Analyzer is a unique system that combines advanced electronics with solid-state, smart sensors. The analyzer will accept any standard InsiteIG DO, SS, pH, or ORP sensor and automatically configures for the correct operation. The system allows for flexible and economical process monitoring and control. The DO sensor is an optical type and 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. The pH electrode is a flat glass, double reference junction with automatic temperature compensation, built-in preamp and signal conditioner. All sensor/electrodes have built in self cleaning capabilities that allows for extended periods between maintenance. Simple, menu driven setup ensures quick and easy system installation. Standard outputs are two isolated 4 to 20 milliamp signals, two setpoint relays, one alarm relay, one cleaning relay, and RS-485 ModBus RTU signal. This makes active process control based on real-time data a possibility in almost any system.



### ***FLUORESCENCE DISSOLVED OXYGEN—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.

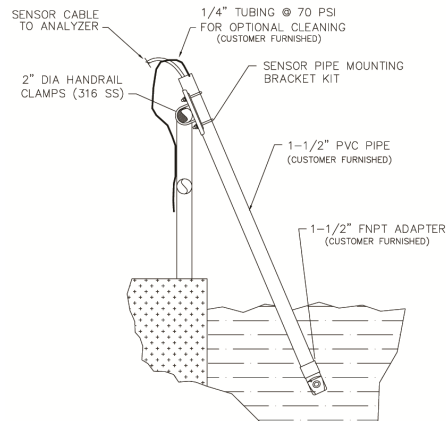
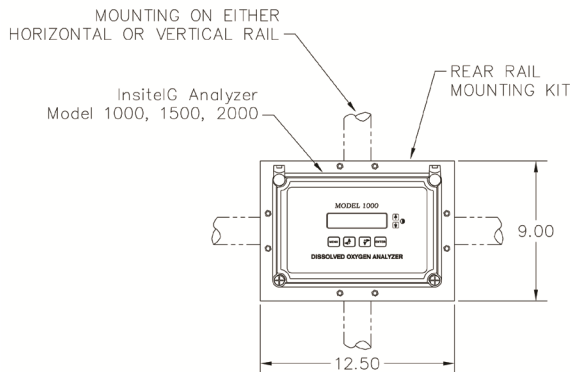


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# SYSTEM SPECIFICATIONS

Measuring Range	<b>DO</b> — 0 to 25 ppm <b>SS</b> — 0 to 30,000 mg/l <b>pH</b> — 2 to 12 pH <b>ORP</b> - +/- 2000mV
Accuracy	<b>DO</b> — 1% of reading or .05 ppm, whichever is greater <b>SS</b> — 3% of reading
Sensitivity / Resolution	<b>DO</b> — .01 ppm below 4.00, .1 ppm above 4.0 <b>SS</b> — 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	<b>DO</b> — .01 ppm <b>SS</b> — +/- 1%
Sensor Drift	<b>DO &amp; SS</b> — Less than 1% per year
Temperature Range	<b>DO &amp; SS</b> — 0 to 60 degrees C <b>pH &amp; ORP</b> — 10 to 60 degrees C
Response Time	95% in less than 60 seconds
Sensor Check	Automatic self diagnostics
Outputs	2 Optically isolated 4-20 milliamp Optically isolated RS-485 Modbus 2 dry contact 10 amp relay setpoints 1 alarm relay 1 clean relay
Memory Backup	Yes
Display	Backlit alpha-numeric LCD display with UV protection Contrast adjustment via keypad
Sensor Cable Length	33 feet standard (optional lengths up to 2000 ft)
Ambient Temperature	minus 20 degrees C to 70 degrees C
Ambient Humidity	0 to 100 percent
Enclosure Rating	NEMA 4X
Wetted Materials	Epoxy, polyurethane, and PVC
Maximum Pressure	100 psi



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