Model 4000 Dissolved Oxygen / Suspended Solids OEM System Specifications	
General Description	
Manufacturer Contact Information and Service Information	Rick Davis Insite Instrumentation Group 80 Whisperwood Blvd. Suite 107 Slidell, LA 70458 Ph – 985-639-0006 Fax – 985-639-0014 e-mail – rdavis@insiteig.com
Analyzer/Sensor General Description 	The Model 4000 OEM system is a one or two channel analyzer designed for the continuous measurement of dissolved oxygen and/or suspended solids in any aqueous solution. The microprocessor-based electronics of the Model 4000 analyzer provide a high degree of flexibility and ease of use. The system is designed to operate with any combination of InsiteIG sensors in a variety of applications. The DO sensor to be used with this analyzer is an optical type sensor that measures the fluorescence and quenching reactions of a ruthenium complex that is immobilized in a sol-gel matrix. The SS sensor operates on the principle of single gap infrared light absorption as a means of detecting the presence of suspended solids.
Transmitter Operational Data	
Ambient condition requirements	Temperature – minus 40 degrees C to 55 degrees C Humidity – 0 to 100 percent Altitude – 0 to 10,000 feet
Display	Integrator supplied if required. All setup and calibration accomplished using a PC supplied by the end user. Windows based software supplied with the system.
Sensor Check	Automatic self diagnostics
Sensor to Analyzer Distance (max)	2000 feet 610 meters
Power Requirements (select one)	1- 9-16 VDC (standard) 2- 16-30 VDC (optional)
Accuracy	Dissolved Oxygen – 1% of reading or +/- 0.02 ppm, whichever is greater Suspended Solids – 3% of reading or +/- 2 mg/l, whichever is greater
Sensitivity or Resolution	Dissolved Oxygen – 0.01 ppm Suspended Solids – 1 mg/l below 1000 mg/l 10 mg/l between 1,000 and 9,999 mg/l

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	100 mg/l above 10,000 mg/l
Repeatability	Dissolved Oxygen – 0.01 ppm Suspended Solids – +/- 0.5%
Consequence of Loss of Sample or Power	User selectable
Measuring ranges	Dissolved Oxygen – 0 to 25.0 ppm 0 to 50 degrees C Suspended Solids – 0 to 30,000 mg/l
Temperature compensation	0 to 60 degrees C
Calibration Method	Dissolved Oxygen – Not required nor recommend during startup. Cal to reference. Suspended Solids – Insitu using gravimetric or portable as reference.
Memory backup	Yes
Analyzer/Transmitter Outputs	
Analog	0 to 1 VDC for both channels
Digital communication	RS-232 Modbus (ASCII)
Relay	There is one independent programmable control relay for each channel to be used to turn on/off automatic cleaning. These relays are Form-C with contacts rated 10 amps resistive load at 12 VDC.
Analyzer/Transmitter Mechanical Data	
Enclosure Rating	Integrator supplied
Mounting Configurations	Integrator defined
Net Weight	Shipping weight is approximately 3 lbs.
DO Sensor Data	
Electrode Materials	No electrode
Electrolyte Materials	No electrolyte

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Sensor Drift	Less than 1% per year
Wetted Materials	Epoxy, silicon, and polyurethane
Temperature Range	0 to 60 degrees C
Minimum Flow Rate	No flow required
Maximum Pressure	100 psi
Measuring Range	0.00 to 25.0 ppm
Response Time	90% in less than 60 seconds
Membrane Thickness	No membrane
Principle of Operation *(measuring principle of sensor)*	The sensor is an optical type sensor that measures the fluorescence and quenching reactions of a ruthenium complex that is immobilized in a sol-gel matrix.
Sensor Cable	4 conductor shielded, 22 AWG, polyurethane jacket
Temperature Sensor	thermistor
Cleaning System	Not required in most applications. Air or water wash option available.
SS Sensor Data	
Sensor Drift	Less than 1% per year
Wetted Materials	Epoxy and polyurethane
Temperature Range	0 to 65 degrees C
Maximum Pressure	100 psi
Measuring Range	0 to 30,000 mg/l
Response Time	90% in less than 60 seconds
Principle of Operation	The sensor operates on the principle of single gap light absorption as a means of detecting the presence of suspended solids. The sensor utilizes an infrared emitter

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	to minimize color effects and compensates for emitter variations due to temperature by measuring source brightness. It incorporates self-cleaning optics via air or water jet.
Sensor Cable	4 conductor shielded, 22 AWG, polyurethane jacket
Cleaning System	Air or water wash option available. Strongly recommended that one be utilized.
Sensor / Analyzer Data	
Documentation Provided	Operator Manual, Packing list, Mod bus RTU appendix Software toolkit for setup and calibration
Recommended Spare Parts	none
Sensor Storage Requirements When Out of Service	None
Level of Skill *(required to operate, maintain and calibrate instrument)*	Minimal
Special Tools or Other Devices Required for Maintenance and Calibration	none
Warranty	2 year
Manufacturer Service Centers Contact Information	80 Whisperwood Blvd., Suite 107, Slidell, LA 70458 Phone – 985-639-0006
Safety Considerations *(while operating, maintaining)*	none
Human Exposure to Injury *(while operating, maintaining)*	none
Annual Cost of Replacement/Calibration Parts	$0.00