

# MPA 48

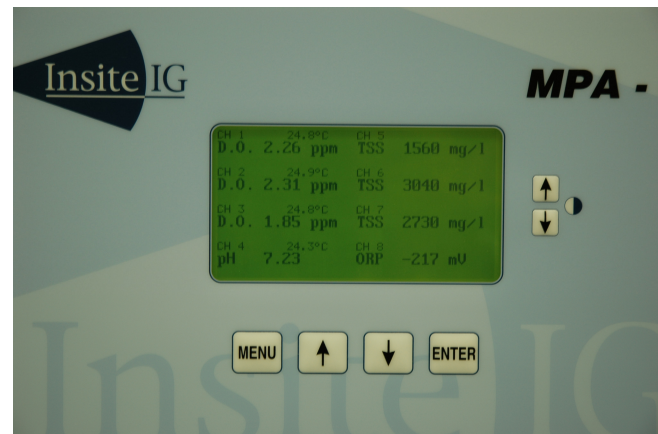
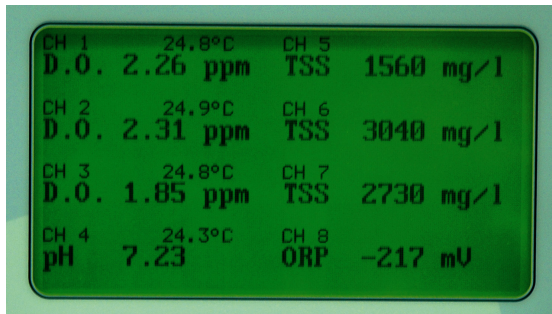
## MULTI-PARAMETER ANALYZER

### 4 TO 8 SENSORS

Optical Dissolved Oxygen—Suspended Solids—pH—ORP—Any Sensor Combination

The Insite Instrumentation Group MPA 48 multi-channel analyzer is a unique system that combines advanced electronics with the latest in sensor technology. The analyzer will accept any combination of DO, SS, pH, or ORP sensors and automatically configure for the correct operation. The system allows for flexible and economical process monitoring and control. The DO sensor does not need membranes, fill solutions, nor replaceable sensor caps. The SS sensor is based on near infrared technology, eliminating inaccuracies caused by changes in the process color. The pH electrodes are flat glass, double reference junction

with temperature compensation. The ORP electrodes are flat glass, double reference junction. Both pH and ORP electrodes feature a quick disconnect design that makes changing electrodes a snap and reduces down time due to electrode maintenance.



### MPA 48 MULTIPLE CHANNEL PROCESS ANALYZER

### 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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# MPA 48 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 100 degrees C
Response Time	95% in less than 60 seconds
Sensor Check	Automatic self diagnostics
Outputs	Up to 8 Opto-isolated 4-20 milliamp (one for each channel) Optically isolated RS-485 Modbus RS-232 serial Up to 8 dry contact 10 amp relay setpoints (one for each channel) 1 alarm relay 1 clean relay
Memory Backup	Yes
Display	Backlit graphical LCD display with UV protection Contrast adjustment via keypad Continuously displays all channels
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, glass, and PVC
Maximum Pressure	100 psi

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