

Engineering Specification for Oil-in-Water Analyzer

The ppm Oil in Water Monitor shall be a continuous flow through type using a fluorescent technology that is selective to hydrocarbons in water. The operating range shall be user defined and selectable at site from 0 to 10 ppm up to 0 to 5000 ppm. The continuous sample flow will tap off the main effluent line and feed to the monitor under process pressure and flow rates. In cases where pressure and flow is not adequate, an approved pump is acceptable. The sample stream gravity outfalls from the monitor to a drain or return sump.

The sensor shall be a non-contacting type with no mechanical or pneumatic devices necessary to maintain a continuous on-line operation. The flow shall be directed across a sensing plate that has been treated to negate background interference due to any normal operational coatings on the glass. Suspended solids up to 400 mg/l shall have no interference with the output signal.

The controller shall provide a 4-line LCD display of ppm concentration and bar graph simultaneously. The display will also advise of diagnostic and control functions. An isolated 4-20 mA output signal will be standard and its range selectable through the keypad. An RS-485 Modbus communication shall be standard. Four 10 amp SPDT relays shall be available; two relays for alarm setpoints, each with full differential to eliminate control chattering and allow a concentrated stream to adequately clear prior to reset; one relay to alarm on a negative offset drift, and one relay to alarm on a maintenance requirement or fault condition. Relay time delay and output signal filtering shall be standard and selectable via the keypad.

For maintenance purposes, the lamp and any components requiring routine cleaning shall be readily accessible without tools and without having to shut off the flow or power to the unit. The relays can be manually disabled and re-enabled via the keypad during operational checks and other routine sump and pump interventions. The 4-20 mA output can be simulated through the keypad to set up and verify remote interconnected devices. Continuous self diagnostics will warn of a signal failure, negative offset drift, over-range, lamp failure, or calibration failure.

Calibration shall be done on-line and under normal process flow and power conditions. Unknown calibration values can be corrected to an outside laboratory result by a simple keypad entry.

The controller and chamber shall be housed in a Type 4X 316 SS housing.

The unit shall be CSA and UL approved for electrical safety and CSA approved for Class 1, Div.2 applications. The unit shall bear the CE Mark and be manufactured in an accredited ISO 9001 facility. The unit shall be third party tested and compliant to IMO MEPC 107(49) guidelines.

The system shall be as the HydroSense Model 2410 from Arjay Engineering Ltd.