



WS05 Series Water Sensor

The WS05 water sensor represents the next generation in on-line monitoring of water contamination in system fluids. Whether a system has a single location or multiple sites that require ongoing, dedicated assessment of dissolved water content, the WS05 series water sensor will meet the application needs.

Simplex or Multiplex

WS05 water sensors can be installed to monitor moisture content from a single point or from multiple locations. Up to 16 sensors can be strung together to monitor critical points in the system and feed the data back to a display, PC, or PLC.

WS05 Water Sensor Features

- A sensing probe, fully immersed in the fluid to directly monitor water content of the oil.
- Compatibility with hydraulic fluids, lubricating fluids, dielectric fluids, and fuel oils.
- Optional integrated or local display with alarm and logging capability for up to 16 node sites
- Display includes a relay for a water alarm (any of up to 16 node sites)
- High-speed data acquisition & transmission capability: RS232 or RS485 serial connections; 4-20mA local output from an individual node box.
- Included PC-based software
- % saturation or ppm display (ppm for specific fluids - contact factory for details)

Operation

Each installation point for a WS05 water sensor consists of a probe and a node box. The probe contains moisture and temperature sensors that are inserted into the system fluid. The node box processes and transmits the acquired data.



WS05D display, WS05S water sensor node boxes and probes

Data can be transmitted to a display (either included on the node box, or at a visible location on the equipment), or to a PC or PLC for remote monitoring.

The sensing element in the probe absorbs or desorbs moisture, achieving equilibrium with the surrounding fluid. A change in the sensor's moisture content modifies its dielectric constant, which, in turn, changes the capacitance of the sensor. Circuitry on the sensor converts capacitance to voltage, amplifies it, and sends it to the WS05 node box for conversion to a % saturation or ppm reading.

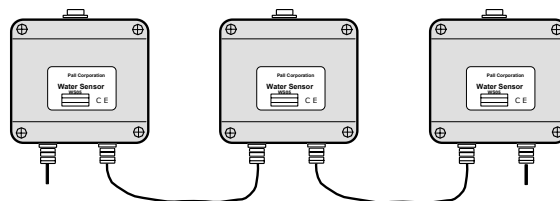
% Saturation or PPM Output

The water sensor functions primarily as a condition monitor. For this reason, dissolved water content in the fluid, expressed as % saturation, is its default data output. This allows the user to monitor changes and trends in water content over time. However, users who require water content to be displayed in ppm can have the unit matched to their specific fluid (contact factory for details and pricing).

Specifications

Required	
Power Supply	6-30VDC
Temperature	0°F to 185°F
Fluid	Petroleum and
Compatibility	synthetic oils
Max. Pressure	150 psi operating
Probe	3/8" O.D.
Diameter	stainless steel
Probe	1/4" NPT (male)
Connecor	
Probe Cable Length	6 feet
Accuracy	+ 2% based on ASTM E104-85
Enclosure	IP 65
Weight	1lb
Box Dimensions	3.85" x 3.85" x 2.4"
Signal Output	RS232 / RS485 serial and 4-20mA local
Alarms	Settable water and temperature alarms on display or PC
Alarm Relay	Relay output for water Alarm, up to 16 nodes
PC Software	included

Multiplexed Sensors



Up to 16 WS05 water sensors can be daisy-chained to provide a common data stream to a display or PC, with each node uniquely identified. The power supplied to the first node is also the power source for subsequent nodes, carried along the serial cable between the nodes. Data is also carried along the serial cable to the display or PC. Note: both a local display and PC interface can be used, with the output from the display going to the PC.

WS05 Signal Output

Model	Signal Output
All	RS485 to other WS05 units
WS05SB	4-20mA and RS485
WS05DS	RS232 and relay
WD05D	RS232 and relay

Ordering Information

Part Number	Description
WS05SBB04	Node Box with probe * (1/4" NPT connector)
WS05DSB04	Node Box with built in display & probe * (1/4" NPT connector)
WS05D	Display
WS05P	AC power supply input (90-250VAC), 24VDC power output to node(s)
WS05A21	6-foot cable for connecting WS05 water sensor(s) to a PC **

* Requires separate power supply, WS05D or other (6-30VDC)

** Required to calibrate a WS05 node box to its probe



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