RIVERTRACE

SMART WiO SENSOR

APPLICATIONS

• Condition monitoring Lubrication oil including:
- 2 and 4 stroke engines
- Compressors
- Pumps
- Gear boxes
- Turbines

• Condition monitoring for Hydraulic oil including;
- All machines using hydraulic oil up to 10bar

The working principle is a capacitive measurement operating on absorption of water in oil. The physical measured value is % Humidity. New oil has the ability to hold a certain amount of dissolved water. The maximum water amount oil can hold is called "saturation point". Above the "saturation point" free water will fall out which can cause corrosion inside of the engine. The "saturation point" is influenced by temperature and other different factors like the composition of oil mineral or synthetic, formulation of additives and will change during the lifetime of the oil. The Water in Oil Sensor (WiO) is not measuring free water or emulsion, which is detectable by regular Water in Oil test kits, it measures the absolute water content in oil.
The PAV (Pre Alarm Value) is set to 50% humidity. The MAV (Main Alarm Value) is set to 90% humidity.
   More than 100% humidity means free water is present. From this point regular Water in Oil test kits begin to measure.
   Normally in the field, the water in oil content is measured by a Water in Oil test kit. The results are mostly <0.02% (or 100.02% humidity), this value means free water content. If the WiO Sensor shows the main alarm, the value is higher than 90% humidity and damage could be caused to the engine if 100% humidity is reached.

FEATURES

• Measures the absolute water content in oil.

• Early warning by using pre alarm and alarm
- The PAV (Pre Alarm Value) is set to 50% humidity.
- The MAV (Main Alarm Value) is set to 90% humidity.

• Takes the oil temperature into consideration in order to measure the saturation

• The sensor measures the saturation of the oil independent from the oil type and oil age

• No cleaning of the sensor is needed.

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SPECIFICATION

Controller Specification

Power Supply	18...32 VDC
Current Consumption	60mA
Polarity Protection	Yes
Alarm relays	Pre-alarm at 50% humidity Main alarm at 90% humidity
Output Current	<300mA
Operating Temperature	-25 to +85 ºC
Protection Degree	IP67
Analog Output: Water in Oil	4...20 mA (equiv. 0...100% Humidity Linear)
Analog Output: Temperature	4...20 mA (equiv. 0...100ºC Linear)
Dimensions:	125mm x 80mm x 57mm
Local Indication	LED Indicators

Sensor Probe Specification

Wong Polarity protection	Yes
Operating temperature	-25 to 85 ºC
Protection degree	IP65
Pressure resistance against medium	10 bar
Connection type	G3/4" Male Thread
Material	Stainless Steel AISI 303; 1.4305
Dimensions	50mm x 187mm
Cable Length to Controller	15m
Insertion Length	120mm
Local indication	LED Indicators

Options

Indicator Dial Temperature		Indicator Dial Humidity	
Indicator Dial type	Analog needle type	Indicator Dial type	Analog needle type
Unit of Measurement	Degrees Celsius	Unit of Measurement	% Humidity
Range	0 – 100ºC	Range	0% - 100% Humidity
Dimensions	96mm x 96mm x 77mm	Dimensions	96mm x 96mm x 77mm

Specifications and system descriptions accurate at time of printing. These are subject to change.