

Oil Condition Monitoring Systems

for lubrication, engine & hydraulic oils

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WearSens

Maximize your asset availability in O&M

Knowing when to change the lubrication oil in gearboxes, hydraulic systems, transmissions, and engines is critical to minimize the risk of asset failure due to wear. Approx 75% of all bearing failures are related to lubrication issues.

Having all that information and being able to take action from your own staff is an advantage: you can keep things in control, your response time is faster, your staff capabilities are improved, your O&M costs get better to forecast and maintain, your repair and maintenance times get to be exactly when they're needed.

Optimizing oil changes, minimizing wear and tear, and having direct, in-real-time information on the oil condition, can be done by measuring altogether the electrical conductivity, relative permittivity, and temperature in the oil as it is used, independent of the flow.

You can get real information on

- **Contamination events**
- **Increased wear due to overload conditions**
- **Oil exchange supervision**
- **Additive reactions**
- **Early detection on the oil-additive composition**

A sensor-based Oil Condition Monitoring System gives you more flexibility and sensitivity than other alternatives as OPC, or vibration systems.

You can have readings on zero-, low- and high-oil flow rates, without a periodic need for (re)-calibrations, and handling high temperatures (upper temperature limit up to 150 °C).

Online Oil Condition based on Conductivity and Relative Permittivity over the same Time

Changes of the Electrical Conductivity and Relative Permittivity at different machine load cycles



You can keep a close-up follow of live information on contamination, and / or chemical changes inside the oil due to other incoming impurities such as water, wrong oil type, additive reactions, etc.

You can set up thresholds for your normal operation, identify outliers, and interact with the data so that information flows efficiently.

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Technical Data Sheet

Ranges

Conductivity: 0.1 to 100,000 pS/m
(optional, high range: 0.1 to 2.000.000 pS/m)
Relative permittivity: 1 to 5

Sensitivity

Conductivity: 0.1 pS/m
Relative permittivity: 1*10-6

Temperature and pressure

Max oil pressure: 60 barg at 200°C
(870 psig at 680°F)
Oil temperature: -10°C to +70°C
(optional, high temperature: -10° to + 150°C)
(optional, low temperature: -40° to + 65°C)
Operating temperature: -20°C to +70°C

Material

Sensor material: Stainless steel
(bowl and carrier) and aluminium (head)
Cable: 3 metre, shielded

Connections

1/4" Swagelok® for 6mm o.d. tube
(optional connectors available)

Communication Interface

Serial communication via RS232/RS232-USB
(opt.: LAN, GSM, Profibus, Modbus, CAN,
0..10V, 0/4..20mA)

Electrical requirements

115/230 VAC, 50/60 Hz (optional, +24 VDC)

Weights and Dimensions

Dimensions (mm):
Sensor: 103 (height) x 70 (diameter)
Communication unit: 210 x 250 x 165
Communication module: 87 x 110 x 30

Weights net:

Sensor: 1.7 kg
Communication unit: 4.45 kg
Communication module: 0.25 kg

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