

Company profile flucon fluid control GmbH

Our company

The company flucon fluid control GmbH, situated in the Harz mountain area in the northern part of Germany, is dedicated to capture and to handle **material properties of liquids** with a special focus on the monitoring of oil quality. The development, construction and distribution of measuring devices to determine properties of liquids as well as supporting services in this field are objects of the company. Flucon fluid control GmbH was founded in 1991 by graduates and former members of the Institute of Tribology & Machine Kinetics of the Technical University of Clausthal, Germany.

Our Product Range

// Oil Performance Monitor **LUBRICON** for the inline monitoring of the oil quality
// Viscosimeter **QVis** for laboratory and for inline process application
// Measuring system **LAMBDA** for the determination of the thermal conductivity of fluids
// Measuring system **CGS** for the determination of foam concentration
// Highly accurate process measuring technology
// Measuring unit for the detection of various fluid properties
// Analysis of material properties in our unique **flucon high pressure laboratory**
// Advisory service and solution-finding for customer-specific problems

Contact

flucon fluid control GmbH
Hauptstraße 114
D-37520 Osterode-Freiheit
Tel. +49 5522/9557006
Fax +49 5522/9559085
Email: info@flucon.de
www.flucon.de

Oil Performance Monitor LUBRICON: inline monitoring of oil quality



In regard to the technical development within the automobile sector, the gear construction branch as well as in the area of energy producing plants, the **continuous monitoring of the oil quality** is gaining increasing importance. With the help of the Oil Performance Monitor LUBRICON, you can keep track of the quality of your oils: **for optimized processes and oil changing intervals tailored to your specific requirements.**

Key features at a glance

- Continuous determination of viscosity, electrical conductivity, relative permittivity
- Categorization of the oil quality according to the customer's specifications
- Visualization of the oil quality by means of LEDs (green=good, yellow=medium, red=poor)
- Flexible mounting of the sensor
- Measurements independent of the direction of flow
- Reliable even under harsh process conditions
- No mechanical wear parts
- Maximum operational safety
- USB interface for the optional connection to a computer
- Optional analog outputs (4...20 mA)

Composition

The measuring instrument LUBRICON is composed of a cylindrical screw-in quartz sensor and a corresponding compact electronic unit. The electronic unit does not only contain the respective control and evaluation system, but it provides the LEDs needed for the visualization of the state the system is in: three LEDs (green/yellow/red) for the oil quality (good/medium/poor) plus one additional separate LED (red) functioning as an error indicator.

Fields of application

In accordance with the quantifiable attributes of the aging process of liquid lubricants, the LUBRICON enables a continuous and nonreactive monitoring of liquid lubricants of engines and machinery parts. The continuous monitoring offers numerous advantages to the customer such as the **optimization of oil changing intervals, the prevention of damage, the reducing of costs and the compliance with ecological objectives.**

The LUBRICON provides data continuously and is furthermore equipped with three LEDs which allow an **additional visualization of the oil quality with the help of the traffic light principle.** The actual oil data as well as their variation compared to the data of the fresh oil are defined by LUBRICON on the basis of the fresh oil calibration on the one hand, and the customer-specific critical values on the other hand. Accordingly, the oil quality can be in one of the three following conditions:

- very good/good oil quality (LED=green)
- medium oil quality (LED=yellow)
- poor oil quality (LED=red)

Technical data

| | |
|------------------------------------|--|
| Power supply | depends on the type of sensor (max. 30 VDC) |
| Measuring fluid | oil (electrically non-conductive fluids) |
| Primary calibration | calibration by flucon GmbH |
| Fresh oil calibration | carried out by the user (by starting the self-calibration process) |
| Measuring range viscosity | 5 to 1.500 mPas |
| Measuring range rel. permittivity | 1 to 10 |
| Measuring range temperature | -40°C to 130°C |
| Pressure range sensor | up to 25 bar |
| Surrounding temperature | -40°C to 60°C |
| Dimensions electronic unit (LxWxH) | 125 x 82 x 35mm (electronic unit only without the connectors) |
| Dimensions sensor | approx. 80 mm, 3/4" thread, insertion depth at least 55mm |

Fundamentals of oil aging

Lubricants and lubricant aging

Within the automobile sector, the gear construction branch and also in the area of energy producing plants, lubricants are indispensable – they are used for reducing friction and wear and allow the transmission of power. Thereby, they are influenced by different factors. Due to mechanical and thermal impacts, the process of lubricant aging plays a major role: the lubricant changes in the course of time, losing its specific characteristics.

Limits of an indirect monitoring of lubricant aging

It is not sufficient to merely deduce the oil performance respectively the oil quality on the basis of indirect data such as temperature, rotational speed, load alternation and duration, because these often fail to indicate precisely the individual conditions the customer is facing. At the same time, the standards concerning operating safety as well as environmental safety and sustainability become more and more rigid. Consequently, a more detailed analysis and monitoring of the oil quality is needed in order to match the oil changing intervals to the specific operating conditions and to meet economic and ecologic targets.

Direct monitoring of the oil quality by means of the Oil Performance Monitor LUBRICON

The measuring instrument LUBRICON developed by flucon is the result of many years of research and experience with the aging process of lubricants, and enables the users to continuously monitor their oil quality. The change of flowability, an increase of insoluble impurities (including metallic particles) and a change in the capacity for neutralization (Total Base Number "TBN" and / or Total Acid Number "TAN", respectively) are the main quantifiable characteristics which determine the oil aging process. Valid conclusions concerning the chemical changes in the lubricant and the resulting performance reserve of the oil are therefore only possible if the following fluid characteristics are monitored continuously:

- viscosity
- relative dielectric permittivity
- and the specific electrical conductivity

Please do not hesitate to contact us for additional information – we are looking forward to your inquiry.