motcom
Condition Monitoring Safety

motcom® SiCOMS® | OCom
Oil mist Concentration and splash oil temperature monitoring

SiCOMS®
OCOM ADVANTAGES

- **Easy pipeless and suction free installation due to simple electric cabling**
- **Single compartment oil mist detection and temperature measurement system**
- **Online and continuous monitoring**
- **Visualisation of the oil mist concentration in mg/l**
- **Temperature measurement in each compartment**
- **Crankpin splash oil temperature measurement (mounting location dependant)**
- **Self redundant measurement system**
- **Maintenance free optical sensor system protected against splash oil contamination**
- **No moving parts**
- **SiCOMS® | OCom sensor replacement is possible at any time**
- **Minimising engine maintenance and service costs**

TECHNICAL DATA

Power supply	24V DC +30% / -25%
Power consumption	continuous 1.0A, peak at startup max. 3.0A
Alarm level	adjustable in • 10 steps (0.2 - 10 mg/l) for oil mist concentration • from 0-130°C for temperature measurement
Outputs	3 isolated relay contacts: • Shutdown | Main alarm • Pre-alarm • System Ready
Data interface	• RS485 to PC • Modbus (RS422 or RS485) • CAN bus (optional)
Ambient temperature	0 - 70°C for Evaluator 0 - 85°C for sensor electronics -10 -120°C for sensor measuring section

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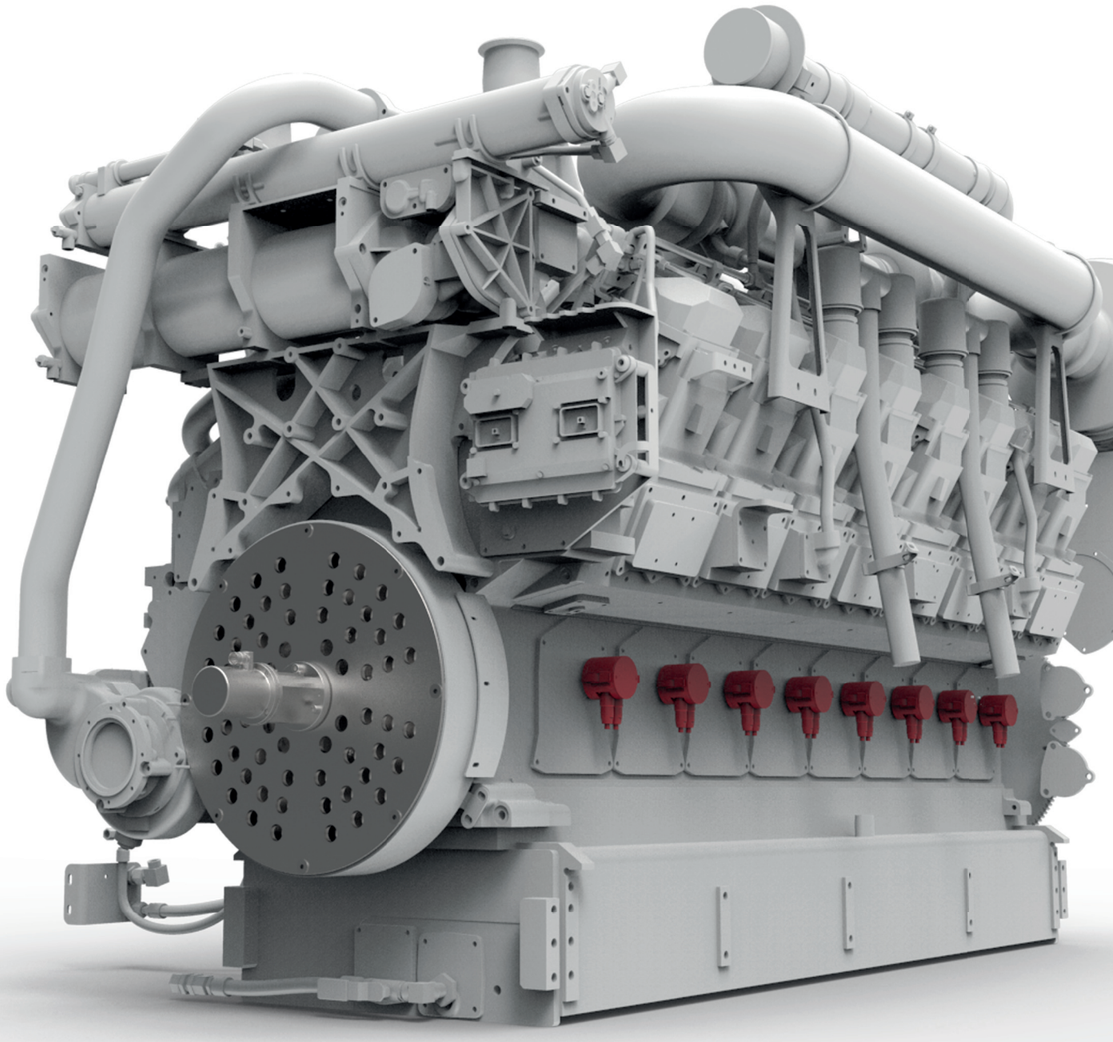

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INTRODUCTION

Oil mist inside an engine accrues when lubricants or fuel come in contact with hot surfaces.

A damaged bearing can be a possible source of heat due to friction, leading to oil mist formation. This oil mist becomes highly ignitable at a concentration of 50mg/l or higher (LEL lower explosive limit). This can result in an explosion causing large scale engine damages and in a worst case the loss of human lives.

FUNCTIONAL DESCRIPTION

The OCom system is an oil mist detection system without the disadvantages of older OMD systems. It is a pipeless system, with sensors mounted directly into the engine wall allowing for a quick and exact measurement of the oil mist concentration in each compartment. In addition, in every sensor a temperature probe is installed. Installation location dependant, the crankpin splash oil temperature (COT) can be measured and evaluated.

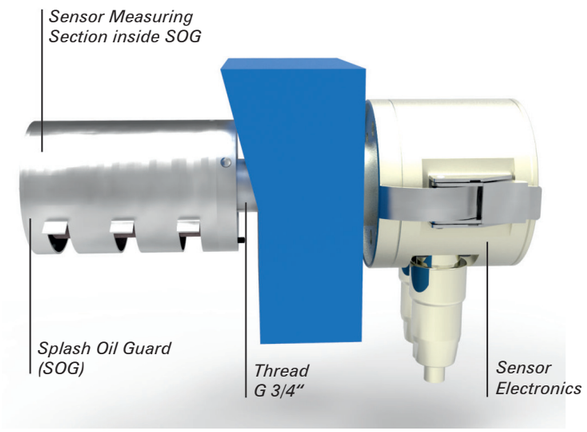
The measured data of each sensor are sent via a redundant serial bus to the Evaluator, where these are processed and displayed for the whole system.

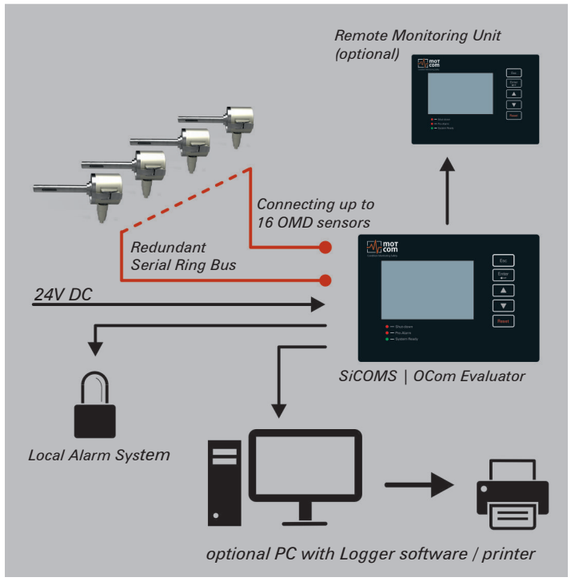
Up to 16 sensors can be connected to one Evaluator. The Evaluator is equipped with two independent relay contacts for shutdown alarm. These can be used to e.g. shut down the engine in case of an alarm preventing further damage.

Additionally, the measured data can be sent from the Evaluator to a computer running a specially designed Data Logger software and/or to a OCom Remote Monitoring Unit (RMU). A seamless integration into the existing engine control system is provided by a Modbus or optional CAN bus interface.

The Data Logger software is able to display, store and review the measured data. An automatic analysis of the stored log files can be achieved by the motcom Loganalyser software. The Remote Monitoring Unit is able to display the measured data like the Evaluator. It has also the capability to reset an alarm.

inside crankcase | Engine wall | Outside engine

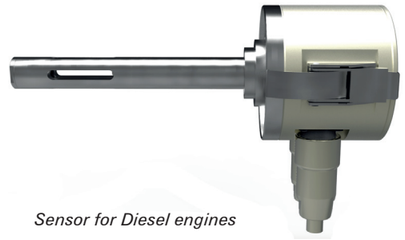




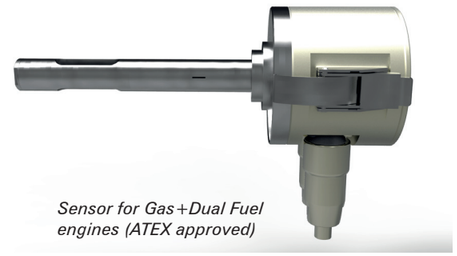
SENSOR

The sensor measures the oil mist directly where it is generated, inside the engine. It is very sensitive, so it can even measure smallest amounts of oil mist.

Without any moving parts and the need of an extensive piping, the installation is very easy and almost no maintenance is needed. Sensors are available for Diesel and Gas (ATEX approved) engines.



Sensor for Diesel engines

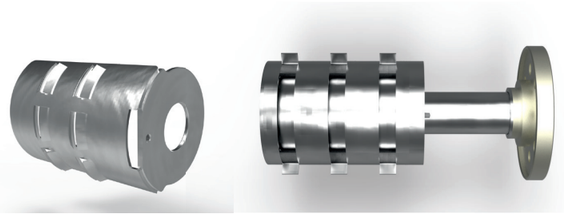


Sensor for Gas+Dual Fuel engines (ATEX approved)

SOG AND DIFFUSOR

The Splash Oil Guard (SOG) protects the measuring section against splash oil inside the engine. With its multiple nested chamber design only oil mist can get into the measuring section.

In case of high splash oil concentrations, the diffusor can be mounted additionally onto the SOG for even better splash oil protection.

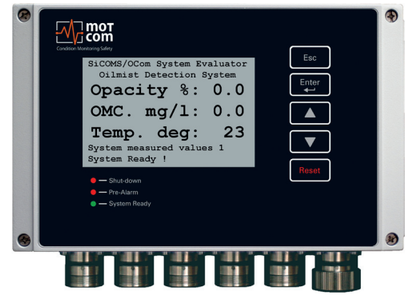


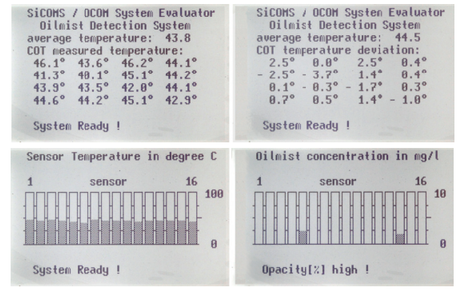
EVALUATOR

The Evaluator is designed to withstand the environment in the engine room. Its vibration resistance allows an installation close to the engine without any special support. For installation on the engine, a specially designed vibration damping feature is available. The housing of the Evaluator is water, dust and shock resistant, EMC-proof and complies with protection class IP 66.

The Evaluator consists of a alloy case, a liquid crystal display (LCD), three LEDs indicating the system status and five membrane buttons for user interaction.

A powerful micro controler inside the Evaluator analyses the measured data continously, displays the data on the LCD and triggers the alarm relays in case of dangerous oil mist concentration or evolution of temperature. The bargraph display makes compartment localisation easy. The Evaluator continously checks all system functions and connected sensors and shows detailed messages in case of any error.





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