SCHALLER AUTOMATION

GasMOS®2020

Gas monitoring system

Selective online measurement of gas concentrations in large engines

www.schaller-automation.com

Product description

The steadily growing number of LNG-fuelled engines as a consequence of challenging emissions regulations creates another possible cause of crankcase explosions: methane. The unburnt methane enters via the top land and the piston sealing rings through blow-by effects either into the crankcase directly or the area under the pistons and can accumulate in the combustion chamber in concentrations up to higher than the lower explosion limit, depending on the fuel-air mixture.
GasMOS® is a monitoring system that increases safety by detecting the methane content in the crankcases of gas and dual-fuel engines on ships and in power stations.

The system design combines measurement technology and gas suction in a highly compact way and is modular. The concept explicitly provides for installation away from the engine to take into account aspects such as vibration, the effort required for installation and easy accessibility for maintenance. The system is connected to the engine crankcase by cable and is protected against contamination from the crankcase atmosphere by appropriate filtering.
Flexible communication: The system comes with modern fieldbus interfaces such as CAN and Modbus. It is easy to read messages and status information from the front panel.

- **Withstands the extreme environmental conditions at the engine**
- **Highly accurate measurements as there are no cross-sensitivities to other gases**
- **Active gas intake**
- **Modular measuring unit**
- **Automatic zero point adjustment**

How it works

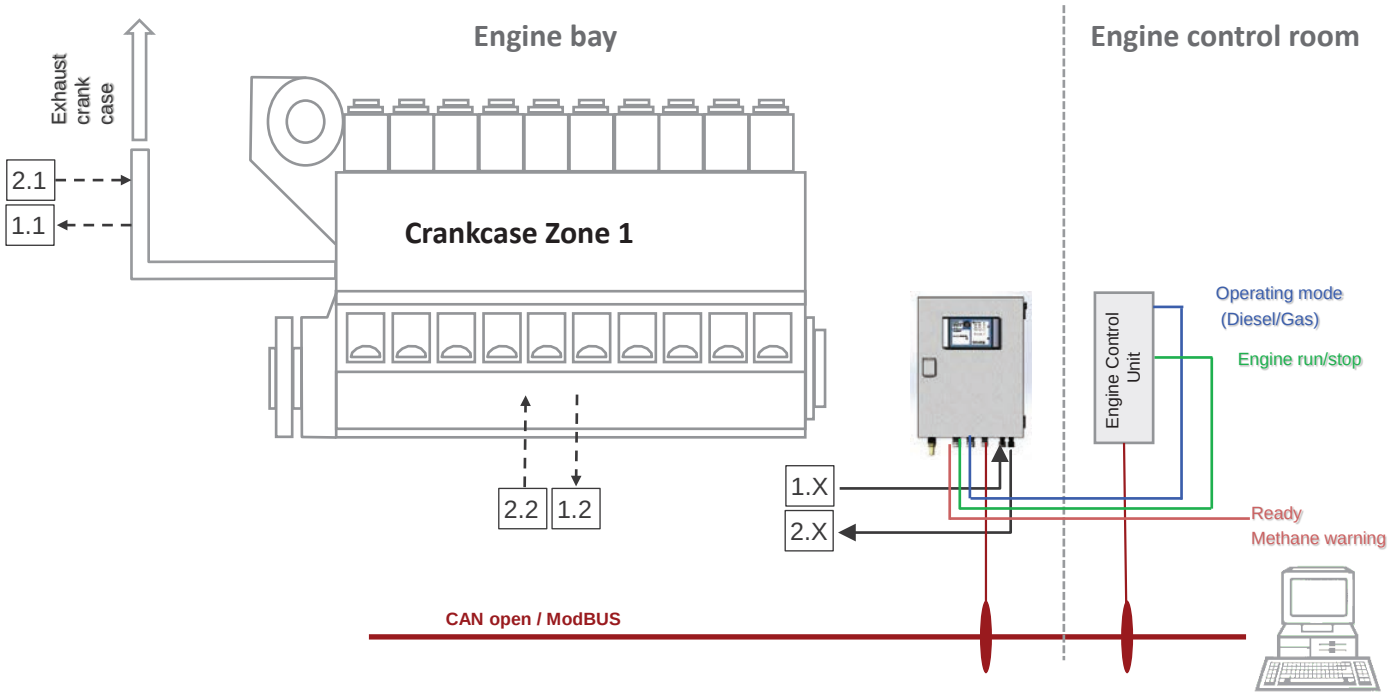
The GasMOS® uses a multi-sensor system in combination, taking into account other factors such as temperature, humidity and pressure, to analyse the crankcase atmosphere,
creating a multi-dimensional database for methane detection. Using special algorithms makes it possible to suppress the disturbance variables as far as possible and detect the methane for measurement very selectively and robustly.

The crankcase atmosphere is actively fed to the sensors via an intake, ensuring reliable and rapid detection of changes in concentration. To compensate for long-term offset drift and to stabilise the measurement signal, regular adjustment is carried out using ambient air.

Application

The GasMOS® has been developed to measure methane gas concentrations in crankcases. This type of measurement is used in dual-fuel and gas engines with crankcases in which critical methane gas concentrations can occur as a result of blow-by via the piston rings or abnormal operating conditions. It is used primarily on ships and in power stations.
Thanks to its robust design, the GasMOS® can be used to measure methane under harsh operating conditions.

Its algorithm-based analysis methods means that it can be used to selectively detect methane regardless of the gas composition.
Thanks to its modern software solution, the GasMOS® can be connected to any CAN/Modbus system.
The GasMOS® is therefore a modern state monitoring system for continuously recording and assessing the methane concentration.



Advantages and benefits

- **Continuous methane measurement**
- **Accurate measurement by using suitable sensors**
- **Self-monitoring**
- **Best-in-market calibration interval (12 months)**
- **Automatic adjustment of measured values using fresh air**
- **Easy maintenance and quick replacement thanks to modular system architecture**

Technical data

Dimensions	Approx. 310 x 450 x 175 mm
Weight	13.00 kg
Power supply	18 – 31.2 V DC; $U_{min}<U_{Supply}<U_{max}$
Nominal voltage	24 V DC
Communication interface with monitoring device	3-wire RS485, electrically isolated or CANopen, electrically isolated
Ambient temperature range	0 to 50 °C
Protection rating	IP 54
Pressure ratio in the crankcase	-50 mbar to +50 mbar
Measuring range and accuracy	0- 3.8% by volume with a measuring accuracy of ±10% LEL 0.44% by volume

SCHALLER AUTOMATION

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Worldwide!

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