

GASMOS®

Gas monitoring system



Selective online measurement of
gas concentrations in large engines

Product description

The increased use of LNG-fuelled engines as a result of stricter emissions regulations has led to an increased focus on Condition-Based Monitoring (CBM), as this is a key area for monitoring potential problems.

One of these potential problems is the possibility of crankcase explosions caused by unburnt methane, triggered by the blow-by effect. Such methane can accumulate in dangerous concentrations in the crankcase.

A special monitoring system called GASMOS® has been developed to detect the methane content in the crankcases of gas and dual-fuel engines in ships and power plants.

The design of this system integrates measurement equipment and gas intake in a compact and modular unit. Particular

attention has been paid to ensuring that the system is mounted away from the engine, to meet the requirements in terms of vibration, cost of installation and accessibility for maintenance work.

The system is connected to the engine crankcase by two cables and features active intake, effective filtering to eliminate contamination from the crankcase atmosphere and subsequent recirculation of the sample gas (closed loop).

Modern fieldbus interfaces, such as CANopen and Modbus, are provided for flexible communication. It is also easy to read messages and status information for the system on the front panel.



- **Automatic zero point calibration**
- **Active gas intake**
- **Withstands the extreme conditions of the crankcase**
- **GASMOS® uses a multi-sensor system for methane detection**
- **Algorithms suppress disturbance variables for reliable and reproducible measurements**

How it works

The GASMOS® uses a multi-sensor system in combination and 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 extraction, which ensures 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 environmental air.

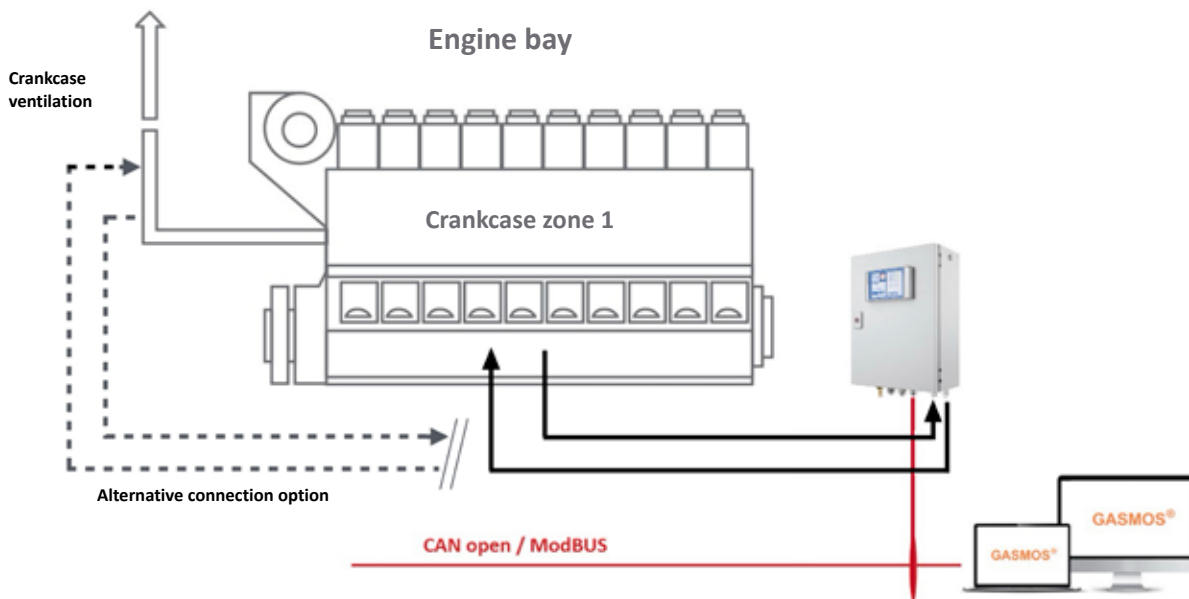
Application

GASMOS® has been developed to measure methane gas concentrations in crankcases, which is particularly relevant for dual-fuel and gas engines where critical methane gas concentrations can occur as a result of blow-by via the piston rings or abnormal operating conditions.

Using GASMOS® means that this concentration can be measured precisely and continuously, with the system working reliably even under tough operating conditions, thanks to its robust design.

Its algorithm-based analysis methods means that GASMOS® can be used to detect methane selectively, regardless of the gas composition.

GASMOS® can also be easily connected to any CANopen/Modbus system. This modern condition monitoring system supports the end user in meeting international environmental and emission standards and ensures comprehensive monitoring, reporting and verification.



Advantages and benefits

- Continuous online measurement of the methane concentration
- Automatic adjustment of measured values using fresh air calibration
- Selective gas measurement by using suitable sensors
- Self-monitoring sensor system
- Provides valuable insights into the operating and wear condition of the piston sealing rings
- Supports the end user in meeting international environmental and emission standards

Technical data

Dimensions	Approx. 310 x 450 x 175 mm
Weight	13.00 kg
Power supply	18 – 31.2 V DC; $U_{\min} < U_{\text{Supply}} < U_{\max}$
Nominal voltage	24 V DC
Communication interface with monitoring device	3-wire RS485, electrically isolated <u>or</u> 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 $\pm 10\%$ LEL 0.44% by volume



Safety for you and your engine: Worldwide!

Headquarters:

SCHALLER Automation

Industrielle Automationstechnik GmbH & Co. KG
Industriering 14
66440 Blieskastel, Germany
Phone: +49 6842 508 0
Fax: +49 6842 508 260
Email: info@schaller.de
www.schaller-automation.com

Key Account Management Center:

Singapore

Schaller Automation Pte Ltd.
114 Lavender Street
#09-93 CT Hub 2
Singapore 338729
Phone: +65 6643 5151 (24/7)
Fax: +65 6643 5150
Email: info@schallersingapore.com



China

Schaller Automation- China
Room 401, Juyang Mansion
No. 1200 Pudong Avenue,
Shanghai 200135, P.R. China
Phone: +86- 21- 5093- 7566
Mobile: +86- 1390- 1890- 736
Fax: +86- 21- 5093- 7556
Email: info@schallerchina.cn

USA

Schaller Automation LP
811 Shotgun Road
Sunrise, FL 33326
United States of America
Phone: +1 954 794 1950
Mobile: +1 561 289 1495
Fax: +1 954 794 1951
Email: info@schalleramerica.com



ISO 9001/2015 certified

GASMOS® is a registered trademark of Schaller Automation GmbH & Co. KG