HEINZMANN®
thinking in drive and control

The new generation of oil mist detection for internal combustion engines

TRITON OMD II

Multiprotection at its best

Superior prevention of false alarms

Compliant with ATEX requirements

Multi-channel measuring cell

Robust and low maintenance design

Decentralised decision-making architecture

Reliable protection against engine damage and crankcase explosion

Engine & Turbine Management

TRITON OMD II – THE NEW GENERATION

TRITON OMD II has been specially designed to set new industry benchmark, not only in terms of operational performance and reliability, but also in terms of the capability to be seamlessly integrated into the customer‘s engine automation and safety systems.

For more than 120 years, HEINZMANN has been helping its customers achieve the best possible operating performance and efficiency, as well as compliance to emission standards, with control and monitoring solutions for large internal combustion engines.

In 2012, we turned a new page in the company‘s history by launching the first generation of the TRITON Oil Mist Detection System, a product line that ensures human and assets protection through the reliable detection of oil mist inside the crankcase.

Potentially hazardous oil mist occurs when lubricating oil evaporates on friction-heated surfaces in the crankcase (in the course of lubricant failure on moving parts) and recondenses into a fine spray. This oil mist may constitute a serious hazard to both staff and equipment. Even a concentration of as little as 50 mg/l is sufficient for an explosion to occur.

TRITON OMD II – Powerful technology

- Measuring range 0 ... 5 mg/l
- Steplessly adjustable alarm limits
- Optical method of oil mist detection
- Multi-channel measuring section
- Active sampling
- Flow-optimised sample routing
- Reaction time < 1s
- Individual crankcase compartments monitoring
- Crankcase ventilation surveillance
- Built-in data logger
- Decentralised decision-making architecture
- Redundant and insulated power supply & communication lines

TRITON OMD II – Perfect interaction

- Excellent system responsiveness by active sampling and optimised internal structures
- Enhanced reliability of the measurements due to the multi-channel structure in combination with sophisticated algorithms for plausibility evaluation
- Easy installation and exchange thanks to flexible sampling feed and quick-fix connections
- Cost savings through integration into the customer's safety system with no need for a central unit
- Reduced maintenance due to self-adjustment and structural measures preventing contamination of the optical system
- No additional operating media necessary
- Low cost of operation

TRITON OMD II – Perfect for your needs

HEINZMANN Oil Mist Detection Systems can be applied to all types of combustion engines for both stationary and mobile applications:

- Diesel engines
- Gas engines
- Dual-fuel engines
- Alternative-fuel engines

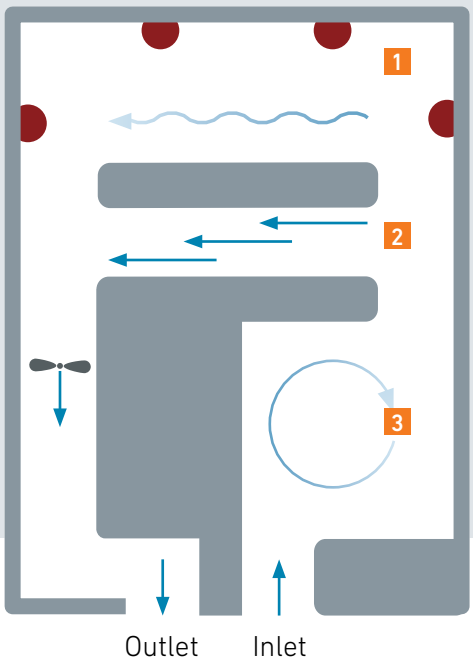
TRITON OMD II – The core element of the system

Sensors may be used either in combination with the central unit from HEINZMANN or alternatively as an integral part of a customer proprietary superordinate engine safety system. The sensor represents the core elements of the TRITON Oil Mist Detection System.

It consists of two complementary parts: the sampling feed with integrated test facility and the sensor body with measuring arrangement.

Installation of the sensor does not require access to the inner space of the crankcase. The sensors are available in versions with bottom and lateral cable outlet.

Active sampling is applied to achieve the same excellent dynamic measurement characteristics regardless of the installation location. The special design of the sample flow path inside the sensor effectively protects the measuring optics from contamination.



1 Measuring section
2 Bypass and flow acceleration path
3 Sample calming zone
4 Sensor

Operating principle

A multi-channel measurement cell backgrounded by sophisticated processing and plausibility validation algorithms provides the best possible reliability of results and built-in immunity to false alarms.

- Active direct sampling

Cleaning principle

- Maintenance-free due to contamination prevention

TECHNICAL DATA – SENSOR

Power supply	2x 24 VDC + 30 % / -25 %
Operating current	Up to 0.25 A
Data interface	2x CAN
Ambient temperature	0 ... 80 °C
Degree of protection	IP65
Installation	G ¾“

TRITON OMD II – Compartment-wise visualisation

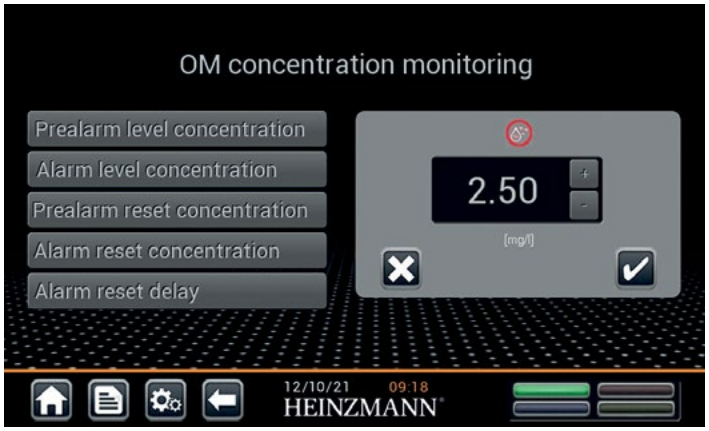
The central unit covers all tasks with regards to enhanced visualisation of TRITON OMD sensor values, system configuration and interfacing to subordinated systems for alarm and data processing. The unit is designed to withstand harsh environmental conditions occurring in the application area and is best suited for direct installation on the engine or alternatively in the engine room. The central unit can serve up to 16 sensors.

Redundant power supply and communication lines ensure uninterrupted system operation. An integrated graphical LCD touchscreen provides the system operator with intuitively arranged status information and the possibility for convenient navigation between different overview and configuration screens.

The extensive internal data logging enables an in-depth analysis of the long-term system behaviour and the investigation of the root causes of events that have occurred. The control unit has advanced connectivity abilities which can allow it to holistically acquire operational data of different systems. It can also enable the further implementation of AI assisted algorithms, e.g. for condition monitoring and/or predictive maintenance.

The entire user interface of the unit has been designed with a focus on simple handling and prevention of operating errors. The following images provide a first impression of the visualisation possibilities of the measurements as well as an example of an alarm settings page.

Oil mist concentration in single compartments



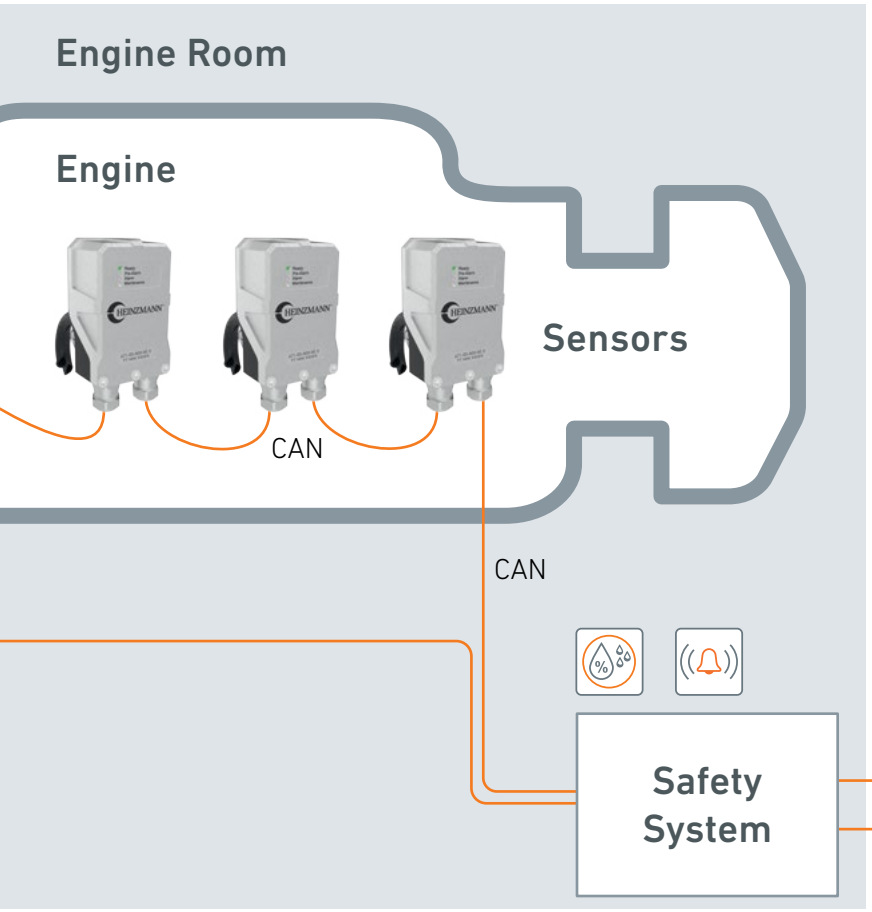
Configuration of alarm levels

TECHNICAL DATA – CENTRAL UNIT

Power supply	24 VDC + 30 % / -25 %
Operating current	Up to 4.5 A
Data interface	Ethernet, CAN, RS-485
Ambient temperature	0 ... 70 °C
Degree of protection	IP65
Installation	Isolated relay contacts: System ready, Main alarm, Pre-alarm
Max. number of sensors	16

TRITON OMD II – OEM solution without central unit

- Stand-alone sensors for seamless integration
- Aimed specifically at engine new builds
- Reduced number of components
- Significant cost reduction



Customer Safety System

- Processing of alarms and warnings
- Visual and audible signalisation
- Visualisation of measurements and alarms
- System configuration

Engine

- Any type of internal combustion engine
- Single compartment monitoring
- Monitoring in the crankcase ventilation

Superordinated System

- Engine Control Room
- Bridge

Sensors

- Connecting up to 16 sensors
- Interchangeable during operation
- Low maintenance design

Measured Values

- Oil mist concentration
- Temperature in crankcase
- Alarms and warnings

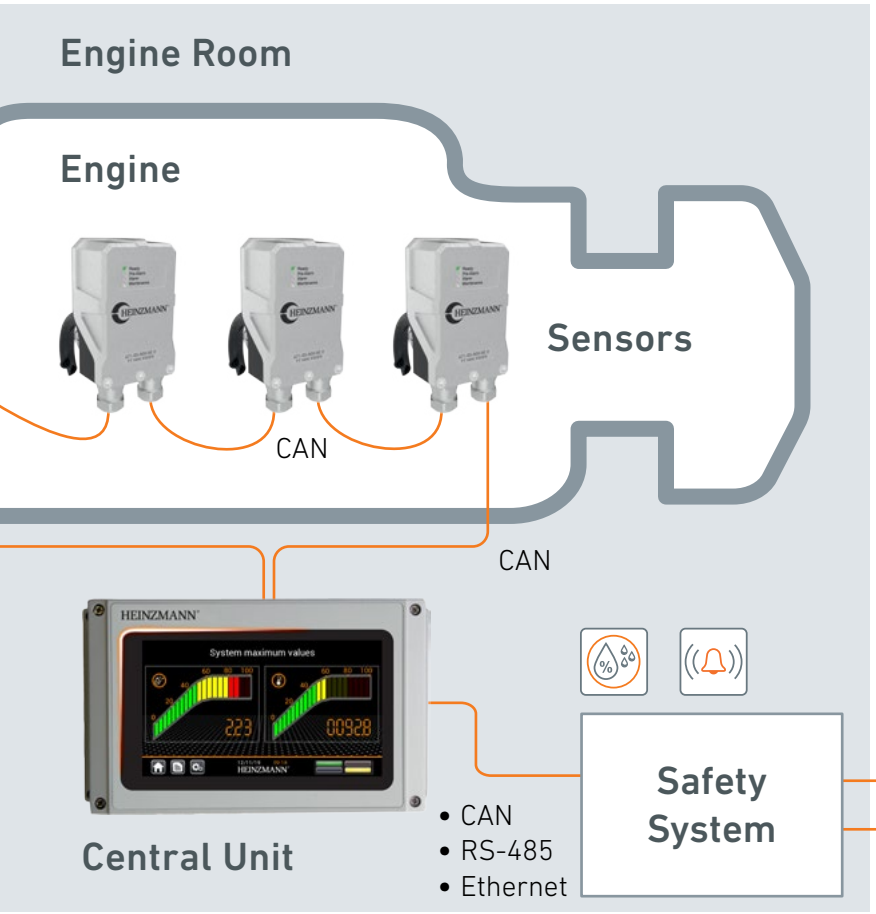
Alarms

- Measured values, alarms and warnings via redundant CAN bus interface

TRITON OMD II – All-purpose solution with central unit

Sensors monitoring oil mist concentration in combination with a central unit for alarm processing

- Suitable for both engine new builds and retrofitting
- Simple integration into the existing engine automation and safety systems



Customer Safety System

- Processing of alarms and warnings
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Engine

- Any type of internal combustion engine
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Superordinated System

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Central Unit

- Universal interface to customer's automation system
- Visualisation of measurements and alarms
- System configuration

Sensors

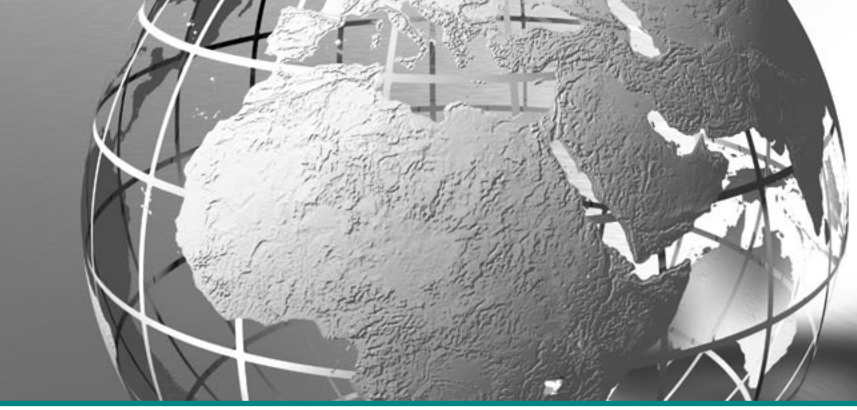
- Connecting up to 16 sensors
- Interchangeable during operation
- Low maintenance design

Measured Values

- Oil mist concentration
- Temperature in crankcase
- Alarms and warnings

Alarms

- Hardwired system status outputs
- Measured values via communication interfaces



HEINZMANN®
thinking in drive and control

HEINZMANN GROUP - THINKING IN DRIVE AND CONROL

HEINZMANN is a globally active family business founded in 1897 with its headquarters in Schönau (Germany), in the Black Forest.

Today, in the field of engine management HEINZMANN is one of the leading suppliers of components and systems for industrial combustion engines, generators and turbines. As a specialist and development partner, HEINZMANN is committed to developing exactly the right solution for increasing efficiency and reducing emissions.

In the Electric Drives division, HEINZMANN also demonstrates innovative strength and development expertise in engine technologies of the future. The company has established itself as a reliable partner and system provider for electric drive systems.

Our collaborative interaction with more than 40 globally active subsidiaries and sales companies characterises the spirit within the HEINZMANN group of companies and makes us a reliable partner.

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