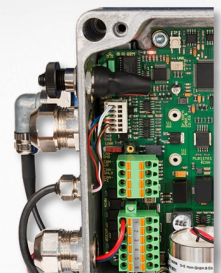
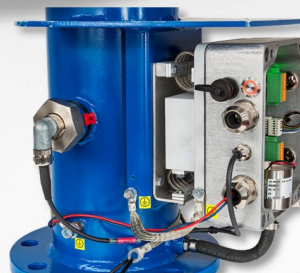
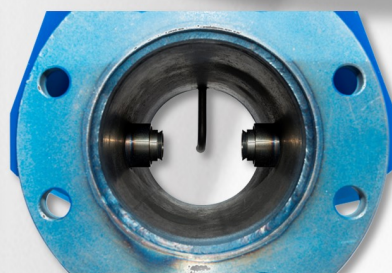
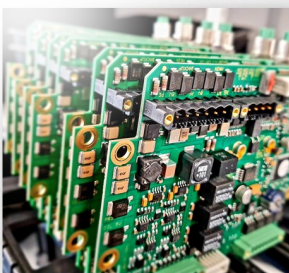
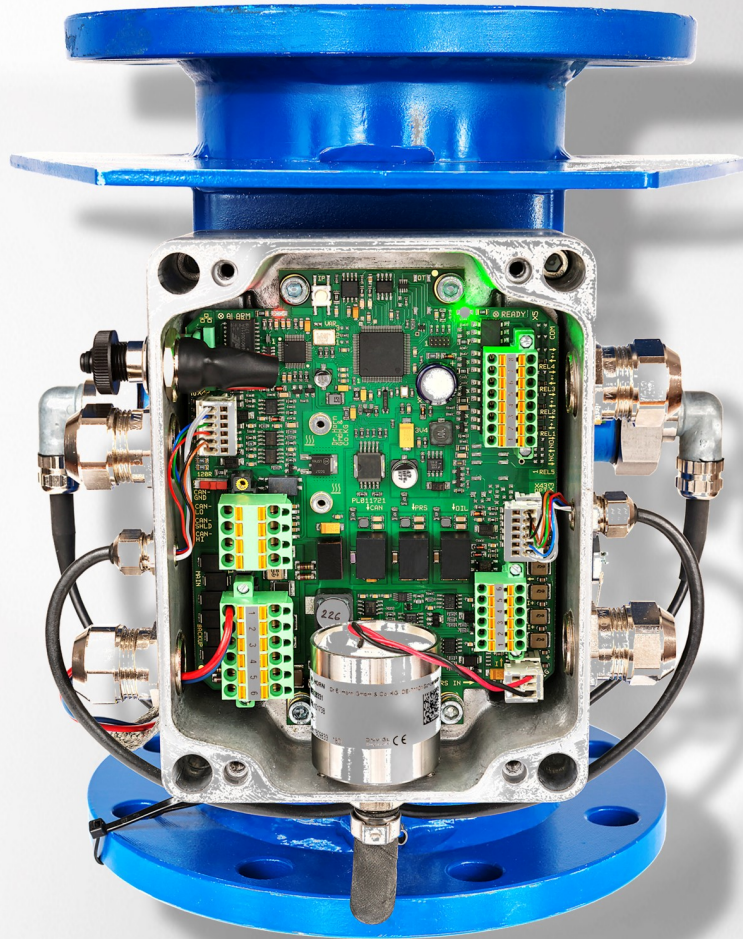


Compact Oil Mist Detector System

MEV 283



Application fields

- 4-stroke diesel engines
- Slow / middle / high-speed engines
- Used by major engine manufacturers worldwide
- Version for hazardous application areas available

Benefits

- Compact unit size
- Simple installation on breather outlet, no drilling of engine required
- No need for artificial suction
- Option: Crankcase pressure sensor
- Retrofit service on request

Working principle

The devices of the **series MEV283** are **compact Oil Mist Detectors (OMD)** for monitoring 4-stroke diesel engines. They are available in different versions and are characterized by long-term usage and simple installation on the crankcase breather.

The devices can be supplied with redundant 24V to meet the demand for independent supply of battery and main supply of the classifications. To operate the system, an "engine-running-"signal can be used as input from motor side. **The device monitors the actual oil mist concentration and crankcase pressure.** For each of the two measured values, a galvanic isolated analog signal output 4 ... 20 mA is available.

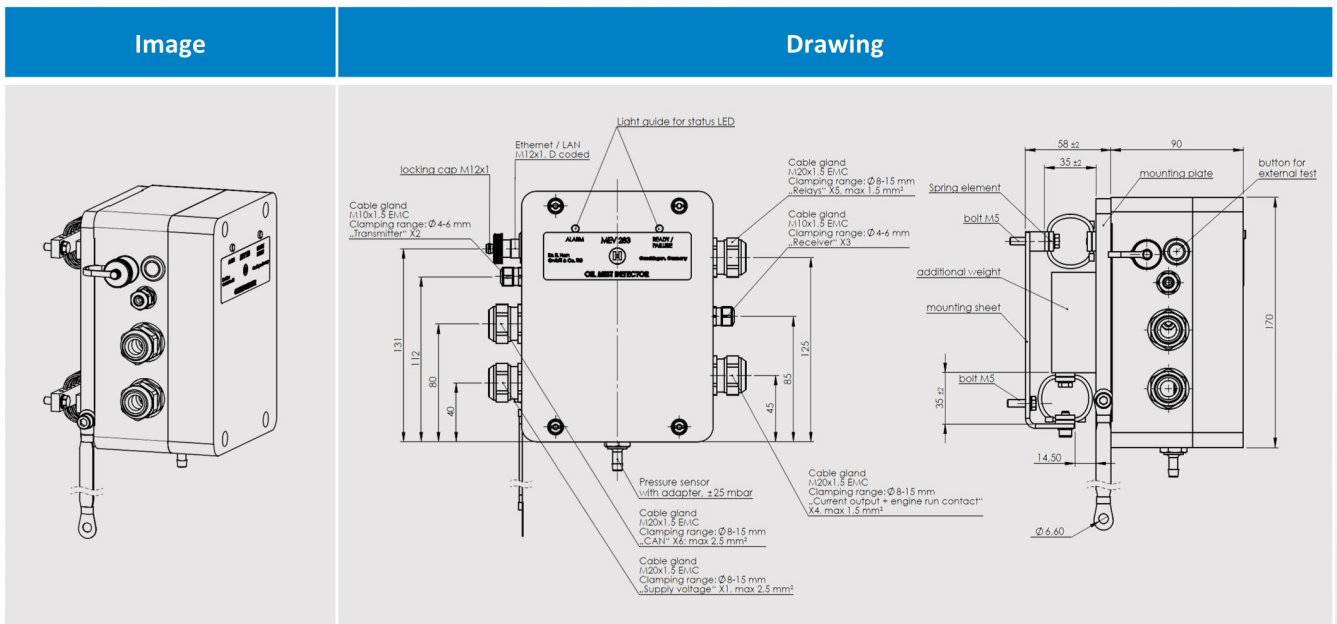
For connecting to a monitoring and safety system, the detector has relays for the operating states Ready, Pre-alarm, Pressure alarm and Main alarm. Additionally, there is a configurable reserve relay. Ethernet or CAN bus interfaces can be used for data exchange of operational data and operational parameters. The protocols CANopen and J1939 are supported.

The product series is approved by all relevant classification societies for marine use.



Technical data sensor MEV283

Characteristic		Technical data
General data	Power supply	2x 24 V DC -25/+30 %, ripple ≤ 5 %, automatic fuse
	Power consumption	approx. 25 W
	Operating temperature	-20 ... +85 °C
	Storage temperature	-20 ... +85 °C
	Relative humidity	<90 %, non-condensing
	Protection acc. DIN 60529	Monitoring box IP 65, Optical sensors IP 67
	Terminals	Conductor cross section 0.14 ... 1.5 mm ²
	Housing material	Tube element steel, monitoring box and optic sensors aluminum
	Weight	Monitoring box approx. 1.3 kg, engine specific tube element approx. 5 ... 22 kg
	EMC-standard	Generics no. 55016 and 55022, Safety rules acc. EN 61000-4, -6, Rules for type approval: DNVGL
Certificates	DNVGL, ABS, LR, RINA, BV	
External Input	Engine-Signal (On/Off)	By using a voltage signal or as input contact. Alternative: signal can be set by CAN
Analog 4...20 mA current output, galvanic isolated	Crankcase pressure	Burden max. 500 R
	Oil mist	Burden max. 500 R
	Linearity	max. ± 0,25 % of final value
	Reaction time	Approx. 300 ms
Relay contacts / outputs	1x Alarm/ Trip- Relay	Mechanical, NO/NC, free programmable
	Max. switching power	60 W, 125 VA
	Max. switching voltage	220 VDC, 250 VAC
	Max. switching current	2A DC/AC
	Exp. Life/ min. operations	1,000,000
	Contact material	gold-plated silver
	1x System-Error relay	Self-monitored PhotoMOS- relay, short-circuit protected
	3x Status-Message relays	PhotoMOS-relays, short-circuit protected, free configurable (Pre-alarm, Pressure-alarm, Reserve)
	Max. switching current	500 mA
Max. switching voltage	7 ... 60 V AC/DC	
Communication interfaces	Ethernet	For display and parameter settings galvanic isolated
	Link speed	max. 100 Mbit/s
	CAN	Galvanic isolated
	Protocol	CANopen, J1939
	Addressing (Node ID)	Adjustable 1 ... 127
Transmission rate	Adjustable 20 kBaud ... 1 MBaud	



Oil Mist Detector description

Depending on the version, the devices MEV283 (1) monitor the current oil mist concentration and/or the crankcase pressure and provide limit contacts for this purpose. A 4...20 mA current loop is available for the mbar-pressure output signal.

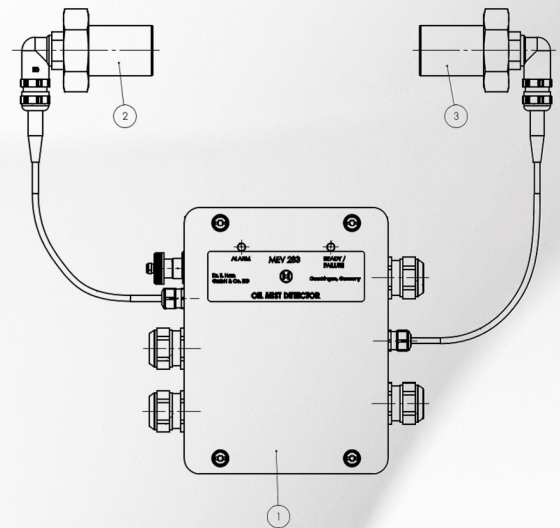
The devices are equipped with relays for the function's operational readiness, pre-alarm and stop alarm.

Due to direct heating of the measuring optics FRG00015/25 (2+3), false alarms caused by condensation at permissible water contents in the lubricating oil are avoided.

The optics are driven by intelligent software: False measuring due to ageing effects as well as slow surface contaminations are avoided by re-adjustment of IR power.

Great advantages: elimination of piping at the motor and very low installation efforts.

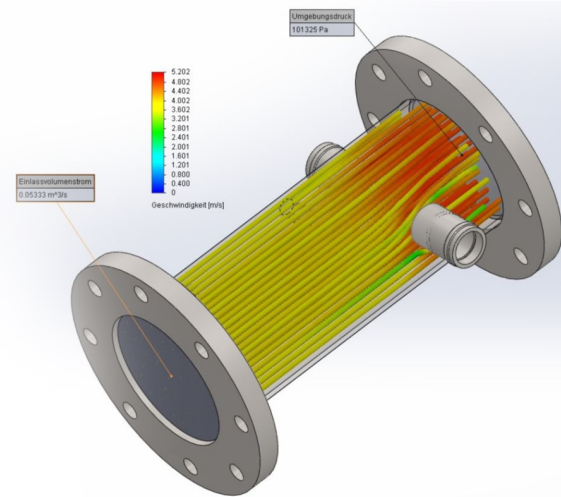
Examples of various system installations:



Customized design

Each application will be checked individually by FE-simulation of gas flow rate in the Oil Mist Detector. Our engineers design the OMD tubing according to given engine constraints and the results of these theoretical considerations.

Specific engine parameters will be calculated and transferred into system software code for smooth function.



Web interface

The home page of the web interface shows process data, error messages and events, which are updated each second.

Maintenance staff can view warnings and error messages, carry out maintenance work, set parameters and change the date.

The event history is collected in an internal memory.

Item	Physical value
Oil mist pressure	12.4 bar
Oil mist concentration	3.2 L
Oil mist pressure	320 kPa
System voltage	24 V V
Actual system time	2019-09-19 12:27
Engine	Running

Code	Description	Status
H01	Pressure limit 1	Not active
H02	Pressure limit 2	Not active
H03	Oil mist pre-warning	Not active
H04	Oil mist warning	Not active
E01	Oil mist shutdown	Not active
E02	Intermittent (Wiederholungs) EPRON	Not active
E03	Failure combustion pressure sensor	Not active
E04	Oil mist control valve inactive	Not active
E05	Optical line not at angle	Not active
E06	Optical line clearing interrupted	Not active
E07	Real time clock not at angle	Not active
E08	Manual oil mist test activated	Not active

Code	Time	Message	Time	Date
E04	None	None	15:08:19	15.09.2018
E01	None	None	09:22:27	15.09.2018
E01	None	None	09:47:02	15.09.2018
E01	None	None	09:47:32	15.09.2018

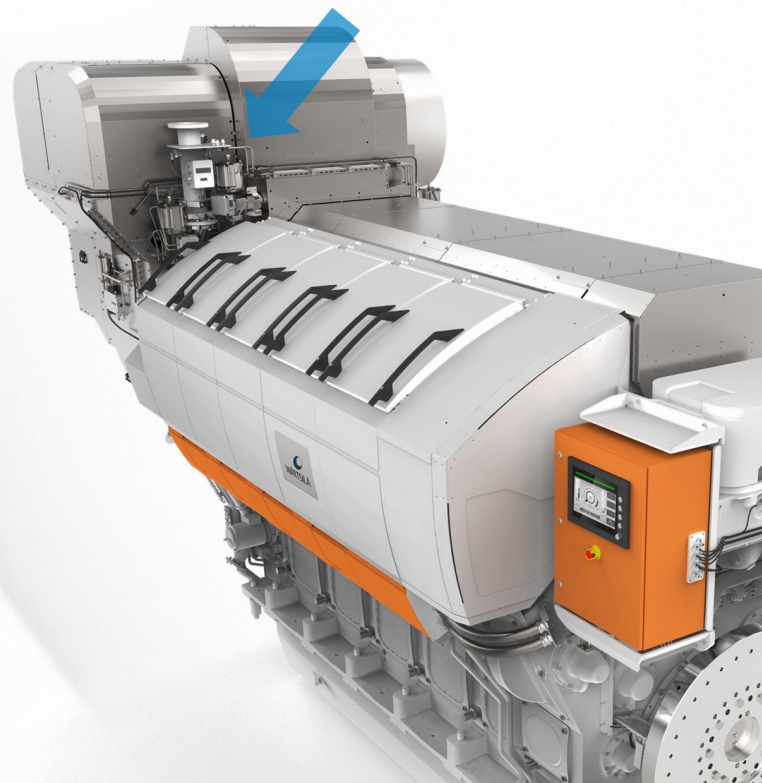
Ordering structures

MEV283 XX - Y

Execution (digit)

Version number (digits)

Basic type Oil Mist Sensor box



Installed equipment live view

Engine installation example: breather outlet flange-flange connection. Straight shape.

Type number TGL017/18xx.

Dr. E. Horn is specialized in retrofit services around the globe. Used machinery will be updated to current safety standards. Please contact our team for further information.

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