

# FEV Signature Solutions AeroXMeter family Gas in oil measurement devices

## Precise gas content measurement in oil without recalibration efforts for different oil types

### FEV offers

- ▶ Continuous (Aero3Meter) and discontinuous (Aero2Meter) direct volumetric measurement methods
- ▶ Measurements at test bench or in the vehicle
- ▶ Device maintenance with short turnaround times
- ▶ Consultation for your individual measurement task with our measurement expertise
- ▶ **Use cases:** combustion engines (of passenger cars, sports & race cars, motorcycles, heavy duty applications etc.), transmissions, EDUs

## Why FEV

- ▶ FEV AeroXMeters are the only devices to measure the total gas content (free and dissolved) of the engine oil sample with a direct volumetric measurement method
- ▶ The calibration of the FEV AeroXMeters is independent of the oil type and oil contamination due to the volumetric measuring method
- ▶ The AeroXMeter device family supports fully automated test bench investigations by automatically triggered measurements (Aero2Meter) and continuous measurements with online values (Aero3Meter)



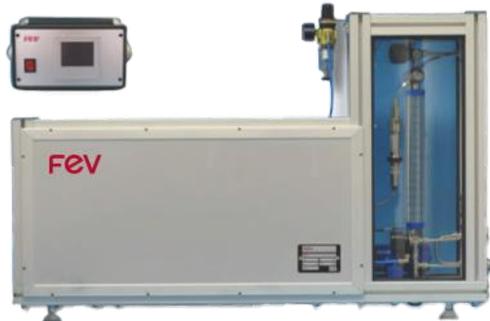
# AeroXMeter family

Recognized and defined as standard by many renowned OEM's worldwide



>60 devices sold worldwide  
**AeroMeter**

- ▶ Available 1997 - 2017
- ▶ End of service 2025
- ▶ Replaced by **Aero2Meter**



>20 devices sold worldwide  
**Aero2Meter**

- ▶ Available since 2014
- ▶ Discontinuous volumetric measurement method



>20 devices sold worldwide  
**Aero3Meter**

- ▶ Available since 2020
- ▶ Continuous volumetric measurement method



# AeroXMeter family

## Direct volumetric gas content measurement with high accuracy

### KEY FEATURES



# FEV Aero2Meter

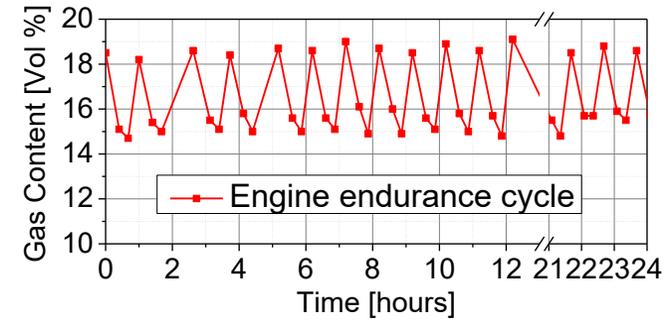
## TECHNICAL HIGHLIGHTS

### Method

- Fully automatic withdrawal and analysis of oil sample from engine lube system under operation condition
- Capable of being integrated in test cell automation system with additional data acquisition
- Evacuation of oil sample for extraction of dissolved air from the oil, volumetric determination of gas content related to ambient conditions
- Adoption and improvement of measuring principal of original Aerometer
- Typical use case
  - Functional testing for lube system optimization
  - Automated functional and endurance testing

### Benefits

- Measures the total gas content (free and dissolved) of the engine oil
- Fully unmanned automatic operation
- Operating conditions: max 150 °C oil temperature, max 10 bar oil pressure



# FEV Aero3Meter

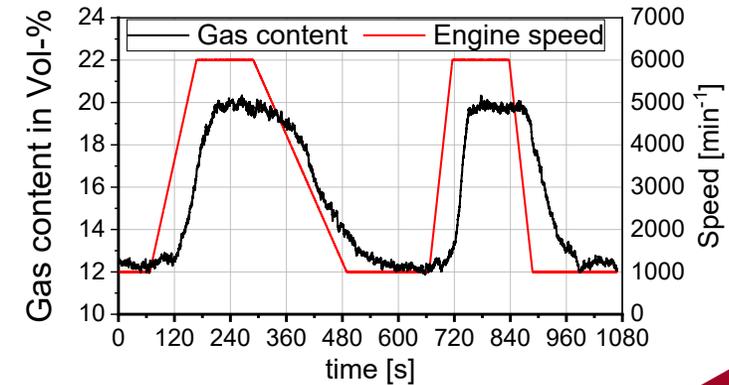
## TECHNICAL HIGHLIGHTS

### Method

- Fully automatic withdrawal and analysis of oil sample from engine lube system under operation condition with up to 1 Hz signal bandwidth
- Introduction of continuous high shear loads and low pressures of 400 mbar during the measurement process to enable the reliable extraction of dissolved air shares from the oil
- Enhancement of the well-established and robust volumetric determination of gas content related to ambient conditions comparable to the principal of original Aerometer/Aero2meter
- Typical use case
  - Dynamic engine cycle testing (e.g. engine tilting, lap emulation)
  - Automated multi-parametric functional and endurance testing
  - Durability runs (e.g. determination of oil ageing / oil dilution / oil level impact)

### Benefits

- Measures the total gas content (free and dissolved) of the engine oil
- Fully unmanned automatic operation
- Operating conditions: max 150 °C oil temperature, max 20 bar oil pressure



# FEV AeroXMeter

## TECHNICAL DATA

### Aero2Meter



150°C

10 bar

ca. 30 cm<sup>3</sup>

± 1%

ca. 3-5 min

### Aero3Meter



150°C

20 bar

ca. 30 cm<sup>3</sup>

± 1,5%

1 Hz

Max. oil temperature

Max. oil pressure

Oil volume (Volume of sample)

Resolution of the gas content measurement

Period for a complete measuring process

# Get in touch with us for further information



[www.fev.com/en/  
signature-solutions](http://www.fev.com/en/signature-solutions)