RESIDUAL OIL CONTENT MEASUREMENT

FACTS

- oilguardPRO checks and protects the production well in advance before oil ingress due to hairline cracks in filters and fine cuts.
- oilguardPRO monitors the active charcoal absorber as well as the converter.
- oilguardPRO constantly monitors online the compressed air, which comes into contact with production as compared to sampling, which only reflects a snapshot of the compressed air quality belonging to the past.
- oilguardPRO saves maintenance costs because filter, adsorbent etc. are continuously checked and hence the ideal time to change any parts can be planned before.
- oilguardPRO gives security, since it can immediately respond to dangerous situations over an early and main alarm.

FUNCTIONING

The withdrawal of compressed air is done over a heated sampling system (8). At the sensor head (1) the gas sample is taken out through a sintered metal filter disc and heated in a spiral-shaped arrangement, flow expansion capillary (3). By the centrifugal force, the aerosol components get evaporated at the capillary wall. With a pressure regulator (4) the desired flow rate is achieved. At the outlet of the capillary (5) the test air expands to nearly ambient pressure and through the analysis cuvette (6) comes into contact with the sensor element (7). The evaluated test air is set free into the atmosphere through a filter.

The heart of the sensing system is a metal oxide semiconductor sensor specially tailor made as per the application, which is optimised with the help of active coating additives for detection of long chain hydrocarbons, through platinum and palladium refinement, the 330 °C hot sensor surface works as a catalyst and the hydrocarbons contained in compressed air gets oxidised. At the boundary surface the metallic oxide particle, the load ratio is minimized due to oxygen deficiency and the change in conductance so adjusted is electronically evaluated.

The software in the microprocessor controlled evaluation unit (9) analyses the change in signal through mathematical algorithms and determines the hydrocarbon content in test gas with the help of stored calibration tables. For typical CH-mass distribution of compressor oil, the oil content is calculated and displayed in mg/m³ from the values stored in the device. The measured values are provided in both analogue and digital format and the alarm and relay outputs are triggered.