PRODUCT INFORMATION

Oil Level Sensors

→ Continual measurement of the level of motor oil in the static and dynamic range
→ Compact sensor architecture with a multi-chip module
→ Integrated temperature sensor
→ Immediate measurement after switch-on

PRODUCT FEATURES

Description/customer benefits

Oil sensors in vehicles ensure that the engine cannot run with too little oil without this being noticed. The tried-and-trusted technology of ultrasonic sensors works on the running-time principle and records the filling level continuously during the trip.

When the engine is running (dynamic measuring range), the filling level is significantly lower than the filling level when the engine is at a standstill (static measuring range). A dipstick records the oil level of a mobile engine only in the static range. This oil level sensor can measure the oil level continuously, i.e. both in the dynamic and in the static range. It thus provides information about the oil level all the time the engine is running.

The sensor monitors the oil level continuously while the engine is running, which makes it possible to prevent the oil level falling below the minimum level, so ensuring that the oil film is not interrupted (which would damage the engine). Marginal influences such as an inclined position of the vehicle and lateral and longitudinal acceleration are compensated by an averaging out in the vehicle's electronic control unit.

BASIC DESIGN AND FUNCTION

The sensor architecture of the PULS (Packed Ultrasonic Level Sensor) oil level sensor consists of one single multi-chip module that integrates the ultrasonic sensor, the temperature sensor and an ASIC (Application Specific Integrated Circuit).

The compactness of our sensors increases their impact and vibration resistance compared with sensors that are fitted with numerous electronic components.

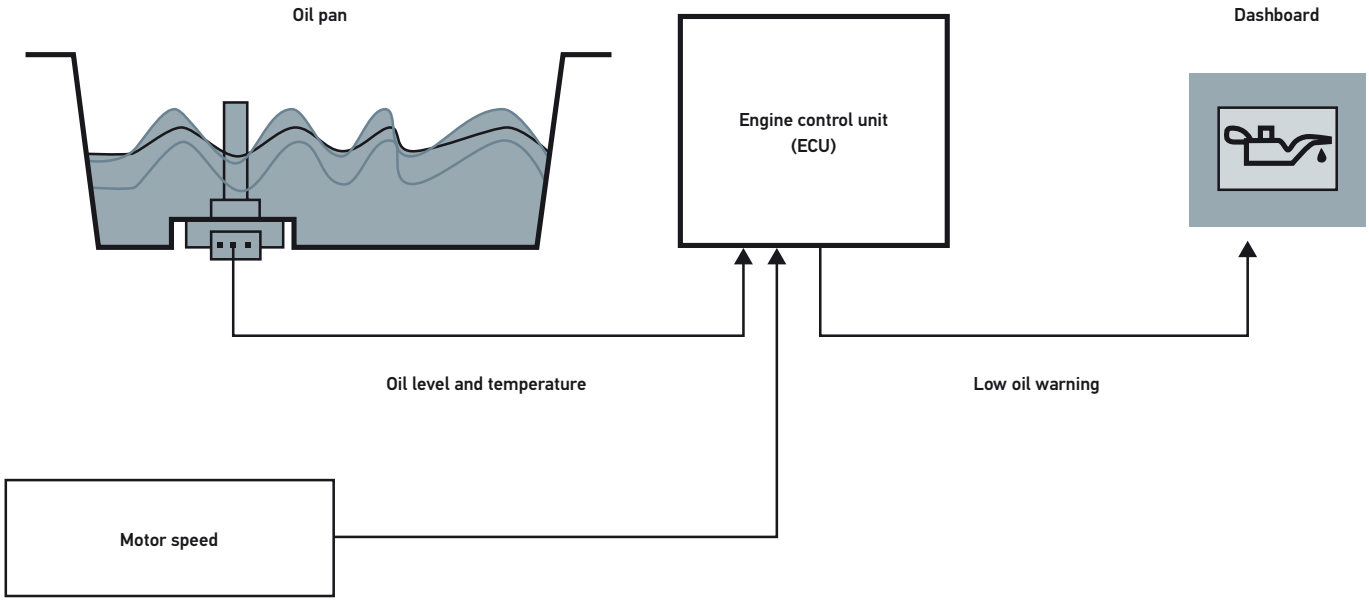
The ultrasonic sensor integrated into the multi-chip module emits a signal that is reflected by the interface between the engine oil and the air. The time taken by the signal is measured and the filling level is then calculated using the speed of sound in the medium.

The attenuation cup attached above the multi-chip module serves to calm the medium (particularly) in the dynamic measuring range.

The damping cap has openings at the base and at the tip, which allow permanent oil flow.

OPERATING PRINCIPLE

The oil level sensor PULS continuously measures the level and temperature of the oil (in the static and dynamic range). The digital PWM output signal conveys the measured oil level and temperature to the engine control unit (ECU). This evaluates the signal and the engine speed and can warn the driver (e.g. on the dashboard) in the event of the oil level becoming critical.



Product features, specifications and availability are subject to change without notice.

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