

ABS Sensors

A typical ABS system consists of a central electronic control unit, ABS sensors (one for each wheel) and an electro-hydraulic unit.

The ABS sensors are components of great importance. They are inductive or Hall type sensors and detect the rotational speed of the wheels. In front of the sensor there is a fixed cogged ring (inductive sensor) or magnetic poles ring (Hall sensor) which rotates with the speed of the wheel (it is usually located in the hub of the wheel, the driveshaft or inside the brake drums). Alternating voltage is generated between the sensor and the ring, which is sent as a signal to the control unit of the ABS. The frequency of this voltage is proportional to the speed of rotation of the wheel and on that basis, the central unit can calculate the speed of each wheel. Because of their location near the wheels of the vehicle, speed sensors are subject to mechanical failures such as wear of the sensor or wiring from foreign objects. In case of failure, even of one of the sensors, the ABS system remains inoperative (warning indicator is lit) and the brakes continue to operate conventionally.

