

Pedal Position Sensor/Accelerator Pedal Module

The position of the accelerator pedal is determined by a sensor and evaluated in the DME. The required position of the throttle valve is calculated by taking other factors into consideration.

Function

The pedal position sensor or accelerator pedal module is powered by an exact voltage of 5 V from the engine control unit. The pedal position sensor or accelerator pedal module is equipped with two completely independent, mechanically coupled sensors. Both sensors output a voltage signal corresponding to the current pedal position. For safety reasons, two sensors are used in order to determine any faults. Sensor 2 always generates exactly half the voltage of sensor 1 so that a short-circuit of both sensors can be detected.

Monitoring

Both signal voltages are permanently monitored by the engine control unit. The voltage exceeding or falling short of the permitted range as well as the difference between the two signals are detected. The supply voltage is also monitored. A separate voltage source is used for each sensor.

The maximum engine output is limited in the event of a fault. The vehicle has a delayed response to abrupt movements of the accelerator pedal. The engine speed is limited to max. 1500 rpm if two faults occur simultaneously.

Pedal position sensor or accelerator pedal module

Either the pedal position sensor or the accelerator pedal module is fitted depending on the type of vehicle. The pedal position sensor is connected to the accelerator pedal by means of a linkage. In the case of the accelerator pedal module, the sensor and the pedal form one unit. In the pedal position sensor system a potentiometer generates the electrical output signals based on the voltage divider principle. Contactless Hall sensors are used in the accelerator pedal module. There is no difference, however, in the output signals from the pedal position sensor and accelerator pedal module.