



## Transmission Sensor

### General

Transmission sensors record the transmission speed. This information is needed by the ECU to adjust the shifting pressure and for the decision which gear must be chosen.

### Function

There are two different types of transmission sensors, a hall sensor and an inductive pickup. Their function is send voltage signals produced by changing magnetic fields developed by the rotating ring gear.

### Effects of failure

A faulty transmission sensor can cause the following:

- transmission control system not operating, ECU switches to limp mode
- engine warning light illumination

Causes of failure:

- mechanical damage of the ring gear
- wire short circuit/open circuit
- internal short circuit
- soiling through metal abrasion



inductive pick up



hall sensor



## Diagnostics

For fault recognition consider the following system tests:

- check sensor for soiling
- check ring gear for damage
- read out trouble codes/fault codes
- measurement of the sensor coil resistor(if on-vehicle) with a ohmmeter, measured value at 80°C about 1000 ohm
- check operation voltage of the hall sensor(if on-vehicle)with a multimeter (circuit diagram needed)Attention: Do not check the resistor of the hall sensor it can be damaged.

Wiring harness to the ECU plug check for continuity and short circuit to earth. Measurement with a ohmmeter between the sensor plug and removed ECU plug, measured value: <1 ohm. Respective pin from the sensor plug checked for short circuit to earth, ECU plug removed, measured value: >30 Mohm