



## Mass Air Flow Meter & Throttle Blade

The mass air flow meter has the task of determining the air mass supplied to the engine. It comprises a tube-shaped housing with flow rectifier, sensor protection and sensor module screwed to the outside. It is mounted between the air filter housing and the throttle blade.



**Effects of failure-** A failed mass air flow meter can become noticeable as follows:

- The engine stops or the engine management control unit starts to work in emergency running mode
- Loss of power
- Engine warning light comes on

**Reasons for failure of the mass air flow meter can be**

- Contact fault at the electrical connections
- Damaged measuring elements
- Mechanical damage (vibration, accident)
- Detachment of measuring elements (leaving the measuring framework)

**Troubleshooting**

- Read out faults stored in the engine management control unit
- Visual inspection of the plug-type connection, the cabling, the housing and sensor element
- Check the supply voltages and output signals using a multimeter or oscilloscope

**Throttle blade**

Throttle blades are installed between the induction bridge and load sensor. Throttle blades control the air flow sucked in by the engine. The mixing ratio of fuel and air is changed by the throttle blade's opening angle. A distinction is made between the following throttle blade parts:

**Mechanical throttle blades** - Actuated through the accelerator pedal via rods or Bowden cable

**Electromotive throttle blades** - Triggered through Bowden cable and control unit

**Electronic throttle blades** - Regulated and controlled through the control unit

**Effects of failure**

- Loss of power, engine warning light comes on
- Misfiring during acceleration
- Vehicle goes into emergency running mode Fluctuating idling speed

**Causes of failure are**

- Soiling through oil carbon deposits
- Mechanical blockage through foreign particles Defective actuator motor
- Defective potentiometer

**Troubleshooting**

- Read out fault store
- Check the supply voltages and signals using a multimeter and oscilloscope
- Visual inspection of the cabling and mechanical assemblies