

GENERIC · POWERTRAIN

P0526

OBD-II TROUBLE CODE

P0526

Fan Speed Sensor Circuit

P0526 is a generic powertrain code that the engine computer sets when the cooling fan speed sensor circuit reports a signal outside the expected range or no signal at all. The computer uses this sensor to confirm the cooling fan is actually spinning at the commanded speed, and when the feedback is missing or implausible it logs the fault and may default the fan to a fixed high-speed strategy.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Vehicle speed, idle control and auxiliary inputs

Symptoms you may notice

- Illumination of the check engine light, often with no other symptoms besides the warning light
- Cooling fan running continuously at high speed regardless of engine temperature
- Cooling fan not running at all when the engine is hot, leading to elevated temperature gauge readings
- Engine overheating in traffic or at idle when the fan fails to engage
- Poor air conditioning performance at low vehicle speeds because condenser airflow is reduced
- In some vehicles, a message on the driver information display about engine cooling or fan performance

Common causes, most likely first

- 1 Failed cooling fan speed sensor or sensor wiring harness damage at the fan shroud
- 2 Corroded, loose, or pushed-back terminals in the fan speed sensor connector
- 3 Open or shorted wire in the fan speed sensor signal or reference circuit
- 4 Failed cooling fan control module or fan relay that prevents the fan from responding to commands
- 5 Seized or dragging fan motor bearing that keeps the fan from reaching commanded speed
- 6 Damaged fan blades or debris obstructing fan rotation
- 7 Engine control module (ECM) internal fault on the fan speed input circuit, which is rare but possible



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P0526, then command the cooling fan on and off with a bidirectional scan tool to confirm whether the fan responds and whether the speed sensor reports movement.
- 2 Visually inspect the fan shroud, blades, and sensor connector for debris, damage, corrosion, or loose pins, and repair any obvious wiring faults before replacing parts.
- 3 Back-probe the fan speed sensor connector and measure reference voltage, ground, and signal voltage while rotating the fan by hand to see whether the signal changes.
- 4 Check the fan motor and control module power and ground circuits with a multimeter and verify the relay or control module commands the fan when activated by the scan tool.
- 5 If the sensor signal does not toggle when the fan spins, replace the fan speed sensor or the fan assembly as a unit where the sensor is not serviced separately.
- 6 Clear the code and run a cooling fan self-test or drive cycle to confirm the repair, then verify the fan cycles correctly with engine temperature and air conditioning demand.

Why the fan speed sensor code misleads

- A fan that spins freely by hand can still set P0526 because the sensor target ring or hall-effect element inside the motor housing fails while the motor itself keeps running.
- Many vehicles use a single fan assembly where the speed sensor is integrated into the motor, so a failed sensor often means replacing the whole fan module rather than a cheap standalone part.
- A weak battery or low charging voltage can cause the fan control module to drop out intermittently and set P0526 without any hard failure in the fan circuit.
- Aftermarket fan assemblies sometimes have incompatible sensor signal output, so a new fan can set the same code until the correct OEM-style module is installed.
- P0526 can be stored alongside fan control circuit codes when the real problem is a failed relay or control module rather than the sensor itself, so always check command and feedback together.

Can I keep driving with P0526?

You can usually drive short distances with the warning light on, but avoid heavy traffic, long idles, and hot weather until the fan is verified to work. If the temperature gauge climbs above normal or the air conditioning stops cooling at low speed, stop driving and let the engine cool to avoid overheating damage.

Tools that help

- OBD-II scan tool with bidirectional fan control capability
- Digital multimeter with back-probe pins
- Wiring diagram for the cooling fan speed sensor circuit
- Socket and wrench set for fan shroud and fan assembly removal
- Infrared thermometer to verify actual fan airflow and engine temperature



Reading P0526

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 5** Vehicle speed, idle control and auxiliary inputs.
- 26** The exact fault within that area.

Often seen with

P0480 Cooling Fan 1 Control Circuit Malfunction · **P0481** Cooling Fan 2 Control Circuit Malfunction · **P0482** Cooling Fan 3 Control Circuit Malfunction · **P0483** Fan Rationality Check · **P0691** Fan 1 Control Circuit Low

See it working

Watch the animated explainer [How a Radiator Fan Relay Circuit Works](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0526/>

