

GENERIC · POWERTRAIN

P0722

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0722

Output Speed Sensor Circuit No Signal

P0722 means the transmission control module (TCM) is not receiving a usable signal from the output speed sensor, which reports how fast the transmission output shaft is turning. The computer has detected an open circuit, short, or missing pulses from that sensor, so it cannot calculate true vehicle speed or shift timing from the transmission side.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- Often no symptoms besides the warning light, especially if the vehicle can still infer speed from wheel speed sensors
- Harsh or delayed shifts because the TCM loses its primary shift scheduling input
- Speedometer reads zero or fluctuates erratically while the vehicle is moving
- Transmission stuck in a limp-home or fail-safe gear, often third or second
- Cruise control and some driver-assist features stop working because vehicle speed is unavailable
- A stored or pending P0722 with no drivability complaint at all in some vehicles

Common causes, most likely first

- 1 Failed output speed sensor itself, typically an internal open or short in the sensor winding
- 2 Damaged or corroded sensor connector, including pushed-back pins or water intrusion
- 3 Broken, chafed, or open wiring between the sensor and the TCM, often near the transmission case or exhaust heat
- 4 Missing or damaged reluctor wheel or tone ring on the output shaft, so the sensor has nothing to read
- 5 Metal debris or clutch material stuck to the sensor tip, blocking the magnetic pickup
- 6 Faulty TCM or a poor ground and power feed to the TCM, though this is less common than sensor and wiring faults
- 7 Incorrect sensor air gap after a transmission repair or replacement



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data, then verify the output speed reading in live data while driving to confirm the signal is truly missing
- 2 Inspect the sensor connector and harness for corrosion, chafing, and pushed pins, and check the sensor for metal debris on its tip
- 3 Measure sensor resistance and compare it to the manufacturer's specification, then check for an open or short across the sensor terminals
- 4 Back-probe the sensor signal circuit at the TCM and check for a pulsed AC or square-wave signal while spinning the output shaft or driving the vehicle
- 5 Check the sensor air gap and inspect the reluctor wheel through the sensor hole for damage or missing teeth
- 6 Load-test the sensor ground and power circuits and check TCM powers and grounds before condemning the module
- 7 Replace the faulty sensor or repair the wiring, clear the code, and verify the output speed reading matches wheel speed sensors during a road test

Why the output speed sensor is not always the culprit

- A P0722 can set from a completely dead sensor, but it also sets when the reluctor wheel is damaged or missing, so replacing the sensor without checking the tone ring wastes money and leaves the code present.
- Many vehicles cross-check output speed against wheel speed sensors, so a failed output speed sensor may produce no drivability symptom at all and the code only surfaces during a scan.
- Metal shavings or clutch debris on the sensor tip is a common missed cause, and it often points to an internal transmission wear problem rather than an electrical fault.
- A chafed harness near the exhaust or transmission mount can create an intermittent open that only sets the code on bumps or during heat soak, so a static resistance check may pass.
- Do not condemn the TCM until the sensor signal has been verified at the TCM connector, because a good signal at the sensor but none at the module means the wiring is the fault.

Can I keep driving with P0722?

You can usually drive the vehicle to a shop if it still moves and shifts, but expect harsh shifts or limp-home operation and avoid highways or heavy loads until it is repaired. If the transmission is stuck in a fail-safe gear or the speedometer is dead, keep speeds low and get it diagnosed promptly.

Tools that help

- OBD-II scan tool with live transmission data
- Digital multimeter with resistance and AC voltage scales
- Oscilloscope for verifying the speed signal waveform
- Jack and jack stands or a lift for access to the sensor
- Basic hand tools and a terminal pick set for connector inspection



Reading P0722

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 7** Transmission.
- 22** The exact fault within that area.

Often seen with

P0500 Vehicle Speed Sensor Malfunction · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction · **P0721** Output Speed Sensor Range/Performance · **P0730** Incorrect Gear Ratio

See it working

Watch the animated explainer [How a Fuel Injector Works: Pulse Width and Spray](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0722/>

