

P0727: ENGINE SPEED INPUT CIRCUIT NO SIGNAL

OVERVIEW

Severity	:	<div><div>High</div></div>
DIY Difficulty Level	:	<div><div>Intermediate</div></div>
Repair Cost	:	\$250-\$300
Can I Still Drive?	:	Yes

What Does The P0727 Code Mean?

A stored code P0727, simply means that the powertrain control module (PCM) has detected no input voltage signal from the engine speed sensor. The engine speed input sensor may also be called the transmission input speed sensor or the input speed sensor. A stored code P0727 may be caused by a mechanical problem or an electrical problem.

The engine speed input sensor is normally inserted through an opening in the transmission case, near the front of the input shaft and fitted with a rubber O-ring (on the sensor housing) so that it makes a seal with the transmission case. Use care when removing the sensor from the housing as hot transmission fluid may be harmful.

Position a suitable container under the opening in the transmission to catch any fluid that may spill when the sensor is removed. Carefully repeat this process whenever you plan to remove any sensor from the transmission (regardless of whether you plan to test or replace it).

At the core of the typical engine input speed sensor circuit is a stationary mounted electromagnetic hall-effect sensor. It is mounted so that a toothed reluctor ring (attached to the input shaft of the transmission) passes in very close proximity to its magnetic tip. As the transmission input shaft turns, the reluctor ring spins.

The raised areas of the teeth on the reluctor ring are employed to electromagnetically complete the engine speed input circuit and the recessed areas between the teeth interrupt the circuit. A

waveform pattern is formed by the rapid electromagnetic completions and interruptions of the circuit. The waveform patterns represent frequency and voltage variations which the PCM recognizes as engine input speed.

A code P0727 will be stored, and a malfunction indicator lamp may be illuminated, if the PCM fails to receive engine speed input signal voltage for a set period of time and under certain circumstances. It is worth noting that the transmission control module (TCM) or PCM may enter limp-in mode when this code is stored.

Related engine speed input circuit engine codes include:

- [P0725 Engine Speed Input Circuit Malfunction](#)
- [P0726 Engine Speed Input Circuit Range/Performance](#)
- [P0728 Engine Speed Input Circuit Intermittent](#)

What Are The Symptoms Of The P0727 Code?

Symptoms may include:

- Automatic transmissions may shift harshly (limp-in mode)
- Transmission fails to shift or shifts erratically
- Erratic or inoperative speedometer/odometer
- Inoperative or incorrect tachometer
- Transmission slippage or delayed engagement
- Additional transmission input/output speed codes may be stored

What Are The Potential Causes Of The P0727 Code?

Possible causes for this P0727 code include:

- Open or shorted wiring and/or connectors in the engine speed input circuit
- Excessive metal deposits on the magnetic tip of the sensor
- Defective engine speed input sensor or transmission output speed sensor
- Damaged or worn engine speed sensor reluctor ring
- Mechanical transmission failure which results in transmission/clutch slippage

How Can You Fix The P0727 Code?

A diagnostic scanner, a digital volt/ohmmeter (DVOM), and a reliable vehicle information source, will be required to diagnose a stored code P0727 precisely.

Prior to diagnosing an automatic transmission related code (anything in the P0700s), it is a good idea to check the condition and level of the transmission fluid.

Check The Automatic Transmission Fluid Level

Many OBD-II equipped vehicles have automatic transmission dipsticks/tubes but others do not. Your vehicle information source will guide you to the proper method for checking the transmission fluid level. Inspect the transmission housing, lines, and cooler for leaks if the fluid level is low. Repair leaks as required and refill the transmission according to manufacturer's recommendations. Make sure that no more leaks are present.

Now, focus on the odor of the transmission fluid. Suspect that the transmission has incurred catastrophic mechanical failure if the fluid smells excessively burnt, appears extremely black, or has a heavy metallic hue. With no more leaks present and the transmission full of the recommended fluid, visually inspect wiring and connectors for signs of corrosion, overheating, or other damage.

Using The Scanner

If no visibly damaged wiring or connectors are present and the transmission is filled to the recommended level with the appropriate fluid, connect the scanner to the vehicle diagnostic port and retrieve all stored codes and freeze frame data. I like to write this information down because it may prove helpful as my diagnosis goes forward.

If the P0727 is reset, connect the scanner to the vehicle and observe the engine speed input signal (to the PCM) using the data display screen. Carefully monitor the data display screen while test driving the vehicle. Note engine input speed and see if it varies greatly from engine RPM. If it does, suspect a defective engine input speed sensor or reluctor ring damage/wear.

Testing The Engine Speed Input Sensor

Consult your vehicle information source and follow testing recommendations (using the DVOM) to test the engine input speed sensor. Replace the engine input speed sensor if it does not fall within specs. If it is within specifications, proceed to the next step.

Testing The Engine Speed Input Sensor Circuit

Test the engine input speed sensor signal by connecting the test leads (of the DVOM) to the signal wire and the sensor ground wire at the sensor connector. Follow manufacturer's specifications and look for glitches/spikes in sensor signal voltage. If the sensor signal seems to be in order, use the DVOM to test system circuits between the sensor connector and the PCM (see note below).

Additional diagnostic notes:

- An oscilloscope is great for observing live data from the sensor in question
- Unplug electrical connectors from related controllers before using the DVOM to check resistance and continuity of system circuits

Severity Description

A stored code P0727 should be rectified with urgency as severe transmission damage and/or drivability issues may result.

Reference Sources

[P0727 Engine Speed Input Circuit No Signal](#), OBD-Codes.