P0726: ENGINE SPEED INPUT CIRCUIT RANGE/PERFORMANCE

OVERVIEW

Severity	:	High
DIY Difficulty Level	:	Intermediate
Repair Cost	:	**$250-$300**
Can I Still Drive?	:	**Yes** (Short-term only)

What Does The P0726 Code Mean?

When I encounter a stored code P0726, I know it means that the powertrain control module (PCM) has detected a circuit range or performance malfunction in regard to the engine speed sensor input signal. The engine speed input sensor is also called the transmission input speed sensor or simply the input speed sensor. This type of code may be caused by either a mechanical problem or an electrical problem.

Inserted through the transmission case, near the front of the input shaft, the engine speed input sensor is usually fitted with a rubber O-ring on the sensor housing so that it makes a seal with the transmission case. Caution must be used when removing the sensor from the housing as hot transmission fluid may be harmful. A suitable container must be positioned under the opening in the transmission to catch any fluid that may spill when the sensor is removed. This should be your practice whether you plan to test or replace the sensor.

The typical engine input speed sensor circuit is centered around a stationary mounted electromagnetic hall-effect sensor which is mounted in such a manner as to allow a toothed reluctor ring to pass in very close proximity to its magnetic tip. The reluctor ring is attached to the input shaft of the transmission.

When the shaft spins, the reluctor ring spins too. In order to electromagnetically complete the engine speed input circuit, the raised areas of the teeth on the reluctor ring are employed. The

recessed areas between the teeth interrupt the circuit. These rapid electromagnetic completions and interruptions of the circuit form a waveform pattern that represents frequency and voltage. The PCM recognizes the waveform pattern as engine input speed.

A P0726 will be stored, and a malfunction indicator lamp may be illuminated, if the PCM fails to receive the expected engine speed input signal voltage for a set period of time and under certain circumstances.

Unacceptable engine speed input signals may include excessive voltage or insufficient voltage as compared to transmission output speed, throttle position, or engine RPM. 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
- P0727 – Engine Speed Input Circuit No Signal
- P0728 – Engine Speed Input Circuit Intermittent

What Are The Symptoms Of The P0726 Code?

Symptoms may include:

- Transmission fails to shift or shifts erratically
- Erratic or inoperative speedometer/odometer
- Automatic transmissions may shift harshly (limp-in mode)
- 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 P0726 Code?

Possible causes for this P0726 code include:

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

How Can You Fix The P0726 Code?

I would need access to a diagnostic scanner, a digital volt/ohmmeter (DVOM), and a reliable vehicle information source, to diagnose a stored code P0726 correctly.

Before diagnosing an automatic transmission related code (anything in the P0700s), check the condition and level of the transmission fluid.

Step 1: Checking the automatic transmission fluid level

Most vehicles are equipped with automatic transmission dipsticks/tubes but others are not. Consult your vehicle information source to find the proper method for checking the fluid level. Inspect the transmission housing, lines, and cooler for leaks if the fluid level is more than one quart low. Repair leaks as required. Refill the transmission according to manufacturer's recommendations and make sure that no more leaks are present.

Note the odor and condition of the transmission fluid. Suspect that mechanical failure of the transmission has occurred if the fluid smells burnt, appears extremely black, or has a heavy metallic hue. With the transmission full of the recommended fluid, and no more leaks present, visually inspect wiring and connectors for signs of damage.

Step 2: Clear the code and test drive

When the transmission is filled to the recommended level (with the appropriate fluid) and no visibly damaged wiring or connectors are present, connect the scanner to the vehicle diagnostic port. Retrieve all stored codes and freeze frame data and write this information down. It may prove helpful as your diagnosis proceeds. Clear the codes and, if possible, test drive the vehicle. If the P0726 is reset, proceed to the next step.

Step 3: Analyze engine speed input signal

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.

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.

Test the engine input speed sensor signal by connecting the test leads (of the DVOM) to the signal wire and the sensor ground 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 P0726 should be considered severe as the conditions which have caused it to be stored may result in damage to the transmission.

Reference Sources

P0726 Engine Speed Input Circuit Range Performance, OBD-Codes.