

P0722 or P0723 Output Speed Sensor (OSS) Circuit Low Voltage

Diagnostic Instructions

- Perform the Diagnostic System Check – Vehicle on page 6-60 prior to using this diagnostic procedure.
- Review Strategy Based Diagnosis on page 6-57 for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions on page 6-58 provides an overview of each diagnostic category.

DTC Descriptors

DTC P0722: Output Speed Sensor (OSS) Circuit Low Voltage

DTC P0723: Output Speed Sensor (OSS) Intermittent

Diagnostic Fault Information

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
OSS Supply Voltage	P0722	P0722	—	—
OSS Signal	P0722, P0723	P0722, P0723	P0722, P0723	—

Transmission OSS

Circuit	Short to Ground	Open/High Resistance	Short to Voltage
Operating Conditions: Engine running, normal operating temperature			
Parameter Normal Range: 0–7,000 RPM			
ISS/OSS Supply Voltage (Pin B)	Out of Range	Out of Range	OK
Transmission OSS (Pin C)	0 RPM	0 RPM	0 RPM

Circuit/System Description

The output speed sensor (OSS) is a hall-effect type sensor. The sensor faces the output shaft machined teeth surface. The sensor receives 8.3–9.3 volts on the input/output speed sensor (ISS/OSS) supply voltage circuit from the transmission control module (TCM). As the output shaft rotates, the sensor produces a signal frequency based on the machined surface of the output shaft. This signal is transmitted through the OSS signal circuit to the TCM. The TCM uses the OSS signal to determine line pressure, transmission shift patterns, torque converter clutch (TCC) slip speed and gear ratio.

Conditions for Running the DTC

P0722

- No ISS DTCs P0716 or P0717.
- No OSS DTC P0723.
- The selected range is not PARK or NEUTRAL.
- The vehicle speed is greater than 16 km/h (10 mph).
- The transmission input speed is between 1,000– 6,500 RPM.
- The engine speed is between 3,000–5,000 RPM.
- The calc. throttle position is greater than 8 percent.
- The engine torque is greater than 50 N·m (37 lb ft).
- The TFT is greater than 0°C (32°F).
- The engine speed is greater than 500 RPM for 5 seconds.
- The ignition voltage is between 8.6 volts and 19.0 volts.

P0723

- No ISS DTCs P0716 or P0717.
- No OSS DTC P0722.
- Greater than 6 seconds since last range change.
- DTC P0723 has not passed this ignition cycle.
- The engine speed is greater than 500 RPM for 5 seconds.
- The ignition voltage is between 8.6 volts and 19.0 volts.

Conditions for Setting the DTC

P0722

The transmission output speed is 70 RPM or less for 4.5 seconds.

P0723

- The transmission input speed does not change by more than 500 RPM for 2 seconds.

- The transmission output speed is 1,000 RPM or greater for 2 seconds.
- The transmission output speed drops 1,200 RPM for greater than 1.5 seconds and does not recover.

Action Taken When the DTC Sets

- DTCs P0722 and P0723 are Type A DTCs.
- The TCM freezes transmission adaptive functions.
- The TCM turns OFF all solenoids.

Conditions for Clearing the DIC/DTC

DTCs P0722 and P0723 are Type A DTCs.

Diagnostic Aids

- Damage or misalignment of the 3-5-R clutchpiston housing machined teeth surface may cause a speed sensor malfunction.
- Proper torque of the OSS mounting bolt is critical to proper OSS operation.

Reference Information

Schematic Reference

Automatic Transmission Controls Schematics on page 17-8

Connector End View Reference

Component Connector End Views on page 11-211

Description and Operation

Electronic Component Description on page 17-279 for output speed sensor (OSS)

Electrical Information Reference

- Circuit Testing on page 11-456
- Connector Repairs on page 11-478
- Testing for Intermittent Conditions and Poor Connections on page 11-460
- Wiring Repairs on page 11-465

DTC Type Reference

Powertrain Diagnostic Trouble Code (DTC) Type Definitions on page 6-61

Scan Tool Reference

Control Module References on page 6-1 for scan tool information

Special Tools

J 38522 Variable Signal Generator

Circuit/System Verification

- 1). Operate the vehicle at 16–32 km/h (10–20 mph) while observing the scan tool transmission OSS parameter. The transmission OSS should vary with the vehicle speed and not drop out.
- 2). Operate the vehicle within the Conditions for Running the DTC to verify the DTC does not reset. You may also operate the vehicle within the conditions that you observe from the Freeze Frame/Failure Records data.

Circuit/System Testing

- 3). Ignition OFF, remove the control valve body cover. Refer to Control Valve Body Cover Replacement on page 17-160.
- 4). Connect the TCM harness connector.
- 5). Disconnect the output speed sensor (OSS) harness connector from the control solenoid (w/body and TCM) valve assembly.
- 6). Connect the J 38522 between the supply voltage terminal B and ISS signal terminal C at the control solenoid (w/body and TCM) valve assembly. Refer to Control Solenoid Valve and Transmission Control Module Assembly Input Shaft Speed/Output Shaft Speed Input Test on page 17-98 for further instructions.
- 7). Set the J 38522 signal to 8 volts, the frequency to 120 and the percent duty cycle to 50.
- 8). Ignition ON, observe the scan tool Transmission OSS parameter. The scan tool Transmission OSS parameter should be between 100–400 RPM. If not within the specified range, replace the control solenoid (w/body and TCM) valve assembly.

If all circuits test normal, test or replace the output speed sensor.

Repair Instructions

Perform the Diagnostic Repair Verification on page 6-86 after completing the diagnostic procedure.

Important: Perform the Service Fast Learn Adapts on page 17-102 following all transmission related repairs.

- Output Speed Sensor Replacement on page 17-168

Important: Before replacing the TCM, perform the Control Solenoid Valve and Transmission Control Module Assembly Inspection on page 17-98.

- Control Module References on page 6-1 for control solenoid (w/body and TCM) valve assembly replacement, setup, and programming

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