

GENERIC · POWERTRAIN

P07C7

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P07C7

Intermediate Shaft Speed Sensor B Circuit Low

P07C7 means the powertrain control module (PCM) has detected an abnormally low voltage signal on the circuit for intermediate shaft speed sensor B, which is one of the speed sensors used to monitor the transfer case or transmission intermediate shaft. The PCM expects a fluctuating alternating current (AC) signal that rises and falls with shaft speed, and a low reading tells it the sensor is not reporting the shaft motion it should.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	Medium	Intermediate	Transmission

Symptoms you may notice

- Illumination of the check engine light or service engine soon light, often with no other noticeable symptoms
- Harsh or delayed shifting if the vehicle uses the intermediate shaft speed signal for shift scheduling
- The transmission may default to a limp or fail-safe mode with limited gear selection
- An all-wheel-drive or four-wheel-drive system that fails to engage or disengages unexpectedly
- A speedometer or odometer that reads erratically or drops to zero
- In some vehicles, a stability control or traction control warning light appears alongside the check engine light

Common causes, most likely first

- 1 A failed intermediate shaft speed sensor B that no longer produces a reliable signal
- 2 Damaged, chafed, or corroded wiring in the sensor circuit, especially near the transfer case or transmission
- 3 A loose or contaminated electrical connector at the sensor or at the PCM
- 4 Metal debris or sludge buildup on the sensor tip that disrupts the magnetic pickup
- 5 An internally shorted sensor that pulls the signal voltage low
- 6 A PCM with a faulty internal driver or signal processing circuit, though this is less common
- 7 Poor ground connection for the sensor or PCM that skews the signal voltage



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes and record freeze-frame data to confirm when the low signal was set
- 2 Visually inspect the sensor, its connector, and the wiring harness for damage, corrosion, or loose pins
- 3 Measure the sensor circuit voltage and resistance with a digital multimeter and compare to the manufacturer's specification
- 4 Check the sensor signal with an oscilloscope while rotating the shaft by hand or during a road test to look for a clean AC waveform
- 5 Remove the sensor and inspect the tip for metal shavings or sludge, cleaning or replacing it as needed
- 6 Verify the ground and power feeds to the sensor and repair any high-resistance connections
- 7 If the circuit and sensor test good, perform a continuity and short-to-ground test on the signal wire back to the PCM before condemning the PCM

What a low signal really tells you

- A low signal code often appears when the sensor is fine but the circuit has a partial short to ground or a poor ground reference, so resistance and voltage-drop tests matter more than swapping parts.
- Metal debris on the sensor tip is a common cause that many technicians miss because the sensor still produces a signal at low speed but drops out under load.
- The intermediate shaft speed sensor B is sometimes shared with the transfer case control module, so a four-wheel-drive engagement fault can set this code without any transmission symptom.
- A weak or failing battery or charging system can cause intermittent low-voltage signals on speed sensor circuits, so check system voltage before chasing the sensor.
- Replacing the sensor without clearing and rechecking the code can leave a stored code that looks like a repeat failure when the real problem was a connector that was disturbed during the repair.

Can I keep driving with P07C7?

You can usually drive the vehicle short distances to a repair shop, but avoid heavy acceleration, towing, or sustained highway speeds because the transmission may enter a limp mode or the all-wheel-drive system may behave unpredictably. If the vehicle shifts harshly or limits gear selection, arrange a tow rather than risk a breakdown.

Tools that help

- OBD-II scan tool with live data and freeze-frame capability
- Digital multimeter with voltage, resistance, and continuity functions
- Oscilloscope for viewing the sensor waveform
- Basic hand tools for removing the sensor and accessing connectors
- Wire terminal pick and electrical contact cleaner



Reading P07C7

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 7** Transmission.
- C7** The exact fault within that area.

Often seen with

- P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction ·
- P07C5** Intermediate Shaft Speed Sensor A Circuit Low · **P07C6** Intermediate Shaft Speed Sensor A Circuit High
- **P07C8** Intermediate Shaft Speed Sensor B Circuit High

See it working

Watch the animated explainer [How a Jet Engine Works: Two-Spool Turbofan](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p07c7/>

