

GENERIC · POWERTRAIN

P091C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P091C

Gear Shift Position Circuit B Low

P091C indicates that the transmission control module (TCM) has detected an abnormally low voltage or current on the electrical circuit for 'Gear Shift Position Circuit B', which is typically a secondary position sensor inside the transmission or shifter assembly. The TCM compares this signal against expected values and other range sensors, and when the B circuit stays below the calibrated threshold for a set time, it logs this code and may command a limp-home mode.

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

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the dashboard, often with no other noticeable symptoms
- Harsh or delayed gear engagements, especially when shifting from park to drive or reverse
- Transmission stuck in a single gear or failing to shift through the full range
- Erratic or inconsistent shift quality that varies with temperature or driving conditions
- Instrument cluster may display an incorrect gear position or flash the current gear indicator
- In some vehicles, the transmission may default to a limp-home mode with reduced power

Common causes, most likely first

- 1 Faulty gear shift position sensor B or its internal electrical failure
- 2 Damaged, chafed, or corroded wiring in the circuit between the sensor and the TCM
- 3 Loose or contaminated electrical connector at the sensor or TCM
- 4 Poor ground connection for the sensor or TCM, causing reference voltage drop
- 5 Internal TCM fault affecting the sensor supply or signal processing
- 6 Mechanical wear in the shift linkage or selector mechanism causing misalignment
- 7 Aftermarket electrical accessories improperly tapped into the circuit



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear codes and test-drive to confirm the fault is current
- 2 Visually inspect the sensor connector and wiring harness for damage, corrosion, or loose pins, and repair as needed
- 3 Measure reference voltage and ground at the sensor connector with a digital multimeter (DMM) with the key on, engine off
- 4 Check the sensor signal voltage while moving the shifter through all positions, comparing to manufacturer specifications
- 5 Perform a resistance test on the sensor itself if accessible, and replace if out of specification
- 6 Check for continuity and shorts to ground or power on the signal wire between the sensor and TCM
- 7 If all external circuits test good, follow the manufacturer's diagnostic flow for internal TCM fault confirmation before replacement

What the B circuit really monitors

- Many transmissions use two or more position sensors for redundancy, and circuit B often serves as a backup or range confirmation signal that can fail without affecting normal driving until the TCM needs it for a shift decision.
- A low voltage on circuit B can be caused by a shared reference voltage circuit that also feeds other sensors, so a fault in an unrelated sensor on the same 5-volt bus can drag down the B signal and set this code.
- Technicians sometimes replace the transmission range sensor only to find the real problem is a corroded ground strap between the engine and chassis, which offsets all sensor voltages and triggers multiple position codes.
- The code can be set intermittently by vibration or temperature changes, so a wiggle test of the harness while monitoring live data is often more revealing than a static multimeter check.
- On some vehicles, the TCM learns the shift detent positions over time, and a battery disconnect or low voltage event can corrupt those learned values, causing a false P091C until a relearn procedure is performed.

Can I keep driving with P091C?

You can usually drive the vehicle to a repair shop, but avoid aggressive acceleration or heavy towing because the transmission may be in a limp-home mode with reduced shift quality. If the vehicle enters limp mode or refuses to shift, stop driving and have it towed to prevent transmission damage.



Tools that help

- OBD-II scan tool with live data and transmission module access
- Digital multimeter (DMM) with back-probing pins
- Manufacturer service information for wiring diagrams and sensor specifications
- Jack and jack stands or a lift for under-vehicle access
- Contact cleaner and dielectric grease for connector repair

Reading P091C

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
9	Transmission.
1C	The exact fault within that area.

Often seen with

P0705 Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P091A** Gear Shift Position Circuit B · **P091B** Gear Shift Position Circuit B Range/Performance · **P091D** Gear Shift Position Circuit B High

See it working

Watch the animated explainer [How an Automatic Transmission Works, Gear by Gear](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p091c/>

