

GENERIC · POWERTRAIN

P091A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P091A

Gear Shift Position Circuit B

P091A indicates that the transmission control module (TCM) has detected an abnormal signal from the gear shift position circuit B, which is typically a secondary sensor or switch that helps confirm the selected gear. The TCM compares this signal with other gear range inputs and sets the code when the voltage or resistance falls outside the expected range for the current shift position.

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 no symptoms besides the warning light, especially if the fault is intermittent.
- Harsh or delayed gear shifts as the TCM may default to a limp-home mode.
- Incorrect gear indication on the instrument cluster or gear selector display.
- Transmission may fail to engage certain gears or may slip out of gear unexpectedly.
- In some cases, the vehicle may enter limp mode, limiting speed and gear selection.

Common causes, most likely first

- 1 Faulty gear shift position sensor B or its internal circuitry.
- 2 Damaged, corroded, or loose wiring or connector at the sensor or TCM.
- 3 Open or short circuit in the signal wire between the sensor and the TCM.
- 4 Poor electrical ground connection for the sensor or TCM.
- 5 Internal failure within the transmission control module (TCM).
- 6 Mechanical wear or misalignment in the gear selector mechanism affecting sensor B.
- 7 Contamination or debris interfering with the sensor's operation.



How to diagnose and fix it

- 1 Use an OBD-II scanner to retrieve the code and check for any related freeze-frame data or pending codes.
- 2 Visually inspect the gear shift position sensor B and its connector for damage, corrosion, or loose pins; clean or repair as needed.
- 3 Perform a voltage and resistance test on the sensor B circuit according to the manufacturer's specifications to check for opens, shorts, or excessive resistance.
- 4 Check the sensor's ground circuit for continuity to the chassis ground; repair any ground faults.
- 5 If the sensor tests out of specification, replace it with a quality part and clear the code to see if it returns.
- 6 Inspect the wiring harness between the sensor and TCM for chafing, heat damage, or loose connectors; repair or replace damaged sections.
- 7 If all external circuits and the sensor are good, diagnose the TCM for internal faults, including software updates or replacement if necessary.

Common Misdiagnosis Traps for P091A

- A weak or failing battery or charging system can cause voltage fluctuations that mimic a faulty gear shift position sensor, so always verify battery health and charging voltage before condemning the sensor.
- The code can be set by a simple loose connector or chafed wire that only acts up under vibration or temperature changes, so a thorough wiggle test of the harness while monitoring live data is essential.
- On some vehicles, the gear shift position sensor B is integrated into the transmission range sensor or neutral safety switch, and replacing the entire assembly may be necessary rather than just the sensor.
- After repairs, the TCM may require a relearn or calibration procedure for the gear shift position sensor, which many DIYers overlook, leading to a repeat code.
- P091A can sometimes be triggered by a faulty brake pedal position switch or other inputs that the TCM uses to validate gear selection, so don't ignore related circuits.

Can I keep driving with P091A?

If the vehicle drives normally with only the warning light on, you can drive cautiously to a repair shop, but avoid aggressive acceleration or heavy loads. If the transmission is shifting harshly, slipping, or stuck in limp mode, limit driving to a short distance to prevent further damage and seek professional diagnosis promptly.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Wire probe set and jumper wires
- Service manual or wiring diagram for the specific vehicle
- Basic hand tools (socket set, screwdrivers, pliers)



Reading P091A

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

Often seen with

P0705 Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0919** Gear Shift Position Control Error · **P091B** Gear Shift Position Circuit B Range/Performance · **P091C** Gear Shift Position Circuit B Low

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/p091a/>

