

GENERIC · POWERTRAIN

P091B

OBD-II TROUBLE CODE

P091B

Gear Shift Position Circuit B Range/Performance

P091B indicates that the transmission control module (TCM) has detected an out-of-range or performance fault in the circuit for gear shift position sensor B, which is often the sensor that reports the current gear or selector lever position. The TCM compares the signal from this sensor against expected values from other sensors and sets the code when the voltage, resistance, or signal pattern falls outside the normal operating window.

SYSTEM

Powertrain

CODE TYPE

Generic (all makes)

SEVERITY

Medium

FIX DIFFICULTY

Intermediate

AREA

Transmission

Symptoms you may notice

- Illumination of the check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed gear shifts, or the transmission entering limp mode with a single gear engaged
- Incorrect gear indicator display on the instrument cluster, or the selector lever position not matching the actual gear
- Failure to start because the transmission range sensor does not recognize Park or Neutral
- Unexpected downshifts or upshifts, or the transmission refusing to shift out of a particular gear
- In some cases, the vehicle may stall or hesitate when coming to a stop

Common causes, most likely first

- 1 Faulty gear shift position sensor B, including internal wear or contamination of the sensor element
- 2 Damaged, corroded, or loose electrical connector at the sensor or transmission harness
- 3 Chafed, broken, or shorted wiring in the circuit between the sensor and the TCM
- 4 Poor ground connection for the sensor or TCM, causing reference voltage instability
- 5 Internal fault in the TCM, such as a failed input driver or corrupted software
- 6 Mechanical wear in the transmission selector mechanism or linkage that misaligns the sensor
- 7 Contamination or debris on the sensor or its magnetic target, interfering with signal generation



How to diagnose and fix it

- 1 Perform a visual inspection of the sensor, connector, and wiring for obvious damage, corrosion, or loose pins
- 2 Check the sensor's electrical connector for proper seating and clean any corrosion with electrical contact cleaner
- 3 Measure the sensor's resistance or voltage output with a multimeter and compare to the manufacturer's specification
- 4 Backprobe the sensor signal wire at the TCM and verify the voltage changes smoothly through the gear range
- 5 Inspect the ground circuit for the sensor and TCM, and clean or tighten grounds as needed
- 6 If the sensor tests out of specification, replace it and clear the code to see if it returns
- 7 If the sensor and wiring are good, check for TCM software updates or perform a relearn procedure as required

Before you replace the transmission sensor

- A loose or corroded connector at the sensor is a far more common cause of P091B than a failed sensor itself, so always inspect and clean the terminals before condemning the part.
The code can be set by a momentary glitch in the signal caused by a poor ground, which may not reappear during a quick test drive; a wiggle test of the harness while monitoring live data is essential.
- On some vehicles, the gear shift position sensor is integrated into the transmission range switch or the valve body, making replacement more involved and expensive than a standalone sensor.
- P091B can be triggered by a low or weak battery because the TCM may log implausible signals during cranking if supply voltage drops below a threshold.
A transmission fluid leak or low fluid level can cause erratic sensor readings due to overheating or pressure fluctuations, so always check the fluid condition and level first.

Can I keep driving with P091B?

You can usually drive the vehicle to a repair shop if the transmission is not in limp mode and shifts normally, but avoid aggressive acceleration or towing until the fault is repaired. If the transmission is stuck in one gear or the vehicle fails to start, stop driving and arrange for a tow to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Electrical contact cleaner
- Socket and ratchet set
- Vehicle service information or wiring diagram



Reading P091B

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 9** Transmission.
- 1B** 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 · **P091C** Gear Shift Position Circuit B Low · **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/p091b/>

