

GENERIC · POWERTRAIN

P089F

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P089F

Gear Lever Y Position Sensor 2 Circuit

P089F indicates that the powertrain control module (PCM) has detected an abnormal condition in the electrical circuit for the gear lever Y position sensor 2, which is a secondary sensor used to confirm the gear selector's vertical position. The PCM compares this signal with other range sensors and sets the code when the voltage or rationality check falls outside the expected range.

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 service engine soon light.
- Gear position indicator on the instrument cluster may flash or show incorrect gear.
- Transmission may default to a limp mode, limiting gear selection or shift quality.
- Difficulty moving the gear lever or unexpected engagement of gears.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- 1 Faulty gear lever Y position sensor 2.
- 2 Damaged or corroded wiring harness or connector at the sensor.
- 3 Open or short circuit in the sensor signal or ground circuit.
- 4 Poor electrical connection at the PCM or transmission control module.
- 5 Mechanical binding or misalignment of the gear lever mechanism affecting sensor reading.
- 6 Water intrusion or debris in the sensor connector.
- 7 Internal PCM fault (rare).



How to diagnose and fix it

- 1 Connect an OBD-II scanner and verify P089F is the only stored code; check for related codes in other modules.
- 2 Inspect the sensor connector and wiring for corrosion, damage, or loose pins; repair as needed.
- 3 Measure reference voltage and ground at the sensor connector with the key on, engine off; compare to manufacturer specifications.
- 4 Test the sensor signal voltage while moving the gear lever through its range; look for smooth variation without drops or spikes.
- 5 If the signal is erratic or out of range, replace the gear lever Y position sensor 2.
- 6 Clear codes and perform a road test to verify the repair; recheck for pending codes.
- 7 If the code persists, check continuity between the sensor and PCM, and inspect the PCM connector for corrosion or damage.

Before replacing the gear position sensor

- A loose or corroded connector at the sensor is a frequent cause that mimics a failed sensor, so always inspect and clean terminals first.
- The gear lever Y position sensor 2 is often a redundant sensor; a failure may not cause drivability issues but can affect shift quality or disable certain features.
- Aftermarket scan tools may misreport this code if they do not support the vehicle's specific transmission protocol; use a factory-level tool for accurate diagnosis.
- Mechanical wear in the gear selector mechanism can cause the sensor to read out of range even when the sensor itself is good.
- This code can be set by a low battery or charging system issue that causes voltage spikes; check battery health and grounds before condemning the sensor.

Can I keep driving with P089F?

If the vehicle drives normally and the gear indicator is accurate, you can drive cautiously to a repair shop, but avoid aggressive acceleration or towing. If the transmission is in limp mode or gear selection is erratic, stop driving and have the vehicle towed to prevent damage.

Tools that help

- OBD-II scanner with live data capability
- Digital multimeter
- Wire probe set
- Service manual with wiring diagrams
- Basic hand tools (socket set, screwdrivers)



Reading P089F

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

Often seen with

P0705 Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0707** Transmission Range Sensor Circuit Low · **P089E** Gear Lever X Position Sensor 2 Circuit Intermittent/Erratic · **P0900** Clutch Actuator Circuit/Open

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/p089f/>

