

GENERIC · POWERTRAIN

P082C

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P082C

Gear Lever X Position Sensor 1 Circuit High

P082C indicates that the transmission control module (TCM) has detected an abnormally high voltage on the signal circuit for Gear Lever X Position Sensor 1, which is part of the internal mode switch or gear range sensor. The computer expects a voltage within a specific range for each gear lever position, and a high voltage typically means the signal circuit is shorted to power or the sensor's ground reference is lost.

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

Symptoms you may notice

- The check engine light or transmission warning light is illuminated, often with no other noticeable symptoms.
- The gear indicator on the instrument cluster may display the wrong range or flash intermittently.
- The transmission may default to a limp mode, staying in one gear or refusing to shift.
- Engine may crank but not start if the TCM cannot confirm the park or neutral position.
- Harsh or delayed shifts may occur as the TCM substitutes default shift strategies.
- In some vehicles, the reverse lights may not illuminate or may stay on constantly.

Common causes, most likely first

- A short to voltage in the signal wire between the gear lever position sensor and the TCM, often due to chafed insulation against a metal bracket.
- A faulty gear lever position sensor (internal mode switch) that has an open internal ground or failed hall-effect element.
- Corroded or loose electrical connectors at the sensor or TCM, allowing voltage to bleed onto the signal circuit.
- A poor ground connection for the sensor or TCM, causing the signal voltage to float high.
- Water intrusion into the sensor or connector, leading to conductive paths and high voltage readings.
- A malfunctioning TCM that incorrectly interprets a normal signal as high voltage, though this is less common.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related transmission codes before proceeding.
- 2 Inspect the sensor and TCM connectors for corrosion, water intrusion, or loose pins, and clean or repair as needed.
- 3 Disconnect the sensor and measure the signal circuit voltage with the key on; if it reads near battery voltage, trace the wire for a short to power.
- 4 Check the sensor's ground circuit for excessive resistance (should be less than 1 ohm) and repair any open or high-resistance ground.
- 5 Test the gear lever position sensor with a multimeter according to the manufacturer's specification, and replace it if resistance or voltage output is out of range.
- 6 If the wiring and sensor test good, substitute a known-good TCM or perform a relearn procedure as required by the vehicle manufacturer.
- 7 Clear the code and perform a road test to confirm the repair and ensure no pending codes return.

Before you replace the transmission sensor

- A shorted wiring harness is more often the culprit than the sensor itself, especially where the harness flexes near the gear lever or passes through the floor.
- A missing or corroded ground for the sensor can cause the signal voltage to read high even though the sensor is functioning correctly.
- Some vehicles require a relearn or adaptation procedure after sensor replacement, and skipping it will set the code again immediately.
- The code can be set by a low battery or charging system fault that causes the TCM to see erratic reference voltage, so check battery health first.
- Aftermarket accessories wired near the transmission tunnel can induce voltage into the signal circuit, causing intermittent high-voltage codes.

Can I keep driving with P082C?

You can usually drive the vehicle to a repair shop, but avoid aggressive acceleration and be prepared for the transmission to enter limp mode or refuse to shift. If the vehicle will not start or move out of park, do not continue driving and have it towed.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter
- Wiring diagram for the specific vehicle
- Socket set and trim removal tools
- Contact cleaner and dielectric grease



Reading P082C

- P** Powertrain: engine, transmission and emissions.
- 0** Generic (SAE) code: it means the same thing on every OBD-II vehicle.
- 8** Transmission.
- 2C** The exact fault within that area.

Often seen with

P0705 Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P082B** Gear Lever X Position Sensor 1 Circuit Low · **P082D** Gear Lever Y Position Sensor 1 Circuit Range/Performance · **P082E** Gear Lever Y Position Sensor 1 Circuit 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/p082c/>

