

GENERIC · POWERTRAIN

P0912

OBD-II TROUBLE CODE

P0912

Gate Select Actuator Circuit Low

P0912 indicates that the transmission control module (TCM) has detected a low-voltage condition on the electrical circuit that controls the gate select actuator, which is the component responsible for moving the gear selector gate between positions such as Park, Reverse, Neutral, and Drive. The TCM monitors the actuator circuit and sets this code when the voltage on the control wire falls below the expected threshold, indicating a short to ground, an open circuit, or a faulty actuator.

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

Symptoms you may notice

- The gear selector may not move into the desired position, or it may feel loose or stuck.
- The transmission may fail to engage a gear when the selector is moved, leaving the vehicle in Neutral or Park.
- A warning light on the instrument cluster, often accompanied by a message such as 'Transmission Service Required' or 'Shift System Fault'.
- The vehicle may enter limp mode, limiting speed and gear selection to protect the transmission.
- In some cases, the driver may notice no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- A short to ground in the gate select actuator control wire, often due to chafed insulation or a pinched harness.
- An open circuit in the actuator circuit, such as a broken wire or a disconnected connector.
- A faulty gate select actuator, where the internal coil or motor has failed and draws excessive current or shows low resistance.
- Corrosion or water intrusion at the actuator connector or in the transmission range sensor, causing high resistance or intermittent contact.
- A poor ground connection for the actuator or the TCM, leading to voltage drops on the circuit.
- A malfunctioning transmission control module (TCM) that incorrectly interprets the circuit voltage, though this is less common.
- Aftermarket accessories or improper wiring repairs that have disturbed the actuator circuit.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in the transmission control module to confirm the fault is current.
- 2 Inspect the gate select actuator connector and the TCM connector for corrosion, loose pins, or water intrusion, and clean or repair as needed.
- 3 Disconnect the actuator and measure the resistance of the actuator coil; compare to the manufacturer's specification to determine if the actuator is internally shorted or open.
- 4 Check the control wire from the TCM to the actuator for continuity to ground and for short circuits; repair any damaged wiring or replace the harness section.
- 5 Test the ground circuit for the actuator and ensure it has less than 0.1 volts drop under load; clean or repair ground connections as necessary.
- 6 If the circuit and actuator test good, substitute a known-good actuator or use a scan tool to command the actuator and observe operation; replace the actuator if it fails to respond.
- 7 After repairs, clear the codes and perform a road test to verify the fix and ensure the code does not return.

Before you replace the gate select actuator

- A low-voltage code on an actuator circuit is more often caused by a wiring fault than by the actuator itself, so always check the harness for chafing near sharp edges or moving components before condemning the part.
- The gate select actuator is sometimes integrated into the transmission range sensor or the gear selector assembly, so a fault in the range sensor can set this code even though the actuator itself is fine.
- Intermittent low-voltage codes can be caused by a loose battery terminal or a failing alternator that drops system voltage momentarily, so check the charging system and battery connections first.
- Some vehicles require a relearn or calibration procedure after replacing the actuator or the TCM, and skipping this step can cause the code to reset or the transmission to shift harshly.
- A short to ground in the actuator circuit can be caused by aftermarket remote start or alarm wiring that taps into the transmission harness, so inspect any non-factory electrical modifications.

Can I keep driving with P0912?

If the vehicle drives and shifts normally, you can drive it to a repair shop, but avoid long trips or heavy loads because the fault may worsen and cause the transmission to enter limp mode. If the transmission is stuck in gear or will not engage, do not drive and have the vehicle towed to prevent further damage.

Tools that help

- OBD-II scan tool with transmission control module capability
- Digital multimeter
- Wire piercing probes or back probe pins
- Service information for the specific vehicle (wiring diagrams and resistance specifications)
- Basic hand tools for connector and harness inspection



Reading P0912

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

Often seen with

P0700 Transmission Control System Malfunction · **P0705** Transmission Range Sensor Circuit Malfunction · **P0911** Gate Select Actuator Circuit Range/Performance · **P0913** Gate Select Actuator Circuit High · **P0914** Gear Shift Position Circuit

See it working

Watch the animated explainer [Turbocharger Trainer: Boost, Wastegate and Intercooler](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0912/>

