

GENERIC · POWERTRAIN

P0922

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0922

Gear Shift Forward Actuator Circuit Low

P0922 indicates that the transmission control module (TCM) has detected a low-voltage condition on the electrical circuit that controls the gear shift forward actuator, which is responsible for moving the shift mechanism into forward gears. The TCM monitors the actuator circuit and sets this code when the signal voltage falls below the expected range, indicating a short to ground, an open circuit, or a faulty actuator.

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

Symptoms you may notice

- Illumination of the malfunction indicator lamp (MIL) on the dashboard
- Transmission may fail to engage forward gears or may slip when accelerating
- Harsh or delayed shifting between gears
- Transmission may default to limp mode, limiting vehicle speed
- Often no symptoms besides the warning light, especially if the fault is intermittent

Common causes, most likely first

- 1 Faulty gear shift forward actuator (solenoid or motor) with an internal short or open winding
- 2 Damaged or corroded wiring harness or connector at the actuator or TCM
- 3 Poor electrical connection at the TCM, such as loose pins or corrosion
- 4 Short to ground in the actuator control circuit
- 5 Open circuit in the power or ground feed to the actuator
- 6 Failed TCM driver circuit for the actuator



How to diagnose and fix it

- 1 Use a scan tool to retrieve all stored codes and freeze-frame data, then clear the code and test-drive to see if it returns
- 2 Visually inspect the actuator and its connector for damage, corrosion, or loose pins, and repair as needed
- 3 Check the actuator circuit for continuity and resistance using a digital multimeter, comparing to manufacturer specifications
- 4 Test the actuator itself by applying power and ground directly to confirm it operates smoothly and draws correct current
- 5 Inspect the TCM connector and wiring for signs of damage or corrosion, and verify power and ground supplies to the TCM
- 6 If the actuator tests faulty, replace it and clear the code; if the circuit is faulty, repair the wiring harness
- 7 After repairs, clear codes and perform a relearn or adaptation procedure if required by the manufacturer

Before replacing the shift actuator

- A low voltage code on an actuator circuit is often caused by a poor ground connection rather than a failed actuator, so check grounds first.
- Intermittent P0922 codes can be triggered by vibration or temperature changes affecting a marginal wiring harness, so wiggle-test the harness while monitoring live data.
- Some vehicles use a single actuator for multiple shift functions; a fault in that actuator can set related codes like P0923 or P0924, so don't replace parts based on one code alone.
- The TCM may set this code if battery voltage is low during cranking, so verify the battery and charging system before condemning the actuator.
- After replacing an actuator, some transmissions require a adaptive learning procedure; skipping it can cause harsh shifts and a repeat code.

Can I keep driving with P0922?

If the vehicle drives normally and the code is intermittent, you can drive cautiously to a repair shop, but avoid heavy acceleration or towing. If the transmission is in limp mode or forward gears are unavailable, stop driving and have the vehicle towed to prevent further damage.

Tools that help

- OBD-II scan tool with live data capability
- Digital multimeter (DMM)
- Wiring diagram for the specific vehicle
- Basic hand tools for connector and component access
- Test light or power probe



Reading P0922

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

Often seen with

P0700 Transmission Control System Malfunction · **P0919** Gear Shift Position Control Error · **P0920** Gear Shift Forward Actuator Circuit/Open · **P0923** Gear Shift Forward Actuator Circuit High · **P0924** Gear Shift Reverse 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/p0922/>

