

GENERIC · POWERTRAIN

P097A

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P097A

Shift Solenoid A Control Circuit/Open

P097A indicates that the transmission control module (TCM) has detected an open circuit or excessive resistance in the control circuit for shift solenoid A, which is responsible for controlling hydraulic pressure to engage or disengage a specific gear. The TCM monitors the solenoid's electrical path and sets this code when the expected current flow is not achieved, often resulting in harsh shifting or a default limp mode.

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 illuminates on the dashboard.
- Harsh or delayed gear shifts, especially when engaging drive or reverse.
- The transmission may enter limp mode, limiting vehicle speed and gear selection.
- Slipping gears or failure to shift into certain gears.
- Often no symptoms besides the warning light, especially if the fault is intermittent.

Common causes, most likely first

- Damaged or disconnected wiring harness or connector at the shift solenoid A.
- Open or shorted shift solenoid A coil.
- Corroded or loose electrical terminals in the solenoid circuit.
- Faulty transmission control module (TCM) or internal circuit failure.
- Debris or contaminated transmission fluid causing solenoid malfunction.
- Internal transmission mechanical failure affecting solenoid operation.



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record freeze-frame data to understand when the fault occurs.
- 2 Visually inspect the solenoid A wiring harness and connector for damage, corrosion, or loose pins; repair as needed.
- 3 Measure the resistance of shift solenoid A at the connector and compare to the manufacturer's specification; replace if out of range.
- 4 Check for power and ground signals at the solenoid connector with a multimeter or test light while cranking or running; verify circuit integrity.
- 5 Inspect transmission fluid condition and level; service if contaminated or low, as dirty fluid can cause solenoid sticking.
- 6 If electrical checks pass, perform a bidirectional test of the solenoid with a scan tool to confirm operation; replace solenoid if unresponsive.
- 7 As a last resort, diagnose the TCM and internal transmission wiring for faults, following the manufacturer's diagnostic flow chart.

Before you replace the shift solenoid

- A loose or corroded connector at the solenoid is a frequent cause of this code, so always inspect the harness before condemning the solenoid itself.
- The code can be set by a momentary glitch in the circuit, so clearing it and test-driving may reveal if the fault is intermittent rather than hard.
- Low transmission fluid or contaminated fluid can cause solenoid performance issues that mimic an open circuit, so check fluid condition first.
- Some vehicles require relearning the transmission adaptive values after solenoid replacement, so a scan tool capable of bidirectional controls is essential.
- The TCM may set this code if the solenoid circuit is open only when the transmission is hot, so testing should include a thorough warm-up.

Can I keep driving with P097A?

If the vehicle is in limp mode or shifting harshly, avoid prolonged driving and seek service soon to prevent transmission damage. If the only symptom is the warning light and the vehicle drives normally, you can drive cautiously to a repair shop, but avoid heavy loads or aggressive acceleration.



Tools that help

- OBD-II scan tool with bidirectional control and transmission data capabilities
- Digital multimeter
- Test light
- Socket set and screwdrivers for connector access
- Manufacturer's service information for circuit specifications

Reading P097A

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
9	Transmission.
7A	The exact fault within that area.

Often seen with

P0700 Transmission Control System Malfunction · **P0750** Shift Solenoid 'A' · **P097B** Shift Solenoid B Control Circuit/Open · **P097C** Shift Solenoid C Control Circuit/Open · **P097D** Shift Solenoid D Control 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/p097a/>

