

GENERIC · POWERTRAIN

P0790

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0790

Normal/Performance Switch Circuit

P0790 indicates that the powertrain control module (PCM) has detected an abnormal signal from the normal/performance switch circuit, which is typically part of the transmission control system on vehicles with selectable driving modes. The PCM expects a specific voltage or resistance from the switch when the driver selects normal or performance mode, and it sets this code when the circuit is open, shorted, or out of range.

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

Symptoms you may notice

- The check engine light or transmission warning light illuminates on the dashboard.
- The transmission may stay in a single mode (often normal) and refuse to switch to performance mode.
- The driver may notice that the performance mode indicator does not light up or that the switch feels unresponsive.
- In some cases, the transmission may shift differently or hold gears longer than usual if the PCM defaults to a limp mode.
- Often no symptoms besides the warning light, especially if the switch is rarely used.

Common causes, most likely first

- Faulty normal/performance switch (worn contacts or internal failure).
- Damaged or corroded wiring harness or connector at the switch.
- Open or shorted circuit in the wiring between the switch and the PCM.
- Blown fuse or poor ground connection for the switch circuit.
- PCM software issue or internal fault (less common).
- Aftermarket accessories or improper wiring repairs interfering with the circuit.



How to diagnose and fix it

- 1 Verify the code with a scan tool and check for any related codes in other modules.
- 2 Inspect the normal/performance switch for physical damage, corrosion, or sticking, and test its continuity or resistance according to the service manual.
- 3 Check the wiring harness and connectors between the switch and the PCM for chafing, corrosion, or loose pins.
- 4 Test the switch circuit for proper voltage and ground using a multimeter, comparing to manufacturer specifications.
- 5 If the switch and wiring are good, check for a faulty PCM or software update; reprogram or replace the PCM only after confirming all other possibilities.
- 6 Clear the code and test-drive the vehicle to verify the repair and ensure the switch functions correctly.

Before replacing the transmission switch

- A common oversight is assuming the switch itself is bad when the real problem is a corroded connector or a chafed wire hidden under the console or dashboard.
- On some vehicles, the normal/performance switch is integrated into a larger mode selector assembly, and a failure in that assembly can set P0790 even if the switch contacts seem fine.
- The PCM may set P0790 if the battery was recently disconnected or if voltage was low, so always check for a weak battery or charging system issues before condemning parts.
- Aftermarket remote starters or alarm systems that tap into the console wiring can introduce resistance or shorts that trigger this code, so inspect for non-factory wiring.
- P0790 can be stored intermittently if the switch is only occasionally used; a switch that works most of the time can still set the code due to a marginal contact.

Can I keep driving with P0790?

The vehicle is generally safe to drive with P0790 because it typically affects only the selectable driving mode and does not impair basic transmission function. Avoid using the performance mode until the fault is repaired, and if the transmission behaves erratically, have it inspected promptly.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Service manual or wiring diagram
- Trim removal tools
- Contact cleaner and dielectric grease



Reading P0790

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

Often seen with

P0700 Transmission Control System Malfunction · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance · **P0715** Input/Turbine Speed Sensor Circuit Malfunction · **P0720** Output Speed Sensor Circuit Malfunction

See it working

Watch the animated explainer [How Misfire Detection Works: Crankshaft Speed](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0790/>

