

GENERIC · POWERTRAIN

P0787

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0787

Shift/Timing Solenoid Low

P0787 indicates that the transmission control module has detected an abnormally low current or voltage on the circuit for a shift/timing solenoid, which is responsible for controlling hydraulic pressure during gear changes. The computer sets this code when the solenoid's electrical signature falls outside the expected range, often due to a short to ground, a faulty solenoid, or wiring damage.

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

Symptoms you may notice

- Illuminated check engine light or transmission warning light, often with no other noticeable symptoms
- Harsh or delayed gear shifts, especially when the transmission is cold
- Transmission may enter limp mode, limiting vehicle speed and gear selection
- Slipping or flaring during upshifts or downshifts
- In some cases, the transmission may not shift at all or may stay in a single gear

Common causes, most likely first

- 1 Faulty shift/timing solenoid with an internal short or open winding
- 2 Damaged or corroded wiring harness or connector at the solenoid
- 3 Short to ground in the solenoid control circuit
- 4 Transmission control module (TCM) internal fault
- 5 Low transmission fluid level or contaminated fluid causing solenoid malfunction
- 6 Valve body issues that affect solenoid operation

How to diagnose and fix it

- 1 Check transmission fluid level and condition; top off or replace fluid if necessary
- 2 Inspect the solenoid wiring harness and connectors for damage, corrosion, or loose pins
- 3 Measure the resistance of the shift/timing solenoid and compare to manufacturer specifications
- 4 Test the solenoid control circuit for a short to ground using a multimeter
- 5 If the solenoid is faulty, replace it and clear the code
- 6 If wiring is damaged, repair or replace the affected section of the harness
- 7 If the TCM is suspected, perform a diagnostic check with a scan tool capable of bidirectional controls and follow manufacturer troubleshooting steps



Don't overlook the wiring harness

- A common oversight is replacing the solenoid without checking the wiring harness for chafed or melted insulation, which can cause a short to ground and set P0787.
- This code can be set by a low transmission fluid level that causes the solenoid to overheat and fail, so always check fluid condition before condemning the solenoid.
- Some vehicles use a single solenoid for multiple shift functions, so a failure may cause symptoms in more than one gear, leading to misdiagnosis of a mechanical transmission problem.
- A faulty TCM can mimic a solenoid circuit fault, so perform a thorough circuit test before replacing the TCM, as it is often the most expensive part.
- P0787 may be accompanied by other solenoid codes if the shared power or ground circuit is compromised, so inspect the entire circuit rather than just the solenoid.

Can I keep driving with P0787?

It is generally safe to drive short distances to a repair shop, but avoid heavy acceleration or towing, as the transmission may enter limp mode or shift erratically, increasing the risk of further damage.

Tools that help

- OBD-II scan tool
- Digital multimeter
- Jack and jack stands or ramps
- Socket set and wrenches
- Transmission fluid level dipstick or scan tool with fluid level function
- Wire repair kit (soldering iron, heat shrink, electrical tape)

Reading P0787

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

Often seen with

P0750 Shift Solenoid 'A' · **P0755** Shift Solenoid 'B' · **P0785** Shift/Timing Solenoid · **P0786** Shift/Timing Solenoid Range/Performance · **P0788** Shift/Timing Solenoid High



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/p0787/>

