

GM · POWERTRAIN

P1842

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1842 · GM

1-2 Shift Solenoid Circuit Low Voltage

P1842 on a GM vehicle means the transmission control module (TCM) has detected low voltage on the electrical circuit that operates the 1-2 shift solenoid inside the transmission. The TCM commands the solenoid to move the shift valve for a 1-2 upshift, but the voltage feedback on the control circuit is below the expected threshold, so the computer flags the circuit as faulty and may default to a limp or fixed gear strategy.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	GM specific	Medium	Professional	Transmission

Symptoms you may notice

- The check engine light or transmission warning light illuminates on the dashboard.
- The transmission may stay in first gear or fail to make the 1-2 upshift, causing high engine RPM at low road speed.
- Harsh or delayed shifting, especially when cold, as the TCM substitutes a default shift schedule.
- The transmission may slip or flare during the 1-2 shift if the solenoid cannot fully engage.
- Often no symptoms besides the warning light, particularly if the fault is intermittent and the TCM has not yet defaulted.
- Reduced fuel economy on highway drives because the transmission holds a lower gear longer than normal.

Common causes, most likely first

- A failed 1-2 shift solenoid with an open or shorted internal coil, which is the most common cause on higher-mileage GM transmissions.
- Damaged, chafed, or corroded wiring in the solenoid harness inside the transmission pan, often from heat and fluid exposure.
- A poor connection or backed-out terminal at the transmission pass-through connector or the TCM connector.
- Contaminated transmission fluid or a clogged solenoid screen that restricts solenoid operation and skews the voltage feedback.
- A faulty TCM driver circuit that cannot supply or read the correct voltage on the solenoid control wire.
- A short to ground on the solenoid control circuit, which pulls the voltage low and sets the code.



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1842, then verify the code returns after clearing to confirm it is current and not history.
- 2 Check transmission fluid level and condition; dark or burnt fluid with debris points to internal wear and possible solenoid contamination.
- 3 Inspect the transmission pass-through connector and TCM connector for corrosion, pushed-back pins, or fluid wicking into the harness.
- 4 Measure resistance across the 1-2 shift solenoid at the transmission connector and compare to the GM service specification for that transmission.
- 5 Check the solenoid control circuit for a short to ground and for continuity from the TCM to the solenoid, repairing any chafed or open wire.
- 6 Remove the transmission pan and inspect the solenoid harness and 1-2 shift solenoid for damage, replacing the solenoid if resistance is out of spec.
- 7 After repair, clear codes, perform a relearn or adaptive reset if required, and road-test through several 1-2 shifts to confirm the code does not return.

What a low-voltage solenoid code really means

- A low-voltage code on a shift solenoid does not automatically mean the solenoid is bad; a short to ground anywhere on the control wire will pull the voltage low and set the same code.
- On many GM transmissions the 1-2 shift solenoid shares a harness with other solenoids inside the pan, so fluid contamination or heat damage often affects more than one circuit and can set companion codes.
- Intermittent P1842 that appears only when the transmission is hot is frequently caused by a solenoid coil that breaks down with temperature, not by a wiring fault, so a cold resistance check can pass.
- A weak or failing transmission pump or low fluid pressure can make the solenoid appear electrically faulty because the TCM sees unexpected voltage feedback when the solenoid cannot move the shift valve.
- Technicians who replace the solenoid without checking the pass-through connector often see the code return because fluid wicking through the connector pins corrupts the voltage signal.

Can I keep driving with P1842?

You can usually drive the vehicle to a repair shop if the transmission still shifts and the warning light is the only symptom, but avoid heavy acceleration and highway merging because the transmission may default to a limp gear. If the vehicle is stuck in first gear or the transmission slips badly, stop driving and arrange a tow to prevent internal damage.



Tools that help

- OBD-II scan tool with bidirectional controls and transmission data display
- Digital multimeter with resistance and voltage measurement
- GM service information for the specific transmission resistance specifications and wiring diagram
- Transmission pan gasket and fluid for reassembly after solenoid inspection
- Wire terminal pick and connector release tools for harness inspection

Reading P1842

P Powertrain: engine, transmission and emissions.

1 Manufacturer-specific code (GM): its meaning depends on the make.

8 Transmission.

42 The exact fault within that area.

Often seen with

P1843 Check DTC Memory Of Distance Control ECU · **P1844** Check DTC Memory Of Central Electronic Control ECU · **P1843 1-2 Shift Solenoid Circuit High Voltage** · **P1844** Torque Reduction Signal Circuit Desired By TCM · **P0700** Transmission Control System Malfunction · **P0751** Shift Solenoid 'A' Performance or Stuck Off · **P0756** Shift Solenoid 'B' Performance or Stuck Off

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/gm-p1842/>

