

GM · POWERTRAIN

P1843

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P1843 · GM

1-2 Shift Solenoid Circuit High Voltage

P1843 on a GM vehicle means the transmission control module (TCM) has detected an abnormally high voltage on the electrical circuit that controls the 1-2 shift solenoid inside the automatic transmission. The TCM commands the solenoid to open or close to shift between first and second gear, and it monitors the return voltage on the control wire to confirm the circuit is intact and the solenoid is responding as expected.

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

Symptoms you may notice

- The check engine light or transmission warning light illuminates on the dashboard.
- The transmission may default to a limp mode, staying in a single gear or refusing to shift out of first.
- Harsh or delayed engagement when shifting from first to second gear, or the shift may not occur at all.
- The engine may rev higher than normal before an eventual shift, or the vehicle may feel sluggish from a stop.
- Often no symptoms besides the warning light, especially if the fault is intermittent and the transmission still shifts acceptably.

Common causes, most likely first

- A faulty 1-2 shift solenoid with an open or high-resistance internal coil.
- Damaged, chafed, or corroded wiring in the solenoid circuit, particularly where the harness passes through the transmission case.
- A poor connection or corrosion at the transmission pass-through connector or at the TCM connector.
- A short to voltage on the solenoid control wire, often from a rubbed-through insulation touching a power wire.
- A failed TCM driver circuit that is unable to pull the solenoid control line low, leaving the circuit at high voltage.
- Internal transmission fluid contamination or debris that physically jams the solenoid valve, causing the coil to overheat and fail.
- A missing or poor ground for the solenoid circuit, which can cause the TCM to see an unexpectedly high voltage on the control wire.



How to diagnose and fix it

- 1 Scan all modules for stored and pending codes, and record the freeze-frame data to see the conditions when P1843 set.
- 2 Inspect the transmission wiring harness and connectors for chafing, corrosion, or loose pins, especially at the pass-through connector.
- 3 Measure the resistance of the 1-2 shift solenoid at the transmission connector and compare it to the GM specification for the exact transmission model.
- 4 Check for a short to voltage on the solenoid control wire by backprobing the TCM connector with the key on and the solenoid disconnected.
- 5 Verify the TCM ground circuit integrity with a voltage drop test under load.
- 6 If the circuit and solenoid resistance test good, substitute a known-good solenoid or use a bidirectional scan tool to command the solenoid and observe circuit response.
- 7 Replace the faulty solenoid or repair the wiring as needed, clear the codes, and perform a relearn or adaptation drive cycle if required by the vehicle.

What a high-voltage solenoid code really means

- A high-voltage code on a solenoid circuit often points to an open circuit rather than a shorted solenoid, because the TCM pulls the control line low to energize the solenoid and sees high voltage when the coil or wiring is broken.
- The 1-2 shift solenoid shares a common power or ground with other shift solenoids on many GM transmissions, so a single bad connection can set multiple solenoid codes at once and mislead you into replacing good parts.
- Transmission fluid that is low, burnt, or contaminated with clutch material can cause the solenoid valve to stick, which overheats the coil and eventually produces a high-voltage fault that will return if the fluid issue is not corrected.
- A failing ignition switch or a voltage drop on the transmission power feed can cause the TCM to log a high-voltage solenoid code even though the solenoid itself is healthy.
- Clearing the code without repairing the root cause often results in the code returning within a few drive cycles, and repeated limp-mode events can accelerate clutch wear inside the transmission.

Can I keep driving with P1843?

You can usually drive the vehicle short distances to a repair shop, but avoid sustained highway driving or heavy acceleration because the transmission may stay in limp mode or fail to shift properly. If the vehicle refuses to move out of first gear or the transmission slips noticeably, stop driving and arrange a tow to prevent further internal damage.



Tools that help

- OBD-II scan tool with bidirectional control and transmission module access
- Digital multimeter with backprobing pins
- Transmission wiring diagram for the specific GM model
- Jack and jack stands or a vehicle lift
- Basic hand tools including socket set and trim removal tools
- Transmission fluid level check tool or dipstick

Reading P1843

P	Powertrain: engine, transmission and emissions.
1	Manufacturer-specific code (GM): its meaning depends on the make.
8	Transmission.
43	The exact fault within that area.

Often seen with

P1842 Check DTC Memory Of Instrument Panel ECU · **P1844** Check DTC Memory Of Central Electronic Control ECU · **P1860** Kick Down Switch Error Message From Engine Control · **P1842** 1-2 Shift Solenoid Circuit Low Voltage · **P1844** Torque Reduction Signal Circuit Desired By TCM · **P1860** TCC PWM Solenoid Circuit Electrical · **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-p1843/>

