



P1822 · GM

Internal Mode Switch Circuit B High

P1822 on GM vehicles means the transmission control module (TCM) has detected an abnormally high voltage on the internal mode switch (IMS) circuit B, which is one of the switch's signal lines that reports the manual shift lever position. The TCM compares the expected voltage pattern for the selected gear against what it sees on circuit B, and when that line stays high or exceeds its normal range, it logs this code and may default to a limp-home shift 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 instrument cluster.
- The transmission may shift harshly or stay in a single gear (limp mode) because the TCM cannot confirm the lever position.
- The gear position indicator on the dash may be blank, flashing, or show the wrong range.
- The engine may start only in certain gear positions or not crank at all if the IMS signal is misinterpreted.
- Often no symptoms besides the warning light, especially if the fault is intermittent and the TCM can still infer position from other circuits.

Common causes, most likely first

- 1 A faulty internal mode switch (IMS) assembly inside the transmission, where circuit B's contact or resistor network has failed high.
- 2 Corroded, bent, or pushed-back terminals at the IMS connector or the TCM connector, creating an open or high-resistance path on circuit B.
- 3 A chafed or broken wire in the circuit B harness between the IMS and the TCM, often near the transmission case or along the engine harness.
- 4 Transmission fluid contamination or debris inside the IMS housing causing poor electrical contact on the B circuit.
- 5 A failed or intermittently failing TCM that misreads the voltage on circuit B despite a good switch and wiring.
- 6 Poor ground connection for the IMS or TCM, which can skew the voltage the TCM sees on the signal line.



How to diagnose and fix it

- 1 Scan all modules and record freeze-frame data for P1822, then clear the code and test-drive to confirm whether it returns immediately or only under specific conditions.
- 2 Inspect the IMS connector and TCM connector for corrosion, loose terminals, or pushed pins, and check the circuit B wire for chafing or breaks with a visual and wiggle test.
- 3 Measure voltage on circuit B at the IMS connector with the key on and the lever moved through each range, comparing against the GM service information chart for the expected high/low pattern.
- 4 Check the IMS ground circuit for excessive resistance (more than about 5 ohms) and repair any corroded ground point before condemning the switch.
- 5 If the voltage pattern at the switch is correct but the TCM still sets P1822, perform a resistance check on the circuit B wire end-to-end and repair any open or high-resistance section.
- 6 Replace the internal mode switch only after electrical checks confirm the switch itself is not producing the correct signal, and reset the TCM adaptive values afterward.
- 7 If all wiring and the switch test good, substitute a known-good TCM or reprogram the existing TCM with the latest calibration before replacing it.

What the IMS voltage pattern reveals

- Circuit B is only one of several IMS signal lines, so a high voltage on B can be caused by a poor ground shared with other circuits, not just a failed switch contact.
- A common misdiagnosis is replacing the IMS when the real fault is a chafed wire in the harness near the transmission mount, which only shorts when the engine moves under load.
- P1822 can set intermittently from transmission fluid that has seeped into the IMS connector, so always check for fluid migration before condemning electrical parts.
- The TCM may set P1822 alongside range-position codes or shift solenoid codes, and those companion codes often point to the shared ground or connector rather than the switch itself.
- On some GM transmissions, the IMS is integrated into the transmission range sensor on the valve body, so confirm the exact configuration before ordering parts.

Can I keep driving with P1822?

You can usually drive the vehicle to a shop, but expect harsh shifts or limp mode and avoid highway speeds or heavy loads until the fault is repaired. If the transmission is stuck in one gear or the engine will not crank in Park, stop driving and have it towed to prevent further damage.



Tools that help

- OBD-II scan tool with GM manufacturer-specific software to read TCM codes and freeze-frame data
- Digital multimeter with back-probe pins for voltage and resistance checks
- GM service information wiring diagram for the IMS and TCM circuits
- Basic hand tools for connector and harness inspection
- Transmission fluid drain pan and fluid if the IMS is replaced

Reading P1822

P Powertrain: engine, transmission and emissions.

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

8 Transmission.

22 The exact fault within that area.

Often seen with

P1820 Pressure Control Solenoid 2 Short To B+ · **P1823** Pressure Control Solenoid 3 Electrical · **P1820** Internal Mode Switch Circuit A Low · **P1823** Internal Mode Switch Circuit P Low · **P1820** Transmission Transfer Case Clockwise Shift Relay Coil Circui · **P0705** Transmission Range Sensor Circuit Malfunction · **P0706** Transmission Range Sensor Circuit Range/Performance

See it working

Watch the animated explainer [How a Car Clutch Works: Diaphragm Clutch Cutaway](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/gm-p1822/>

